

SABE / IAAREP Conference 2016

# Book of Abstracts



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## Behavioural Insights in Research and Policy Making

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# *New Researcher Workshop Stream 1a*

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7/7/2016 8:20:00 AM: Pomona Room 1

## **Shift Happens: An Experimental Comparison of Conformity Theory and Diffusion-of-Responsibility Theory**

*Jagau, Stephan; Offerman, Theo*

Psychologists talk about a choice shift when individuals advocate a risky (safe) decision when acting as part of a group even though they would prefer a safe (risky) alternative decision when acting as individuals. Research in psychology and economics has produced a mass of evidence on this puzzling phenomenon, all the while not coming up with a satisfactory explanation for choice shifts in terms of individual behavior. We suspect a desire of individuals to conform to the perceived 'default behavior' or 'behavioral norm' in the group to be part of the explanation. Eliaz et al. 's (2006) recently proposed model of choice shifts also predicts a drift towards 'default behaviors'. However, their theory operates entirely on individual risk preferences. We compare these candidate mechanisms in an experimental setting where the 'default choices' in decision problems are orthogonal to a 'behavioral norm' related to majority preferences among group members.

## **Insurance and Solidarity**

*Lenel, Friederike ; Steiner, Susan*

Assume an individual in your neighborhood has just lost a considerable part of his belongings due to a large fire. You are asked for donations. How much will you donate? Will you donate less in case you learn that your neighbor had been offered an affordable and fair insurance some weeks before the fire; that this insurance would have covered the loss but the neighbor had declined to purchase it? What if you have reasons to assume that your neighbor had declined the insurance because she expected she would receive sufficient support from her neighbors in case of a loss; will that affect your donation decision?

The relationship between accountability and solidarity forms the core of our paper. We investigate whether solidarity transfers are reduced when individuals can be held accountable for their misfortune. We analyze this question in the insurance context. This context is of scientific and political relevance. Over the last years, there have been considerable efforts, both from the private sector as well as from the donor community, to expand formal insurance into previously unattended markets in developing countries (for a documentation of the rapid expansion, see Churchill and McCord 2012). For low- income people in these countries one major risk- management tool are informal support arrangements. Relatives, friends and neighbors assume insurance functions by providing monetary and in-kind trans- fers, shelter and labor assistance in times of need, as has been well-documented in a number of studies (Ligon, Thomas, and Worrall 2002; Fafchamps and Lund 2003; De Weerdt and Dercon 2006). The motives behind such support arrangements are separated into selfish, incentive related motives (such as reciprocity) and altruistic, social preference related motives (Cox and Fafchamps 2007; Ligon and Schechter 2012). The question emerges how these informal support arrangements change when formal insurance becomes available. Evidence is scarce and not clear-cut (Hintz 2010; Landmann, Volland, and Frölich 2012; Mobarak and Rosenzweig 2013). It is relatively straightforward to expect that incentives to engage in these arrangements decline as the autarchy value increases, i.e., when insurance becomes available (for a theoretical and empirical analysis, see Lin, Liu, and Meng 2014); it is less clear how social preference related motives are affected.

This is where this paper sets in. Guided by the literature on fairness and accountability (Roemer 1998; Konow 2003), we study the relationship between accountability and solidarity with a lab-in-the-field experiment conducted in Cambodia. We designed a game that borrows both from the dictator game and the solidarity game. Players are randomly assigned the role of provider or recipient. Each provider is anonymously matched with one recipient. Both receive the same endowment. The recipient can lose a large proportion of her endowment due to a random shock. The provider is asked how much of his endowment he would transfer in case the recipient lost. We vary whether the recipient has the option to purchase an insurance which covers the loss from the shock and whether the recipient is informed about the provider's support possibility. We investigate to what extent the provider reduces his transfers when the recipient can be held accountable for the outcome as she forewent the insurance option. Specifically, we analyze how much of this reduction can be attributed to a response to the choice per se of the recipient, in line with the accountability principle (Konow 1996), and how much to a response to the recipient's informed choice, i.e., his intentional reliance on the solidarity transfers, in line with intention-based reciprocity (e.g., Charness and Rabin 2002). We complement the results with detailed survey data on subjects' characteristics and attitudes.

We present a theoretical model on conditional solidarity based on Konow (2010) where a provider incurs an internal cost when deviating from what he perceives as the adequate transfer to a less well-off recipient. We allow this adequate transfer to depend not only on the recipient's endowment but also on the recipient's choice set and information (i.e., his decision calculus). We define different types of solidarity behavior based on the extent to which transfers are conditioned on the recipient's decision calculus. The anonymous, within-subject design of the experiment allows us to classify the subjects' transfer behavior according to these types and to contrast the types with subjects' characteristics and attitudes.

The experiment and the survey were conducted in 21 villages in two neighboring provinces, Siem Reap and Banteay Meanchey, in Northwestern Cambodia from July to October 2015. The context of Cambodia is interesting as insurance for the low-income population (more specifically, health insurance) has recently been introduced, yet is still not available in all provinces. In one of our two provinces, Siem Reap, health insurance was introduced in the rural areas in 2012. In the other province, Banteay Meanchey, health insurance is not yet available. We first conducted a comprehensive household survey with close to 1,300 households in these villages. From the surveyed households, 672 respondents then took part in the experiment. Between the household survey and the experiment there was a time gap of two weeks in order to reduce confounding factors. Data collection was finalized at the end of October 2015. All findings presented in this version of the paper are preliminary. Data analysis is ongoing.

On average, providers transfer 15% of their endowment to a recipient who had no option to insure. There is a significant reduction in transfers provided when the recipient can be held accountable for her loss: providers reduce their transfers on average by 30% when a recipient forewent the option to insure. This reduction is mostly driven by a response to the recipient's choice per se and less by a response to the perceived intention behind this choice. Interestingly there is a large proportion of providers (42%) that transfer the same amount, independent of the option the recipient had available. This proportion is comparable to the findings by Trhal and Radermacher (2009). Potentially, individual accountability receives more consideration with a higher valuation of autonomy. When we contrast the participants' behavior in the experiment with their self-reported autonomy elicited in the survey, we find support for this proposition. Participants who see their lives to depend on themselves punish the foregoing of insurance significantly stronger in the experiment. Also, participants who reportedly rely less on the support of others punish the foregoing of insurance stronger. Surprisingly, the response to a recipient who decides informedly against the insurance (suggesting a willful reliance on the provider's support) is less clear-cut. The majority of the providers (80%) do not punish the recipient's willful reliance. In fact, 20% transfer even more (or, punish less), in case the recipient was informed about the support possibility when deciding against the insurance. We can only speculate about the reasoning behind this behavior.

One possible explanation is that these providers wish to fulfill the expectations of a recipient who intentionally did not take up insurance specifically because she counted on the provider's transfer in case of loss, i.e., they wish to fulfill the expected transfer. Additional analyses will be done.

## **The 'Neighbour Effect' dilemma**

*Noh, Zamira; Goddard, Paul; Hylton, Patrick; Parke, Adrian*

The Neighbour Effect (NE) is a bias in social decision-making exhibited by actors that (usually) favours their direct-spatial-neighbours rather than non-neighbours. We tested NE using participants seated in a lecture theatre (n=229) by getting them to play a closed form of the Prisoner's Dilemma (PD) game. Participants had to choose whether to cooperate or defect with either their direct-spatial-neighbours or non-neighbours. Participants were significantly more cooperative with their lateral (left/right) direct-spatial-neighbour(s) than non-neighbours but participants became significantly less cooperative with their longitudinal (front/back) direct-spatial-neighbour(s) than their non-neighbours,  $\chi^2(1) = 7.376, p = .007$ . Therefore, NE is not just a bias based on simple spatial proximity but is based on the relative lateral/longitudinal positioning of actors.

## **A Model of Indecision**

*Ip, Edwin*

In this paper, I introduce a decision utility model based on multi-attribute conflict. Using this simple model, I am able to derive four well-known behavioural phenomena which have so far lacked consistent theoretical explanations. These are the decoy (attraction) effect, the compromise effect, choice overload and information overload. Given the simplicity of the model, it can be applied to many classical settings to give different predictions on market outcomes. As an example, I show that indecisiveness allows for a range of non-social optimal equilibria in a Bertrand-style price-quality competition model.

# *New Researchers Workshop stream 1b*

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7/7/2016 10:40:00 AM: Pomona Room 1

## **Identity, Threat Aversion, and Organisational Decision-Making: Experimental Evidence from Public Officials**

*Kuehnhanss, Colin Raico ; Murdoch, Zuzana ; Geys, Benny ; Heyndels, Bruno*

In any organisational decision-making process, distinct policy options are typically characterised by a number of advantages (or 'opportunities') and disadvantages (or 'threats'). The selection of one option over another depends on the opportunity-vs.-threat perceptions of the individuals within the organisation. In this article, we argue that individuals' organisational identification constitutes a key determinant of this threat perception. We propose that a stronger organisational identity strengthens individuals' motive to avoid a negative outcome and shifts their attention towards potential threats rather than opportunities in the payoff distribution. As decision-making is context dependent, we also argue that this 'prevention focus' in individuals' motivational basis for decision-making is stronger under negative than under positive selection strategies. An original survey

experiment with civil servants in the European Parliament (EP) finds significant supportive evidence for the empirical implications of our argument.

## **Citizens' preferences for a tax exemption for care-giving heirs – an empirical analysis**

*Kusa, Nataliya; Bischoff, Ivo*

### 1. Introduction

In Europe, the next decade will see unprecedented private wealth transfers from the generation born around the end of World War II. These transfers are taxed by an inheritance tax in many European countries (e.g., Büttner et al., 2004; Gift and Inheritance Tax Survey, 2014). At the same time, we observe a massive increase in demand for long-term care together with decreasing number of potential caregivers. Additionally, dependent individuals have a strong preference to be cared at home (Huber et al., 2009). These factors lead to a growing demand for informal care. The huge amount of downward wealth transfers expected for the next decade has the potential to bring relief to the fiscal pressure many countries are currently in - even with moderate tax rates. On the other hand, these wealth transfers frequently represent a substantial part of the remuneration that care-giving relatives receive in exchange for the informal care. Wealth transfer taxation results in a tax wedge reducing the incentives for caregivers to provide home care. A tax exemption for care-giving heirs may be a solution.

We investigate citizens' policy preferences on the proposal to introduce a tax exemption in the inheritance tax for heirs who gave long-term care to the bequeather:

1. Why do some citizens support a tax exemption for care-giving heirs while others oppose it?
2. Why do some citizens want to restrict the tax exemption to care-giving relatives?
3. Main Hypotheses

Citizens' policy preferences are expected to depend on sociotrophic arguments and on monetary self-interest. Sociotrophic arguments suggest that subjects are more likely to support the tax exemption if they believe that the tax wedge causes substantial damage to intergenerational exchange relations within the family. According to material self-interest, the support for the tax exemption is lower the more likely a subject expects to be paying the tax. Our main hypotheses are:

H1: Subjects who believe that the old generation's trust in the young generation is low are more likely to support the tax exemption than subjects who believe that trust is high.

H2: Subjects who believe in norm of indirect reciprocity are more likely to support tax exemptions for heirs who have given long-term care to their relatives.

H3: Subjects who expect an inheritance in the near future and/or have been or expect to be involved in long-term care are more likely to support the tax exemption.

We include a large array of control variables (e.g., gender, household income, level of education, age, government trust, belief in the role of the family, Big Five personality traits).

Regarding question 2 (restriction of tax exemption to care-giving relatives), we believe that self-interest plays a crucial role. A substantial amount of long-term care is provided neither by family members nor by professional personnel in long-term care institutions, but by female migrants coming from low-income countries. Relatives may see these caregivers as competition reducing the expected inheritance for themselves, but they many also see them as relief. Depending on the

point of view, citizens who await to give care to family members are more or less likely to support restricting the exemption.

### 3. Empirical analysis

We test these hypotheses using data from a representative survey among 3500 individuals from Germany. The endogenous variables are based on the answers to the following question: "... Some people demand an appreciation of home care by a tax exemption. Others are against this proposition ... Should there be an inheritance tax exemption for care-giving heirs? If yes, should it be restricted to care-giving relatives only? "

Results on question 1 (tax exemption): Among all respondents, almost 80 percent support the proposal to introduce a tax exemption for care-giving heirs. We find support for hypothesis H2 but not for H1. Self-interest factors play an important role. Subjects expecting an inheritance and subjects whose parents are alive are more supportive of the tax exemption as are subjects overestimating the tax burden. We test an impact of Big Five personality traits and find extraversion to be positive and significant. Support is lower among highly educated subjects but it is not found to depend on age.

Results on question 2 (restriction of tax exemption to care-giving relatives): Among those supporting the tax exemption, about 36 percent support restricting it to care-giving relatives. Females and subjects, who were involved in providing long-term care to family member, are less likely to support this restriction.

These results hold regardless of the empirical model specification (separate binary regressions, Heckman model, multinomial probit).

### 4. Discussion and conclusions

We provide a comprehensive study on the driving factors behind citizens' policy preferences regarding tax exemption for care-giving heirs. Both sociotropic arguments and material self-interest are found to drive citizens' support for this exemption. Support is not higher among women than among men, even though women are at the heart of intergenerational transfer relations (both as caregiver and as care-receiver). Women do, however, more strongly oppose the restriction to family members. The same holds for subjects who have personal experience in long-term care giving. This suggests that non-relative persons providing home care are regarded as relief to the relatives rather than their competition.

Our paper contributes to the growing strand of empirical studies on citizens' preferences regarding taxation in general and wealth transfer taxation in particular (e.g., Bischoff and Kusa, 2015).

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# The Cost of Paying Attention: Cognitive Resource Scarcity and Investor Activity around FDA Announcements

*Rothman, Tiran*

In the summer of 2012, the FDA approved a pioneering drug for obesity, developed by Arena Pharmaceuticals (NASDAQ: ARNA). ARNA's stock price increased gradually in the preceding three months, from \$2 to \$10 on approval day. However, one month after FDA approval, Arena's stock price had declined by 20%, to \$8. What went wrong? Why did ARNA's stock price decrease after the 'good news' dissemination? Was this a specific case of ARNA, or did it reflect a general, intriguing, phenomenon?

A sample of FDA resolutions we have collected for a period from 2002 to 2014, consisting of 163 New Drug Application (NDA) and Biological Licensing Application (BLA) cases, shows ARNA's case was not specific. Yet another sample we have collected of 295 New Molecule Entity (NME) approval cases, corroborates our findings as well.

We document an interesting picture of price adjustments around FDA announcements. In the cases where the FDA has not approved the drug application, as well as in the cases of approval, stock prices tended to decline after the announcement. The price decline after non-approvals was rapid (within a few days), while in the case of approvals it took longer (approx. 30 trading days); the latter is especially puzzling as, ostensibly, it stands at odds with the nature of the released positive information.

Our paper's goal is to document this phenomenon, and suggest possible explanations for its existence. To the best of our knowledge, of the several studies which have investigated the effects of FDA resolution announcements on stock prices, none has delved into regulatory analysis or explore this phenomenon of the stock prices subsequent to the FDA resolution.

We suggest preferences for skewness investment, such as investment in the stocks of drug development firms, can explain the intriguing pricing pattern we have detected. The industry's seminal milestone events attract investors' attention, forming reaction to the new information. This preference for skewness, mainly with small capitalization firms, leads to overreaction based on the positive skewness payoff perceived in pre-seminal milestone events, reflected also in high trading volumes. Post event, even if the firm received good news, positive skewness is no longer imbedded, and other firms' seminal milestone events pop-out. Thus, we found bio run-down in stock prices in the two months after the event.

The events we study are different from common corporate events: First, their valence is clear cut. Second, assessing the events' value implications requires technical and professional knowledge about the pharmaceutical industry. Third, in spite of the technical nature of the information, its potential effect on the new drugs makes it interesting for many people. Thus, presumably, "individual investors" (cf. Barber and Odean, 2000, 2001, 2011) buy the involved stocks at inflated prices and, once the publicity wave passes, sell them while prices subside.

We believe our study is important in several aspects. (i) it contributes to financial research by shedding light on the role of behavioral biases in investors' decisions; (ii) understanding market patterns is invaluable for the investors, as well as for the firms, which rely on the market to finance their activity; (iii) our results have immense welfare implications: mispricing in the vast magnitude we have detected casts tremendous efficiency costs by tilting financial markets' resource allocation. Our research will hopefully enable us to suggest ways for mitigating the phenomenon.

# *New Researchers Workshop; stream 1 afternoon*

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7/7/2016 1:00:00 PM: Pomona Room 1

## **Implicit Racial Discrimination in the Cathedral: The Role of Evidence and Optimal Prevention**

*Dominioni, Goran*

This paper investigates the nexus of implicit racial biases and tort law. I argue that implicit racial biases in the judiciary play a major role in determining the incentives structure from which tortfeasors and victims choose to engage in activities regulated by liability rules. In doing so, it contributes to two emerging strands of literature on judicial decision-making and tort law: behavioral realism and behavioral tort law and economics.

Building on recent findings in psychology and neuroscience, I illustrate how implicit racial biases affect the creation, perception and evaluation of different types of evidence in tort trials. In this connection, the analysis suggests that exclusive focus of existing research on the effect of implicit biases on the creation of evidence at trial underestimates the importance that biased pre-constituted evidence has in determining trial outcomes.

Furthermore, via a simple model, I show that, contrary to what is argued by some authors, the allegedly small influence of implicit racial biases on single human behaviour does not necessarily imply that implicit racial biases have small societal effects in trial settings. In this connection, and in contrast with an emerging belief, the model shows that implicit racial biases are likely to have a significant role in determining trial outcomes in high stakes cases.

Lastly, I argue that implicit racial biases prevent the equal access to civil justice to non-white individuals in Western (and especially European) countries by lowering their expected benefits and increasing the expected costs of bringing a case to trial. This decreased access to justice, coupled with courts' use of implicit stereotypes as a form of predictive evidence, impairs the deterrent capacity of tort law. This analysis aims to inform scholars and policy makers in, respectively, the study and the choice between tort law, regulation and Pigovian taxes for addressing issues of distributive justice and efficiency in a wide spectrum of settings, ranging from environmental liability to product liability. In this connection, the study highlights the conditions under which implicit racial biases are expected to play a greater role in determining trial outcomes.

## **Cascading Defections from Cooperation Triggered by Present-Bias Behaviours in the Commons**

*Persichina, Marco*

The intertemporal resource management is frequently exposed to risks of inefficiency. The origin of the problem also resides in the difficulties that people often face in defining intertemporal choices and allocating consumptions in a consistent way over time. This phenomena is strictly related to the existence of present biased preferences. Several evidences show that people exhibit a systematic tendency to discount more near futures respect to the distant one; such that in front to present-biased preferences the immediate benefit conducts the choices despite the long-run interest.

Generally, common resource dilemmas are defined in a context in which long run choices and short ones can conflict, exposing in this way the resources to the risks that derive by present-bias. In this context it is observed frequently, in particular in the field of controlled experiments, a systematic decadence of the cooperative propensity with the prosecution of the interactions over the time between agents, the reason of the decay of the cooperation propensity over time is argument of discussion and great interest.

When resources for their intrinsic nature are commons with intertemporal harvesting peculiarities, the decay of cooperation intentions can be the main obstacle to the preservation of a given stock of resources. But in this context the role played by the cognitive biases is not adequately investigated. The question about if and in which way phenomena like the present-bias can affect the dynamic of the cooperation and its eventual decadence has not been posed yet.

If on one hand it is beyond any doubt doubts that the existence of cooperation capability and that this is part of the human evolution success, on the other hand the reason for what societies sometimes fail in order to reach the level of fairness and cooperation that they desire are still unclear.

The interest on the role of the present-bias in the framework of the cooperation in common resources dilemma derives from the observation that a truthful representation of the human behaviour in the social intertemporal dilemmas needs an inclusion of the complexity of the decision-making process, in particular of the cognitive factors that affect the choices. In fact, on one hand, the adoption of sustainable and cooperative behaviour in relevant social dilemmas depends by the degree of consciousness about the effect of their own behaviours on the others, having interest and care of the common resources. On the other hand, the made choices reflect the capability of reading and weighting correctly costs and benefits deriving from choices and decisions. The intertemporal decision-making processes, leading the choices, are hence the path in which the social dilemmas are solved by individuals. For these reasons the paper offers a tractable model in order to circumscribe the important effects that the present-bias has in the dynamic of defection by cooperation.

Cognitive factors affecting the intertemporal foresight of agents can be involved in a decadence of cooperative interaction over time in the framework that include common resources, also when agents have preferences for cooperation.

But the question that the paper pose is not only if it an implication of the present-bias in the dynamic of management of the common resources is plausible, but if defective behaviours from the cooperative equilibrium in the common resources management can be fuelled and trigged by the presence of agents with myopic behaviours, also if with cooperative motivations.

In fact, several reasons could lead agents to defect by a perfect cooperative strategy. Nevertheless, also a pure cooperative agent can implement a strategy that does not coincide with optimal cooperative one also when his aim is cooperate, because his choices can be affected by limited capability in reach the optimal solution or biased as in the case of present bias. Moreover, as the paper shows, the swift by the optimal cooperative strategy for effect of the present-bias can trigger a dynamic of defections, also in presence of cooperative intentions.

The model takes care of a common pool of resources from which a group of agents harvest simultaneously for a given time. The representative agent of the model is a conditional cooperant, his strategy is a *tif for taf* that prescribes that he starts harvesting a cooperative amount as long as he thinks that also the other agents are cooperating, viceversa the strategy instead prescribes the defection until the end of the interactions. In front to heterogeneity in the myopic discount factor, it is not possible for a member of the group distinguish if an amount greater that the optimal cooperative harvested by another member derives by free-ride intentions or if it is a cooperative biased action. Present bias, in fact, implies the realisation of non-consistence choices that generate in this way the impossibility to infer the intentions of the agent from the consistency with possible

cooperative behaviours of the past. So an excessive reduction of the stock of resource deriving by the myopia of some agent can be erroneously interpreted as an act of free-ride and in a tit for tat strategy trigger a dynamic of defection.

Definitely, the model presented shows that the observable and observed decay of the cooperative choices in the common resources dilemmas are not a unique and unequivocal signal of an increasing on free-riding intentions, but can be also a consequence of present-biased preferences and myopic behaviours of the cooperative agents. More in deep, this work shows that in a context populated by conditional cooperators with heterogeneous myopic discount factor, in absence of institution of coordination and when there is a lack in information.

The paper demonstrates, and define the conditions in which the behaviour adopted by naive agents, also if with cooperative intentions, can trigger a dynamic of cascade defections from the cooperative strategy inside the group of harvesters. So a decreasing in the cooperative intentions can be also the effect of the absence of coordination instruments in front to the cognitive bias that affect the human behaviours.

## **Energy-Efficient Investments in Residential Buildings: Does Personality Matter?**

*Basic, Ante*

In an interdisciplinary approach of Economics and Psychology I explore in this paper whether, and in what way, personality traits influence energy-efficient investments in residential buildings.

Energy-efficient technologies are an attractive option for reducing energy consumption as they deliver the same level of services in a cleaner, more efficient way without the need to cut down on the consumption of the product they deliver, for example space heating or motorised transport. However, the expected large-scale surge for energy-efficient investments in many domains, including the residential sector, has not been observed despite their apparent potential to increase economic profitability. Many scholars have studied this well-known energy-efficiency paradox or energy-efficiency gap. The majority of explanations identifies market failures as the prime reason (see, for example, Myers, 2014; Phillips, 2012). Some of these market failures are caused by behavioural factors (Allcott and Rogers, 2014) but little research exists on how personality traits relate to energy-efficient investments.

In this paper, I argue that ignoring the impact of individual behaviour and differences in personality traits may bias the estimates of the energy-efficiency gap. First, I state the case for considering personality traits in predicting energy-efficient investments in residential buildings. I provide a conceptual framework for understanding how personality traits affect a household's economic decision whether to adopt energy-efficient technology. Second, I test the derived framework empirically with data on residential solar photovoltaic installations in the UK. The results show that personality traits are mediated through risk preferences and environmental concerns on the households' decision to invest. For instance, openness is positively related to risk preferences and environmental concerns (mediators) which in turn increase the probability to adopt energy-efficient technology. The results further suggest that the mediators are translated into investments conditionally on the households' income level. Finally, I derive new perspectives on improvements of environmental policy-making by taking account of personality traits.

It is well known that the perception of identical situations differs widely across individuals. Personality defines how an individual processes events and drives his corresponding characteristic behaviour and decisions. For instance, extroverted people may perceive a crowded location as enjoyable while introverts might feel less comfortable. The extroverts may appreciate the conversation and the exchange of ideas, whereas the introverts may be threatened by such

surroundings and would prefer to leave. It might seem intuitive that personality traits can influence decisions but what are the tangible arguments for that link? More specifically, why should personality have an impact on economic decisions such as energy-efficient investments?

To answer the question for the case of residential energy efficiency, I draw on current multi-disciplinary literature on energy efficiency, economic theory and personality psychology. I develop three main arguments for why personality should have an impact on energy-efficient investments:

1. Previous theoretical constructs and empirical investigations have demonstrated a link between personality traits and environmental behaviour in general; this suggests that specific decisions, such as energy-efficient investments, are likely to be affected as well.
2. Recent economic theory on personality and economic outcomes also supports the concept that personality traits affect the choice of energy-efficient investments.
3. Energy-efficient investments in residential buildings, as investments, depend on risk and uncertainty preferences and are consequently driven by personality traits.

To build the conceptual framework, I integrate two robust mediation channels for personality that were found and analysed independently in previous studies: economic preferences and environmental beliefs. In doing so, I start to fill the existing gap in terms of models that can serve as a basis for analysing the influence of personality traits on energy-efficient investments. This could open avenues for a fuller elaboration of the influence of personality on energy-efficiency measures.

I test the conceptual framework's underlying mediation mechanism of personality traits empirically by running a multiple mediator bootstrapping General Structural Equation Model (GSEM) on households' residential solar panel investments in the UK. To conduct the analyses, I use data from The UK Household Longitudinal Study "Understanding Society". The survey provides figures on personality traits according to the Big Five model that captures personality with five core dimensions (Costa and MacCrae (1992)): openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. I map the homeowners' individual traits, risk attitudes and environmental concerns to his/her energy-efficient installations. The results show that the effect of personality traits is mediated on the probability to invest through risk preferences and environmental concerns. The specific indirect effect through risk is significantly positive for openness and extraversion, whereas agreeableness has a negative impact. The effect that is mediated through environmental concern is significantly positive for openness, agreeableness and neuroticism, whereas it is negative for conscientiousness and extraversion. For both mediators, the effect is only significant if a certain threshold of income is met.

Policy-makers, pro-environmental organisations and providers of financing for energy-efficient technology might do well to take account of stable psychological characteristics (personality traits) in their strategies. By using information about personality traits, they can tailor-fit their strategies to different target audiences. If facets of openness drive pro-environmental decisions, policy-makers should present pro-environmental actions as new and cutting-edge (Markowitz et al., 2012). Moreover, policies could be applied on a regional large-scale base. Recent studies have found geographical manifestations of personality traits which show that specific traits are more prevalent in some regions than in others (Obschonka et al., 2015; Rentfrow et al., 2015). Such findings can be used to tailor policies to specific groups of personalities. For instance, regions with low levels of openness should be confronted with proposals that require only marginal changes in behaviour because they prefer the status quo. Likewise, producers of energy-efficient technologies may benefit by tailoring their marketing strategies to the relevant traits. For instance, the effects of eco-labels could be improved. Again, if openness is a crucial factor in deciding to pursue energy-efficiency, labels could be designed with visual effects that engage with the typical openness facets of inner feelings and emotions. Instead of using alphabetical letters or figures of carbon emissions, the levels of energy-efficiency could be visualised with pictures ranging from polluted cities (low energy-efficiency) to green landscapes (high energy-efficiency). Such visualisations might be more effective for openness-prone people than just highlighting the financial value of energy savings.

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# *New Researcher Workshop Stream 2a*

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7/7/2016 8:20:00 AM: Pomona Room 2

## **Zooming in on Ambiguity Attitude: Rare events matter**

*Emirmahmutoglu, Aysil; Baillon, Aurelien*

Kahneman and Tversky (1979) pointed out that rare events are either completely neglected or overweighted. For decision making under risk, the common view in the literature is that small probability events are overweighted (e.g., Tversky and Kahneman, 1992; Gonzalez and Wu, 1999). However, the picture is not that clear when we consider decision making under uncertainty. Recent research in psychology has shown that if unlikely events are not described but experienced by agents, they tend to be partly neglected or underweighted (see for instance Barron and Erev, 2003; Hertwig et al, 2004; Hertwig and Erev, 2009). On the other hand, there is also evidence that rare events are overweighted, but less so under experience-based decisions than description-based decisions when the events concern gains, and they are overweighted similarly in both decisions when the events concern losses (Abdellaoui et al., 2011). More research in ambiguity for rare events is needed for clarification.

Understanding the attitude towards rare events helps to explain certain economic activities. For example, if rare events concern losses, overweighting leads agents to take more preventive actions or buy more insurance than necessary. Similarly, policies to prevent or cope with environmental catastrophes also concern such events. On the other hand, when rare events relate to gains, overweighting can explain betting behaviour while underweighting of unlikely gains might hinder the development of entrepreneurship.

In this paper we measure ambiguity attitude for very unlikely events in an Ellsberg-like experiment. Despite the fact that decision making for ambiguous rare events is crucial, there are no other studies that empirically examine ambiguity attitude with events as unlikely as ours. This paper is the first study of ambiguity attitude for very unlikely events, more than 100 times smaller than in typical ambiguity studies. Additionally, the existing literature on ambiguity focuses mostly on gains, while there is little known about the loss domain (Trautmann and van de Kuilen, 2014).

We measure ambiguity attitude both for gains and losses, and therefore contribute to the existing literature by being one of the few studies that uncover the loss domain, providing opportunities for direct comparison with gains.

We deal with two main challenges of measuring ambiguity attitude: disentangling ambiguity attitude from risk attitude and controlling for beliefs. The first one relates to identifying ambiguity attitude generated on top of risk attitude when we move from decision making under risk to decision making under uncertainty. We use the solution proposed by Dimmock et al. (2015), namely "matching probabilities", to deal with this issue. Matching probability for an event  $E$  with unknown probability is the objective probability  $p$  that makes a decision maker indifferent between receiving a nonzero outcome  $x$  Euro with probability  $p$  and receiving  $x$  Euro if event  $E$  realizes. Dimmock et al. showed that eliciting matching probabilities is enough for measuring ambiguity attitude. The intuition is that risk attitude is differenced out from the comparison of a risky choice and an uncertain choice if both choices yield the same outcome. Therefore, the distance of matching probabilities to the neutral benchmark probabilities of events is considered to measure whether ambiguous events are more or less overweighted/underweighted.

The second challenge relates to controlling for beliefs. The interpretation of matching probabilities as direct measures of ambiguity attitude is problematic because we do not know the decision maker's belief. For example, the decision maker may truly believe that an event is impossible. If this is the case she does not ignore an unlikely event as the above direct measure would predict, but instead she simply deals with an event she considers impossible. Therefore, we do not want to use an arbitrary benchmark to assess overweighting or ignorance of unlikely events. Instead, we only compare matching probabilities with themselves and study their internal consistency, as Baillon et al. (2015) suggested. We do this by the use of additivity measures. Intuitively, if an unlikely event is neither ignored nor overweighted, it would get the same subjective value (matching probability) in isolation or as part of a larger event. Hence, matching probabilities would be additive under ambiguity neutrality. If unlikely events weigh more in isolation (overweighting) matching probabilities will be said to be subadditive. Neglecting or underweighting would result in opposite violation of subadditivity (superadditivity). Therefore, in this paper we measure ambiguity attitude in very unlikely events as violations of additivity.

Our analysis reveal that very unlikely events are overweighted and loom larger in isolation, more under ambiguity than under risk. This corresponds to ambiguity seeking for unlikely gains and ambiguity aversion for unlikely losses. Additionally, we observe more overweighting of unlikely losses than unlikely gains. Therefore, ambiguity aversion for catastrophes is stronger than ambiguity seeking for betting behaviour. In a nutshell, rare events matter.

## **Impact of Incentives and Motivation on Attention Allocation**

*Rafai, Ismael; Toumi, Mira*

In this study, we investigate experimentally the effect of incentives and motivations on the allocation of the attention targeted to micro-behavior.

It is commonly accepted that incentives have a direct positive effect on behavior, but sometimes can also have a negative indirect effect through alteration of intrinsic motivation (i.e. crowding-out effect); especially for prosocial behaviors. Depending on the type, the design, and the strength of the incentives, their overall effect can be positive or negative.

Public Good Game (PGG) is often used to study prosocial behaviors, where players are free to choose their level of investment or effort. In this case, prosocial behavior is the result of an optimal cost/benefit trade-off. The possibility of a crowding-out could result from an 'unexpected' interference between preferences and incentives (e.g. reputational or self-regarding effect).

Therefore, intrinsic and extrinsic motivations have separate effects on behaviors, but they also affect each other.

In PGG experiment, subjects choose an investment of money instead of real effort (induced effort cost) in order to ensure the saliency of the incentives and the effort cost, and also to let aside the performance and heterogeneity of capability among participants.

However, various micro-prosocial behaviors consume attention (e.g. paying attention to turn off the light, paying attention to put waste in the right dustbin, etc.) rather than "salient effort cost". We argue that the allocation of the attention is not strictly equivalent to an allocation of effort and does not perfectly fit an optimal trade-off between cost of thinking/benefit to think (due to an infinite regress problem, optimal allocation of attention should consume itself attention). Therefore, actual PGG experiments are not perfectly adapted to grasp the attention allocation problem induced by prosocial micro-behavior.

As the effect of incentives and intrinsic motivation on attention allocation has not been studied yet in economics, we propose an original experimental design able to do it. In the experiment we suggest, participants are faced to a repeated task of a hundred levels which only consume attention. This task, which consists in classing each of the hundred items in one of two boxes, allows us to measure attention through two dimensions: the "effective attention" (the probability to put an item in the corresponding box) and the "attentional resources" (the time allocated in the task).

Depending on the treatment, subjects have: (0) no incentive; (1) a self-interest monetary incentive; (2) a prosocial monetary incentive; to put the item in the corresponding box.

The participants are given 45 minutes to complete the task, but as soon a participant finishes the hundred levels, he has the possibility to navigate freely on internet during the remaining time. So, the subject can allocate his time between the task and the free-time.

As in our experiment, subjects have another alternative than spending their attention to the task, so the attention allocated in the baseline (0) reveal how much they like to pay attention to the task compare to free-time. We measure intrinsic motivation (using Intrinsic Motivation Inventory, Ryan (1985)) and are able to estimate the 'pure-effect' of intrinsic motivation on attention.

Then we compare the attention and the motivation in baseline and in the incentivized treatments 1 and 2. Using Structural Equation Modeling, we are able to discriminate from the global effect of each incentive, both the direct effect on attention and the indirect effect on intrinsic motivation.

Moreover, we control for risk-aversion (Holt and Laury, 2002), social preferences (SVO ring Test) and time preference.

Preliminary results (pilot experiment) show that if prosocial and self-interest incentives have nearly the same positive effect on the amount of attentional resources allocated (time allocated in the task), the self-interest incentives have a greater effect on the effective attention (precision in the task) than prosocial incentives. Attention seems to decrease across the levels with different speed depending of treatments (e.g. attention decrease more quickly in the baseline).

The full experiment will be conduct on z-Tree (Fischbacher 2007), in March 2016 with around 200 subjects. We are also planning to run the experiment on internet using Amazon Mechanical Turk.

# Wage earners, home makers, and gender identity in couples.

## Experimental findings on labour division

*Görges, Luise*

This paper investigates couples' specialisation decisions to examine the influence of social norms for the gender-specific patterns in labour division in families. Put simply, the main question asked is why, within a couple, men are more likely to specialise in market work while women are more likely to specialise in home production. According to standard family economic theory we observe this pattern due to systematic, gender-related productivity differences in wage income and home production. If men on average expect higher wages than their wives, or women are more productive in the home than their husbands, an income-maximising household will choose a traditional labour division because this specialisation generates efficiency. This fundamental insight dates back to the Becker (1965) model of time allocation. In 2015, however, the fact that gender gaps in education have closed, and partly reversed, seemingly contradicts the assumption of systematic, gender-related productivity differences, and yet, the gender specific specialisation patterns are remarkably tenacious.

The notion that social norms regarding the "appropriate" roles of the male and female partner influence the labour division in a couple play is intuitive. Recently, Bertrand et al. (2015) investigated a peculiar pattern in the distribution of American couples over the wife's contribution to overall household wage income, that seems to confirm this intuition: The authors identify a sharp drop to the right of 1/2 and argue that this is likely an effect of social norms. Couples seek to avoid a situation where wives earn a higher income than their husbands. Empirically, it is extremely challenging to identify what causes the gender bias in couples' specialisation decisions, since the effects of complementary sorting into marriage and social norms are often not easily distinguishable. In most cases, consumption and survey data do simply not allow to determine whether women with relatively low labour market productivity sort into marriages with highly productive men because they aim to specialise in home production – or whether identically productive partners practise traditional specialisation as prescribed by social norms, and thus evolve, over time, differences in relative productivity. It is for this reason that I propose a laboratory experiment to identify the effect of gender and couple identity on specialisation decisions.

Thus far, experimental tests of family economic theory that utilise real couples as subjects focus mainly on the degree of cooperativeness in couples and the consequences for intra couple income distribution when couples are provided with an exogenous income endowment (see, for example, Peters et al., 2004; Ashraf, 2009; Iversen et al., 2011; Cochard et al., 2014; Beblo et al., 2015). The first study that examines specialisation decisions and finds a gender-bias in couple's labour division in the lab is provided by (Görges, 2014). The precise mechanisms that account for this bias, however, are not yet entirely understood. One potential explanation, that women simply have a higher preference for contributing to the household public good, seems to be ruled out by the findings of Cochard et al. (2015).

In the first part of the paper, following Akerlof and Kranton (2000), I introduce an identity component into a simple formal model of time-allocation in a cooperative household decision making framework. Spouses maximise their joint utility, which is an increasing function of household income and public goods consumption, and their compliance to social norms (i.e.,

identity). They decide how to optimally allocate each partner's total time either to wage income production or to the production of a household public good. This theoretical model allows me to derive several testable predictions regarding (i) the impact of gender identity on couples' specialisation decision, (ii) the effect of couple identity on the probability of using a contract to ensure the "home maker" against moral hazard of the wage earner and (iii) the influence of couple and gender identity on sharing rules specified in contracts.

I will test these predictions using data from a laboratory experiment: 140 real heterosexual couples play a two-stage game, where each individual is randomly assigned to play with their partner or a stranger of the opposite sex. In the first stage, partners make a joint decision on how to play the game: They can independently complete a task that pays them individually according to performance (task A), i.e. engage in wage income production. Alternatively, they can select one partner to perform an unpaid task (task B), thereby doubling the pay-rate for the other partner playing task A, i.e. engage household public good production. Partners' productivity in each of the two tasks is measured in preceding practise rounds and is common knowledge. After completing their tasks, participants are informed about their pay offs in private and allowed to transfer a share of their earnings to their partner. In a subsequent round, an optional contract is introduced, which allows participants to ex-ante specify a sharing rule for the generated income. Additionally, I collect an extensive set of variables, including socio-demographic characteristics, personality traits, relationship-specific information, e.g. on trust and satisfaction. Most importantly, I elicit partners' beliefs about relative productivities that allow me to rule out an alternative explanation for inefficient choices of traditional labour division not related to identity: men's overconfidence coupled with lack of confidence in their female partners.

Based on the theoretical predictions and pre-tests, the main findings of the paper will be: In romantic couples, but not strangers, there is a significant willingness to pay for gender identity. Specifically, they are more likely to forgo efficiency gains from a non-traditional specialisation, which arise whenever women are more productive in the paid task than their partners. Pure income-maximisation requires more productive women to act as wage earners (task A), and their male partners as "home-makers" (B). Moreover, in romantic couples, because of the social norm that "true love does not need contracts", the unpaid task B-players are more likely to waive the opportunity to set binding contracts that obligate their wage-earning partners to a monetary compensation. Finally, when strangers specify contracts, the compensation for the B-players increases in his task A ability, whereas couples choose compensations that are unrelated to outside options.

## **Understanding Heterogeneity in Pension Plan Decisions: The Retirement Belief Model**

*Eberhardt, Wiebke; Brüggem, Elisabeth; Post, Thomas*

**Abstract:** Our aim is to identify factors that influence whether participants in occupation pension scheme take the first step and search for information about their expected retirement benefits. We develop a unifying framework for these factors: the Retirement Belief Model. We conducted a survey involving 583 pension plan participants to identify the most relevant beliefs and emotions.

We find that participants are more likely to acquire pension information when perceived barriers are low, while perceived benefits and severity are high. If participants perceive low self-efficacy to inform themselves, their intention to do so is actually high. We show how behavioral intention of pension plan participants depends on different beliefs and emotions regarding retirement and pensions, and provide segmentation guidelines for pension communication.

**Background:** Reforms of funded occupational pension systems result in more choice and greater responsibility and investment risk for individual plan participants (Knoef et al., 2016; Van Rooij et al., 2007). Yet, studies suggest that participants in occupational pension schemes know very little about their pension and do not read information provided by pension providers (e.g. Gustman & Steinmeier, 2004). Given the pressure on pension systems around the world, participants who are not sufficiently informed may encounter significant pension gaps, which will have detrimental welfare effects at retirement (Post et al., 2014). However, research on the very first step, becoming active and acquiring the necessary information about one's personal pension situation is scarce. There is some evidence that participants differ significantly in their approach towards

retirement planning. For instance, some participants may suffer from retirement anxiety, i.e. “concerns about one’s income and health, emotional and mental well-being” (Hayslip et al., 1997), whereas others do not. The emotional tone in communications with those participants should not add to the anxiety, whereas for others, it may be effective to stress the urgency of the situation (Brüggen et al., 2013). Pension providers are confronted with very heterogeneous participant bases, and they do not know which demographic and psychographic dimensions of heterogeneity determine whether participants seek information about their expected pension benefits.

The Retirement Belief Model: The purpose of this article is therefore twofold: we first develop a unifying model including identified factors that determine whether participants inform themselves about their pension situation, the Retirement Belief Model. Second, we determine whether segmentation of pension plan participants is worthwhile.

The Retirement Belief Model (figure 1), which is based on the idea that pension plan participations will only become active and inform themselves if they (1) believe that the consequences of (not) engaging in a behavior are severe (severity), (2) that they are at risk of experiencing an undesirable outcome (susceptibility), (3) think that benefits of taking action weigh heavier than the costs (benefits vs. barriers), and finally (4) feel that they are able to change something about their situation (self-efficacy). To identify heterogeneity among participants, we measure socio-economic characteristics (e.g. age, gender, income), financial preferences (e.g. risk-taking, propensity to plan), financial literacy, and emotions (e.g. retirement anxiety) of pension plan participants.

Method: We design an online survey to test the Retirement Belief Model with Dutch pension plan participants of a large international insurance company and occupational pension provider. Together with a newsletter, the survey was sent out via e-mail to 7,122 participants. We match survey and anonymized administrative data of the pension provider and receive a final sample of 583 participants.

We estimate the RBM by building a partial least squares structural equation model, which allows us to test a network of relationships between different latent variables (measured by several indicators) simultaneously. Afterwards, we employ a finite mixture segmentation model.

Results: We find that benefits, severity, retirement anxiety and trust towards one’s own pension provider significantly influence information search intention in a positive way. Barriers (mediated by financial literacy) and self-efficacy have a significant, negative influence on the intention to look up retirement information. Several significant relationships between socio-demographic factors and beliefs and emotions are presented in the paper.

We identify three segments and label them according to their characteristics: the overconfident, the emotional and alpha males. These segments differ significantly as to the beliefs and emotions that are most important in determining participants’ motivation to gain information. For the overconfident (N=60, 55% male, lowest income and financial literacy), self-efficacy has a significant negative impact, these participants feel that they can inform themselves, while they actually do not do so in the end. The emotional (N=264, 61% male, youngest, 37% have no children) experience high levels of retirement anxiety, which together with their perceived benefits of informing themselves stimulates them to take action. Our last segment, the alpha males (N=259, 100% male, highest income and financial literacy), needs trust towards their pension provider for them to inform themselves. For this segment, the belief that the consequences of not informing oneself are very severe, is also a main trigger to act.

While previous research focused on average participants, we considered differences between participants among multiple dimensions to achieve a better explanation of individual information search behavior. We show how the impact of the distinct beliefs on motivation to inform oneself about ones pension differs in sign and magnitude among different groups of participants, and elaborate on implications for research, policy and pension communication practice.

# *New Researchers Workshop stream 2b*

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7/7/2016 10:40:00 AM: Pomona Room 2

## **Framing consequences**

*Jullien, Dorian; Borie, Dino*

The goal of this paper is to provide an axiomatic framework that can account for framing effects violating the so-called axiom of description invariance. Most existing discussions of the latter in economics are made with respect to Kahneman and Tversky's 1980s work. However, other psychologists have, over the last twenty-five years or so, progressively refined the conditions under which framing effects violating description invariance hold. Our axiomatic framework is motivated by these developments. We argue that description invariance is an implicit axiom of the standard model primarily on the formal structure of its object of choice and only derivatively on the formal structure of preferences. The conditions under which it is violated in psychologists' experiments are a useful guide to make it formally explicit. Furthermore, they also provide normative justifications for weakening it. We propose a way to do so in a mathematically tractable fashion that can account for all the variations in framing effects for which prospect theory cannot (at least straightforwardly) account for.

## **Evidence for Opportunity Cost Neglect in the Poor**

*Plantinga, Arnoud; Krijnen, Job M.T.; Zeelenberg, Marcel; Breugelmans, Seger M.*

People tend to neglect opportunity costs: They fail to spontaneously consider forgone alternatives outside of a particular choice set (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009). Several researchers have suggested that poor people should be more likely to spontaneously consider opportunity costs because budget constraints lead to a focus on trade-offs (Fernbach, Kan, and Lynch, 2015; Mullainathan & Shafir, 2013; Shah, Shafir, & Mullainathan, 2015; Spiller, 2011). For example, Spiller (2011) found that participants were more likely to consider opportunity costs when they were made to feel financially constrained. We tested this hypothesis in five high-powered (quasi-)experiments (total N = 2325, participants recruited on Amazon Mechanical Turk). Participants were presented with a scenario in which they encountered an attractive product and were asked whether they would buy the product or not. In the first four experiments, some participants were reminded of opportunity costs by framing the not-buying option as "keeping the money for other purchases" (Frederick et al., 2009). In the fifth experiment, some participants were asked to list alternative products before making the buying decision. The experiments used different products (both material and experiential) with both high and low prices (from \$8.50 to \$249.99). There was considerable variation in household income: across the 5 experiments 31.90% of the participants were in the lowest income quintile of the U.S. population, and 25.05%, 23.98%, 14.16% and 4.91% were in the second, third, fourth, and fifth quintiles, respectively (DeNavas-Walt & Proctor, 2015). Both high-income and low-income participants showed a strong decrease in willingness-to-buy when reminded of opportunity costs, implying that both the rich and the poor tend to neglect opportunity costs. In conclusion, opportunity costs do not seem to be on the top of the minds of people, regardless of their income. However, opportunity cost neglect should be especially important for the poor because their budget constraints lead to narrow margins of error (Bertrand, Mullainathan, & Shafir, 2006). A simple reminder of opportunity costs could help both poor and rich consumers to make choices that are more in line with their long-term goals.

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## The Consequences of Time Pressure on Risky Decisions

*Hausfeld, Jan ; Resnjanskij, Sven*

How are risky decisions affected by the opportunity costs of time? We introduce and test a theoretical model in which a decision maker (DM) trades-off rationally the costs and the quality in risky decisions. We design an experiment in which we introduce exogenous variation in the opportunity costs, and find that a DM reduces time invested in the lottery decision which reduces decision quality and increases the number of lottery choices in which the DM is choosing the inferior lottery. We find no evidence suggesting that the reduction in the decision quality is irrational in sense that behaviour deviates from the rational decisions predicted by our model.

Our study combines insights from three branches of the economic literature. On one side recent behavioral studies investigated how time pressure induced by fixed decision deadlines alters behaviour under risk (Kocher, Pahlke, and Trautmann 2013; Nursimulu and Bossaerts 2013), on the other side, there is the well-established literature originated by the seminal work of Becker (1965) and Minzer (1963) on how rational agents allocate time optimally recognizing that time has a (shadow) price determined by the opportunity costs related to alternative time uses. Finally Stigler (1961) introduced the costs of information.

In contrast to the experiments used in the literature on time pressure, in which a DM is forced by an exogenous time limit, our experimental setting investigates the effect of time pressure as an endogenous outcome of a decision maker's trade-off between costs and quality of a decision.

In line with the Thinking, Fast and Slow metaphor (Kahneman 2011), we find indeed evidence that slow decisions are related to a higher decision quality, however our interpretation of fast decision is in stark contrast to the interpretation of fast and error prone as irrational decision making. Instead, the DM rationally choose a lower decision quality by investing less time in the decision, which is necessary to equalize the marginal utilities of time w.r.t. to its different uses.

In addition, we estimate the parameter for a drift-diffusion model analysis using fast-dm (Voss & Voss, 2007). When time pressure increases, the boundaries shrink significantly, and the non-decisional time also shrink. The drift-rate does not seem to change to any larger extent across treatments. We further compare the fit of different choice theories and criteria. Here, we use elicited expected utility parameters (via Holt-Laury, structural estimation, individual structural estimation), expected value, and heuristics for the determination of the thresholds.

# *New Researchers Workshop stream 2: afternoon*

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7/7/2016 1:00:00 PM: Pomona Room 2

## **How lay people understand economic theories as economic crisis' explanations**

*Darriet, Elisa ; Bourgeois-Gironde, Sacha ; Wagner-Egger, Pascal*

This study explores laypeople's perception of economic theories as explanations of economic crisis. Differences in perception about economic variables between "experts" and "laypeople" already have been found (Caplan, 2007). More precisely, differences in social representations of economic crisis have been found among individuals according to their sociodemographics and psychological variabilities (nationality, economic knowledge, beliefs in a just world, etc). Scientists and economic experts offered many theoretical explanations of economic crises. We still ignore how these scientific explanations are perceived by laypeople yet. The main goal of this study is to analyze and explore the perception of economic theories by laypeople and their underlying concepts. Consequently, we elaborated a questionnaire, in which the main economic theories (Keynesian, Classical, Neoclassical, Monetarist, Galbraith, Marx, Minsky and Schumpeter) as explanations of economic crisis are presented. We also gathered measures about Belief in a Just World and Locus Of Control, and used an economic knowledge questionnaire to assess the level of expertise in economics of our participants. We collected 450 completed questionnaires between November 2014 to December 2015 in France and in Switzerland. First we look at the data via principal component analysis and multidimensional scaling in order to explore the underlying dimensions of economic theories according to laypeople. Secondly, we test the relationships between sociodemographics indicators, psychological variabilities and economic theories as explanations of economic crisis. Applications of these findings will be discussed.

## **Unethical Reciprocity**

*Leib, Margarita ; Shalvi, Shaul ; Moran, Simone*

People tend to reciprocate other's generous and ungenerous gestures on a daily basis (Blau, 1964; Gouldner, 1960). Here, we study whether people will reciprocate other's (un)generosity even when it requires behaving unethically. We focus on one-shot exchanges, in which unethical reciprocity cannot be attributed to anticipating future reciprocal interactions or the desire to maintain a long term relationship. Specifically, we ask: Will people benefit (harm) generous (ungenerous) others by bending ethical rules (here: lie) in a one-shot exchange? What is the underlying mechanism of unethical reciprocity? And paradoxically, will cooperative people, those who are especially concerned with social norms such as generosity and reciprocity, be more susceptible to unethically reciprocate in such settings?

Experiencing pro sociality, such as receiving a generous gesture leads to feelings of gratitude (Emmons & Crumpler, 2000), which in turn translates to positive reciprocity—benefit other's, both directly (i.e., the generous counterpart; McCullough et al., 2008) and indirectly (i.e., benefiting a third party; Nowak & Sigmund, 2005). On the other hand, experiencing anti-social acts, such as lack of generosity, increases negative emotion which motivates negative reciprocity—harming

others following an ungenerous gesture (Güth, Schmittberger, & Schwarze, 1982). However, very little is known about how far people will go to reciprocate. That is, will people sacrifice their honesty to reciprocate another's pro-social acts due to feeling grateful for other's generosity? Will they sacrifice their honesty to reciprocate another's anti-social acts due to the negative feelings evoked by other's lack of generosity?

In two large scale, financially incentivized experiments (Study 1: N=546; Study 2: N=160), recipients in a dictator game received ungenerous (<30% of an initial endowment) or generous (≥30% of an initial endowment) amounts of money from a dictator. After learning the amount they received, recipients engaged in a task that allowed them to inflate/deflate other's outcome by lying (see details below). Additionally, participant's social value orientation (Messick & McClintock, 1968; Van Lange, 1999) and gratitude and negative feelings were measured.

In experiment 1, recipients in the dictator game predicted the outcome of a coin toss (heads or tails), kept it in mind, tossed the coin, and reported whether their prediction was correct (Shalvi, 2012). For every correct prediction, they earned 1 ILS for their counterpart (i.e., the dictator, in the direct reciprocity setting) or for a participant in a later study (i.e., indirect reciprocity setting). For every incorrect prediction, 1 ILS went back to the study budget. Lying was detected by comparing reported success rate with expected rate of honest reports (50%). To assure that any observed effects are driven by experienced generosity, rather than merely receiving a small/large amount, a control condition in which the amount was determined by a computer was added.

Results showed that after receiving a generous amount from a dictator (but not from a computer) participants lied to benefit their generous counterpart as well as an unrelated third party (reported success rates were significantly higher than 50%). That is, participants engaged in unethical positive reciprocity. Participants' behavior was driven by gratitude, and the effect was driven by pro-social people. No lying was apparent after receiving an ungenerous amount from a dictator (or a computer).

In experiment 2, receivers were asked to report the outcome of a die roll appearing closest to a preceding fixation cross appearing on a computer screen (Pittarello, Leib, Gordon-Hecker & Shalvi, 2015). Out of multiple trials, one was randomly chosen, and the reported outcome on that trial determined their counterpart's (i.e., dictator's) pay (with higher reports = higher payoff). Lying was detected by testing whether receivers reported the correct target outcome – i.e., the value closest to the fixation cross or the second closest outcome (which was either higher or lower than the target).

Results showed that after receiving a generous amount, both pro socials and selfish people lied in order to benefit their counterparts. However, after receiving an ungenerous amount, pro socials (but not selfish people) lied in order to harm their counterpart. Additionally, corroborating results from experiment 1, unethical positive reciprocity was driven by gratitude, and unethical negative reciprocity was driven by negative feelings.

Overall, these findings suggest that people engage in unethical reciprocity and lie in order to benefit or harm an (un)generous counterpart, or even a third party, and that this behavior is driven by affect. It seems that pro socials are more sensitive (than selfish people) to violations of social norms (e.g., generosity), which drives them to lie in order to reciprocate other's behavior – both to benefit generous and punish ungenerous counterparts. . The findings reveal a darker side of reciprocity and suggest that in situations in which there is no ethical avenue for reciprocating, reciprocity should be monitored rather than unconditionally encouraged. To avoid corruption from emerging and spreading, policy makers may focus on crafting environments, which allow people to reciprocate others' behavior by ethical means. Such environments seem crucial for increasing and maintaining ethical behavior in everyday life, organizations, and societies.

# Voluntary

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7/8/2016 9:30:00 AM: De Peppel Room 1+2

*Dr. Marie Briguglio*

## **Changing habits with punitive crackdowns: a field experiment into sorting of household waste**

*van Soest, Daan; Vollaard, Ben*

We study how short-term punitive crackdowns can have long-term effects on behavior. We focus on behavior that is typically stimulated by rewards and moral appeals: sorting household waste. The field experiment was implemented in the city of Tilburg, the Netherlands. As treatment, households are informed of the illegal nature of not sorting their waste. This announcement is followed by a four-week enforcement campaign, the start and the end of which are unbeknownst to the affected households. Brightly colored labels are attached to the garbage containers of offending households; repeated offenders may get fined. In addition, a random sample receives feedback in the form of a white label that no wrongdoing has been detected. We randomly vary the timing of introduction of the treatment among 60,000 households in the city of Tilburg, the Netherlands. We find a sharp increase in the percentage of household waste that is sorted in response to the treatment. Given concerns about loss of intrinsic motivation, we follow households for many months after the intervention ended. We find some decay in the behavioral effect over time, but the decay levels off. The white labels do not seem to have had an effect on behavior. We find a smaller behavioral response to a crackdown several months later. Our findings suggest that a substantial time lag between the first and second crackdown produces the highest behavioral response.

## **Fostering sustainable consumer decisions in practice: The impact of real-time feedback on resource consumption and voluntary carbon offsetting**

*Tiefenbeck, Verena ; Schoeb, Samuel ; Kupfer, Anna ; Staake, Thorsten*

Research in behavioral economics and psychology has shown that a lack of information and a bias in favor of the most salient attributes often induce decisions that are suboptimal both for the individual herself (Bordalo et al. 2012, Rees-Jones and Taubinsky, 2016) and for society as a whole. This leads to overconsumption and far-reaching negative consequences in many domains like nutrition, resource consumption, and drug use, to name just a few examples.

In the domain of resource consumption, policy makers and companies alike have put to the test a plethora of information-based campaigns to encourage sustainable choices among consumers. The most widespread intervention are "home energy reports" sent out by utility companies to millions of households. These periodic letters inform individuals how much electricity or gas their household has been using in past month(s) compared to similar homes. Home energy reports have proven as a means to curb electricity use by 2% on average (Allcott and Rogers 2014), amounting to 74 kWh per year for a typical European household.

In prior work, we have investigated the use of real-time feedback on a specific behavior as a means to reduce energy consumption. Thus in contrast to home energy reports, we provide the feedback during the resource consumption. More precisely, the participating households had

received devices able to display the individual's water and energy consumption in the shower in real time on a little display next to the showerhead. In a randomized controlled field trial in Switzerland with 696 households, we have shown that real-time feedback on an environmentally significant behavior can yield large conservation gains. In a two-month study, treated households had reduced their energy use for the target behavior by 22% compared to the control group. Despite the narrow focus on a single behavior, the yearly savings for the average Swiss household amount to 350 kWh on average.

Both feedback-based approaches have proven to be cost-effective, practically useful means to curb resource consumption. While many forms of such interventions are currently investigated in research and applied in practice, the influence of consumption feedback on carbon offsetting has not yet received attention in academic publication. Carbon offsetting allows individuals to compensate the emissions caused by their behavior by financially supporting projects that lead to an equivalent reduction in greenhouse gas emissions. In fact, a large number of companies, in particular airlines, bus operators, and utility providers, offer their customers the possibility to voluntarily neutralize the carbon emissions by paying a price premium. While demand for carbon offsets has grown in recent years (Blasch and Farsi 2014), in most cases, still only a small minority of consumers (2 to 9% for air travel) adopts them in practice (Mair 2010).

In a recent three-month field study with 637 households in the Netherlands, we replicate our previous study on the effects of real-time feedback on resource consumption and investigate if the information affects the willingness to pay for carbon offsetting. The study started in September in 2015 and was conducted in collaboration with a Dutch utility company. Upon completion of an initial online survey, all households received a study version of the smart shower meter "amphiro b1". The participants installed the device themselves between the shower hose and the shower head. The device operates without batteries, powered by the water flow. As soon as a user turns on the water in the shower, the device measures water and energy use, water temperature, and duration of the shower. The study devices record the data of up to 248 showers. Participants were invited to transfer their data to the researchers using an app (iPhone or Android smart phones).

The study was designed as a randomized controlled trial with 2x2 conditions: (real-time feedback yes/no) x 2 (ex-ante possibility to abate carbon emissions yes/no). At the beginning of the study, all smart shower meters displayed only the water temperature (baseline period). Control group devices continued doing so throughout the study. By contrast, once the baseline period was completed, treatment group devices automatically started to display feedback on energy and water use in the current shower.

In the pre-study survey, half of the participants were told that they had the opportunity to offset their shower-related carbon emissions; they were able to choose between different billing options. In the post-study survey, all participants were asked (again resp. for the first time) whether or not they wanted to offset their shower-related carbon emissions.

In addition to measuring the impact and temporal stability of real-time feedback on participants' energy use (as in the previous study), the research design of this study allows us to measure a) participants' willingness to offset their carbon emissions both prior to receiving real-time feedback and after receiving real-time feedback and b) whether the ex-ante decision to offset carbon emissions influences subsequent consumer behavior. Furthermore, recent research (Brooks, 2015) indicates that the kind of normative comparison type of feedback provided by home energy reports may be less effective in countries like the Netherlands that are characterized by a high degree of individualism as opposed to more collectivist cultures (e.g., Columbia, Mexico). Therefore, our study also seeks to answer whether the large effects of real-time feedback observed in our Swiss study can be replicated with a different population and in a different (and more individualistic) country.

We also find a treatment effect between 19-21% in the study in the Netherlands (depending on the calculation method). The effects are immediate and stable over the duration of the study. Prior to

the study, 15% of participants who had the option to offset their shower-related carbon emissions decided to do so. After the study, significantly fewer participants were willing to do so both in the treatment and in the control group. Given that the study only ended end of 2015, additional analysis are still ongoing, but we expect to complete them by the deadline for the full paper submission.

## **Partisanship, Priming And Voluntary Recycling**

*Briguglio, Marie ; Delaney, Liam ; Wood, Alex*

This study tests whether psychological attachment to a political party influences voluntary participation in a government-promoted public-good scheme, positing that cooperation is higher among households that identify closely with the party in government and lower among households that identify closely with the party in opposition. The focus of the study is participation in a voluntary recycling scheme, in a context (Malta) where two dominant parties characterise the political landscape. A dedicated nationally-representative survey ( $n = 1,037$ ), conducted shortly after a change in government, yielded information on actual participation rates as well as on political and environmental preferences. The survey also fielded an experiment to test how participation intent reacts to a political prime which associates a hypothetical scheme with the new party in government. The results indicate that the initial uptake of the scheme launched by a Nationalist government was significantly lower among respondents close to the party in opposition (at the time, the Labour Party). Five years later this effect had decayed. But intent to participate in the hypothetical scheme was lower among respondents close to the party in opposition (this time, the Nationalist Party), if primed with a cue that associates the new scheme with the Labour party. Formal modeling of scheme participation and intent (controlling for political and environmental ideology inter alia), yields similar results: Attachment to the party in opposition suppresses voluntary uptake of a public good schemes, when these are associated with the political party in government. These findings shed light on a new dimension which may be responsible for diverse rates of participation in public good schemes and have practical implications for the manner in which such schemes are communicated to the public.

# Finance / Debts

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7/8/2016 9:30:00 AM: Dorskamp Room 1+2

*Prof. David Leiser*

## **Present Bias and Self-Control: Structural Estimation from a Mortgage Market in Mexico.**

*Cuilty, Emilio*

It is not surprising that long term decisions require deeper levels of rationality by individuals. Behavioral economics had proposed several theories that might explain time inconsistency and present bias. Nevertheless most of these theories have only been tested in an experimental framework. Hence some implications of these experimental findings might not be applicable for policy making, mechanism design or for expanding the economics core theory.

The present paper aims to test one of the most popular theories on present bias and self-control: Quasi-Hyperbolic-Discounting (QHD) in a nonexperimental setting. To test QHD I analyze the debt repayment behavior by state workers in one of Mexico's public mortgage institutions. This public mortgage institution has the peculiarity of offering mortgage contracts in minimum wages instead of Mexican pesos. Facing a mortgage in minimum wages implies that debt increases every time there is a minimum wage increment (In Mexico minimum wage increases yearly). Thus a state worker has incentives to repay sooner than later, nevertheless present-bias might preclude this behavior.

In this novel data I observe a random sample of state workers across time, where it is possible to see how they decide to repay their mortgage. The data consists on of 410 workers that start repaying their mortgage from the first week of January 2000 to the last week of June 2015. Every two weeks I observe the transactions made by both the individuals (payments) and the institution (charges). Therefore I have a panel of  $T=348$  with potentially 142,000 observations.

Every worker faces a mortgage contract that fortnightly discounts 30 percent of her base salary as payment; additionally they have the option of making extra contributions to repay their debt faster. Given that the workers can make additional payments, it allows me to build a dynamic discrete choice model. It is worth mentioning that I am assuming that all extra payments are optimal, in this way I only consider decisions over discrete alternatives.

The discrete choice model follows the typical  $\beta$ - $\delta$  representation of preferences introduced by Laibson. By choosing whether to make an additional payment the state worker maximizes her utility of consumption over time. Like Stroz (1956), Phelps and Pollak (1968), and O'Donoghue and Rabin (1999), I allow the individual to be partially naive. The naivety degree is associated with the perception of her future discount parameter  $\beta^*$ . If  $\beta^*=1$  the individual is completely naive, and if  $\beta^*=\beta$  the individual is sophisticated.

Making a distinction between sophisticated and naive individuals is important when formulating public policy recommendations. For example, a sophisticated agent with present bias who has access to an illiquid asset will be able to smooth consumption (Laibson (1997)), whereas the naive agent might struggle with it.

Applying the methodology designed by Fang and Wang (2015) I am able to identify present bias, in particular if the agents are aware of having this bias. This is achieved by structurally estimating three discount factors (long run ( $\delta$ ), quasihyperbolic ( $\beta$ ), and naivety degree ( $\beta^*$ )). Although the

hypotheses of present bias can be studied from a reduced form approach (see Kuchler (2015)), the structural estimation allows me to conduct simulations of several public policies after recovering the relevant parameters.

Identifying all the discount factors relies on the use of exclusion variables that affect the transition probability but not the instantaneous payoff. In this particular state worker case, the transition states are defined over her possible levels of debt and income. In that way I use gender, age and location as exclusion variables which affect the transition probability of getting a higher wage or lowering the mortgage debt, but not the instantaneous payoff of making or not making an additional payment.

My results suggest that the average individual is present biased,  $\beta=0.347$ , totally naïve ( $\beta^*=1$ ) and her long term discount is  $\delta=.9960$ . These results are robust under different specifications. This implies that the average worker will consume as much as possible in the first periods. In fact if the worker exits the public labor force her probability of default is greater than the one considered under standard models.

To my knowledge this is the first paper that uses mortgages to recover the structural parameters of a dynamic discrete choice model. Also, Mexico is an interesting country because it is not fully developed, and the credit market is relative small. Therefore this research contributes to the literature of behavioral economics, especially to the use of structural empirical methods, and it also provides public policy recommendations for Mexico's case.

## Perceived Risk and Behavior in the Financial Domain

*Kleijne, Paul ; Rooij, van, Maarten ; Siegmann, Arjen*

### Extended Abstract

There are problems with the concept of risk preference as a stable personality trait, although it is widely used in economics. Individuals have been classified differently when different methods were used and even within methods, they show different results in different decision domains and situations. In this paper, we test for commonality in the subjective risk preferences of households and stated behavior, within subgroups of the financial domain.

The survey was conducted through the DNB Household Panel, a closely monitored panel representative of the composition of the Dutch population. We have formulated 30 questions on six financial subdomains: mortgage related decisions, one with decisions on credit and loans, a gambling related domain, a domain based around insurance related decisions, one on income decisions and finally one on investment decisions. These initial domains consist of a number of decisions related to the domain. So, for instance, the domain with mortgage related decisions has a decision on whether or not to take out a mortgage with a variable interest rate. And the investment related domain has a decision on whether to invest in art or not. The decisions are based on what we consider representative for what households might encounter.

To ensure that the respondents can relate to the stated decision, even when they have no prior decision-making experience, each group of questions starts by sketching the context. For example, the mortgage decisions are framed in the context of the buyer of a house.

For each decision we ask three questions, that are to be answered on a scale from 1 (most negative) to 7 (most positive):

1. How likely are you to engage in this activity?
2. How risky do you perceive this activity?
3. How do you perceive the likely benefits of this activity?

In addition, we ask two questions to obtain general estimates of the risk aversion of the participant: one direct, and one through a lottery question. We obtained responses from 2049 individuals.

Remarkably, the correlation between the direct risk elicitation question and the log of the relative risk aversion (RRA) computation is negative at -14%. This confirms earlier findings on the difficulties of estimating risk aversion from hypothetical lottery questions. Consequently, the average correlation between the question-specific subjective risk scores and the direct and indirect risk aversion outcomes is low.

We perform a factor analysis on the answers to the subjective risk questions and find a grouping of questions that mostly corresponds to our initial allocation of questions into domains: (i) investment, (ii) labor income risk, (iii) borrowing and lending, (iv) gambling 1 and (v) gambling 2. The two gambling factors differ in that Gambling 1 includes serious gambling activities such as poker, betting in a casino and sports betting, while Gambling 2 includes the harmless type of gambling (lotteries and scratch cards).

We construct adjusted domains from the factors to be used in a regression analysis. The internal consistency of the domains is high, with Cronbach Alphas of at least 0.75 and mean item-total correlations of at least 0.66.

We perform a regression analysis to relate the stated behavior ("how likely are you to engage in the activity?") to the perceived risk score. The outcomes show a large and significant effect for the domain-dummies, which suggests a large dispersion in how perceived risk translates in behavior across domains. Relative to the investment domain, people are less likely to engage in serious gambling (Gambling 1), while controlling for perceived risk. This could be due to an ethical component in the consideration. People are more likely to engage in activities related to income, lending, borrowing and harmless gambling, relative to the investment domain.

Interacting the risk perceptions with the domain dummies, we find a similar relation between risk perception and likely behavior for the domains Investment and Serious gambling. This suggests that stock market investments are seen as a more serious type of risk, comparable with sports betting and the casino. The interaction terms for the other domains (Gambling 2, Credit and loans, Income risk) also have similar coefficients for each domain, with a statistically insignificant difference. These results suggest that the division of financial risk in Investment and Gambling, as done by Weber (2002), is not the best division of risks in the financial domain.

The results can be seen as supportive of the idea that the non-participation puzzle (in the stock market) can be explained by unfamiliarity and the perceived resemblance of stock market investments with the casino.

Another implication of the study is that a large degree of variation (between 70 and 80 percent) of people's willingness to engage in risky activities is not explained by risk attitudes, perceived benefits or background characteristics.

In all, our results support a domain-specific perspective on financial risk, where answers on subjective risk are consistent within domains, and different between domains. The relation between subjective risk evaluation and likely behavior is broadly consistent in two categories: one that includes Investment and Serious gambling, and one that consists of credit, income and harmless gambling activities.

# Economic crises and stability – evaluation of fact or expression of fears?

*Leiser, David; Benita, Rinat*

Recent years have seen a significant increase in the number of studies investigating how lay people understand economic phenomena (Caplan, 2011; Gangl, Kastlunger, Kirchlner, & Voracek, 2012; Leiser & Drori, 2005; Loix & Pepermans, 2009; Ranyard, Missier, Bonini, Duxbury, & Summers, 2008; van Bavel & Gaskell, 2004; Williamson & Wearing, 1996). Beyond the inherent interest of the topic, it is of major practical significance for two distinct reasons. First, economic beliefs affect economic behavior (Roos, 2006, 2008) and constitute an important component of economic modelling (Darriet & Bourgeois-Gironde, 2015). Second, citizen understanding is essential for democracy (Caplan, 2011; Davies, 2015) and it affects public policy through the political process (Fornero, 2015). Trust, in particular, is very important, including the assessment of the ability of professional economists to steer the economy toward growth and prosperity (Gärling, Kirchlner, Lewis, and Van Raaij, 2009). It has been widely recognized that much of the effects and the mechanism of spreading and deepening of the recent (global) financial crisis are related to a lack of trust. The restoration of trust depends on how people understand what happened in the crisis and whether they believe that lessons have been learnt (Akerlof & Shiller, 2010; O'Connor, 2012).

Since Katona's (1975) early work, research has examined how economic behavior and beliefs are influenced by inner, psychological factors. For instance, Leiser, Wagner-Egger, & Duani (in preparation) showed that conspirational construal of economic concepts such as the stock market were correlated with conspirational beliefs in other domains, while Benita and Leiser (2014) showed that there is a link between trait anxiety (Spielberger, Gorsuch, & Lushene, 1970) and the tendency for the concept "economic stability" to evoke emotional associations

In this study, we focus on the perception of economic stability, and investigate whether beliefs about crises are confined to economics or, in part, the expression of broader attitudes.

## STUDY DESIGN

To this end, we asked several questions about economic crises, inspired by the work of Leiserowitz (2004) on climate change and Dake (1992) on naturally occurring risks. We asked the questions first about economic stability and crises, then with minimal variations of wording, about personal relationships, climate change, and health crises.

Further, we examined also participants Locus of Control (Using several sub-scales, see Halpert & Hill, 2011) and the "Belief in a dangerous world" (BDW) scale. The locus of control construct is one of the most popular in cognitive social psychology, referring the extent to which one believes that life events depend on one's own actions and--or qualities (dimension of internality). The "Belief in a dangerous world" (Altemeyer, 1988) refers to the belief that the social environment of a person is dangerous and threatening.

We hypothesize that both these factors will affect people's beliefs, and do so differentially. BDW, in particular, should affect beliefs about economics and social relations, but not health and climate.

We already ran a pretest with 100 participants, and slightly revised the questionnaire. We will shortly run the experimental sample, that will consist of 250 US participants recruited via Amazon Turk.

## RESEARCH CONTRIBUTION

Data is still being collected but we can formulate our two objectives:

1. To evaluate the extent to which beliefs regarding economic stability are correlated with parallel beliefs in unrelated social and natural domains.
2. To evaluate the extent to which these commonalities can be attributed to

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# Finance / Savings and Debts

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7/8/2016 9:30:00 AM: Tarthorst Rooms 1+2

*Dr. Simon John McNair*

## **Why do Poor People Co-hold Debt and Liquid Savings?**

*Laureti, Carolina*

We observe the use of flexible savings-and-loan accounts offered by SafeSave, a microfinance institution serving poor slum dwellers in Dhaka, Bangladesh. We find that 59% of the clients borrow at high interest rates and simultaneously hold low-yield liquid savings. Our main finding is that this apparent behavioural anomaly cannot be attributed to liquidity needs. In contrast, we show that co-holders are more likely to be regular workers, subject to low uncertainty about income. An alternative explanation is that co-holders take up costly loans they do not need to escape forced solidarity vis-à-vis relatives and friends.

## **Commitment vs. Flexibility: Combining a field experiment with financial diaries in Nigeria**

*Janssens, Wendy ; Kramer, Berber ; Swart, Lisette*

Time-inconsistent behavior of farmers in developing countries has long puzzled researchers as it implies forgoing highly profitable opportunities: farmers keep postponing profitable investments they were determined to do. Collins et al. (2009) illustrated the complicated financial lives that many poor people live, in which there is simultaneous borrowing and lending from a number of different sources. The question arises why such inconsistencies between plans and executions arise and what would be optimal from an outsiders' perspective: careful ex ante planning or ex post coping. These two strategies have different implications for policy, as ex ante planning is facilitated by commitment contracts, while ex post coping in a world without full insurance requires flexibility to respond to unforeseen changes. In order to design the optimal policy, it is therefore important to analyze what causes people to revise their plans. This paper investigates this interplay between preferences for commitment and those for flexibility by analyzing what factors are correlated with the revision of pre-committed intertemporal plans.

There is a large literature that experimentally documents choice inconsistencies (see Read, Frederick and Airoldi (2012) for a recent overview. Most of these experiments measure static choice reversals: someone may prefer \$100 today over \$110 tomorrow, but \$110 in 61 days over \$100 in 60 days (Green, Fristoe and Myerson, 1994; Kirby and Herrnstein, 1995). However, for our purpose we are ultimately interested in dynamic choice inconsistencies: if someone prefers \$110 in 61 days over \$100 in 60 days, will this still be the case 60 days later? This distinction is important because static and dynamic choice inconsistencies do not overlap if there are anticipated or unanticipated changes in one's economic situation (Janssens, Kramer and Swart, 2015).

In this paper, we use a unique and very rich dataset from rural Nigeria in which high-frequency financial diaries data are combined with field experiments eliciting people's time preferences and plan revisions, risk preferences and subjective beliefs regarding their future incomes. Dynamic choice reversals, or plan revisions, were elicited using convex time budgets (Andreoni and Sprenger, 2012) in a longitudinal design adopted from Gine et al. (2014), which also allowed us to measure static choice reversals. Participants made three types of choices: one regarding two near-future payment dates and one regarding payment dates in the more distant future two months

later. In addition, nearly two months later, the participants were revisited unexpectedly and given an opportunity to revise their earlier choice if they wished to do so.

Expected and unexpected income shocks affect people's behavior in different ways. Our data set allows us to investigate this thoroughly by comparing the participants' subjective beliefs of their future income (elicited following the design of Delavande, Gine and McKenzie, 2011) to realized outcomes as measured in the financial diaries. Furthermore, the level of risk aversion is also likely to affect people's plan revisions both directly in their decision making in the experiment and indirectly through other choices they make in life that affect their level of income outside of the experiment.

Our study bears similarities to that of Gine et al (2014) who carried out a similar experiment with credit-constrained participants, but the combination of the experiments and the financial diaries in our dataset enables us to investigate the role of expected and unexpected changes in one's financial situation in more detail.

Data from the financial diaries, the time preference experiment, the risk preference experiment and the subjective beliefs elicitation of future income have each been analyzed already in isolation, but in the near future we will combine these to investigate the role of present bias, risk preferences and subjective beliefs of future income on the revision of prior commitments based on the derived predictions of a utility maximization problem.

This will allow us to indicate to what extent plan revisions are related to present-biased preferences, to expected changes in income and to unforeseen shocks.

## **Spending and borrowing at Christmas: the role of dispositions, affect and the meaning of Christmas**

*McNair, Simon John; Ranyard, Rob*

### Introduction

The Christmas quarter reliably sees spikes of 55% in UK retail spending compared to other quarters (Office for National Statistics, 2013), and UK consumer borrowing reached a seven-year high in November 2014 (Bank of England, 2015). While nearly a third do not budget for Christmas, 58% of people recently indicated overspending on their Christmas 2012 budget, and only 15% spent to plan (HSBC, 2012). Research shows that as much as 92% of people feel pressured to spend more at Christmas (Which? 2012), and that pleasing friends and family is the top reason for overspending, followed by consumer temptations (Money Advice Service, 2013).

Yet, research has so far not investigated the relative influence that these kinds of factors that might have on people's willingness to spend and borrow during this period. We present part of a multi-method investigation focussing on the role in spending and borrowing at Christmas of psychological dispositions (materialism and spending anxiety); positive and negative affect; and what people predominantly feel the meaning of Christmas is. The contribution of these factors relative to the role of money management skills, perceived economic hardship and demographic variables is examined.

### Method

#### Interviews

In-depth interviews with 11 adult residents of Leeds, UK were conducted using the Mental Models framework of Morgan et al. (2011) to elicit thoughts and feelings in relation to Christmas.

Recurring opinions and themes from the interviews guided the subsequent development of several novel scales used in our subsequent survey.

## Survey

N = 187 residents of the Leeds city area in the UK completed a survey in the pre-Christmas period (October – December). The survey enquired about basic demographics, and also people's basic financial management skills (Money Management Skills Scale, Garsdottir & Dittmar, 2012); current financial hardship (Economic Hardship Scale, Lempers, Clark-Lempers, & Simons, 1989); spending anxiety (Tightwad/Spendthrift Scale, Rick, Cryder, & Loewenstein, 2008); and materialistic tendencies (items from Materialistic Values Scale, Richins & Dawson, 1992). Our survey also assessed people's general levels of positive and negative affect during the Christmas period (Positive and Negative Affect Schedule, Watson, Clark, & Tellegen, 1988).

Finally, the survey included several novel scales derived from our interview analyses. A "Meaning of Christmas" scale (10 items) was factor analysed and indicated three sub-scales: Traditions ( $\alpha = .57$ , e.g. "Spending time with family"), Indulgence ( $\alpha = .69$ , e.g. "Getting what I want"), and Worries ( $\alpha = .71$ , e.g. "Stress and pressure"). Two further sets of items were factor analysed to establish Willingness indicators. Our "Willingness to Spend" scale comprised 8 items (e.g. "The more money I spend at Christmas the better I feel",  $\alpha = .81$ ); as did our "Willingness to Borrow" scale (e.g. "Borrowing money is the only way I could afford Christmas",  $\alpha = .87$ ).

## Results

We conducted a series of hierarchical regression models. Predictor variables were entered in the order of 1) sociodemographics (income, gender, age, education, number of children); 2) practical financial factors (money management skills; economic hardship); and 3) psychological factors (spending anxiety, positive/negative affect; meanings of Christmas, and two materialism factors). The dependent variables were 1) Willingness to Spend, and 2) Willingness to Borrow.

Our first model tested Willingness to Spend. While a purely sociodemographic model significantly predicted 12% of the initial variance ( $F[5, 181] = 4.87, p < .001$ ), adding financial factors did not significantly improve the model. The addition of psychological factors significantly increased the final model  $R^2$  to 42% ( $F[8, 171] = 8.11, p < .001$ ). Six significant predictors were observed in the final model: education ( $B = 1.35, p < .05$ ), economic hardship ( $B = -.09, p = .05$ ), hedonic materialism ( $B = .36, p < .01$ ), esteem materialism ( $B = .51, p < .001$ ), negative affect ( $B = .13, p < .01$ ), and indulgence ( $B = .37, p < .01$ ).

Model two tested Willingness to Borrow. Again a purely sociodemographic model significantly predicted 14% of the variance, but now adding financial factors saw a significant increase in  $R^2$  to 45%. In the final step of the model we again included the psychological factors but now also included Willingness to Spend as an additional predictor.  $R^2$  saw a further significant increase to 56%. Significant predictors in the final model included: number of children ( $B = .20, p < .01$ ), money management skills ( $B = -.38, p < .001$ ), economic hardship ( $B = .151, p < .02$ ), negative affect ( $B = .14, p < .03$ ), and willingness to spend ( $B = .20, p < .01$ ).

The dependent variables, willingness to spend/borrow, had significantly moderate correlations with actual amounts of spending and borrowing reported by a subsample (N = 132) who completed a post-Christmas questionnaire ( $r$ s of .15 - .50,  $p$ s of  $< .01$  - .09).

## Discussion

Our results suggest distinct differences in psychological factors predicting willingness to spend and borrow at Christmas. We found that higher willingness to spend was particularly predicted by materialistic tendencies—including perceiving Christmas as a period of indulgence—and lower economic hardship. Willingness to borrow was predicted by lower money management skills, higher

economic hardship and willingness to spend. Interestingly, higher rates of negative affect also significantly predicted both forms of willingness. Although demographic, factors such as number of children, together with money management skills account for some of the variance in willingness to borrow, these psychological variables account a substantial additional proportion.

The UK's National Debt Line reported an 80% increase in calls after Christmas 2013, with 1 in 20 callers indicating that they would likely miss a household bill in January as a result of their Christmas expenditure (Money Advice Trust, 2014). Understanding the kinds of factors that may influence peoples' financial tendencies at Christmas is thus an important endeavour as it may help elucidate the kinds of barriers—practical and psychological—that may contribute to the kinds of behaviour that result in post-Christmas financial difficulty.

## Health

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7/8/2016 9:30:00 AM: Pomona Room 1+2

*Prof. Daniel John Zizzo*

### **Emotions and Scope Effects in the Monetary Valuation of Health**

*Aviles-Blanco, Maria Victoria ; Brey, Raul ; Araña, Jorge ; Pinto Prades, Jose Luis ;*

#### Introduction

This paper explores the role of emotions and scope effects in the monetary valuation of health technologies. The role of emotions can be particularly important in health technology evaluation, since changes in health status are likely to trigger patients' emotional reactions. Hsee and Rottenstreich (2004) provided evidence that emotions may affect sensitivity to scope, showing that when subjects are in a highly emotional state their WTP hardly changes with the amount of the good provided. They argue that high levels of anticipated emotions reduce sensitivity to scope because "feelings depend on the nature of a stimulus but not on its scope" (p.24). The implication of this effect would be that WTP values very influenced by emotions would not be good indicators of the social value of health technologies. Sensitivity to scope is a desirable property of elicited utility functions, and an important requirement by many analysts who use contingent valuation results to inform health policy. The lack of scope sensitivity questions the normative validity of the responses of highly emotional subjects.

#### Data

We use responses of a computer assisted personal interview survey conducted in Spain (N=1663), where subjects were asked their WTP for an stent that reduces the risk of restenosis. Respondents were asked to choose between a free Bare Metal Stent (BMS) or to pay for a Drug-Eluting Stent (DES) in case they required an angioplasty. These two types of stents result in different risk reductions (DES's is higher) making it possible to test the sensitivity of elicited WTP to changes in risk reduction. There were two different versions of the questionnaire: in the "descending" version, subjects started with a 32% absolute risk reduction (39% if they chose a DES to 7% if they chose a BMS) and then they moved to 27%, 22% and 17%. In the "ascending" version, subjects started with 2% and they moved to 7%, 12% and 17%. Therefore, each subject participating in the survey was asked 8 WTP dichotomous choice questions corresponding to two WTP questions for each of the four risk levels.

The survey included a question on the subject's level of fear and anxiety related to the idea of undergoing an angioplasty.

#### Theoretical Model

We adopt the representation of the Random Utility Model (RUM) based on McFadden (1974) to define our Cognitive-Emotional Random Utility Model. We extend the standard algebraical representation of the RUM in the context of emotional choices.

The emotional variable ( $e_i$ ) is operationalized as a dichotomous variable ( $HE_i$ , high emotions) taking value 1 if the anticipated emotional level is high, and 0 otherwise. Thus, the anticipated emotional level of the intervention directly affects the WTP for such intervention. We can call this effect an emotional shift effect in the utility function, and can be included as an extra term in the deterministic part of the WTP weighted by a parameter  $\alpha$ . That is,

Hsee and Rottenstreich (2004) claim that individuals experiencing high levels of anticipated emotion will not only value the outcome differently, but also emotions will affect how they value changes in the quality of the good under valuation. More emotional subjects will be less sensitive to the size of the benefit. This hypothesis can be called the emotional scope sensitivity effect and can be included in the RUM equation by allowing the parameter vector for subjects experiencing low level of emotions to be significantly different from that one of high emotional patients, .

More specifically we expect  $\beta^* < 0$ .

An alternative equation that would make it possible to test both hypotheses (shift and emotional scope sensitivity effects) would be,

Shift effects would be estimated using the parameter

predictions are that

$\beta^* < 0$  and  $\beta^* < 0$ .

□ and scope sensitivity

We use a random effects model econometric specification to analyse the data.

Parameters and mean WTP were estimated for four different models. Model 1 is the base model, where the HE and LE groups are pooled together with no distinction and including the HRR as a continuous variable. Model 2 includes the emotional shift and scope sensitivity effects. Model 3 includes the HRR by means of the dummy variables HRRRR, where RR stands for the risk reduction. Finally, Model 4 uses dummy variables for each level of risk reduction, but making a distinction between the HE and the LE groups.

#### Results

Results show:

a) Existence of an emotional shift. HE coefficients in Model 2 are positive and significant in the ascending and descending versions (.9957 (.0000) and 1.5451 (.0000), respectively). A likelihood ratio test between Models 3 and 4 finds significant differences on WTP between HE and LE groups, (t-statistics are 32.19 and 21.72 respectively, 1% critical value for the chi-squared distribution with 4 degrees of freedom is 13.28).

$H_0$  is rejected at the 1% significance level in Model 4 (1% critical value for the chi-squared distribution with 1 degrees of freedom is 6.63). Also, HERR coefficient estimates are always higher than LERR.

b) WTP estimates increase with the amount of risk reduction. The associated parameter to HRR is significant and positive in Models 1 and 2. Similar conclusions are obtained when using dummy variables (Models 3 and 4).

c) Sensitivity to scope is sensibly higher for the LE group. level, indicating that the slope of the HE group is lower than the slope of the LE group, in both sequences. Similar conclusions are drawn looking at the WTP estimates obtained with Model 4.

□\* is negative a

#### Discussion and Conclusion

These results have direct implications for the analysis of stated preference methods in health economics and the use of WTP as guidance for public health policy. The validity of monetary values that do not consider the emotional dimension is questionable as guide for social policy.

We provide empirical support in the area of valuation of health technologies of previous findings of lab experiments using students and simple objects like music CDs, suggesting that the role of emotions in the monetary valuation of objects can be a general phenomenon present in very different contexts.

## Why do Food Bank Clients in the United States Identify as Food Secure?

*Gundersen, Craig ; Engelhard, Emily*

Food insecurity has become a leading health and nutrition issue in the United States and Canada for two central reasons. First, the magnitude of the problem is staggering. In 2014, over 48 million Americans (14.0%) were food insecure, meaning that they were "...uncertain of having, or unable to acquire, enough food because they had insufficient money or other resources." (Coleman-Jensen, et al., 2015). About one-third of these individuals were living with a more serious level of food insecurity, "very low food security." Second, a vast literature has demonstrated the numerous negative health consequences associated with food insecurity. (See Gundersen and Ziliak, 2015 for a review.) As might be expected, these negative health consequences are also associated with higher health care costs (Tarasuk et al., 2015). As a partial response to the problem of food insecurity, the federal government spends over \$100 billion per year on food assistance programs.

Across multiple literatures, including economics, a well-constructed picture of the determinants of food insecurity has emerged. (For a review of households with children see Gundersen and Ziliak (2014) and for a broader review see Gundersen et al. (2012).) What is less understood, though, is why so many poor households are food secure. In 2014, 60.5% of poor households, meaning they live below the Federal Poverty Line, are food secure (Coleman-Jensen et al., 2015; Table 2). This has been ascribed to a number of factors including the use of food assistance programs like SNAP (see Kreider et al., 2012) and the National School Lunch Program (Gundersen et al., 2012) and to household-specific characteristics like better financial management skills (Gundersen and Garasky, 2012). While some explanations have been given, in the main, we don't understand why so many poor households are food secure. Of particular interest is why so many very poor households (those with incomes far below the poverty line) are food secure.

In this paper we focus on a group of food secure households that are in particularly grave danger of being food insecure, namely, those who are using food pantries and soup kitchens. A food pantry is a program that distributes non-prepared food and groceries to be used off-site, usually in one's home, and often for the whole family. A soup kitchen provides prepared meals or snacks at the on-site. (In fact, the original definition of food insecurity in the U.S. was such that anyone using either of these sources of food would be defined as food insecure.) For this analysis we use data collected for Hunger in America 2014, a comprehensive survey of more than 60,000 clients who utilize charitable food assistance programs as well as interviews with 32,000 charitable agencies that distribute food. The study includes information on client demographics, participation in federal food programs, tradeoffs between food and other necessities, and more.

In this paper we concentrate on the following four questions. First, what are the characteristics of food secure households in comparison to food insecure households? While there has been a great deal of work on this topic when looking at all households and, in many instances, low-income households, this is the first time this description has been done for a sample composed of food bank clients.

Second, controlling for other factors, what are the determinants of food security among food bank clients? Again, while this question has been posed in other contexts, it has never been examined for food bank clients. Moreover, this data set has a much wider array of questions than other data sets which allows for a richer portrayal of the determinants.

Third, how do the answers to the previous question differ when we look at the depth and severity of food insecurity? In virtually all work done looking at the determinants of food insecurity, a binary measure of food insecurity has been used (i.e., food insecure versus food secure) but measures of food insecurity have been developed, based on the Foster-Greer-Thorbecke class of income poverty measures that allow for the portrayal of the depth and severity of food insecurity. (See Gundersen (2008) for more on these measures and an application.) While the primary interest of this paper is in what makes some households food secure despite serious challenges, we are also interested in what may diminish the depth and severity of food insecurity.

Fourth, how do the characteristics of food pantries and soup kitchens influence the food security status of households? One advantage to the HIA data is that we are able to merge information about clients with information about where they received services. (This information about services is taken from the agency survey portion of the HIA.) We are especially interested if there are certain characteristics of the food programs being used by food secure clients that differ from the broader set of food programs. Among other characteristics, it might be the case that persons using food pantries with longer hours, more food items, lower likelihood of running out of food, etc., are less likely to be food insecure.

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## **The impact of taxation and framing signposting on diet: an online field study with breakfast cereals and soft drinks**

*Zizzo, Daniel John ; Parravano, Melanie ; Nakamura, Ryota ; Forwood, Suzanna ; Suhrcke, Marc*

Background: Current thinking about the impact of a fiscal policy intervention, such as a 'sugar tax', on dietary behavior is limited and based on econometric and modelling data, or on experimental studies using hypothetical purchase choices. This study presents a large scale field study: a nationally representative sample of participants was asked to make real purchases within an online supermarket platform. The study captured price elasticity for two products of policy interest: breakfast cereals and soft drinks, as well as the impact of how those changes are framed signposted to the consumer.

Methods: 1,000 participants, with latent demand for cereals and soft drinks, were randomly allocated to one of two conditions (signposted or not signposted) and completed ten shopping tasks using an online supermarket platform. They were given a budget of £10 and were aware that a randomly determined task would be played out for real: they received the groceries chosen and any unspent budget. The groceries were breakfast cereals and soft drinks, from a list of almost 1,000 products offered by Tesco, the largest U.K. supermarket retailer. For each of the 10 tasks, the supermarket contained either cereals (five tasks) or soft drinks (five tasks), and the pricing either matched a UK grocery retailer (baseline), or a subset of products received a tax of either a 20% or 40% to either the healthier or less healthy items within the supermarket. Participants could fill a one week shopping diary after groceries were delivered.

Results: When the taxes were signposted to consumers, both the 20% and 40% rates reduced purchase volume of all the products they were applied to. When the taxes were not signposted, reductions in purchase volume were only seen in less healthy cereals and healthier soft drinks at 20% taxation, and in less healthy cereals and all soft drinks at 40% taxation. There were no significant differences in the effects from taxation between socioeconomic groups.

Discussion: Our evidence is consistent with the conclusion that fiscal policies that tax food or drinks are an effective means of altering food purchasing, with a 20% rate being sufficient to make a significant impact. It should be considered together with observational studies, such as Colchero et al.'s (2016) analysis of the Mexican case, in terms of estimation of the size of the effects. Signposting represents a complementary 'nudge' policy that could enhance the impact of the tax without imposing severe welfare loss, though the effectiveness may depend on the product category. Expectations that taxation would reduce socioeconomic inequalities in diet may be overstated, but neither is there reason for concern that overall diet improvement would have to come at the cost of increasing socioeconomic inequalities.

# Perception and Time

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7/8/2016 9:30:00 AM: Kolkakker Room

*Jan Hausfeld*

## Randomness beliefs and decisions on risky medical treatments

*Robles-Zurita, José Antonio ; Pinto-Prades, José Luis*

Subjective notion of randomness seems to vary among subjects with some of them believing in more positive autocorrelation between random items than others (Nickerson and Bluter, 2009; Rapoport and Budescu, 1997 and 1992; Budescu, 1987; Falk, 1981). Those individuals who think that random events will be repeated often (not very often) are said to have repetition bias (alternation bias). For example, given the random variable "tossing of a fair coin" subjects could have different beliefs on the probability of heads after a realization of heads (i.e. the probability of repetition of heads), even though the true underlying probability is  $P(H|H)=0.5$ . Some people may have the intuition that if the coin has landed in head last time then it will be less likely in the next tossing (alternation bias), with  $P(H|H)<0.5$ , and some others may show the opposite (i.e. repetition) bias, that is,  $P(H|H)>0.5$ . Given that risky medical treatments can be considered as random variables this cognitive characteristic could affect people's view about health interventions.

In this study we want to empirically test for the effect of the repetition/alternation bias on decisions over risky medical treatments. The main idea is that people who believe in more repetition would perceive medical treatments as more risky than they are and the opposite in the case of the alternation bias. For example, assume that a medical treatment has a 50/50 chance of improving/reducing the health of each patient that follows this treatment. Suppose that this treatment is provided to 10 patients. The alternation bias implies the belief that if the treatment has not been successful in one patient it will be successful in the new one. Good and bad outcomes will alternate leading to a less risky distribution. Therefore, one subject affected by the alternation bias will tend to think that 10 applications will very likely result in the alternation of 5 successes and 5 failures. On the other hand, if she presents repetition bias she will tend to think that the treatment will more likely produce extreme results like 10 successes or 10 failures, i.e. that most people will benefit or that most people will be harmed. This is because she perceives more positive correlation between events. Repetition bias increases the perceived variability of the medical treatment while alternation bias leads to the reverse effect.

There are several implications of this effect. One is that risk averse individuals who are affected by alternation bias will perceive the medical treatment as more desirable than it should be. This is because the bias leads to a lower perception of the risk. The opposite will happen in the case of risk seekers. The second implication is that given that the existence of these biases requires several realizations of the medical treatment its impact will be limited to multiple-play treatments. Subjective beliefs of sequential dependence will not have any effect on decisions over single-play treatments that are going to be applied to just one patient on one occasion. The corollary is that those biases can lead to a divergence between the attractiveness of one medical treatment when applied to one single patient than when applied to a group of patients or to one patient on several occasions. This is a phenomenon that has been observed in the literature without a clear explanation as yet.

In our survey, we find that the correlation between repetition bias and preferences for multiple-play medical treatments is interacted with risk aversion. Even more, the interaction is in the expected direction: the effect of repetition bias tends to be negative (or not significant) for the risk averse group, and positive (or not significant) for risk seekers. On the other hand, we find mainly

no effect (and very low statistical significance) of the repetition bias in the case of single-play medical treatments. Eventually, we also find evidence that the differences between preferences for single and multiple-play treatments changes with underlying risk preferences. Specifically, risk averse individuals have a higher relative preference for multiple-play treatments in comparison to single-play interventions, especially when they believe in more alternation between random events.

## **Moral emotions as a factor of risk perception**

*Macko, Anna; Michailova, Julija; Tyszka, Tadeusz*

This research focuses on the role of emotions in forming judgments about risks. In particular our interest lies in the analysis of the impact of moral emotions on risk perception.

A vast body of literature suggests that affect is an important factor influencing people's risk perception (Siegrist et al., 2014). Finucane et al. (2000) developed a concept of "affect heuristic" which mediates the relationship between risks and benefits in individual risk assessment. Thus, this heuristic suggests that people judge hazards based on their feeling about it, and do not necessarily employ their knowledge about this hazard (Slovic et al., 2006). Thus cost-benefit judgment of risk is derived not from some objective facts but rather has subjective emotional and intuitive foundation (McDaniels et al., 1995; Finucane et al., 2000; Slovic and Peters, 2006).

Previous research suggests that human and manmade hazards differently influence people's emotions (affect), and therefore their risk perception and judgments. In comparison to natural hazards, people perceive manmade hazards as causing more suffering, being scarier, more dangerous and having more severe outcomes; their fatalities are also seen as less acceptable (Siegrist and Sütterlin, 2014; Rudski et al., 2011). Furthermore people's willingness to prevent manmade harm is higher than to prevent nature-caused harm (Kahneman et al., 1993; Kahneman and Ritov, 1994). Manmade hazards evoke significantly higher negative affect than natural disasters, which in turn influences the abovementioned difference in the reaction to the two types of hazards (cf. Rudski et al. 2011).

Manmade hazards often bring about blame and even outrage directed at the responsible agents (Boehm and Pfister, 2000; Brun, 1992; Hallman and Wandersman, 1992; Snadman, Sachsman, Greenberg and Gochfeld, 1987; Narb and Sprada, 2001). Furthermore when human action is the cause of the harm, greater intent is linked with greater outrage (Kahneman et al., 2013). In contrast, natural causes for a negative event require no assignment of responsibility at all, because they are beyond anyone's control (Nerd and Sprada, 2001; Weiner, 1995).

However previous research does not go beyond a statement that manmade hazards, in comparison to natural ones, evoke stronger negative affect and thus does neither make a significant attempt to reveal the specific negative emotions at play, nor to determine their intensity. Based on the above analysis, we believe that moral emotions seem to be a good candidate to condition the difference in the risk perception between natural and manmade hazards. Moral emotions are "emotions that go beyond the direct interests of the self" (Haidt, 2003:853) and can be described as those linked to the interests or welfare of persons other than the judge or agent. The most prototypical moral emotions are elevation, anger, compassion, and guilt. Other moral emotions are: disgust, shame, embarrassment, contempt, gratitude; fear and schadenfreude are marginal and nonprototypical moral emotions.

As already mentioned, previous research is rather vague about the precise mechanisms underlying the cognition-emotion relationship, and specifies the role of emotions rather generally and imprecisely as a kind of good/bad or like/dislike evaluation. In our paper we plan to test whether a group of specific emotions – moral emotions – explain more variance compared to the simple affect variable proposed in the affect heuristic. For that identical negative outcomes are being evaluated by participants in the case of the nature and human-based hazard. Moreover, since Siegrist and

Sütterlin (2014) suggested that perceived event symbolic meaning might play a role we want to influence the strength of the moral emotions being evoked by including the factor of deliberateness of human actions, by contrasting the harm due to negligence and due to bad will. We use vignettes as our research instrument and present our subjects with short stories in which we control for the origins of hazard, namely: natural and manmade. We further distinguish in the manmade hazard whether it comes from the act of omission or commission, and represent at the same time two levels of intentions: no intentions of harm and an intention of harm. To measure emotions the Geneva Emotion Wheel is used.

Our research contributes to the prediction of how people will respond to different types of hazards and thus can be used by policy makers to improve risk communication to the lay public and develop effective risk-management strategies. E.g. if natural hazards were described in more anthropocentric manner people could be (1) more prone to undertake some actions, and (2) contribute more to preventing natural hazards (e.g. flood).

## **The Consequences of Time Pressure on Risky Decisions**

*Hausfeld, Jan ; Resnjanskij, Sven*

How are risky decisions affected by the opportunity costs of time? We introduce and test a theoretical model in which a decision maker (DM) trades-off rationally the costs and the quality in risky decisions. We design an experiment in which we introduce exogenous variation in the opportunity costs, and find that a DM reduces time invested in the lottery decision which reduces decision quality and increases the number of lottery choices in which the DM is choosing the inferior lottery. We find no evidence suggesting that the reduction in the decision quality is irrational in sense that behaviour deviates from the rational decisions predicted by our model.

Our study combines insights from three branches of the economic literature. On one side recent behavioral studies investigated how time pressure induced by fixed decision deadlines alters behaviour under risk (Kocher, Pahlke, and Trautmann 2013; Nursimulu and Bossaerts 2013), on the other side, there is the well-established literature originated by the seminal work of Becker (1965) and Minzer (1963) on how rational agents allocate time optimally recognizing that time has a (shadow) price determined by the opportunity costs related to alternative time uses. Finally Stigler (1961) introduced the costs of information.

In contrast to the experiments used in the literature on time pressure, in which a DM is forced by an exogenous time limit, our experimental setting investigates the effect of time pressure as an endogenous outcome of a decision maker's trade-off between costs and quality of a decision.

In line with the Thinking, Fast and Slow metaphor (Kahneman 2011), we find indeed evidence that slow decisions are related to a higher decision quality, however our interpretation of fast decision is in stark contrast to the interpretation of fast and error prone as irrational decision making. Instead, the DM rationally choose a lower decision quality by investing less time in the decision, which is necessary to equalize the marginal utilities of time w.r.t. to its different uses.

In addition, we estimate the parameter for a drift-diffusion model analysis using fast-dm (Voss & Voss, 2007). When time pressure increases, the boundaries shrink significantly, and the non-decisional time also shrink. The drift-rate does not seem to change to any larger extent across treatments. We further compare the fit of different choice theories and criteria. Here, we use elicited expected utility parameters (via Holt-Laury, structural estimation, individual structural estimation), expected value, and heuristics for the determination of the thresholds.

# Well-being / General

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7/8/2016 9:30:00 AM: Roghorst Room

*Dr. Job van Exel*

## **Assessing Subjective Well-Being when Preferences are Dynamically Inconsistent: A Day Reconstruction Study**

*Lades, Leonhard; Delaney, Liam*

### Introduction

Economists traditionally assume that choices reveal people's true preferences. This assumption allows an evaluation of policies based on observed behavioural changes. But psychological and behavioural economic research shows that human choices can be predictably inconsistent and influenced by a number of biases. When choices are inconsistent, they do not necessarily reveal people's true preferences. Thus, observed behaviour cannot be used for evaluating policies, and alternative ways to evaluate policies are needed. One of these alternatives is the subjective evaluation of people's well-being.

We directly assess momentary subjective well-being when preferences are dynamically inconsistent. We present data of a day reconstruction study in which we track the subjective well-being of 144 individuals over a full day. We identify episodes in which the participants have self-control failures, i.e. are dynamically inconsistent, and compare subjective well-being across episodes. Our main result is that subjective well-being in episodes with self-control failures is significantly lower than in episodes where non-conflicting behaviours are enacted.

As its key contribution, the paper suggests a novel methodology that is able to evaluate the effects of interventions on both potentially incoherent preferences and on subjective well-being in everyday life. We expand on the Day Reconstruction Method (DRM), which was introduced by Kahneman et. al (2004) and has become a popular tool in subjective well-being research. We additionally measure everyday motivations, i.e. what individuals desire in their everyday lives and whether these desires conflict with higher order goals and thus can lead to self-control problems and dynamically inconsistent behaviour. We thus do not only obtain data about everyday emotions and behaviours, but also about the psychological processes that underlie behaviours.

While the DRM is often used to measure experienced utility, i.e. the hedonic component of subjective well-being, we additionally measure decision utility, i.e. the motivational component of utility (Kahneman, 2003) and its psychological determinants. Economists have traditionally equated experienced utility and decision utility by assuming that rationally maximising decision utility leads to optimal experienced utility. However, behavioural and neurological research, mostly conducted in laboratory settings, suggests that what we desire is not always what we like (Berridge, 2012; Kahneman, 2003). In our study, we directly measure decision utility in everyday life by asking individuals what they desire, experienced utility by asking them how they feel, as well as various situational factors that affect emotions and motivations in everyday life. Hence, we can identify determinants that induce gaps between decision utility and experienced utility. We focus on the effects of dynamic inconsistencies on subjective well-being.

### Design

We invited 144 individuals recruited from the University of Stirling student and staff population to come to computer labs to participate in our study. The participants are aged between 18 and 53 (M

22.80, SD 5.52), 64% are female, 49% have a college degree, 53% are from the UK, and they received a payment of £14.33 in the average.

As is typical in Day Reconstruction Studies, participants first completed a private time-usage diary (on paper) in which they recalled and reported the previous day as a discrete set of episodes. Following Kahneman et al. (2004), we asked participants to think of their day as a movie divided into multiple episodes. It was explicitly mentioned that participants could take their paper diary home after the completion of the questionnaire and that the diary was merely an aid to recalling what happened and how they felt yesterday.

After the participants had finished the diary, they went through each episode on the computer screen and answered questions about each episode. Most importantly, we asked them several questions about how they felt and what desires they had during each episode. For the latter, we used the questions proposed by Hofmann et al. (2012) and asked about (i) desire strength, (ii) strength of a conflict between the desire and a higher order goal, (iii) use of self-control, and (iv) enactment of desires.

We also elicited individuals' time and risk preferences in incentivised multiple prize lists to obtain trait measures of dynamic inconsistency in the form of present bias and gathered various other types of information such as Big 5 personality traits with sub-facets and demographics. The associations between present bias and everyday self-control failures, without discussing subjective well-being, are presented in "another paper" (reference deleted for anonymity).

## Results

The 144 participants reported 1749 episodes (M 12.31, SD 3.48) altogether. In 813 of these episodes a desire was enacted and 221 episodes contained a self-control failure. Subjective well-being in each episode was measured on a scale from 1 to 7. In episodes where a non-conflicting desire was enacted, participants indicated a mean subjective well-being rating of 4.62 and in episodes with a self-control failure, participants indicated subjective well-being of 3.89. To account for the nested data structure, we used multilevel linear models with standard errors clustered on the individual level to predict the subjective well-being in each episode by the presence of a self-control failure controlling for demographics, what activity the individuals pursued, where the episode took place, when it took place and whether individuals were alone or not. In episodes with a self-control failure, individuals reported momentary happiness that was 0.49 points lower on the subjective well-being scale from 0-7 than in episodes where a non-conflicting behaviour was enacted ( $p < 0.01$ ). We are aware that our data is observational and that we cannot make causal claims about the direction of this effect.

## Evaluating interventions

Our approach of directly measuring experienced utility (how people feel), decision utility (what people desire), and psychological processes underlying behaviour (dynamically inconsistency or not) goes beyond the practice of solely measuring behaviour and assuming that this behaviour reveals utility. We can differentiate behaviours that are the result of self-control failures from "normal", non-conflicting behaviours and show that the former are associated with lower subjective well-being in the same moment. Taking this process-view, we argue, can provide valuable insights to come up with sensible criteria for evaluating how alternative policy interventions affect psychological processes underlying behaviour, experienced, and decision utility.

## What constitutes well-being? Views of people from the Netherlands on “a good life”.

*van der Deijl, Willem; Brouwer, Werner; van Exel, Job*

Well-being has gained much interest as an object of study in economics and the social sciences. However, little agreement exists with respect to the substantive meaning of well-being. While many take a multi-dimensional approach to well-being, the question remains what the dimensions of well-being in a multi-dimensional conceptualization should be. Little empirical input exists for this question. In particular little is known about the variety of well-being conceptions people have for their own lives.

This study explores conceptions of “a good life” among people from the Netherlands by means of Q methodology. We used 36 statements representing potential constituents of a good life. In order to arrive at this set of statements, we constructed a taxonomy of different theories and lists of multidimensional well-being, originating from different literatures: the capability approach, policy research of governmental organizations, and general social indicator studies. We identified 11 dimensions of well-being that roughly fit the aforementioned lists. Based on these dimensions, a set of 36 statements was developed that we judged to be representative of the range of topics covered by the 11 dimensions, phrased at a comparable level of generality. Participants were recruited from an existing, renowned panel (<http://www.centerdata.nl/en/about-centerdata>) and were asked to rank the statements according to importance for a good life for them, and to provide written explanation of their ranking of the statements. By-person factor analysis was used to identify common patterns in the ranking of statements, which were interpreted and described as shared viewpoints on what constitutes a good life.

A sample of 1,461 respondents from the adult population of the Netherlands participated in the study. The average age of respondents was 55 (range 16-92) and 56% were women, meaning that the sample was not fully representative of the Dutch population in terms of age and gender (but was roughly so in terms of level of education). We found four distinct views on what people take to be a good life to live for themselves. While there is agreement with respect to the importance of physical and mental health and the unimportance of political representation, the views diverge widely when it comes to most other aspects of life, such as social relations, spirituality, and material welfare.

The findings of this study have implications for formulating conceptualizations of well-being. Insofar as well-being constructs are defined in terms of objective lists, it is important that individual heterogeneity in importance attached to domains of well-being is taken into account. Similarly, when considering the validity of subjective well-being as a measure of well-being, it is important to be aware that well-being may consist of very different ingredients for different people. More knowledge is necessary regarding how to deal with this heterogeneity in research and policy measures aimed at improving well-being, in order to ensure a (sufficiently comprehensive definition of a) good life for everyone.

# Finance / Payments and Credit

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7/8/2016 12:00:00 PM: Tarthorst Rooms 1+2

*Dr. Anna Maria Helka*

## **Price Recall Error when Using Card Payment**

*Gafeeva, Rufina; Hoelzl, Erik*

Consumers use different payment modes for their financial transactions, ranging from cash over credit cards to mobile payment. Previous research showed differences in consumer spending behavior as a function of payment mode due to variations in transparency of the payment process. In this context, price knowledge and price recall are important both for the present purchase and for future spending decisions. In the present research, we examined price recall error for different payment modes. In a field study conducted in university cafeterias, customers (N = 244) were asked to recall the price they just paid at the cashier. Results showed that consumers paying with cafeteria card made a higher price recall error in comparison to consumers paying with cash. Our findings support the hypothesis that card payment increases price recall error.

## **Discounting a Lump-sum vs. Payment Stream: More Payments leads to More Patience**

*Malkoc, Selin A. ; Goodman, Joseph K. ; Rosenboim, Mosi*

Many management and individual decisions have intertemporal components, requiring a valuation of outcomes at different points in the future. In such situations, people's preferences often imply higher discounting for shorter, compared to longer, time periods—often referred to as present bias or hyperbolic discounting. Past research studying present bias has exclusively examined the delay of lump-sum payments (a stock variable), and implicitly assumed that it is equivalent to delaying a payment stream (a flow variable). We examine the delay of a payment stream and compare it to its equivalent lump-sum. Two experiments demonstrate that when people delay a payment stream (vs. lump-sum) they have lower discount rates (i.e., more patience) and significantly diminished present bias. The results suggest that present bias may in part be an artifact of its measurement using lump-sum payment and can be alleviated if an outcome is framed as a stream of smaller payments.

## **Social norms in the process of incurring and repaying financial liabilities**

*Helka, Anna Maria; Wójcik, Małgorzata*

### AIM OF THE STUDY

The influence of social norms on the propensity for incurring and repaying liabilities has not been examined yet. However, Gathergood's research (2012) indicates the significantly lower psychological costs of incurring debts by individuals living in high bankruptcy regions, which gives the reason to believe that the available social norms may be important not only in the context of the psychological costs of incurring debts, but also in the sheer propensity to incur and repay financial liabilities. The main aim of this study was to determine which social norms are important to Poles with regards to the debt-incurring process. We decided to conduct individual in depth

interviews (IDI) which allowed not only to define list of above mentioned norms but also to determine the connotations words such as credit and debt in the Polish society which has not been so far thoroughly researched in Poland. We were eager to examine whether people with various experience with debts share the same or different social norms concerning debt-incurring process. Activated social norms may influence different behaviours including economic one (Fehr & Fischbacher, 2004), therefore we expected that [H1]: "People with various experience in incurring and repaying financial liabilities will declare different social norms concerning debt-incurring process".

## PROCEDURE

In order to verify our hypothesis we conducted 21 semi-structured IDI with 11 women and 10 men (age 23 to 73, mean age = 39,857 ,  $\sigma$ = 6,293) who have various experience in incurring and repaying financial liabilities: have never taken any loan (non-borrowers), repaying in a timely manner (model borrowers) and having trouble repaying their liabilities (unreliable debtors).

In the initial part of the interview subjects were familiarized with the definition of social norms (what is typical as well as what is socially acceptable). Then respondents specified which social norms concerning incurring and repaying financial liabilities are valid in Polish society, they also assessed whether these norms are universal or apply only in certain groups. Further, the respondents declared by which social norms they themselves are guided in terms of incurring and repaying financial liabilities. The study ended with questions about demographic data and previous experience in the borrowing and repayment of financial obligations of the respondent. The structure of the interview was designed in order to find out which social norms are available and what are acknowledged by Polish respondents.

The interviews took place between December 2015 and March 2016. Data in the form of interview transcripts was analyzed in Nvivo10, using the techniques of the thematic analysis procedure (Braun, Clarke, 2006) within a constructionist framework (Burr, 2003).

## RESULTS

The thematic analysis resulted in 31 codes. They were grouped into 2 key themes: Social norms concerning (1) incurring and repaying financial liabilities (16 codes); (2) the deviations of repaying financial liabilities (14 codes).

Almost all respondents considered that financial liabilities such as credit or rent shall be pay on time and with the high priority. Nearly half of the respondents (mostly unreliable debtors) declared or regarded that other Poles use credit only in case of necessity or as last resort. It is worth noticing that only one model borrower and three non-borrowers mentioned this category. Majority of the respondents admitted that people should not live beyond its means which refers to both loans and other financial liabilities and expenses. 1/3 of them referred this norm to themselves in particular. This norm was mentioned by all model borrowers and unreliable debtors but rarely non-borrowers. About half of respondents (mostly unreliable debtors) regarded that credit use is widespread and is a means to finance large purchases such as a car, house or household appliances. Half of unreliable debtors (and only them) treated credit as a quick way to solve financial problems.

Three categories refer to negative sides of credit use namely: "credit as a source of stress and discomfort", "credit as something which is expensive and available only for richer parts of society" and "if you take credit remember that something may go wrong" (eg. losing a job, sickness, economic meltdown). It shall be emphasized that this three categories were almost absent in model borrowers answers and were present in interviews with most of unreliable debtors. Majority of non-borrowers and unreliable debtors and only one model borrower mentioned that although it is not accepted some people deliberately commit frauds. It seems that model borrowers have

significantly different approach to the loans that others. More particular, they seem to not notice the negative aspects and risks associated with taking out loans.

The most frequent category among key theme "social norms concerning the deviations of repaying financial liabilities" was "the consequences of not paying" which was recalled by majority of unreliable debtors and non-borrowers but only one model borrower. About half of the respondents (but among them only two model borrowers) recognized that crisis situations such as financial crisis, poverty, job loss, health hazard and other misfortunes could give an excuse for non-payment of financial liabilities. 1/3 of respondents (but again only two model borrowers among them) mentioned that people may have problems with the timely payment of debt as a result of their carelessness, lack of reflection or helplessness of life which may lead to incur further loans in the shadow bank and fall into a spiral of debt. Again, model borrowers present different approach – they indicate much less excuses for non-payment than others.

Half of respondents indicated intergenerational differences in the approach to repayment financial liabilities. A large group also pointed to significant differences in borrowing and repaying loans from banks and from family. Several contributions pointed to other explanations of non-payment liabilities, such as: dissatisfaction with the services for which we pay, obligation's amount (you may not pay out small one), gambling or other addictions and debt which you have not incurred yourself.

## CONCLUSION

Reported study helped to identify a list of social norms important in the process of borrowing for the Poles and revealed a number of differences between people with different experience in indebtedness.

# *Well-being and Money*

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7/8/2016 12:00:00 PM: Roghorst Room

*Dr. Maria da Conceição Pereira*

## **Correlation Between Materialism and Psychological Well-being**

*Patoshka, Olga*

**Introduction.** In recent years, materialism has become an increasingly important topic in psychology of consumer behavior. Materialism is generally viewed as the value placed on the acquisition of material objects. Previous research finds that high levels of material values are negatively associated with subjective well-being. However, relatively little is known about the relationship between materialism and well-being within the broader context of psychological variables.

**Objectives.** The main objective is to examine the relationship between material values and well-being, determined by self-esteem, locus of control, level of aspiration, and satisfaction with the existing relationships.

**Methods.** The sample include 133 people (94 female), average age  $23,5 \pm 3,2$ . Questionnaire consisted of following scales: Richins and Dawson's (1992) materialism scale, satisfaction with life

scale (E. Diener), Rotter's locus of control scale, Dembo-Rubinstein scale of self-esteem and aspiration level, questions about satisfaction with relationships.

Results and conclusions. Confirmatory factor analysis was conducted to examine the reliability, convergent validity, and uniqueness of the subscales within the materialism scale. As the result, the structure of materialism scale was validated in Russian sample. It consists of 3 subscales: Acquisition centrality, Happiness, Success. The extent to which possessions considered as essential to personal satisfaction and well-being in life is significantly higher developed among women, has opposite correlation with material status, self-esteem and relationships' satisfaction. Consistent with past studies, there was a general negative relationship between life satisfaction and materialism. But we found mediator variables, which reduce negative relationship. They are material status and self-esteem.

## **The role of personal values in the SWB-income relationship**

*Pereira, Maria da Conceição ; Batista, Andreia*

The present work aims to analyze the moderating effect of personal values, as defined by Schwartz (1992), in the relationship between (family and reference) income and subjective well-being (SWB) for the Portuguese population.

According to Rojas (2007), each individual has a different conceptual referent for happiness, which extends to its explanatory structure, including income. This means that income is differently valued by individuals, and this is true not only for personal income, but for reference income as well. While some individuals can be heavily affected by the fact that they earn a lower income than the group of people they tend to compare themselves with, others may completely disregard such social comparisons.

This heterogeneity in the importance individuals attach to income is likely to be driven by their personal values. The Schwartz (1992) value theory is probably the one that has received more empirical support and that has been more frequently used. Schwartz (1992) has identified 10 general value types, which have been conceptualized as forming four higher-order value domains: Self-enhancement (power and achievement), Openness to Change (stimulation and self-direction), Conservation (security, conformity, and tradition), and Self-transcendence (universalism and benevolence). The self-enhancement domain arrays "values in terms of the extent to which they motivate people to enhance their own personal interests (even at the expense of others)" whereas the self-transcendence domain concerns values that "motivate people to transcend selfish concerns and promote the welfare of others, close and distant, and of nature" (Schwartz, 1992: 43-44). Openness to change includes "values in terms of the extent to which they motivate people to follow their own intellectual and emotional interests in unpredictable and uncertain directions" and the Conservation dimension regards the importance attributed to the preservation "of the status quo and the certainty it provides in relationships with close others, institutions, and traditions" (Schwartz, 1992: 43).

Despite the extensive attention devoted to Schwartz values theory, there is no attempt to investigate its moderating role in the SWB-income relationship. Georgellis et al. (2009) analyze the moderating effect of personal values and beliefs in the income-life satisfaction relationship, but they measure such personal values and beliefs in an arbitrary way (using indicators of individuals' attitudes towards religion, traditions, helpfulness, materialism, creativity, and admiration by others). Furthermore, they only develop a proper moderation test for reference income, examining the moderating effect of absolute income by splitting the sample in two halves according to individuals' values and running separate regressions to compare the coefficients of income.

In order to accomplish our aim, data provided by the European Social Survey, regarding four rounds, from the 3rd to the 6th, were used. The dependent variable is measured by the question

"All things considered, how satisfied are you with your life as a whole nowadays?" Interaction terms between (family and reference) income and personal values are used to test the moderating effects along the lines of Aiken et al. (2003).

Our results can be summarized as follows:

Direct effects    Moderating effects

Family income    Reference income

Openness to change – n. s.    n. s.

Self-transcendence + n. s.    –

Self-enhancement – n. s.    +

Conservation + n. s.    n. s.

The results concerning the direct effects of personal values are discussed on the basis of Sagiv and Schwartz (2000), for whom the assessment of subjective well-being might directly depend on personal values via two ways: the individual's profile in terms of personal values, and the success in realizing one's values. More specifically, in terms of the psychotherapy literature classification of healthy and unhealthy values, one would expect Openness to change and Self-transcendence to induce higher well-being, whereas Self-enhancement and Conservation would have the opposite effect. However, if the prevailing social and cultural context prevents individuals from realizing their values in a satisfactory manner their value profile is likely to reduce SWB. Accordingly, individuals more open to change may feel incongruent with a collectivist culture that prevails in Portugal, and the consequences of this incongruence can induce a negative association between SWB and Openness to change. Following a similar argument, conservative individuals may have a more negative sense of SWB, but their congruence with the society's culture may act to foment their positive assessment of well-being.

Our results concerning the interactions show that family income is not moderated by any one of Schwartz value dimensions. This could be due to the fact that personal income is low in Portugal, thus making it paramount, independently of the individuals' values. In fact, it is widely known that the relationship between SWB and income is stronger in less abundant societies (Ferrer-i-Carbonell 2005), probably making it less vulnerable to moderating effects.

Self-transcendence turned out to enhance the effect of relative income on SWB. We rationalize this result by recognizing that individuals with high self-transcendence have concerns with the well-being of others and emphasize the acceptance of people as equals, hence their SWB may react more negatively to an income lower than those in their reference group, because they place more value on income equality.

As to self-enhancement, rather than strengthening the effect of reference income on SWB, due to its association with materialism, the opposite takes place. The reason may lie on the tunnel effect, according to which, in unstable economic settings, a higher reference income may act as a "source of information for forming expectations about future status" (Caporale et al. 2007). Accordingly, individuals with higher self-enhancement can look at their reference group's higher income as a sign of a future income increase, thus facing the income gap less unfavorably.

No moderating effect for Openness to Change and Conservation was observed, possibly due to their non-materialistic nature.

# Social Affairs

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7/8/2016 12:00:00 PM: Pomona Room 1+2

*Stefania Marcassa*

## **Undoing Gender with Institutions. Lessons from the German Division and Reunification**

*SENIK, Claudia; Lippmann, Quentin; Georgieff, Alexandre*

Social scientists have provided empirical evidence that “gender trumps money”, in the sense that gender norms can be more powerful than economic rationality in shaping daily arrangements between spouses. In particular, it has been shown that when they deviate from the “male breadwinner” norm, women react by “doing gender”, i.e. overplaying their feminine role by increasing the number of housework hours that they accomplish. It has also been shown that the risk of divorce increases when a woman earns more than her husband. This paper shows that, however powerful, these norms are cultural and can be trumped by institutions. We use the 41-year division of Germany as a natural experiment and look at differences between East and West Landers in terms of gender behavior after the German reunification. As most countries of the socialist bloc, the former GDR had designed institutions that were much more gender equalizing than their counterpart in the former FRG. We show that these institutions have created a culture that keeps influencing behavior up to the current period. In particular, in East Germany differs from West Germany in the sense that a woman can earn more than her husband without “doing gender” and without putting her marriage at risk

## **The Geography of Social Change**

*Fogli, Alessandra ; Marcassa, Stefania*

This project uses a cross-sectional county-level dataset for the period 1800-1900 to look at the U.S. fertility transition, and particularly at its spatial aspects. The decline in American fertility is a puzzle in terms of both magnitude and timing. From a very high level around 1800, the white child-woman ratio collapsed by about half over the course of the next hundred years. The decline was mainly a rural phenomenon that started in the North-East coast (New England region): the child-woman ratio decreased by about 70 percent in rural counties, and only about 30 percent in urban areas. Another feature of this decline concerns the timing: from Knodel et al. (1979), we know that the onset of fertility transition was much earlier than in Europe (with the exemption of France). Our theory is based on the diffusion of new family values governing intergenerational responsibilities and behavior with respect to saving and fertility. In particular, our idea relies on the change in social norms which diffuse geographically observing the behavior of habitants of neighboring counties. Patriarchal family based on intergenerational transfers dissolves as young sons migrate towards West. This phenomenon lowers expected transfers from children, and incentivized precautionary savings of parents.

# Dilemma

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7/8/2016 12:00:00 PM: Ir. Haak Room

*Dr. Kees Vringer*

## **Factors that influence trust in organisations**

*Hoekstra, Elisabeth Janke; Perlaviciute, Goda; Steg, Linda*

An organisation's license to operate depends on the extent to which people trust the organisation: the more people trust an organisation, the more acceptable they find the organisations' activities. Hence, an important question is what determines whether an organisation is perceived as trustworthy. We define trust as being perceived as honest, competent, and reliable (cf. O'Neill, 2013). We aim to empirically study the extent to which perceived honesty, competence, and reliability of an organisation predicts perceived trust in an organisation, and whether this in turn predicts acceptability of an organisations' activities, that is, the extent to which people in general evaluate an organisations' activities in a negative or positive way. As a case in point, we studied perceived trust in companies involved with gas supply in the Netherlands.

We conducted a questionnaire study among a representative sample of the Dutch population. We measured perceived honesty, competence, and reliability of and trust in companies involved with gas supply in the Netherlands in general. We asked participants to what extent they believe that these companies can be trusted. We measured perceived honesty by asking to what extent participants believe that these companies are honest and open about their activities, and take the safety of the public into account. We measured perceived competence by asking participants to what extent they believe that companies are competent, and have the necessary skills and knowledge to carry out their activities properly. Perceived reliability was measured by asking participants to what extent they believe companies have adhered to laws and rules in the past, have proven to act reliable in the past, and have shown in the past that they have the necessary skills to carry out their activities properly. Acceptability towards gas transport and gas production in the Netherlands was measured by asking how acceptable, useful, good/bad, and necessary people believe these activities are.

As expected, the more people perceived the companies as honest, competent, and reliable, the more they trusted these companies. Also, there was a positive relationship between trust in the companies and acceptability of gas transport and gas production.

### References

O'Neill, O. (2013, June). Onora O'Neill: What we don't understand about trust [Video file].

Retrieved from [https://www.ted.com/talks/onora\\_o\\_neill\\_what\\_we\\_don\\_t\\_understand\\_about\\_trust?language=en](https://www.ted.com/talks/onora_o_neill_what_we_don_t_understand_about_trust?language=en)

## Sustainable consumption dilemmas

*Vringer, Kees ; van der Heijden, Eline ; van Soest, Daan ; Vollebergh, Herman ; Dietz, Frank*

Problems of sustainability and sustainable development tend to be more wicked (i) the larger the differences in perceived urgency of the problem, and – not unrelated— (ii) the larger the distance (geographically, or temporally) between beneficiaries of sustainability actions and those who bear the costs of providing them. An example in point is climate change. Future generations, especially those living closest to the equator, will benefit most from climate change mitigation actions, while the costs of these actions need to be incurred by the current generations, and especially those living in the richer countries. That means that considerations like ethical stance, morality, warm glow and social identity are likely to play an important role in individual decisions whether to (voluntarily) contribute to solving these wicked sustainability problems. On top of that, (in)action may also be the result of social dilemma considerations. Each individual has a negligible impact on solving wicked sustainability problems, but the more other agents are willing to commit themselves to undertake the sustainable actions, the more likely it is that an individual agent will decide to do so too – because for the same amount of costs incurred by the individual, the impact of the collective action will be higher the larger the number of agents who are contributing too.

In this paper we explore whether indeed social dilemma considerations play a role in individual decisions regarding wicked sustainability problems – in addition to more personal considerations like personal morality and social identity considerations. We implement a large scale (semi-) field experiment with more than 600 participating households, who receive budgets to be spent on either a sustainable product variety or on a conventional product variety. Important aspects of the experiment is that the decisions of the participants have financial consequences as well as that the decisions were taken in the place where they are typically taken; not in the lab, but at home or in the supermarket.

One set of treatments includes the random allocation of households to groups of varying sizes, to test whether the size of the group affects the share of households voting in favour of compulsory purchasing the sustainable product variety. In addition, we implement treatments to explicitly test for conditional cooperation, to detect socially desirable actions in treatments with and without binding regulations, and to check whether the perceived stringency of policies to overcome social dilemmas affects support for the policy in place. Wicked sustainability problems are hard to experiment with, and therefore we selected a sustainable consumption problem that shares some of the key characteristics of the wicked sustainability consumption society faces: meat consumption and animal welfare. Meat is widely available in both the sustainable and the conventional product variety, and as a problem animal welfare is sufficiently abstract to give rise to divergent opinions regarding the perceived salience of the problem and also to large differences in the perceived distance between the agents incurring the extra costs associated with organic (as opposed to conventional) meat consumption and those who stand to gain from these greener consumption decisions – other households who care about animal welfare issues, and also, of course, the animals themselves.

We find mixed evidence regarding the importance of social dilemma considerations as a barrier for households to undertake unilateral action regarding the consumption of organic meat. On the one hand, the share of households voting in favour of a binding commitment to only buy organic meat does not systematically change if groups are increased from one household (i.e., individual decision making) to 31 households or 61 households. Also, we find that conditional cooperation is not an important driver of behaviour, and the same holds for the tendency to provide socially desired responses (comparing outcomes of treatments where voting results are binding, or non-binding). Survey responses, however, do suggest there is substantial support for the government to regulate unsustainable product varieties. We try to reconcile these conflicting results by analysing not just our subjects' actions but also the beliefs.

# Consumption / Leisure & Variety

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7/8/2016 12:00:00 PM: Dorskamp Room 1+2

*Apostolia Loukopoulou*

## **Not seeing the forest for the trees: The role of specificity effect on variety-seeking behavior**

*Baltas, George; Kokkinaki, Flora; Loukopoulou, Apostolia*

The purpose of this paper is twofold: first of all to propose specificity effect as a mechanism for explaining variety-seeking tendencies in the case of large assortments and secondly to investigate the effect of chooser type on variety-seeking behavior when making multiple choices from extensively large assortments. The data were collected through a computerized laboratory experiment where one hundred twenty-one undergraduate students had to select multiple items simultaneously from either a small or a large assortment. The results indicated that consumers tend to seek more variety when they choose from large assortments compared to when they choose from small assortments: in large assortment conditions, subjects paid less attention to the aspect differentiating the set of episodes and perceived the process to be more repetitive whereas, in small assortment conditions, subjects paid more attention to flavor and they perceived the process to be less repetitive. Concerning the effect of chooser type on variety-seeking, for preference constructors, there were no differences in variety-seeking when choosing from small or large assortments whereas preference matchers tend to seek more variety when choosing from large assortments. The findings lead to important managerial implications.

## **Information via different social media platforms affects pro-environmental behaviour**

*Onwezen, Marleen; Bouwman, Emily*

### Introduction

The world is currently confronted with environmental problems like global warming (Steg & Vlek, 2008). These environmental problems are mainly caused by humans and thus can be tackled by guiding individuals towards pro-environmental behavior (Gilg, Barr & Ford, 2005; Steg & Vlek, 2008).

There is evidence that identifying with a social group, i.e. social identification (Mael & Ashforth, 1992; Tajfel, 1982), affects consumers' pro-environmental intentions (Bartels & Reinders, 2010), because individuals who perceive themselves as part of an environmental group act according to the group standards.

We propose that Social Media might activate social identification with online groups, because individuals actively engage in, communicate with, and belong to online groups that together create content (Kaplan & Haenlein, 2010). We refer to this form of identification as online identification. We hypothesize that online identification with environmental groups can change the way information is processed and may guide pro-environmental intentions because individuals aim to live up to the group standards. The goal of this paper is thus to address if environmental messages sent via Social Media activate online identification and increase pro-environmental intentions.

## Method & results

Pilot study. This study (N=45) triggered the idea of the current manuscript. The study examines whether online identification, activated through message-source (Facebook 'online visible' vs. e-mail 'online private'), influences pro-environmental intentions.

Online identification. Participants approached via Facebook significantly identified themselves more with other Facebook users than participants approached via e-mail ( $F(1, 44) = 5.636$ ;  $p = .022$ ,  $\eta^2 = .114$ ;  $M_{\text{e-mail}} = 3.18$  (1.6);  $M_{\text{Facebook}} = 4.31$  (1.6)). Indicating that Facebook triggers online identification.

Pro-environmental intention. ANOVA shows that participants who were approached via Facebook had significant higher pro-environmental buying intentions than participants approached via e-mail ( $F(1, 44) = 5.374$ ;  $p = .025$ ,  $\eta^2 = .109$ ;  $M_{\text{e-mail}} = 2.59$  (1.7);  $M_{\text{Facebook}} = 3.71$  (1.6)). This indicates that the same message had a greater impact on pro-environmental buying intentions when sent via Facebook than via e-mail.

Study 1. Study 1 further explores which aspect of Social Media triggers online identification. We manipulated online visibility by asking respondents to participate in an online discussion (opinion visible versus not). We also included becoming a website member or not to ascertain that the findings are generalizable to multiple contexts.

Online identification. Participants who participated in the discussion on the website Food Discussions significantly identified themselves more with other Food Discussions members than participants who didn't participate in the discussion ( $F(1, 194) = 4.933$ ;  $p = .028$ ,  $\eta^2 = .025$ ;  $M_{\text{participation}} = 3.1$  (1.7);  $M_{\text{no-participation}} = 2.6$  (1.4)). Indicating that participating in a discussion triggers online identification.

Intention to reduce meat consumption. There were no main effects, but there was a marginally significant interaction-effect ( $F(1, 156) = 3.192$ ;  $p = .076$ ;  $\eta^2 = .021$ ). Participants who participated in the discussion and didn't become a member were more willing to eat less meat ( $M=4.21$ ;  $SD=1.8$ ), than all other participants ( $M_{\text{participation - member}}=3.48$  ( $SD=1.8$ );  $M_{\text{participation - no member}}=3.60$  ( $SD=1.9$ );  $M_{\text{no participation - no member}}=3.29$  ( $SD=1.8$ )). Participating in an online discussion thus impacts intentions, but only when individuals are no member of the website.

Study 2. To ascertain that online visibility triggers online identification and pro-environmental intentions Study 2 (N=187) asks all participants to write down a reaction to an online discussion and manipulates online visibility by manipulating the visibility: one group learns that many people have seen their reaction (online visibility high) and the other group learns that no one has seen their reaction (online visibility low).

Online identification. Analyses show no significant effects of the manipulation on online identification. Though there is a significant interaction effect with social norms. High visibility significantly increased online identification ( $F(1, 186) = 1.943$ ;  $p < .05$ ;  $\eta^2 = .131$ ;  $M_{\text{online visible}} = 4.35$  (1.36);  $M_{\text{not visible}} = 4.03$  (1.46)), though only for participants with high environmental norms (this difference was not visible for participants with low environmental norms ( $M_{\text{online visible}} = 2.98$  (1.19);  $M_{\text{not visible}} = 2.89$  (1.58))). We control for seriously answering by including seriously intending to live up to their reaction as covariate. The results thus indicate that online visibility in a discussion triggers online identification, but only when individuals are sensitive to injunctive environmental norms.

Intention to reduce meat consumption. There were no significant effects in general. Though there was a significant interaction effect with environmental norms ( $F(9, 78) = 2.311$ ;  $p = .022$ ;  $\eta^2 = .193$ ). Participants in the online identification condition and a high score on Injunctive Environmental Norm had the highest willingness to eat less meat ( $M=5.05$ ;  $SD=1.74$ ), than all

other participants ( $M_{\text{visible\&lownorm}}=4.30$ ;  $SD=1.17$ ; ( $M_{\text{Not-visible\&highnorm}}=4.76$ ;  $SD=1.67$ ;  $M_{\text{Not-visible\&lownorm}}=4.42$ ;  $SD=1.56$ ). These results imply that online participation affects intentions, but only when individuals are sensitive to environmental norms.

## Discussion

Social Media is changing the information landscape and there is a large body of research trying to show and understand how Social Media affects information distribution (Xiang & Gretzel, 2010; Youmans & York, 2012; Schuman & Luong, 2011; Lueg et al., 2006; Wang et al., 2012). However, it was not yet clear whether Social Media changes the way how information is perceived and activates (environmental) behavior.

The results reveal that the same environmental message has a different impact when provided via Social Media that activates online identification. More specific, receiving a message via Facebook or after an online visible discussion is an unconscious way to manipulate online identification and activates pro-environmental intentions. Additionally the results reveal two relevant boundary conditions. First, becoming a member undermines the effect of online identification on intentions. This finding implies the relevance of free choice or intrinsic motivation is necessary to reveal the positive effects of online identification on pro-environmental intentions. Second, consumers that perceive high norms of others to engage in environmental activities are more sensitive to online identification such that it activates intentions. Thus, social media can trigger online identification and pro-environmental intentions, though only when individuals are highly motivated (via the context or social norms).

# Uncertainty

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7/8/2016 12:00:00 PM: Kolkakker Room

*Prof. Tobias Rötheli*

## **Can a new defense technology affect emotions, risk perceptions and precautionary actions during a military operation? The Israeli case of the Iron Dome**

*Shahrabani, Shosh ; Lahav, Eyal ; Benzion, Uri*

The current field study uses unique data collected in Israel in July 2014, during the Protective Edge military operation that the Israel Defense Forces (IDF) conducted in the Gaza Strip, in reaction to the thousands of missiles launched from there into Israel. During this operation, the new Iron Dome anti-missile defense system was used for the first time to protect Israelis exposed to missile attacks. During Protective Edge, the effectiveness of Iron Dome was tested very frequently from the first day of the operation, with estimated accuracy rate at approximately 90%. During the operations, the IDF instructed the population that upon hearing an alarm, they must enter the nearest protected area, preferably an in-house protected space or shelter.

The study examines the impact of attitudes towards this technology on negative emotions, risk perceptions, and the decision to comply with defense instructions issued by the IDF regarding behavior during missiles attacks.

Our hypothesis is that the new defense technology might reduce the level of negative emotions, and decrease the perceived self-risk from attack for people exposed to attacks of the relevant type. However, at the same time the success of the technology could also cause people to reduce their precautionary actions during attacks and decrease their compliance with instructions issued by the authorities (similar to the tendency to be less attentive when driving a car with new safety technology).

The study has two main objectives: 1) to examine the factors correlated with the decision of Israelis exposed to missiles attacks to comply with the IDF instructions about precautionary actions during the operation, and 2) to examine the attitudes of people toward the new defense technology, Iron Dome, and to examine the impact of these attitudes on negative emotions, risk perceptions and the decision to comply with the IDF instructions during missiles attacks. In addition, gender differences are considered with respect to emotions, risk perception and factors correlated to the decision to comply with the instructions during the operation and take precautionary actions. The current study also contributes to the existing literature by considering the relationship between the level of anger toward Hamas militias and toward the Israeli government, separately, and the compliance with IDF instructions.

Our sample was based on an internet survey. 628 invitations were sent to participate to a sample of the adult population in several regions in Israel, and 515 participants completed the survey (average age 40.94, 264 males and 251 females). The survey was distributed in several regions because the time available to take cover before a missile from launched from the Gaza Strip reaches its target varies from region to region. People who live farther from the Gaza Strip have a longer time to reach a protected place. The survey was conducted at the eleventh day of the Operation Protective Edge (July 18, 2014), after ten days of air strikes by the IDF, and missile launches by Hamas.

The results indicate that 57% of the participants reported that they always comply with the IDF instructions during alarms while 43% did not always comply. Compliance rates with IDF instructions are significantly higher among women (65.3%) than among men (50%), and reported fear level was higher among women than among men.

The results show that the decision to comply with instructions was more common among older participants, married participants, those who have a protected space nearby, and those who were exposed to news every two hours or more frequently. In addition, the results indicate that people who always comply with the IDF instructions believe that they have higher chances of being injured by missile if not in a protected place, and have higher degree of support for how the government is conducting the operation, than those who do not always comply.

The results indicate that participants have positive opinions regarding Iron Dome. Those with stronger positive opinions towards the new system felt lower levels of fear and anger, and believed that their chances of being injured by a missile were lower than had been during previous military operation, compared to those with less positive feelings. In addition, people who complied with defense instructions issued by the IDF more carefully were more fearful, angrier at Hamas, less angry at the Israeli government, and had more positive opinions about Iron Dome.

Among both genders we found similar correlations between compliance with IDF instructions and fearful people, people who are angry at Hamas, support of the government and having an in-house protected space. However, the findings of the study indicate gender differences with respect to other factors correlated with the tendency to comply with the IDF instructions.

For women separately, we found that those who agree more strongly with the statement "Iron Dome gives me the confidence to continue with my daily routine" have lower levels of fear. For men separately, we found that those who agree more strongly with the above statement have lower levels of anger toward the government.

Interestingly, we did not find any significant correlations between tendency to comply with the IDF instructions and attitudes toward the Iron Dome system and exposure frequency to the news in the media, for women although we did find them for men.

To conclude, positive attitudes toward the new defense technology during the 2014 Protective Edge operation moderate the levels of negative emotions (less fear for women; less anger toward the government for men). These effects are important since previous studies indicate that strong negative emotions are associated with post-traumatic stress disorder.

The implications of the study are important for understanding the level of confidence that the public has in new defense technology, and its relationship to their confidence in the actions that the government takes during missile attacks. In addition, the implications of the results are important for understanding the impact of the attitudes toward the Iron Dome, negative emotions, risk perceptions and precautionary actions of people exposed to continuous missile attacks.

## **On Thin Ice: Risk, Return and Crash**

*Rötheli, Tobias*

This paper describes a new experiment for the analysis of the determinants and the effects of economic risk-taking. All experiments are completed and the formal analysis will be done in the next months. We develop a naturalistic task where 4 independently acting subjects engage in decision making. The interplay of the individual choices determines individual rewards and there exists a clearly comprehensible risk of a crash if individuals push their luck in search of higher returns. In case of a crash event all (except the risk-free) investments yield zero return. Individuals after each period receive feedback on their individual return, the average return over the group of 4 subjects and whether a crash has occurred. The experiment is conducted in two treatments each with 10 groups of 4 players (for a total of 80 subjects) over 20 periods. The two treatments differ with respect to their return-risk profile. One treatment offers a choice with a (low) risk-free return and a mildly increasing return-risk profile. The second treatment has no safe return strategy available and a steeper return-risk profile. The difference in outcomes between these two treatments help to assess, e.g., how different compensation packages and income taxation for managers influence aggregate income and frequency of crash events in a risky world (International Monetary Fund, 2014, Larcker et al., 2014). We can further investigate in greater detail than in earlier studies how gender influences risk-taking and the individual's contribution to the occurrence of a crash (Charness and Gneezy, 2012, Deck et al., 2012). Moreover, the data shed light on the relationship between the experiences of losses and induced riskier choices (March and Shapira, 1992). Furthermore, we investigate the heterogeneity of individual risk taking behavior. In particular, we focus on leaders who lead others in the sense of taking increasingly higher risk. We distinguish type 1 leaders who push the collective into the abyss and type 2 who succeed in pulling back as followers increasingly take higher risks. While type 1 and 2 individuals are likely to do well as entrepreneurs and investors (Levine and Rubinstein, 2013), type 2 is the socially beneficial version of a leader in risk taking. The counterpart of such aggressive leaders are followers who are lured into taking higher risk but eventually get burned (the "devil takes the hindmost" phenomena). Here we assess whether increasing risk taking by followers is driven by the difference between their return and the average group return (March and Shapira, 1992). Finally, our experiment shows that excessive risk taking leading to crashes occurs even when subjects fully understand the risk-return tradeoff. In fact, our analysis documents that in the naturalistic context studied here crashes are never the result of bounded rationality in the sense of naïve, inefficient risk taking (Campbell and Turner, 2012). Summarizing, our study offers new and complementary findings to recent analyses of the causes of economic crises (Reinhart and Rogoff, 2009, Thorisdottir and Karolinudottir, 2014).

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# *Consumption / Sustainability*

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7/8/2016 4:00:00 PM: Kolkakker Room

*Dr. Eva Hofmann*

## **Professional norms as incentives: experiments with purchasing professionals and students**

*Vyrastekova, Jana ; Boodie, Max ; Kamann, Dirk-Jan F.*

We compare behavior of a sample of purchasing professionals in an incentivized economic experiment. In one treatment, we implement a framing designed to trigger professional norms of the purchase professional, while in the control treatment, we observe behavior of another sample of the purchasing professionals deciding without such framing. The treatment effect is significant and entails that the professional norm affects decisions of the professionals although this is costly to them: they transfer more of their endowment money to the passive receivers when this is described as providing "high quality". We interpret our data as evidence that professional norms are triggered in the process of decision-making, and interact with monetary incentives. As a robustness check, we confirm that the imposition of the same professional-norm framing in a student subject pool has no impact on behavior. Finally, we identify a link between the length of exposure to the profession and the impact of the professional norm, consistent with norm internalization as a long-term process.

# Consumer motives to cocreate in different service types

*Neghina, Carmen ; Bloemer, Josée ; van Birgelen, Marcel ; Caniels, Marjolein*

## Introduction

More consumers engage in value cocreation activities in order to fulfill various needs or wants, which form the basis of various motives to cocreate. This study investigates how consumer motives to cocreate vary between professional and generic services - one of the most critical dichotomies in services research (von Nordenflycht 2010) based on differences in knowledge intensity and workforce professionalism - and how these motives drive consumer willingness to cocreate (W2C) and intended cocreation behaviors.

One of the key factors that shape value cocreation is the service context (Vargo & Lusch 2008). However, the role of the service context in influencing the value cocreation process has yet to be empirically explored (Edvardsson et al. 2011). Since consumers perceive different service types as allowing them to fulfill different needs or wants, the service context will be conducive of certain motives to cocreate. More specifically, we argue that service type is expected to play an important role in shaping consumer motives to cocreate.

## Theoretical foundations and hypotheses

Consumers engage in cocreation activities in order to fulfill their own personal wants and needs, which become motives for their behavior (Etgar 2008) based on the expected value they seek to achieve. The motives for consumers to engage in value cocreation have been classified in different typologies. We build up on the most recent typology of dimensions of value cocreation in interactions at the micro-level of service interactions developed by Neghina et al. (2014a) (individualizing, relating, empowering, ethical, developmental, and concerted dimensions). These dimensions become motives for consumers to engage in value cocreation interactions, as they represent the various value dimensions consumers can achieve in cocreative interactions with a service provider: 1) individualizing motives referring to the desire to establish a mutual understanding of the customer's resources, roles, and desired outcomes, 2) relating motives pertaining to enhancing the social and emotional connection with either the service provider or other customers, 3) empowering motives connected to the desire to negotiate the power to influence the service process or its outcome, 4) ethical motives referring to requiring fair, honest, and moral guidelines for the service interaction, 5) developmental motives in relation to the development of the customer's operand and operant resources, and 6) concerted motives relating to the synchronizing efforts between consumers and service providers with the goal of engaging in pleasant, relevant, and timely interactions.

We expect consumer motives to vary between professional and generic services, due to the differences in knowledge intensity and workforce professionalism across these service contexts. Such differences influence the resource integration patterns of consumers due to the different levels and pace of knowledge and skills being exchanged, as well as different social norms due to the differences in professionalism levels and the social distance embedded in their activities. More specifically, and theoretically clearly substantiated in our full paper, we hypothesize:

H1: In professional services, a) developmental and b) empowering motives will be dominant in positively influencing W2C.

H2: In generic services, a) individualizing and b) relating motives will be dominant in positively influencing W2C.

H3: W2C is a strong positive determinant of intended cocreation behaviors.

## Methodology

In order to test our hypotheses, we addressed respondents via a Web-based panel study. For professional services, we focused on flower shops, whereas for generic services, we focused on clothing retail services. We collected 284 responses divided as follows: NFlowers=136 , NClothing=148. Respondents were told that their “local florist / clothing shop is looking for collaborators as they are looking to improve their services.” We used existing valid and reliable scales to measure the respondents’ W2C, motives to cocreate, intended cocreation behaviors as well as demographics and previous cocreation behavior.

## Findings and discussion

Our hypotheses were tested with SmartPLS 2.0.

We provide empirical evidence for the service contextual nature of value cocreation (Edvardsson et al. 2011) by showing that consumer schemas regarding professional and generic services, based on differences in knowledge intensity and workforce professionalism, influence consumers’ motives to cocreate value with service providers.

In professional services, consumers are more willing to cocreate due to developmental motives, ( $\beta = .396$ ;  $p < .01$ ) and less so due to empowerment motives ( $\beta = -.354$ ;  $p < .01$ ), showing that consumers aim to improve their knowledge and skills, but are not motivated by their desire to control the cocreation interactions. The impact of other motives was insignificant.

In generic services, W2C is positively influenced by individualizing ( $\beta = .455$ ;  $p < .001$ ) and relating motives ( $\beta = .252$ ;  $p < .05$ ), showing that consumers are more willing to express their needs and develop their social network when cocreating. The impact of other motives was insignificant.

For both professional and generic services, the relationship between W2C and intended cocreation behaviors is strong and positive ( $\beta = .675$ ;  $p, .001$  and  $\beta = .734$ ;  $p, .001$  resp.) showing that this relationship is stable and independent of the service context, even when controlling for previous cocreation behavior. Finally, consumers who are more willing to invest time, energy, and effort to cocreate value with service providers clearly show higher intentions to engage in cocreation behaviors.

## Conclusions

The most important theoretical implication of this study lies in showing the effect of the service context on consumer motives to cocreate value. While the contextual nature has been hypothesized before, empirical proof about the need to drive future research into more comparative studies has been scarce.

An additional theoretical implication resulting from this research lies in the low importance of previous cocreation frequency on W2C. This low effect indicates that consumers decide at the beginning of the interaction whether to participate based on an evaluation of their motivations driven by the expected value they can derive from the activity.

Managers interested in cocreating value with their consumers should first investigate consumer perceptions of their service type and develop their strategies accordingly.

References available upon request

# Love food, hate the brand that I waste: The effects of product waste on brand evaluations

*van Herpen, Erica; de Hooge, Ilona*

In 2010, the total generation of waste in the European Union amounted to 2 506 million tons (Eurostat). This represents a huge loss of resources and of 'unused utility': throwing away of functioning appliances, unused products, and edible foods. Yet, wasting is not a carefree activity for consumers. Consumers follow complex procedures in managing the residual value of discarded food items to lessen anxieties about wastage (Evans, 2012; Graham-Rowe et al., 2014; Parizeau et al., 2015). Moreover, a distaste for waste affects consumers' choices, such as favoring options with less unused utility (Bolton and Alba, 2012) or persevering in a failing project when stopping would involve waste (Arkes, 1996). The current research provides insights into this contradiction between wasting a lot and not wanting to waste, and reveals the consequences of waste for brand evaluations.

## Waste and brand evaluations

Waste can be understood as the result of not using a product to its full capacity. Whereas both throwing away a food container that still holds leftovers and throwing away an emptied food container would lead to the generation of waste, there is an important difference in the unused utility that is wasted, in this example in the form of uneaten food. This salient unused utility is aversive for consumers (Bolton and Alba, 2012). According to cognitive dissonance theory (Festinger, 1957), the occurrence of "nonfitting" relations among cognitive elements (which could entail attitudes, beliefs, and behaviors) is unpleasant and leads to psychological discomfort (also termed dissonance). Thus, consumers would like to solve this dissonance in the current waste situation. Because attitudes can be altered more easily than previously displayed behaviors, attitude change is a common way in which people reduce dissonance (Galinsky et al., 2008; Simon et al., 1995; Starzyk et al., 2009). Therefore, we expect that wasting a product with left-over utility would generate cognitive dissonance, and that this dissonance would be solved by decreasing evaluations of the wasted brand.

Importantly, when a product with left-over utility is discarded, the left-over utility is not necessarily wasted. Different disposition behaviors are possible: throwing it away, giving it away, trading it, and selling it (Jacoby et al., 1977). If unused utility can be transferred to another person, the level of psychological discomfort should be lower than if unused utility is lost. Thus, we expect that wasting a product with left-over utility leads to more cognitive dissonance and more decreased brand evaluations than other ways of disposing a product.

Finally, the predicted effect should depend on brand salience. Dissonance reduction through brand evaluations should be less likely when the brand itself is not salient when wasting the product (i.e., when the brand is not visible, and there is thus no reminder of the brand name).

## Studies

We tested our hypotheses in four studies. The first three studies were scenario studies. Study 1 examined the effect of different ways of disposing products on dissonance feelings. Results showed that wasting a product (irrespective of whether it was thrown away or recycled) lead to more dissonance than transferring utility to another person (irrespective of whether the product was used in its original intended purpose). Study 2 tested the effects of wasting on brand evaluations. Respondents imagined that they had purchased a drink they could not consume entirely, and that they either threw the remaining product in the bin (waste condition) or gave it to a friend (no-waste condition). Brand evaluations were lower in the waste condition than in the no-waste condition. Study 3 ruled out alternative explanations (transfer of disgust, cf. Morales and Fitzsimons, 2007, and attribution of waste to the brand).

Study 4 investigated waste in a situation with real product consumption, to generalize our results beyond imagined situations. It also tested the moderating effect of brand salience. Respondents prepared and ate a salad in the lab. In the brand-salient condition, product containers with the same brand name were placed next to bowls with ingredients, whereas in the brand-not-salient condition only unlabeled bowls were provided. In both conditions, respondents were aware of the brand through the instructions. The amount of ingredients provided ensured that there were leftover ingredients. As dissonance is more likely when people believe that they freely choose their behavior (Harmon-Jones, 2000), in the waste condition respondents could ask for sandwich bags to take leftover ingredients home or put leftover ingredients in a bin (only six respondents asked for bags). In the no-waste condition, respondents could take leftover ingredients home or leave these on the table for future respondents (none took ingredients home). All participants then evaluated the brand.

Our results showed the expected waste x salience interaction effect ( $F(1, 120) = 5.32, p = .023$ ). When the brand was not salient, wasting did not affect brand evaluations ( $p = .156$ ). In contrast, when brand was salient, brand evaluations were marginally higher when ingredients were left on the table ( $M = 5.19$ ) than when these were wasted ( $M = 4.75, p = .069$ ). Mediation analyses showed that dissonance was a mediator when salience was high ( $b = 0.27, CI [0.05, 0.58]$ ) but not when salience was low ( $b = 0.13, CI [-0.15, 0.48]$ ).

#### General discussion

Our research shows that consumers can reduce dissonance from wasting a product with unused utility by decreasing their brand evaluations. This was found both in scenario studies and in a food consumption context. Results furthermore reveal that brand devaluation does not occur when the brand is not salient at the moment of wasting. This provides new insights to literature on consumer disposition behavior that help clarify the paradox in which consumers both waste products and do not want to waste. It also has important managerial implications. The realization that brand evaluations suffer when consumers waste products with unused utility could inspire companies to spend additional efforts on preventing this. It also provides brand managers with compelling arguments to tackle the waste issue.

## Quantitative sustainability information in the supermarket - a semi-field experiment

*van den Broek, Eva; van den Puttelaar, Jos; Ge, Lan*

#### Abstract

We systematically investigated the effects on consumer purchasing behaviour of increasingly precise information formats displaying the environmental impact of products. We displayed 29 vegetable and fruit products in a virtual supermarket to customers in an actual supermarket and compared their incentivized choices under three labelling regimes. We find that displaying both complex and simplified environmental information leads to a change in consumer choice towards more environmentally sustainable products.

#### Introduction

Over the past decade, governments, ngos and food producers have started to display environmental effects of products on Front of Pack (FOP) logos and in-store information. Simultaneously, apps have been developed that give consumers insight in their footprint or the sustainability of their choices (Questionmark, goodguide etc). Some producers report the estimated costs of the environmental impact (True Price) of their products (f.i. Puma, Akzonobel). Despite this variety of ways to display environmental impact, the effectiveness of different formats and

specifically of the complexity of sustainability labels on consumer behaviour remains unclear (Van Trijp, 2013; Grunert, 2011; Van Kleef and Dagevos, 2010).

Randomized controlled trials (RCTs) on food labelling are logistically hard to implement and therefore most of the knowledge in this field is based on surveys, laboratory experiments or stated willingness to pay (Thøgersen et al., 2010). Consumers' stated preference is that they prefer simple labels to complex ones (Lobstein and Davies, 2009). However, more information is perceived as more trustworthy, even if consumers do not understand complex information (McDonald and Oates, 2006). Consumers value the opportunity to prioritize among environmental aspects positively (Leire and Thidell, 2005). More detailed environmental information increases consumer satisfaction (Borin and Cerf, 2011; Teisl, 2003), but shorter descriptions evoke a more positive valuation of a product (Feunekes et al., 2008). In short, it is unclear how different information formats would affect consumer behaviour in a real setting. To our knowledge, we are the first to run an RCT with increasingly complex informational formats to observe actual incentivized in-store buying behaviour.

We investigate whether increasing the precision of information influences the choices consumers make by varying the information format without changing the content of the information. We include a questionnaire to measure consumers' attitude towards sustainability and to account for consumers' locus of control and other characteristics.

## Method

The virtual supermarket is a tool that has been developed to study changes in the choice architecture of supermarkets and their effects on consumer behaviour (Van Herpen et al., 2016). It consists of three large screens on which a three-dimensional supermarket is displayed, surrounding a participant from three angles. Participants can move through the supermarket, study products in detail, and buy products. To ensure the participation of consumers who were planning to buy vegetables and to be able to incentivize their choices with the actual selected products, we ran the study in an actual supermarket. A total of 90 participants were recruited. They participated in one of the three treatments over the course of two weeks. After selecting four products, they filled in a questionnaire and were paid in discounts for the specific products they selected.

The setup of the virtual supermarket and the selection of vegetables and fruit were copied from the actual supermarket as closely as possible. The treatments were developed to realistically convey actual information. In the baseline treatment, no information on sustainability of the products was displayed; the country of origin was displayed in small letters, since that is obligatory in supermarkets. In the 'level' treatment, five categories of different colours were assigned to the levels of environmental impact (A-E, similar to the traffic light energy labels on laundry machines). The values were based on ReCiPe scores computed by MilieuCentraal, a Dutch NGO. For the numerical treatment, this information was normalised to scores between 0-149 and added to the coloured class labels. For instance, a Dutch apple would have a score of 6 impact points (class A), whereas a mango from Ghana would have a score of 146 (class E). We displayed the environmental impact information in the virtual supermarket next to the price tag.

## Results

In the baseline treatment, participants bought products with an average score of 13.1 impact points, vs 10.7 points in the impact level (A-E) treatment and 10.5 points in the numerical treatment. Since the label colours were displayed in both the numerical and the level treatment, we ran an ordered logit to assess the influence of the treatments and personal characteristics on the choice for products labelled A-E. Both the level and the numerical treatment significantly increased the likelihood to choose a product with a lower impact label (Level: m.e. = 0.12,  $p = 0.02$ ; Numerical: m.e. = 0.13;  $p = 0.02$ ). The effects do not differ significantly from each other, indicating that the precision of the format did not influence consumer choice. Neither the attitude towards organic products nor the locus of control of participants had a significant effect on choices.

The effect of the numerical treatment was larger for men than for women (7.58 vs 15.25 points,  $p < 0.10$ ).

#### Discussion

Displaying impact classes or quantified sustainability information is the first step towards more transparency on environmental externalities of products. We show that consumers respond to the content of such information by shifting their actual purchases towards more sustainable products. Although field experiments are necessary to establish long term effects, we show that displaying more precise information on food products has a similar behavioural effect on consumers' choices as simpler categorical information. A further way to increase precision of values would be to translate the numbers into exact monetary values. Such precise quantitative information on the externalities of food products could steer consumers, and in response food producers, towards further reducing their environmental impact.

## **The Social Dilemma of Collaborative Consumption: A Give-Some-Take-Some Laboratory Experiment**

*Hofmann, Eva ; Hartl, Barbara ; Penz, Elfriede*

Because of environmental problems and the economic crisis in recent years, collaborative consumption is becoming increasingly important in society. Collaborative consumption means that consumers instead of owning a good only get access to it (Belk, 2014;

## *Finance / Education*

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7/8/2016 4:00:00 PM: Dorskamp Room 1+2

*Dr. VERA RITA FERREIRA*

## **Setting the Scene: Using Film to Teach Behavioural Economics**

*Briguglio, Marie ; Mateer, Dirk ; Acchiardo, Charity-Joy*

This paper outlines the case for including behavioral economics part of a standard undergraduate economics course and proposes a pedagogical tool (film clips), for doing so. The manner in which the economics is taught at undergraduate levels continues to focus almost entirely on rational decision makers and to rely extensively on a pedagogical model that assumes the same kind of assimilation and processing of information. Despite some evidence that suggests that students of economics may be more rational than others (whether due to training or selection effects), there is no indication that they are devoid of the same biases that ordinary humans are. Like others they are likely to recall economic content better when that content is presented as a narrative (or story) than when it is couched in abstract models. Film is one of the most evolved forms of story-telling and its use (and other media) has been found to enable an entire cohort of learners to master a concept more quickly. The paper presents a database of over 50 short scenes which may be used as jumping off points for instructors who wish to develop a more nuanced understanding of economic behaviour among undergraduate students of economics. These clips resonate with students and help them appreciate how and why people make the choices they do. This media-

driven approach applies the very lessons emerging from behavioural economics to the very manner in which behavioural economics itself is taught.

## **The Effectiveness of Financial Education**

*van Raaij, Willem Frederik*

In this paper, I try to answer the question whether (responsible, sustainable) financial behavior can be taught, and whether financial education is effective. The following aspects are relevant and will be discussed:

1. Responsible financial behavior is normative. What do we think that is good for a person and for society, often in the long term.
2. There is a weak connection between financial education and financial literacy, and this is especially true for financial knowledge, but less so for financial skills.
3. There is a stronger connection between financial literacy and financial behavior.
4. Financial literacy should include financial knowledge and (digital and budgeting) skills.
5. Relevant person variables for financial behavior are: conscientiousness, numerosity, need for cognition, time preference, risk preference, (over)confidence. These person/personality variables have a stronger effect on financial behavior than financial literacy.
6. Relevant task variables for financial behavior are: complexity, information (over)load, structuring, partitioning.
7. Timing of information at point of purchase or point of decision: decision aids and apps with relevant information.

The discussion points/aspects are supported by results of empirical research from many countries, especially Latin-American countries. As a conclusion, I think that financial behavior can be learnt and taught, but we have to be very precise on what to teach (knowledge and/or skills), how to teach it (in a theoretical or practical manner), the timing of information (apps at the point of purchase or decision, and the person characteristics of the persons we teach.

## **Using financial capability measurement to evaluate the impact of financial intervention**

*Carmel, Eyal; Leiser, David; Spivak, Avia*

While evidences show that financial literacy is related to adequate financial behavior, attempts to increase financial literacy have a negligible effect that decays over time. The current study uses a new approach to investigate the impact of financial education and rely on financial capability that captured through the measurement of its behavioral manifestations.

The impact of financial education was tested using data regarding changes in income and expenses of participants at an intervention program designed to improve financial skills. Data analysis was accompanied with financial capability surveys among more than 800 participants. In addition, former graduates who had completed the program several years beforehand were sampled and asked to answer a financial capability survey and to complete a report about their current financial state.

Our purpose is to evaluate the impact of the intervention on different dimensions of financial capability and to identify factors that contribute to successful financial recovery. We also aim to assess the predictability and reliability of financial capability measurements in order to test the feasibility of this new approach to evaluation of financial education.

Work is currently in process. However, initial results reveal that by the end of the program, participants have improved in all four categories of financial capability as compared to the pre-program condition. In addition, financial capability among the graduates explains a large portion of the variance in their reported financial state. Further analysis will be presented at the conference.

## **Financial literacy and consumer borrowing behaviour in Norway.**

*Nyhus, Ellen K.*

The purpose of the reported study is to examine the relationships between self-control, future orientation, financial literacy and borrowing behaviour among consumers in Norway. Norwegian households' disposable income ranks third highest in the OECD, and Norway has high scores relating to subjective well-being, work-life balance and the environment (OECD, 2016). Still, in spite of so many good outcomes with respect to jobs, earnings and housing, Norwegian households have a high debt burden. Due to an overheated housing market followed by a corresponding increase in mortgage lending, household indebtedness is now over 200% of disposable income – and higher among young people (OECD, 2016). Debt collecting agencies report a steady increase in forced debt collection each year, indicating that many households have more financial burdens than they can handle.

The Norwegian school curriculum includes little personal finance and economics. Hence, there is a possibility that the high level of debt collection and high number of over-indebted households may be a result of lack of financial knowledge. Previous research in the UK and US has found a negative relationship between financial literacy and over-indebtedness (Disney & Gathergood, 2013; Gathergood, 2012; Lusardi & Tufano, 2009). Gathergood found that lack of self-control and financial illiteracy are positively related with non-payment of consumer credit and perceived over-indebtedness. He found self-control to be a stronger predictor of over-indebtedness than was financial illiteracy. Those having low self-control were found to use quick access and expensive credit more often than others.

In this study, we test if these findings can be replicated in Norway. In addition, we test the role of future orientation. The expectation is that both self-control and future orientation will be related over-indebtedness and payment problems, and that these factors will have independent effects that are at least as high as the effect of financial literacy. Three datasets collected from representative samples of the Norwegian population are exploited to test the proposed relationships. All data sets are collected as part of OECD's international surveys of financial literacy (see Atkinson & Messy, 2012). Two data sets are from 2011, one websurvey (n=2122) and one telephone survey (n=992), and one data set is from 2015 - a web-survey with n=1031. The collecting agency was TNS Gallup.

The measures of financial literacy varied in the three studies, but are all based on knowledge questions (see Atkinson & Messy, 2012). The telephone survey included 4 knowledge questions while both web-surveys included 8 questions. The topics of the questions were interest, compound interest, inflation, and risk/diversification. Indexes of financial literacy were based on the number of correct answers. In general, scores on the indexes are high compared to many other countries, indicating that the Norwegian population is one of the most financially literate in Europe. Still, we find the same patterns in financial literacy as in other countries: Women are less financially literate than men. This is true for every individual question in each of the three surveys. Young consumers (younger than 30 years) have less knowledge than older consumers. Financial literacy is also

positively related to educational level. Hence, women, the young, and those with little education, are the most vulnerable in the financial market.

The rest of the data analysis, where the relationships between self-reported self-control, future orientation and behavioral measures will be tested, is still in progress (report will finished in April 2016). Some preliminary analyses have been done: Comparisons of mean scores of the literacy index show that people with payment problems and people with no or a small financial buffer have lower scores on the financial literacy indexes than others. This in line with findings from previous studies. There is also positive relationships between financial knowledge and paying once' s bills in time, not worrying about having enough money for necessities, or not thinking that lack of money prevents one from doing things that are considered important. Hence, financial literacy seems to be welfare enhancing.

This research will contribute to our knowledge of how consumer's understanding of financial concepts and ability to interpret financial data is reflected in their borrowing behaviour. Preliminary analysis indicates that consumers with low levels of financial literacy, have higher debt and more payment problems than others. Policy implications of these findings will be highlighted.

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Gathergood, J. (2012) Self-control, financial literacy and consumer over-indebtedness, *Journal of Economic Psychology*, 33, 590-602.

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## **Economic Psychology and Financial Education – Discussion and Routes of Administration**

***FERREIRA, VERA RITA***

The article discusses the concepts of financial education, financial literacy, financial capability and the reasons why behavioural insights have been increasingly used to complement initiatives in that area, and analyses suggestions on how this could be

# Finance / Advice and Contracts

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7/8/2016 4:00:00 PM: Tarthorst Rooms 1+2

*Prof. Stefan Schulz-Hardt*

## **Tell me what I want to hear: Lay people assign higher authority to financial experts whose advice confirms consumers' expectations**

*Zaleskiewicz, Tomasz; Gasiorowska, Agata*

Our goal was to examine how lay people perceive epistemic authority (EA) in the field of the financial expertise. We expected that financial advice confirming consumer's opinion would lead to assigning higher EA to the advisor. We conducted three experiments, in which we manipulated the type of recommendation, clients' opinion on the financial product, and the information on what is the common norm of financial behavior in society. The results showed that people assign higher authority to those experts whose recommendations confirm their own opinion or (when own opinion is not salient) the common norm of the financial behavior.

## **Contract enforcement and trustworthiness across ethnic groups: Experimental evidence from Northern Afghanistan**

*Levely, Ian V. ; Vojtech, Bartos*

We study how the availability and use of a specific formal institution – a financial sanction – affects trust, trustworthiness, and moral intentions towards co-ethnics and non-co-ethnics using an economic experiment run with 420 adult males from peri-urban areas in Afghanistan. In contrast to previous studies on the behavioral effects of financial incentives, our subjects have little experience with formal institutions. We use a trust game with a requested back-transfer in which the investor can choose to impose a financial sanction for non-compliance. The sanction is costly to the trustee but cost-less to the investor. While sanctioning increases back-transfers in cross-ethnic pairs, it does not in co-ethnic pairs. Our results suggest that financial sanctions may crowd out moral incentives more strongly among one's own group, but have a much smaller behavioral effect when applied to individuals from a different ethnic group. The results have important implications for understanding how formal institutions affect cooperation in ethnically heterogeneous settings.

## **A proper test of interventions against escalating commitment: The case of reassignment of responsibility**

*Schultze, Thomas; Schulz-Hardt, Stefan*

Research on escalation of commitment (EOC) deals with the phenomenon that, under certain conditions, decision makers persist with or even intensify losing courses of action. Studies with a more pronounced economic background speak of a sunk-cost effect in reinvestment decisions, meaning that the more resources have already been invested into a particular course of action, the more likely it becomes that the decision maker will make reinvestments, even if this alternative turns out to be unprofitable. Incurring losses from bad loans in the banking sector, loss escalations in building and infrastructure projects by the public administration, or the failure to terminate failing R&D-projects are often cited as prominent examples of such dysfunctional commitment escalation.

Experimental studies on EOC usually provide participants with an economic case study where they can invest monetary resources into one of two or more decision alternatives. Subsequently, they receive negative (bogus) feedback about the outcome of their decision. The crucial measure for escalating commitment is the amount of resources that the participants commit to the initially chosen alternative in a second (re-)investment decision.

Because dysfunctional persistence with losing courses of action can be very costly, one of the main goals of experimental EOC research is to test the effectiveness of possible interventions against an escalation of commitment. Although, in the meantime, several such interventions have been claimed to be effective, all of these tests do, in our view, suffer from one major weakness: They fail to differentiate between, on the one hand, interventions that specifically help against EOC and, on the other hand, interventions that generally lower the likelihood that the decision maker will commit resources to ANY course of action. The reason for this shortcoming is that all of these experiments only ran conditions where the initial negative feedback was considered to be an indicator of ultimate project failure. However, instead of such STRUCTURAL failure, projects may experience initial setbacks, but may be successful in the end (TEMPORARY failure). And if an intervention turns out to be a general (unspecific) brake on investments, it will have undesirable side-effects in that the decision maker will erroneously withdraw from projects that would ultimately be successful.

Therefore, we suggest a new experimental strategy to test for the specific effectiveness of an intervention against EOC: Whereas all participants receive initial negative feedback on a previous investment decision, half of these participants subsequently receive information that indicates that, in spite of the initial setback, reinvestments will turn out to be profitable, whereas the other half of the participants receive information indicating the structural failure of the initially chosen course of action. Independent of this factor, the presence or absence of an intervention has to be manipulated. For an intervention to be specifically effective against EOC, it has to reduce reinvestments in the structural failure situation, whereas it should, at least, leave reinvestments in the temporary failure situation unchanged.

In two experiments, we applied this new approach to that particular intervention that has been most often tested (and considered effective) in previous EOC research, namely the reassignment of responsibility. Across numerous studies, it has been shown that reinvestments are lower if the person who decides on these reinvestments was not responsible for the initial decision (with the predominant theoretical explanation being that these persons should not suffer from self-justification pressures). However, as outlined above, none of these studies have considered cases where high reinvestment would have been the appropriate choice.

#### Experiment 1:

152 undergraduate and graduate students were randomly assigned to one of the four conditions in a 2x2 (reassignment of responsibility: yes vs. no; project development: structural failure vs. temporary failure) design. The experimental materials were an extended version of the seminal „Adams & Smith“ case by Staw (1976, OBHDP). After initial negative feedback on an investment decision, participants had the opportunity to make reinvestment decisions over the course of 10 rounds. In the structural failure condition, further reinvestments in the initially chosen company department turned out to be unprofitable (more money could be gained by reassigning this money to an alternative investment). In contrast, in the temporal failure condition reinvestment turned out to be the more profitable option. Participants were paid contingent on the profitability of their decisions. Whereas we replicated the previously found effect of responsibility reassignment in the first round (i.e. higher reinvestments among participants who had made the first investment decision themselves), this effect completely vanished from the second round on. Instead, participants learned whether reinvestments turn out to be profitable or not, and adjusted their reinvestment behavior accordingly.

Experiment 2:

The design was similar to Experiment 1. 161 undergraduate and graduate students took part in the experiment. Experiment 2 used a different adaptation of the „Adams and Smith“ case. This time, only one reinvestment decision was made after the initial negative feedback had been given. However, prior to making this reinvestment decision, participants were provided with forecast information, and correctly analyzing this forecast information allowed them to infer whether reinvestment promised to be profitable (temporal failure) or not (structural failure). The results showed that reassignment of responsibility after the initial decision generally lowered reinvestments, but it did so independent of the future prospects of the initially chosen alternative.

Taken together, our results speak against using reassignment of responsibility as an intervention against EoC: Although it dampened reinvestments, it did so only in the short run (Exp. 1), and irrespective of whether the project might still be a good investment (Exp. 2). This means that reassignment of responsibility often will not help (at least if several subsequent reinvestment decisions have to be made), and it will even hurt by facilitating premature withdrawal from projects that would ultimately be successful.

## **How professional background impacts executive decision-making: An fMRI-study on the exploration-exploitation dilemma in entrepreneurs and administrators**

*Bergner, Sabine; Rybnicek, Robert; Paleczek, Dominik; Koschutnig, Karl; Gutschelhofer, Alfred*

Organizations in a dynamic environment are challenged to both explore new possibilities in order to cope with future changes in the business environment and exploit old certainties to meet today's business demands. If organizations overemphasize exploration they risk spending scarce resources with very little payback. Conversely, if organizations overstress exploitation they reduce learning of new skills and might become captive of outdated practices, knowledge and resources, possibly depressing their long-term performance. Since executives play a major role in organizations their individual ability to explore and exploit is key to organizational success. In this fMRI-study we investigated in how far professional background (i.e., previous expertise in executive decision making) influences a person's ability to explore and exploit.

Exploration and exploitation are based on different processes and individual resources. Explorative choices refer to risk taking, experimentation, cognitive flexibility, discovery, or innovation. On a cognitive level they are linked to top-down processes and on a neural level they primarily engage the dopaminergic frontolimbic-striatal system projecting to the ventromedial prefrontal cortex. In contrast, exploitative choices refer to information reduction, refinement, or choice selection, cognitive approaches that are linked to bottom-up processes. On a neural level, these processes mainly engage the intraparietal sulcus and the lateral prefrontal regions, particularly the frontopolar cortex. Amongst others cognitive processes are shaped by individual expertise which makes experts' decisions more efficient on a behavioral, cognitive, and neural level. According to the neural efficiency hypothesis experts of a certain field require less cortical activation when completing a task matching their expertise than non-experts. Combining the exploration-exploitation dilemma with the neural efficiency hypothesis it was argued that executives with expertise in exploring strategies are more efficient when making decisions where explorative choices are needed. In addition, this efficiency should be reflected on a neural level. In contrast, executives with expertise in exploiting strategies should be more efficient when making decisions where exploitative choices are needed and this efficiency should also be mirrored on a neural level.

With respect to executives differing in their expertise regarding exploration and exploitation choices entrepreneurs and leading administrators were investigated in the current study. Since

entrepreneurs engage in tasks requiring fast and efficient decision-making, experimenting with new approaches towards technologies and business processes, and searching for innovation their expertise in decision making is rather based on explorative strategies. Therefore, entrepreneurs were regarded as experts for explorative choices. In contrast, leading administrators were regarded as experts for exploitative strategies since their professional background is based on optimizing and stabilizing organizational routines, structures and systems, applying and improving existing competences, and deepening existing knowledge.

In order to study if the professional background influences the ability to explore and exploit 50 junior executives with different expertise in decision making were tested ( $M_{age}=27.02$ ,  $SD_{age}=3.74$ ). These executives were divided into 25 leading administrators and 25 entrepreneurs who clearly differed regarding their exploration and exploitation expertise when completing a behavioral questionnaire on decision making strategies. All participants completed the Balloon Analogue Risk Task (BART) while being scanned in a magnetic resonance tomography. This task provokes both explorative and exploitative decision strategies. In each of the 80 trials participants had to pump up a simulated balloon without knowing when it will explode. Each pump increased the potential monetary reward to be gained but also the probability of explosion, which wipes out all potential gains for a single trial. If participants pumped beyond a balloon's limit, an explosion occurred, resulting in the loss of all points for this particular trial. If participants stopped pumping before the balloon's limit, they could collect their monetary gain. In this study the explosion probabilities of the balloons were unknown to the participants at the beginning of study and they had to learn them through trial and error. Therefore, explorative strategies had to be used at the beginning of the task while exploitative decision strategies had to be applied once the participants guessed the explosion probabilities of the balloon.

With respect to the behavioral findings a 2x2 ANOVA with group (administrators vs. entrepreneurs) and decision strategy (exploration vs. exploitation) showed that entrepreneurs obtained more profit (i.e., monetary gain) than administrators when using the exploration strategy in decision making. No behavioral group differences were found when exploitation strategies were used. Regarding the neuroimaging results the whole brain analyses displayed a significant main effect of decision strategy and a significant interaction between the group and the decision strategy. Using an exploration strategy led to stronger activations in mesocortico-limbic regions including the ventromedialprefrontal cortex and the bilateral hippocampus. In contrast, using an exploitation strategy led to stronger activations of bilateral parietal and frontal regions. Most importantly, the 2x2 ANOVA with group and decision strategy revealed that entrepreneurs were cortically less activated than administrators when using exploration strategies. These findings suggest that expertise in decision making impacts an executive's ability to use exploration and exploitation strategies. Even more important, previous expertise in exploration leads to more efficient decisions when exploring choices are required. This, however, does not hold true for exploitative choices. The neural processes linked to this effect suggest that executives with expertise in exploration are neutrally more efficient when making decisions where exploration is needed.

# Allocation

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7/8/2016 4:00:00 PM: Pomona Room 1+2

*Prof. Shoshana Grossbard*

## **The socioeconomic gradient in health: the role of intra-household resource allocation**

*MORO-EGIDO, ANA I. ; BARCENA, ELENA ; BLAZQUEZ, MAITE*

This paper aims to analyse the impact of different household financial regimes on the health status of males and females in a number of European countries. Using the EU-SILC 2010 on intra-household sharing of resources, we find that each part of the couple is worse off if his/her partner has most decision-making responsibilities. Besides, the presence of children in the household plays a role in the effect that household financial regimens exert on individual self-assessed health, especially among females. We can conclude that family arrangements in terms of resource allocation and decision-making have important consequences and should be given some attention in the task of identifying individuals predisposed to health problems.

## **Consumption Allocation within the Household: Evidence from Japanese Panel Data**

*Sekijima, Kozue*

This paper aims at clarifying impacts of a wife's bargaining power on consumption allocation within a family. The growing studies have cast doubt on a unitary model and empirically analyzed household resource allocation based on a collective model (Chiappori (1988, 1992), Apps and Rees (1988) et al.), in which the household resource is allocated to the individual household members in accordance with their bargaining powers within the household.

Preceding articles investigated intra-household allocation about consumption and time. (The models and empirical results were summarized in detail in Browning, M., Chiappori, P. A., & Weiss, Y. (2014).) However, there remained to be some difficulties in verifying effects of the bargaining power on the consumption allocation within a family. The effects of the bargaining power on the resource allocation contained the possibility to be contaminated by unobserved factors such as individual preferences on private or public goods, willingness to work, individual characteristics and so on. There was also a difficulty in attribution of individual expenses within a family due to lack of data.

In this paper, we estimate the effects of the wife's relative income to the husband's on the expenditure share for individual household members. Our empirical analysis is based on the exhaustive information on the individual consumption within the households compiled in the Japanese Panel Survey of Consumers (JPSC) from 1994 to 2010. Our study makes the following contributions. First, we employ an instrumental variable strategy to address the endogeneity of the bargaining power. The source of our excluded instrument is the revised parental leave law enforced in the end of 2004. The legal reform expanded the eligibility for parental leave for mothers who have children younger than 1 year old and work as fixed-term employees. It is confirmed that the change in the parental leave law raises the bargaining power of a wife who works as a fixed-term employee while the legal reform would not impact on her consumption. That is because she has more possibilities to leave her salary unchanged even after the childbirth and thus her outside

options are improved. In addition to control for unobserved individual heterogeneity by fixed effects model or random effects model, the endogeneity problem is solved using the instrument in our estimation. Next, the data enables us to utilize the individual shares of the expenditure directly. The JPSC asks the respondents to break down the total household expenditure into the expenses for family as a whole, wife, husband, children and the others. This is different from the most preceding literature which predicted the private consumption by the expenditure on the clothes or substituted the mother's consumption with the children's consumption.

We find that an increase in a wife's bargaining power raises the wife's private expenditure relative to the husband's private expenditure. The 1% increase in the wife's bargaining power measured by the wife's monthly disposable income relative to the husband's income raises the wife's relative (to husband's) private expenditure by 2.1% significantly. This result supports what the collective model states: the bargaining power affects the allocation of the expenditure within a family.

Furthermore, we examine whether there exists a difference in the effects of the wife's bargaining power between households with children and households without children. Our results indicate that the increase in the wife's bargaining power raises the expenditure on a child relative to the husband's private expenditure when we estimate the samples restricted to the households with children. A mother would increase not only her private expenditure but also the expenditure on her child as her bargaining power rises. This finding corresponds to the previous researches which suggested that the mothers care more about the children than the fathers. We provides another contribution from this point of view. Our results would support that the earlier empirical results which confirmed the effects of the bargaining power on the intra-household resource allocation substituting the consumption allocation on a mother with that on the children, since the mother's bargaining power has similar effects between the mother and the children. It is reasonable that empirical studies utilize the share of a child's consumption as a proxy variable of the mother's consumption when examining the effects of the bargaining power with limited data.

## **More chores at home: a price immigrants pay when marrying a native?**

*Vernon, Victoria ; Grossbard, Shoshana*

Immigrants tend to benefit from intermarriage with natives in terms of faster wage growth and better job market opportunities in the U.S.A. (Kantarevic 2004, Furtado and Theodoropoulos 2009) and Australia (Meng and Gregory 2005). Comparisons between all-immigrant marriages and intermarriages between natives and immigrants suggest that their native spouses assist immigrants with access to social capital, finding employment, obtaining legal status, and acquisition of language skills (Furtado and Theodoropoulos 2010). In this paper we investigate whether marrying a native carries a premium or a penalty for immigrants in terms of the amount of household chores they perform in marriage.

The allocation of home production time of husbands and wives carries implications for important outcomes, including children's success, effort expended in market work, and individual well-being. To the extent that intermarriage affects household division of labor it may also influence these outcomes and the degree to which immigrants succeed in their adopted country. Intermarriage may thus influence assimilation of foreigners and social stability not only because it affects success in the labor market, but also via its influence on household production. Until now, to the best of our knowledge, this connection between intermarriage and household production has not been examined.

We also investigate how intermarriage to an immigrant affects the amount of chores that natives perform by comparing time spent doing chores in intermarriages and marriages between two natives. Furthermore we research whether household chores performed by an individual vary with own and spouse's citizenship status. Given that around 13% of the US population is foreign born (Pew Research 2011) these questions are of policy relevance.

The American Time Use Survey for the years 2003-14 allows us to compare the time use of immigrants married to natives, endogamously married immigrants, and endogamously married natives. Immigrants and natives who choose to intermarry may possess unobservable characteristics that distinguish them from their endogamous counterparts. To take account of selection into intermarriage we estimate IV (Instrumental Variable) models that include two stages: selection into intermarriage and amount of time spent on chores. In choosing our instruments we learned from prior studies that have linked the probability of intermarriage to being younger at migration, longer time between migration and marriage, better education and availability of mates belonging to the same ethnicity (see e.g. Angrist 2002, Meng and Gregory 2005, Chiswick and Miller 2014).

The conceptual framework we use to analyze intermarriage is based on the marriage market analysis pioneered by Gary Becker (1973) and its first application to intermarriage, Grossbard-Shechtman (1983). The latter included the prediction that, given discrimination against Jews in the US in the first part of the 20th century, Jewish men marrying Christian women would have to compensate for their lower status in the form of more years of schooling or fewer previous marriages relative to their wives' characteristics. Similarly, sociologists have hypothesized that preference for lighter and more educated spouses may lead to marriages where blacks trade their high educational status in exchange for the racial advantages of a white partner and to marriages where white partners trade their racial advantage in exchange for higher levels of spouse's education (Merton 1941, Fu 2001, Gullickson and Torche 2014).

Underlying these analyses is the assumption that an individual's value in marriage is linked to own traits and those of the spouse. Grossbard-Shechtman (1984) and Lafortune et al. (2012) have linked this value in marriage to willingness to work in the labor force. Grossbard-Shechtman and Neuman (1988) connected intermarriage to women's labor force participation, predicting that if a woman of a higher status group intermarries with a man from a lower status group she will have a lower participation rate in the labor force than if she marries endogamously. Accordingly, they found that in Israel Ashkenazi Jewish women who intermarried with Sephardic men (a lower status group at the time the data were collected) had lower labor force participation rates than their counterparts in all-ashkenazi marriages. Similarly, Grossbard-Shechtman and Fu (2002) found that in Hawaii Caucasian women who intermarried with Hawaiian men had lower labor force participation rates relative to their endogamous counterparts. However, neither study controlled for the endogeneity of intermarriage.

A recent study has found an association between black/white intermarriage in the U.S.A. and time allocated to household production: Grossbard, Gimenez and Molina (2014; hence GGM) showed that when intermarried with whites black women in the U.S. perform more hours of chores than comparable black women married to other blacks. In contrast, when intermarried with black men, white women perform fewer hours of chores than their counterparts in white endogamous marriages. GGM applied a two-stage estimation of household chores and intermarriage to ATUS data,

In this paper we also use ATUS data and a two-stage estimation method to investigate the relationship between intermarriage of immigrants and natives and the time that individual spouses spend on chores relative to their non-intermarried counterparts. Our main findings are that when comparing immigrants who intermarry with a native to immigrants in all-immigrant marriages, the intermarried immigrants perform more hours of chores in their household. In contrast, U.S. natives married to an immigrant spend less time on chores than their counterparts who marry another native. We also find that both immigrants and natives benefit from being married to a spouse who is not a US citizen in the sense that they perform fewer hours of chores.

Household division of labor has implications for important outcomes, including children's success, effort expended in market work, and individual well-being. To the extent that intermarriage affects household division of labor it also affects these outcomes and the degree to which immigrants succeed in their adopted country. Intermarriage may thus influence assimilation of foreigners and

social stability not only because it affects success in the labor market, but also via its influence on household production. Until now this connection between native-immigrant intermarriage and household production had not been examined.

Based on a comparison of immigrants who are in marriages with natives to immigrants in endogamous marriages our research shows that immigrant wives who intermarried do significantly more chores than their counterparts in marriages with other immigrants. In contrast, U.S. native men and women who marry an immigrant spend less time on chores than their counterparts married to another native. Once we examine subsamples classified by employment status of both husband and wife, it appears that intermarried immigrant husbands and wives in dual earner couples perform roughly the same amount of chores as they do in all-immigrant marriages. We also find that immigrant husbands who are sole breadwinners in their households spend the same amount of time in chores regardless of wife's immigrant status.

Relative to all-native families, more chores are performed in "immigrant wife-native husband" households and fewer chores in "immigrant husband-native wife" households. Does this translate to higher well-being of families with foreign born wives and American husbands? Are intermarried immigrant wives a vulnerable group to the extent that they spend more time in chores and possibly less time in leisure? Is their wellbeing lower than that of their counterparts in all-immigrant marriages?

Our results were obtained in an instrumental variable framework correcting for endogeneity of intermarriage. They are robust to various definitions of the samples. When we expand the range of household production activities beyond the limited tasks defined as 'chores' our results are weaker, as we predicted.

We explain our main findings in terms of a marriage market analysis that leads to the establishment of differentials in the (unobservable) "price" that immigrants and natives can get in U.S. marriage markets. Given the widespread availability of data on wages, in labor markets penalties and premia for natives and immigrants are measured in monetary terms. In contrast, prices in marriage markets are not established in monetary terms. Nevertheless we can infer the existence of price differentials by comparing outcomes of participants in different marriage markets such as markets for marriage between two natives or between a native and an immigrant. Those suffering a penalty, such as immigrants marrying a native, may have to do more unpleasant chores in their households. Those obtaining a premium may spend less time at chores. Our results are consistent with prices for native marriage market participants being higher relative to that of immigrants. In turn, these price differentials may be due to natives' potential value as facilitators of assimilation, job search, and qualification for citizenship. Discrimination against immigrants may also play a role.

Furthermore, we find that both immigrants and natives benefit from being married to a spouse who is not a US citizen to the extent that it entails fewer hours of chores on their part. Again, marriage market analysis and the drawbacks of being a non-citizen that could have repercussions on value in marriage markets help explain this finding.

This study adds to the previous literature on the advantages of natives and the penalties of being an immigrant. It also contributes to the literature on intermarriage between various groups defined by race, education or religion, a literature that rarely looks at time in household production as a possible indicator of variation in marriage market conditions.

Further research will hopefully establish whether there is not something uniquely American about our findings. We also hope that future work can use a larger data base, allowing for the comparison of different types of immigrant intermarriages: intermarriages with natives as well as intermarriage with immigrants from the same or other regions. Likewise, it would be interesting to compare native intermarriages as a function of the country or region of origin of the immigrants. Unfortunately our data did not allow such analyses.

This study focused on married couples. With a large enough sample size, not currently available in ATUS, it would be interesting to see if cohabiting couples also exchange chores for assimilation services in 'inter-cohabitation' as couples do in intermarriage.

## **Obesity and division of household resources: some evidence from women's hours of work choices**

*Grossbard, Shoshana; Mukhopadhyay, Sankar*

Obesity can affect labor supply via its effects on outcomes in both labor markets and marriage markets. To the extent that it is associated with lower prospects of being in couple and obtaining intra-couple transfers we expect that obesity will increase willingness to supply labor in labor markets, especially in the case for women. We use US panel data from the NLSY97 to examine whether body weight influences hours of work in the labor market. To better separate between labor markets and marriage markets effects we estimate regressions that include and exclude wage. It appears that obese white women work significantly more in the labor force than their counterparts who are not obese, even after we control for wages. This indicates that predicted success in dating and marriage markets associated with extra weight influences the labor supply of women.

## *Moral Behaviour / Dishonesty*

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7/8/2016 4:00:00 PM: Roghorst Room

*Prof. Martin Kocher*

### **The Psychological Effects of Extreme Rituals on Moral Behavior**

*Mitkidis, Panagiotis {Panos} ; Ayal, Shahar ; Shalvi, Shaul ; Heimann, Katrin ; Levy, Gabriel (5); Kyselo, Miriam (6); Wallot, Sebastian ; Ariely, Dan ; Roepstorff, Andreas*

Religious rituals are found all over the world. Some cultures hold extreme religious rituals in which individuals take on forms of bodily harm to demonstrate their devotion. Such rituals entail excessive costs in terms of physical pain and effort, but the equivalent societal benefits remain unclear. While few perform such rituals, many observe them. From a standard economics perspective, such ceremonies pose intriguing questions: are the costs of engaging in these rituals, outweighed by the potential benefits the ritual provides? Are the benefits from engaging in a ritual restricted to those performing it, or perhaps extend to those observing them?

To study the impact of extreme rituals on moral behavior, we conducted a field experiment in Congomah, Mauritius. The field experiment took place during the Hindu festival of Thaipusam, during the Kavadi ritual, in which performers pierce their bodies, sometimes with multiple needles and skewers, carry heavy bamboo structures, and walk on swords for over four hours. The Kavadi, a purification ritual (Ward, 1984), involves men and women, young and old engaging in the ritual being observed by spectators from the local community.

In a field experiment, we examined how the Kavadi ritual in Mauritius shapes the moral behavior of observers and performers. We focused on one proxy for moral behavior – honesty. Participants were guaranteed complete privacy during the task, which meant that detecting lies on the individual level was impossible. This was the key to our design, since we are interested in how

extreme rituals affect people's intrinsic moral behavior independently of external considerations such as maintaining a moral appearance or fear of punishment. To assess the robustness of the effects, we varied the person that would benefit from the participant's potential lies. The recipient was defined as to be the person performing the task (Gneezy, 2005; Fischbacher & Heusi, 2013; Mazar, Amir, & Ariely, 2008), a friend of this person, or an unknown stranger (Gino, Ayal, & Ariely, 2013; Weisel & Shalvi, 2015; Shalvi & De Dreu, 2014). This made it possible to assess whether exposure to an extreme ritual affects all types of (dis)honest behavior, or is restricted to selected settings.

A total of 85 people were recruited by local assistants to participate in the experiment. Thirty performed the ritual (age 28.0, SD=11.6, 13 females), thirty observed it (age 37.0, SD=14.4, 15 females), and twenty-five students from the University of Mauritius comprised the control group (age 21.4, SD=1.5, 15 females). The research design was 3 (Group: Ritual performers vs. Ritual observers vs. Control) X 3 (Benefit: lie to benefit Self vs. Friend vs. Unknown other) X 2 (Time: before vs. after the ritual) X 3 (blocks) with the first as between- and all other as within-subjects factors. Observers typically had previously performed the Kavadi.

To assess moral behavior we conducted a die-roll task to measure honesty in the outcome reports (Fischbacher & Föllmi-Heusi, 2013; Shalvi, Dana, Handgraaf, & De Dreu, 2011). Participants privately rolled a six-sided die nine times and reported the outcome of each roll. The payoff for each roll was ten times the reported outcome of the die in Mauritian rupees (e.g., for outcome 1 the participant earned 10 MUR ~ 30 US cents). Since the participants alone saw the outcome of their die rolls, they could cheat and inflate the stated outcome to increase payment. Participants completed the task nine times with three different targets (randomized and counterbalanced): (i) Self – the reported outcome benefited the participant, (ii) Friend – the reported outcome benefited the participant's best friend, whose name was provided by the participant at the beginning of the study, and (iii) Stranger – the reported outcome benefited an unknown inhabitant of the island. The task was completed twice, before and after the ritual.

Since participants' die rolls were truly private, we could only assess dishonesty on the group level by comparing the group-level payoff between conditions as well as to the baseline (i.e., mean across trials = 3.5). A repeated measures ANOVA with 3 (Group: Ritual performers vs. Ritual observers vs. Control) X 3 (Benefit to: Self vs. Friend vs. Other) X 2 (Time: before vs. after the ritual) with the first as between- and all other as within-subjects factors revealed a main effect of Target,  $F(2,164) = 4.90$ ,  $p = .009$ ,  $\eta^2 = .056$ . Not surprisingly, participants reported higher numbers to boost their own ( $M = 3.89$ ,  $SD = .76$ ) rather than a friend's ( $M = 3.67$ ,  $SD = .71$ ), or an unknown other's outcomes ( $M = 3.59$ ,  $SD = .69$ ). No other effects were significant, except the key three-way interaction between Group x Benefit x Time,  $F(4,164) = 2.59$ ,  $p = .039$ ,  $\eta^2 = .059$ .

To better understand the interaction, we analyzed the Group x Time interaction within each of the Benefit settings. A repeated measures ANOVA with Time and Group predicting the reported outcome aimed at benefiting the self revealed a significant interaction between Time x Group,  $F(2,82) = 3.52$ ,  $p = .034$ ,  $\eta^2_p = .079$ .

The pattern observed among performers (and control participants) suggests that they lied to a relatively minor extent. This is consistent with findings observed in Western cultures which show that people lie to the extent that they can still maintain their moral image as honest individuals, even when lying (Shalvi, Dana, Handgraaf, & De Dreu, 2011; Gino & Ariely, 2012; Welsh, Ordóñez, Snyder, & Christian, 2015). In contrast, the results here revealed that extreme ritual observers reported lower die roll outcomes after as compared to before the ritual, and thus collected a lower payoff after observing the ritual compared to those performing the ritual. These results may support that observers may need to pay their bill (van Bunderen, & Bastian, 2014) and thus cleanse themselves by acting more morally whereas performers are licensed to act less morally. The fact that after the ritual the behavior of the control participants was more similar to the performers than the observers may hint that cleansing among observers is the main driver of this effect.

## Unethical reciprocity

*Leib, Margarita ; Shalvi, Shaul ; Moran, Simone*

People tend to reciprocate other's generous and ungenerous gestures on a daily basis (Blau, 1964; Gouldner, 1960). Here, we study whether people will reciprocate other's (un)generosity even when it requires behaving unethically. We focus on one-shot exchanges, in which unethical reciprocity cannot be attributed to anticipating future reciprocal interactions or the desire to maintain a long term relationship. Specifically, we ask: Will people benefit (harm) generous (ungenerous) others by bending ethical rules (here: lie) in a one-shot exchange? What is the underlying mechanism of unethical reciprocity? And paradoxically, will cooperative people, those who are especially concerned with social norms such as generosity and reciprocity, be more susceptible to unethically reciprocate in such settings?

Experiencing pro sociality, such as receiving a generous gesture leads to feelings of gratitude (Emmons & Crumpler, 2000), which in turn translates to positive reciprocity— benefit other's, both directly (i.e., the generous counterpart; McCullough et al., 2008) and indirectly (i.e., benefiting a third party; Nowak & Sigmund, 2005). On the other hand, experiencing anti-social acts, such as lack of generosity, increases negative emotion which motivates negative reciprocity—harming others following an ungenerous gesture (Güth, Schmittberger, & Schwarze, 1982). However, very little is known about how far people will go to reciprocate. That is, will people sacrifice their honesty to reciprocate another's pro-social acts due to feeling grateful for other's generosity? Will they sacrifice their honesty to reciprocate another's anti-social acts due to the negative feelings evoked by other's lack of generosity?

In two large scale, financially incentivized experiments (Study 1: N=546; Study 2: N=160), recipients in a dictator game received ungenerous (<30% of an initial endowment) or generous (≥30% of an initial endowment) amounts of money from a dictator. After learning the amount they received, recipients engaged in a task that allowed them to inflate/deflate other's outcome by lying (see details below). Additionally, participant's social value orientation (Messick & McClintock, 1968; Van Lange, 1999) and gratitude and negative feelings were measured.

In experiment 1, recipients in the dictator game predicted the outcome of a coin toss (heads or tails), kept it in mind, tossed the coin, and reported whether their prediction was correct (Shalvi, 2012). For every correct prediction, they earned 1 ILS for their counterpart (i.e., the dictator, in the direct reciprocity setting) or for a participant in a later study (i.e., indirect reciprocity setting). For every incorrect prediction, 1 ILS went back to the study budget. Lying was detected by comparing reported success rate with expected rate of honest reports (50%). To assure that any observed effects are driven by experienced generosity, rather than merely receiving a small/large amount, a control condition in which the amount was determined by a computer was added.

Results showed that after receiving a generous amount from a dictator (but not from a computer) participants lied to benefit their generous counterpart as well as an unrelated third party (reported success rates were significantly higher than 50%). That is, participants engaged in unethical positive reciprocity. Participants' behavior was driven by gratitude, and the effect was driven by pro-social people. No lying was apparent after receiving an ungenerous amount from a dictator (or a computer).

In experiment 2, receivers were asked to report the outcome of a die roll appearing closest to a preceding fixation cross appearing on a computer screen (Pittarello, Leib, Gordon-Hecker & Shalvi, 2015). Out of multiple trials, one was randomly chosen, and the reported outcome on that trial determined their counterpart's (i.e., dictator's) pay (with higher reports = higher payoff). Lying was detected by testing whether receivers reported the correct target outcome – i.e., the value closest to the fixation cross or the second closest outcome (which was either higher or lower than the target).

Results showed that after receiving a generous amount, both pro socials and selfish people lied in order to benefit their counterparts. However, after receiving an ungenerous amount, pro socials (but not selfish people) lied in order to harm their counterpart. Additionally, corroborating results from experiment 1, unethical positive reciprocity was driven by gratitude, and unethical negative reciprocity was driven by negative feelings.

Overall, these findings suggest that people engage in unethical reciprocity and lie in order to benefit or harm an (un)generous counterpart, or even a third party, and that this behavior is driven by affect. It seems that pro socials are more sensitive (than selfish people) to violations of social norms (e.g., generosity), which drives them to lie in order to reciprocate other's behavior – both to benefit generous and punish ungenerous counterparts. . The findings reveal a darker side of reciprocity and suggest that in situations in which there is no ethical avenue for reciprocating, reciprocity should be monitored rather than unconditionally encouraged. To avoid corruption from emerging and spreading, policy makers may focus on crafting environments, which allow people to reciprocate others' behavior by ethical means. Such environments seem crucial for increasing and maintaining ethical behavior in everyday life, organizations, and societies.

## **Consecutive moral decision-making: evidence from an economic experiment**

*Epp, Lena ; Djawadi, Behnud ; Fahr, René*

In many situations, moral costs might compensate the monetary benefit of opportunistic behaviour and thus create an internal conflict. In the present paper we analyse how self-deception is a way to lower moral costs. We focus on moral balancing as a special form of self-deception in consecutive decision-making situations which assumes that individuals can behave immorally as long as the associated moral costs do not lead the individual to drop below the personal convenient level of self-worth. In our experiment, subjects can raise their self-worth by donating parts of their earnings from a real effort task to doctors without borders. After that decision, subjects are then faced with a consecutive moral decision. Contrary to psychological research about moral balancing we do not find evidence that subjects who firstly behave morally good by donating feel licensed to decide selfishly in the second decision. Particularly in the treatment with high monetary incentives the great majority acts consistently by either deciding in favour or against both altruistic options. Further, donating subjects behave morally consistent in line with personality attributes such as self-worth and ethical awareness elicited with a questionnaire after the experiment.

## **I lie? We lie! Why? Experimental evidence on dishonesty in groups**

*Kocher, Martin; Schudy, Simeon; Spantig, Lisa*

Recent history has provided several prominent examples of dishonesty in groups and organizations. Fraudulent accounting methods and malpractice of groups of executive officers have led to the marked bankruptcies of WorldCom and Enron. Recently, it has been discovered that the German car producer Volkswagen has sold more than 480,000 diesel cars with emissions certificates based on faulty information. The multibillion-dollar organization FIFA, the international football association responsible for the regulation and promotion of soccer worldwide, provides an additional example of dishonesty in groups. Several FIFA officials been accused for racketeering, wire fraud and money laundering conspiracies, and several sports marketing executives were alleged to have systematically paid and agreed to pay bribes and kickbacks to obtain lucrative media and marketing rights. These cases illustrate the economic importance of dishonest behaviors. They do not only highlight how prevalent dishonesty is in many organizations, but also that groups tend to find their own ways of accepting fraudulent and dishonest behaviors. To develop measurements that reduce such behavior, a better understanding of dishonesty in groups is necessary.

The aim of this study is to understand why dishonesty is so prevalent when people decide in groups. Is dishonesty among groups so prevalent, because groups have common payoffs and therefore “need to” cooperate? Do dishonest groups necessarily consist of more (dis)honest individuals? Or does the group interaction itself lower lying costs by changing individual beliefs in other’s dishonesty? While separating these different channels is of great value for institutional design, observational data is unlikely to provide valid answers to these questions. Opportunities to observe (dis)honest behavior of individuals in the field before they enter a group or organization (as well as the extent of dishonest behavior in that organization) are scarce. Also, endogenously formed groups make it impossible to differentiate between selection into dishonest groups and the influence of group interaction on dishonesty. To circumvent these problems we use an economic lab experiment that allows to i) exogenously vary group membership and incentives for the group members to behave dishonestly, ii) to observe individual behavior before individuals become members of a group as well as dishonest behavior when the group decides and iii) to elicit individual beliefs about dishonest behavior of others.

The experimental literature has shown that frequently individuals are willing to forego monetary benefits to avoid behaving dishonestly (see e.g. Abeler et al., 2014; Cappelen et al., 2013; Erat and Gneezy, 2012; Fischbacher and Föllmi-Heusi, 2013; Glätzle-Rützler and Lergetporer, 2015; Gneezy, 2005; Gneezy et al., 2013; Kajackaite and Gneezy, 2015; Lundquist et al., 2009; Mazar et al., 2008). Recent work has started to investigate dishonesty in groups (Baeker and Mechtel, 2015; Chytilova and Korbel, 2014; Conrads et al., 2013; Muehlheusser et al., 2015; Sutter, 2009). Groups may lie more than individuals for at least three reasons: First, groups may generally apply significantly higher levels of reasoning than individuals (Kocher et al., 2006; Kocher and Sutter, 2005). Thus, groups may lie more as they have a better understanding of the game (Sutter, 2009). Second, groups may lie more, as it may be easier to disguise lying in groups than individual lies (Conrads et al., 2013). Third, groups may lie more because others may benefit from dishonest behavior (Gino et al., 2013; Weisel and Shalvi, 2015; Wiltermuth, 2011).

Our experimental design excludes the first two arguments (groups have a better understanding and lies are easier to disguise in groups) and tests for the third argument using different experimental treatments. Most importantly, our design allows us to study the effects of mere group interaction without payoff commonalities, which have so far been neglected in the literature. We shed light on how individual behavior changes when individuals interact as a group and document how dishonest group decisions emerge.

Our results substantially improve the understanding of (dis)honest behavior in groups. First, complementing recent evidence on the role of collaboration opportunities and joint payoffs for dishonesty when interaction and communication are absent (see Weisel and Shalvi, 2015), we observe that groups lie significantly more than individuals when group members face payoff commonalities and have to coordinate on an action. Second, we show that payoff commonalities are not a prerequisite for groups to behave more dishonestly than individuals. If individuals interact within a group but do not have to coordinate to receive a payoff, their behavior is very similar to the behavior of groups facing payoff commonalities. Hence we provide evidence that the group interaction itself has a detrimental effect on honest reporting behavior. One rationale for this result is that group interaction provides possibilities for individuals to deliberate and formulate justifications for dishonest behavior. Another is that group interaction, by exchanging justifications, enables group members to coordinate and establish new norms regarding dishonesty. The content analysis of our chat protocols documents that group members indeed use the group interaction, primarily, to formulate and exchange arguments in favor of dishonest behavior. Such arguments make it easier to report dishonestly (see also Gino and Ariely, 2012; Mazar et al., 2008; Shalvi et al., 2012) and to coordinate. We observe that the group interaction increases coordination significantly, even without payoff commonalities. Further, we find that the group interaction shifts group members’ incentivized beliefs about the prevailing honesty norm in another experiment, suggesting that group members indeed established a new norm regarding dishonesty.

# Ambiguity

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7/8/2016 4:00:00 PM: De Peppel Room 1+2

*Prof. Aurelien Baillon*

## **Ambiguity Attitudes in Social Interactions**

*Turmunkh, Uyanga ; Gonzalez, Richard ; Li, Chen ; Wakker, Peter P. ;*

Ellsberg (1961) showed that people treat ambiguity—uncertainty with no objective probabilities available—in a fundamentally different way than risk where for each uncertain event an objective probability is known. Ambiguity attitudes describe these differences. A big field of application for decision making under ambiguity is game theory, where the uncertainty concerns the action of an adversary who interacts with the decision maker, and who may have common or opposite interests. Game theory has traditionally used objective probabilities (mixed strategies) to model such uncertainties. However, in applications the probabilities of others' decision are virtually never available. Thus, decisions in games are typically made under ambiguity.

The purpose of this paper is to demonstrate how ambiguity attitudes can be quantified in the context of games. We use the term social ambiguity to describe uncertainty about the unknown decisions of others in games. Social ambiguity may arise due to the decision maker's ignorance of the adversary's preferences or strategies, or both. In order to measure ambiguity attitudes, we employ a series of "side bets" which award a fixed prize contingent on the possible decisions of the adversary in the game, and on the basis of the decision-maker's choices between these "side bets" and various risky prospects, we elicit so-called matching probabilities which, as we explain in the paper, contain sufficient information to infer and quantify the decision-maker's attitude toward the social ambiguity in the game.

Using matching probabilities of "side bets", we measure ambiguity attitudes of experimental subjects in the context of a two-person trust game, where the decision-maker faces ambiguity concerning the trustworthiness of the adversary. Our experiment also measures subjects' attitudes toward two other sources of ambiguity: social ambiguity concerning another subject's food preferences and non-social Ellsberg-urn type ambiguity, which is typically used in studies of ambiguity attitudes. We find that although individuals may exhibit aversion to ambiguity when ambiguity attitudes are measured employing Ellsberg-urn type mechanisms, toward social ambiguity individuals may exhibit ambiguity-seeking behavior. Our findings underscore the source-dependence of ambiguity attitudes and the need to measure social ambiguity attitudes for understanding decisions in games against others.

## **Trust and Ambiguity**

*Li, Chen; Turmunkh, Uyanga*

Trusting others often puts oneself in a vulnerable position, where the decision power is conceded to the trustee over whom one has no control of. Often, it also results in a negative payoff. Despite of the negative consequences of trusting, a substantial proportion of people still choose to trust others. What makes people trust? Apart from their other regarding preferences such as inequality aversion, their attitudes towards uncertainty also matters since it is unknown whether their trust will be reciprocated. Previous studies focused on how people's risk attitude contribute to their trust decisions, but found no link (Eckel and Wilson, 2004; Houser et al. 2010). This might be due to the ambiguous nature of the trusting decision --- the chance that one's trust will be reciprocated is also

unknown. It was well documented in the literature that people treat ambiguity differently than risk (Ellsberg 1961).

In this paper, we analyse people's trust decisions as decisions under ambiguity, where their ambiguity perception, ambiguity aversion and beliefs about others' trustworthiness may all play a role. We found that people who decided to trust were on average less ambiguity averse, but there were no difference in ambiguity perception between those who trusted and those who did not. We also found that people who trusted believed their trustees to be more trustworthy.

Another open question in the literature is: whether the survey questions on trust, for instance, the ones included in the World Value Survey (WVS), are a good measure of trust. A typical survey question would ask "generally speaking, would you say that most people can be trusted or that you cannot be too careful in dealing with people?" Findings on the correlation between answers to these questions and experimental trust measured using real incentives are mixed: while Glaeser et al. (2000) found no correlation, Fehr et al. (2003) found positive correlations. Sapienza (2013) suggested that although trust has two components: a belief-based one and a preference-based one, the survey questions measured mostly the belief-based component. Our findings also contribute to the understanding of this question, with beliefs and preferences elicited in a more incentive compatible manner, while controlling for people's ambiguity attitude. Although we found only weak correlation between the survey answers and the real incentivized trust decision, the survey questions were indeed strongly correlated with people's beliefs about their trustees' trustworthiness.

## **Zooming in on Ambiguity Attitude: Rare events matter**

*Emirmahmutoglu, Aysel; Baillon, Aurelien*

Kahneman and Tversky (1979) pointed out that rare events are either completely neglected or overweighted. For decision making under risk, the common view in the literature is that small probability events are overweighted (e.g., Tversky and Kahneman, 1992; Gonzalez and Wu, 1999). However, the picture is not that clear when we consider decision making under uncertainty. Recent research in psychology has shown that if unlikely events are not described but experienced by agents, they tend to be partly neglected or underweighted (see for instance Barron and Erev, 2003; Hertwig et al, 2004; Hertwig and Erev, 2009). On the other hand, there is also evidence that rare events are overweighted, but less so under experience-based decisions than description-based decisions when the events concern gains, and they are overweighted similarly in both decisions when the events concern losses (Abdellaoui et al., 2011). More research in ambiguity for rare events is needed for clarification.

Understanding the attitude towards rare events helps to explain certain economic activities. For example, if rare events concern losses, overweighting leads agents to take more preventive actions or buy more insurance than necessary. Similarly, policies to prevent or cope with environmental catastrophes also concern such events. On the other hand, when rare events relate to gains, overweighting can explain betting behaviour while underweighting of unlikely gains might hinder the development of entrepreneurship.

In this paper we measure ambiguity attitude for very unlikely events in an Ellsberg-like experiment. Despite the fact that decision making for ambiguous rare events is crucial, there are no other studies that empirically examine ambiguity attitude with events as unlikely as ours. This paper is the first study of ambiguity attitude for very unlikely events, more than 100 times smaller than in typical ambiguity studies. Additionally, the existing literature on ambiguity focuses mostly on gains, while there is little known about the loss domain (Trautmann and van de Kuilen, 2014). We measure ambiguity attitude both for gains and losses, and therefore contribute to the existing literature by being one of the few studies that uncover the loss domain, providing opportunities for direct comparison with gains.

We deal with two main challenges of measuring ambiguity attitude: disentangling ambiguity attitude from risk attitude and controlling for beliefs. The first one relates to identifying ambiguity attitude generated on top of risk attitude when we move from decision making under risk to decision making under uncertainty. We use the solution proposed by Dimmock et al. (2015), namely "matching probabilities", to deal with this issue. Matching probability for an event  $E$  with unknown probability is the objective probability  $p$  that makes a decision maker indifferent between receiving a nonzero outcome  $x$  Euro with probability  $p$  and receiving  $x$  Euro if event  $E$  realizes. Dimmock et al. showed that eliciting matching probabilities is enough for measuring ambiguity attitude. The intuition is that risk attitude is differenced out from the comparison of a risky choice and an uncertain choice if both choices yield the same outcome. Therefore, the distance of matching probabilities to the neutral benchmark probabilities of events is considered to measure whether ambiguous events are more or less overweighted/underweighted.

The second challenge relates to controlling for beliefs. The interpretation of matching probabilities as direct measures of ambiguity attitude is problematic because we do not know the decision maker's belief. For example, the decision maker may truly believe that an event is impossible. If this is the case she does not ignore an unlikely event as the above direct measure would predict, but instead she simply deals with an event she considers impossible. Therefore, we do not want to use an arbitrary benchmark to assess overweighting or ignorance of unlikely events. Instead, we only compare matching probabilities with themselves and study their internal consistency, as Baillon et al. (2015) suggested. We do this by the use of additivity measures. Intuitively, if an unlikely event is neither ignored nor overweighted, it would get the same subjective value (matching probability) in isolation or as part of a larger event. Hence, matching probabilities would be additive under ambiguity neutrality. If unlikely events weigh more in isolation (overweighting) matching probabilities will be said to be subadditive. Neglecting or underweighting would result in opposite violation of subadditivity (superadditivity). Therefore, in this paper we measure ambiguity attitude in very unlikely events as violations of additivity.

Our analysis reveal that very unlikely events are overweighted and loom larger in isolation, more under ambiguity than under risk. This corresponds to ambiguity seeking for unlikely gains and ambiguity aversion for unlikely losses. Additionally, we observe more overweighting of unlikely losses than unlikely gains. Therefore, ambiguity aversion for catastrophes is stronger than ambiguity seeking for betting behaviour. In a nutshell, rare events matter.

## **The Rich Domain of Ambiguity Explored**

*Li, Zhihua ; Muller, Julia ; Wang, Tong ; Wakker, Peter*

Ellsberg and others suggested that decision under ambiguity is a rich empirical domain with many phenomena to be investigated beyond the Ellsberg urns. We provide a systematic empirical investigation of this richness by varying both the uncertain events, the outcomes, and combinations of these. Although ambiguity aversion is prevailing, we also find systematic ambiguity seeking, confirming insensitivity (or perceived ambiguity, depending on the ambiguity model assumed). We find that ambiguity attitudes depend on the source of uncertainty (the kind of uncertain event) but not on the outcomes. Ambiguity attitudes are closer to rationality (ambiguity neutrality) for natural uncertainties than for the Ellsberg urns, as appearing from the reductions of monotonicity violations and of insensitivity, even under hypothetical choice. Our rich domain serves well to test which families of weighting functions are best suited for fitting ambiguity attitudes. We find that two-parameter families, capturing not only aversion but also insensitivity, are desirable for ambiguity even more than for risk. The Goldstein-Einhorn family performs best for ambiguity.

## Measuring Higher Order Ambiguity Preferences

*Baillon, Aurelien ; Schlesinger, Harris ; van de Kuilen, Gijs*

Consider a decision maker (DM) whose income is the same now and at a future point in time. Suppose that the DM learns that he will face a zero-mean risk at the later point in time, and is deciding whether to save precautionary in order to be better able t

# *Special Session Contextual and individual factors promoting sustainable behaviour*

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7/9/2016 8:30:00 AM: Ir. Haak Room

*Dr. Ellen Van der Werff*

## **The Impact of Individual and Contextual Factors on Recycling Behaviour A Meta-Analysis**

*Geiger, Josefine Luise ; Steg, Linda ; van der Werff, Ellen ; Unal, Berfu*

### Objectives

Recycling enables the retrieval of secondary raw materials and thereby reduces greenhouse gas emissions (European Union, 2014). What motivates people to recycle? We conducted a meta-analysis to identify key factors that predict recycling behaviour. A meta-analysis can objectively examine existing studies and thereby allows a systematic comparison of the prediction of different variables on recycling behaviour. In general, studies on recycling behaviour have mostly examined the influence of individual and contextual factors separately. Studies focusing on individual factors assessed, for example, the impact of attitudes towards recycling, attitudes towards the environment in general, social norms and biospheric values (e.g., Do Valle, Rebelo, Reis, & Menezes, 2005; Izagirre-Olaizola, Fernández-Sainz, & Vicente-Molina, 2015; Park & Ha, 2014; Schwab, Harton, & Cullum, 2014); studies focusing on contextual factors assessed, for example, the impact of the recycling scheme in use, the distance to the recycling location and the housing situation (e.g., Hage, Söderholm, & Berglund, 2009; Oskamp, Harrington, Edwards, Sherwood, Okuda, & Swanson, 1991; Sidique, Lupi, & Joshi, 2010). With the current meta-analysis, we aimed to examine the extent to which individual and contextual factors affect recycling behaviour.

### Method

In order to run the meta-analysis on recycling behaviour, we first conducted an extensive literature review to find relevant papers. We retrieved papers from relevant databases, journals and reference lists from chosen papers. A paper was considered as relevant when it operationalized recycling behaviour in one of the following ways: observed, self-reported or intended recycling.

In a second step, we abstracted the following data from the articles into a coding table: the independent variables, the operationalization of recycling behaviour, the country, target group, number of participants, type of recycling system in use, and the statistics that are needed to calculate the effect size. As most of the reported studies are correlational we chose to use the correlation coefficient  $r$  as an index for the effect size. When studies depicted other statistics we converted them into  $r$ . Some authors addressed several variables in their study, such as different individual factors. In this case, the multiple  $r$ 's were averaged to avoid double-counting of participants. In a final step, we ran two separate meta-analyses for individual and contextual factors with the program Comprehensive Meta-Analysis version 3 (CMA; Borenstein, Hedges, Higgins, Rothstein, 2014).

## Results

### Individual factors

Results of the meta-analysis with an initial sample of 17 studies yielded that individual factors, such as attitudes towards recycling, social norms, and biospheric values had a small to medium-sized effect on recycling behaviour. The results suggest that individual factors in isolation cannot explain recycling behaviour sufficiently. Significant heterogeneity was further observed, suggesting that the effect varied across different individual factors. Some individual factors were more predictive than others. A meta-regression to detect the more predictive individual factors is still being conducted. Importantly, a significant publication bias was found. Specifically, if more unpublished studies would have been taken into account in this meta-analysis the effect size would be substantially lower. Thus, published studies on recycling behaviour are not fully representative. In line with these findings, it seems reasonable to also consider other factors, such as contextual factors, when explaining recycling behaviour.

### Contextual factors

The data on contextual factors are still being analysed. For the effect of contextual factors on recycling behaviour, we expect the same pattern as for the effect of individual factors. More precisely, we expect that contextual factors will only have a small to medium-sized effect on recycling behaviour, indicating that contextual factors in isolation can only explain part of recycling behaviour.

## Conclusion

The initial results show that individual factors can only explain recycling behaviour to a certain extent. The same pattern is expected for contextual factors. These initial findings give evidence that the direct effects of individual and contextual factors only partly predict recycling behaviour. We propose that it is essential to consider the interplay of individual and contextual factors to fully understand recycling behaviour. The influence of individual factors on recycling behaviour, for example, may differ according to the effort that the context implies. More precisely, attitudes may only lead to recycling behaviour when it is not extremely difficult to recycle. Only a few studies examined the interplay of individual and contextual factors on recycling behaviour (e.g., Best & Kneip, 2010; Guagnano, Stern, & Dietz, 1995). To consider the interplay of individual and contextual factors is relevant in the domain of recycling as many different collection systems exist, and thus a variety of contexts in which recycling behaviour can take place, which, in turn, affects recycling behaviour. The results of the meta-analysis will further be discussed in relation to implications for theory, practice and future research.

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## **Acceptability of recycling policies: Do top-down interventions work at organizational settings in the long run?**

*Unal, A. Berfu; Van Der Werff, Ellen; Nizamic, Faris; Nguyen, Tuan Anh*

### Introduction

Waste-separation, which is key to the recycling of reusable materials, would help reduce negative human impact on the environment. Current interventions on waste separation or recycling largely focus on individual households, although a big amount of consumption takes place at the workplace. One important aspect that distinguishes workplace and households is that the decision to engage in waste separation or recycling is not a bottom-up and autonomous process at the workplace, but rather the decision of higher ups. Then, how would a top-down waste-separation policy be received by employees? In the current study, we aimed at testing the acceptability of a top-down waste-separation intervention at the workplace, and whether participating in the intervention would increase self-reported recycling at the workplace. Importantly, we aim at testing the long term effectiveness of the intervention and therefore whether the acceptability of the top-down intervention would sustain over a longer period.

### Method

A total of 266 employees (124 male, 142 female) participated in the intervention. Mean age was 38.89 (SD= 12.24). We had a quasi-experimental design, where the employees of one particular

university building were in the recycling intervention group (N= 139), and employees of another building were treated as the control group (N= 125) .

The intervention involved removing all trash bins in the offices overnight, and asking employees to use new (recycling) bins which were placed at convenient locations on each floor in the intervention building. Two weeks after the intervention, an online study (i.e., pre-measure) was carried out asking the participants about the extent to which they find the new recycling policy acceptable (Participants in the control condition responded based on a hypothetical policy description). Participants also indicated the extent to which they recycle at work, and whether they try to reduce waste at work (i.e., positive spillover). We had a post-measure about 5 months after the intervention (N= 63) which allowed us to track long-term acceptability and effectiveness of the top-down intervention with a group of participants who participated in both the pre-measure and post-measure.

## Results

Results revealed that both the acceptability of the new recycling policy and self-reported recycling behaviour were higher among the intervention group than the control group. Interestingly, the control group participants reported to reduce their waste at work to a higher extent than the intervention group participants, indicating that participating in the intervention did not lead to positive spillover. We reasoned that a positive spillover is less likely when employees cannot autonomously decide whether to separate their waste or not, but rather made to do so by contextual changes at workplace, such as the removal of individual trash bins from their offices. But despite the lack of positive spillover effects, has the intervention received acceptability in the long-term?

The findings of the post-measure indicated that acceptability of the recycling policy was still higher in the intervention group than in the control group. Importantly, when compared over time, there was no difference in the acceptability of the recycling policy within the intervention group. Findings were similar for self-reported recycling.

## Conclusions

The findings indicate that top-down interventions increase the acceptability of (recycling) policies, supporting previous literature (Schuitema, Steg & Forward, 2010). Notably, acceptability of such interventions is likely to remain high over time. In terms of spillover effects, our findings indicate that such top-down interventions seem to be preventing positive spillover. However, it should be investigated further if lack of autonomy in deciding to engage in waste separation at work might even lead to negative spillover (Thøgersen, 1999). We will discuss the theoretical and practical implications further.

## **How our evolutionary predilection for stories might cure individual paralysis on climate change mitigation**

*Morris, Brandi S.; Thøgersen, John; Chrysochou, Polymerous; Mitkidis, Panagiotis*

How our evolutionary predilection for stories might

cure individual paralysis on climate change mitigation

"I am very sorry but I am deeply pessimistic.

I really see no path to success on climate change."

- Daniel Kahneman

## Introduction

Although 90% of Europeans say climate change is a 'serious' or 'very serious' problem, only one in four believe they bear personal responsibility for tackling anthropogenic effects (European Commission, 2014). Given high levels of concern and widespread acceptance of the scientific evidence confirming human impact on rising global temperature, why aren't we reacting with greater urgency? Could it be, that the very cognitive features which have been a source of evolutionary advantage, are becoming our undoing?

This study seeks to contribute to the literature by identifying ways of overcoming the predictable psychological effects, which prevent us from behaving in our own best collective interest and possibly even survival.

## Background & Hypothesis

Climate change has been dubbed a 'wicked problem,' striking to the very heart of our greatest vulnerabilities as a species. As a threat, it lacks several salient features that typically trigger our cerebral alarms, including a clearly identifiable 'enemy.' Indeed, the responsibility lies not just 'out there,' with this or that global corporation, but also with us as individuals. As consumers we make an infinite number of seemingly small but significant purchases and decisions with incalculable cumulative global impact.

One simple example is the consumption of bottled water, which takes an average of 3 liters of fresh water to produce 1 liter of finished bottled water (Pacific Institute, 2007). In 2011, bottled water consumption in the United States alone translates into wastage of over 100 billion liters (van der Linden, 2015).

Loss aversion-, assimilation- and confirmation biases are just a few examples of the formidable cognitive barriers that prevent us from taking responsibility for our individual carbon contributions to rising global temperatures.

So how can climate science communicators effectively engage and persuade consumers in this environment characterized by constant changes, uncertainty, foreboding complexity and cognitive hurdles? While there is some evidence that education may increase engagement with the issue, there is also mounting evidence that information alone is insufficient to promote pro-social behavior (Staats, Wit, & Midden, 1996; Whitmarsh, O'Neill, & Lorenzoni, 2013).

Yet a growing body of research suggests that stories have a unique ability to inspire pro-social behavior (Barraza, Alexander, Beavin, Terris, & Zak, 2015; Lin, Grewal, Morin, Johnson, & Zak, 2013; Zak, 2015; Zak, Stanton, & Ahmadi, 2007). Small and Loewenstein (2003) found that character-based narratives are more effective than mere information at motivating costly behavior. Through 'narrative transportation,' stories become vehicles of influence by conveying a desired way to feel, think, or act (Gerrig, 1993).

Clandinin and Connelly (2000) showed that story structure facilitates the development of all six levels of understanding in Bloom's Taxonomy (knowledge, comprehension, application, analysis, synthesis, and evaluation) by providing context and relevance as well as information. Stories activate unconscious parts of our brain (Pinker, 2015) and feed the output to the conscious mind for consideration (Edelman & Tononi, 2000).

According to the Narrative Paradigm (NP) (Fisher, 1987), humans are 'homo narrans' – storytelling animals who often make decisions based on the quality of the story rather than the quality of the information it contains (Marshall, 2014). The efficacy of narratives seems to be related to how human brains process information. Stories have dominated human interaction for over 100,000 years, which may have rewired the human brain (Nelson, 2003; Pinker, 2015). Stories are a specific subset within the category of narratives: all stories are narratives, but not all narratives are

effective stories (Dalkir & Wiseman, 2004). The working definition of a story used in this study is: "A detailed, character-based narration of a character's struggles to overcome obstacles and reach an important goal" (Haven, 2007).

Yet little is known about how climate change related stories affect pro-environmental motivation and behavior. The working hypothesis is that stories have greater persuasive influence on pro-environmental behavior than 'information' alone.

## Methodology

The behavioral study is a single-blind design currently being undertaken at a behavioral lab at Aarhus University in Denmark. Participants are randomly assigned to one of three conditions, two treatments and a control group: (A) Written, story-based treatment, (B) Written, information-based treatment, (C) Control group. For each condition behavioral and self-reported measures, are used to gauge the effect of the treatments.

## Discussion

Currently, climate-change focused messaging primarily uses statistics, tables, graphs and informational prose for communicating the urgent findings of scientific research. Despite their intellectual credibility within the scientific community, these communication frames have proved mostly ineffectual in motivating costly pro-social behavior in a realistic context of uncertainty and cognitive complexity. This study aims to find different and more effective ways to overcome the many barriers to pro-environmental behavior, which render climate change a 'perfect storm' for our evolutionary vulnerabilities. The suggested approach leverages another human evolutionary vulnerability: our undeniable predilection for stories.

It appears that stories may strengthen the connections between experiential and analytic processing by providing context, coherence and meaning to intellectually compelling information. This study contributes to filling lacunae in the literature by using a novel approach to examining how stories impact pro-environmental behavior. Much more research will obviously be needed to affirm the findings and to shed more light on how stories affect cognition; this is only a first step. It is our hope that we may exploit a greater understanding of how our evolutionary wiring for stories might make us more willing to make sacrifices now for others who will live in an uncertain future.

## **Consumer response to packaging design: the role of packaging materials and visuals in sustainability perceptions and product judgments**

*Steenis, Nigel D. ; van Herpen, Erica ; van der Lans, Ivo ; van Trijp, Hans*

### Introduction

This research investigates whether and how different packaging materials and visual designs influence consumers' perceptions of the packaged product, and how these relate to overall product attitudes. Specific attention is paid to consumer sustainability perceptions, a topic that has garnered increasing managerial and policy-level attention, but that has been left relatively under-represented in marketing research. Previous research on consumer response to packaging has focused chiefly on packaging visuals and verbal elements (labelling) on the packaging (e.g., Celhay & Trinquocoste, 2015; Magnier & Schoormans, 2015), branding effects (e.g., Underwood, 2003; Underwood & Klein, 2002) and holistic design factors (e.g., Orth & Malkewitz, 2008). We aim to contribute to this literature by examining consumer response to packaging materials, which are crucial for the sustainability of a package. Building on theories of cue acquisition and integration (Olson, 1978; Rao & Monroe, 1989; Steenkamp, 1990), we examine the role of packaging design

in (i) consumer cue acquisition and perception, (ii) consumer inferences of (expected) packaged product benefits and (iii) overall attitudes towards the packaged product. In this view, we consider the packaging as providing a series of cues which consumers can perceive and interpret to make inferences about the product's expected benefits, as a basis to inform their overall attitudes towards these products.

### Empirical study

We conducted an empirical study among 249 Dutch students. Stimuli consisted of 14 soup packages constructed from 7 material types (glass jar, bioplastic pot, liquid carton, dry carton and bag, plastic pouch, mixed material pouch consisting of plastic with carton wrapping, can) and two visual schemes (designed to be conventional-looking vs. sustainable-looking).

We used an idiosyncratic method of attribute elicitation (based on triadic sorting) that does not impose predefined criteria, but that allows respondents to freely use their own criteria. Specifically, respondents were presented with seven triads of differently packaged soup products and gave short descriptions of their perceptions of these packaged products using their own words. Respondents then profiled each packaged product by indicating the extent to which each of their own descriptions applied to the product, following a "check all that apply" format. Lastly, respondents rated each product on a set of product benefits (i.e., sustainability, convenience, healthiness, naturalness, taste, inexpensive price and quality), obtained from literature, and overall attitude.

Based on a content analysis we categorized 3224 elicited descriptions (cue perceptions) into 28 cue perception categories. Notably, we find a high convergence between respondents own descriptions and the benefit dimensions; each benefit was represented by a corresponding category obtained from elicitation. To provide support for this, multilevel regressions were out carried using the 28 elicitation categories as predictors for the benefits. These regressions indeed show high convergence (all  $p$ 's  $< 0.0001$ ) between the elicitation categories and benefits that were deemed similar. This supports the contention that consumers use packaging cues to infer about relevant benefits – including both sustainability of product and package. Other relevant spontaneous perceptions that were related to benefit dimensions included in particular transparency, packaging flexibility, modernity (vs. traditional), luxuriousness, product preservability and contents per package. These results are also displayed on a perceptual map based on clustering of dominant score patterns.

Visual and material packaging designs significantly contributed to perceived benefits. Visuals most strongly affected perceptions of naturalness ( $F(1, 248) = 42.511$ ,  $p < 0.0001$ ,  $\eta^2_p = 0.146$ ) and sustainability ( $F(1, 248) = 27.297$ ,  $p < 0.0001$ ,  $\eta^2_p = .099$ ) - even though from an objective point of view the product is not affected. Materials affected most strongly (perceived) packaging sustainability ( $F(5, 1221) = 38.236$ ,  $p < 0.0001$ ,  $\eta^2_p = .134$ ), but we also find medium-sized effects on overall sustainability, healthiness, naturalness, taste, price and quality. Differences in packaging materials have consequences for perceived environmental impacts, but are also associated with different benefit perceptions beyond sustainability, such as price ( $F(5, 1305) = 19.053$ ,  $p < 0.0001$ ,  $\eta^2_p = .071$ ) and can "spill over" towards intrinsic product benefits such as taste ( $F(5, 1163) = 28.386$ ,  $p < 0.001$ ,  $\eta^2_p = .103$ ) and healthiness ( $F(5, 1159) = 25.604$ ,  $p < 0.0001$ ,  $\eta^2_p = .094$ ).

A separate regression showed that all benefit dimensions, in turn, were relevant to consumers' overall attitude towards the packaged products ( $p$ 's  $< 0.05$ ).

### Discussion

Sustainability can be signalled to consumers using both visual and structural aspects of packaging design. Although actual environmental impacts of the packaging likely are a consequence of the packaging's structural elements, they also affect a wide range of other benefits (e.g., price,

convenience), including perceptions of intrinsic product elements (taste, healthiness). Whether more sustainable packaging design is desirable from a managerial perspective will depend to a large extent on product positioning. This is especially relevant for those brands and products that may be harmed in light of more sustainable positioning, (Luchs, Brower, & Chitturi, 2012; Luchs, Walker Naylor, Irwin, & Raghunathan, 2010). We showed how consumers rely on their intuitions when they are confronted with products differing in packaging design to form inferences about product benefits used to assess the product, and that altering packaging sustainability can change how the packaged product is perceived as a whole.

## *Special Session Behavioural theories of the firm, entrepreneurship, innovation*

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7/9/2016 8:30:00 AM: Pomona Room 1+2

*Prof. Morris Altman*

### **The Multi-Faceted (Boundedly) Rational Entrepreneur: from Rent-Seeker to Growth Maker**

*Altman, Morris (University of Newcastle)*

I argue that the entrepreneur can be constructively modelled as a boundedly rational or smart, purposeful decision-maker whose behavior can affect economic outcomes in either a positive or a negative manner. The entrepreneur can be the Schumpeterian type or a managerial innovator (a gap-filler as discussed by Leibenstein). In all cases, entrepreneurs play a determining role in organizing and/or managing the economic resources of the firm at varying levels of risk to themselves. This would include facilitating innovation and its adoption by the firm. This facilitator role plays a vital role in generating economic growth, whilst it can also negatively impact on the growth process where the entrepreneurs' innovative activity focuses on rent-seeking behaviour. In this narrative, the entrepreneur is motivated the incentive environment (inclusive of institutional parameters), peer environment (identity), mental models, the preference function of the entrepreneur. The supply of certain classes of entrepreneurs, and hence the extent of entrepreneurial activity can be affected by formal and informal education. Aspects of this modelling exercise derive from Altman's model of induced technological change wherein environmental pressures on firm decision-makers incentivize them to innovate. The latter is affected by alternatives to positive innovation, such as rent seeking behaviour. Also, the extent of innovative activity is affected by how effective the managerial innovator happens to be. Managerial inefficiency reduces the probability of technological change. *Ceteris paribus*, the less efficiency (more x-inefficiency) is the firm, the less cost effect will the new innovation be. The supply of innovators of all types effects of the extent of economic growth, contingent upon the preferences of entrepreneurs, mental model of the entrepreneur, the incentive environment, institutional parameters, and peer environment (identity). The entrepreneur is a key variable in realistically endogenizing technological change. Unlike in the conventional model optimal rates technological change and related to this the highest reasonably achievable levels of efficiency cannot be assumed to be autonomously and optimally determined by market forces. The latter can generate a wide range of sustainable growth rate, contingent upon the quality and quantity of entrepreneurs and their preferences and their over-arching decision-making environment.

## **Harvey Leibenstein's Theory of the Firm. An Integration of the Economic and Organizational Theory of the Firm and the Role or Lack of a Role of the Entrepreneur**

*Frantz, Roger (San Diego University)*

In 1966 Harvey Leibenstein questioned some of the basic tenets of economic theory – rationality, maximization, and efficiency – in his X-efficiency (XE) theory. XE theory was an alternative to the neoclassical theory of firms and markets; the existence of a cost minimizing black-box called a firm, and monopoly market structure creating the only form of inefficiency - market allocative inefficiency. In XE theory both firms and market structures can produce inefficiency, the firm producing X-inefficiency while the market produces market allocative inefficiency. Six years prior, in 1960, Leibenstein published a book titled *Economic Theory and Organizational Analysis*. In the preface Leibenstein says that “The purpose of this book is to consider two types of theoretical approaches that are closely related: microeconomic theory and organizational analysis” (Leibenstein, 1960, p. vii). In retrospect this was in part an attempt to offer a compatible but alternative explanation for organizational behavior to the one being written about by Herbert Simon and his colleagues at the Carnegie School. Between 1960 and 1966 Leibenstein had his a-ha experience, focused his attention on economic theory rather than organizational theory, and developed X-efficiency theory which incorporated some of the ideas he wrote about in his 1960 book. What role did the entrepreneur play in the orthodox economic theory of the firm, in Leibenstein's 1960 book, and in his X-efficiency theory? This paper will show the evolution of his thinking about the firm, human psychology, and the entrepreneur.

## **Dispersed Entrepreneurship and Bounded Rationality in the Theory of the Firm**

*Teraji, Shinji (Yamaguchi University)*

Knowledge varies by time and place. A more fundamental problem with regard to knowledge relates to the creation of novelty. Novelty is unpredictable. Kirzner (1973) argues that the existence of disequilibrium situations in the market implies profit opportunity. The entrepreneur endeavors to exploit this opportunity. According to Leibenstein (1987), there are entrepreneurs of unusual talents where modes of operation cannot be captured, described, and taught to others. These people are at one end of the talent distribution found among entrepreneurs, which ranges from ordinary capacities to the borderline of the great entrepreneurial innovators. In conventional economic models, while individuals are ignorant about certain things, they can take steps through search activities and remedy this ignorance. However, individual agents are actually ignorant about what they are ignorant about. In Simon (1978)'s analysis, decisions are made when the alternatives are only imperfectly known because of limited computational power and uncertainty in the external world. Economic agents make choices which are satisfactory rather than optimal. In the face of uncertainty, they pick the first choice that meets a pre-acceptance criterion. This paper specifies the micro-foundations of enterprise performance in an economy with dispersed sources of invention. Following Guth (2010)'s framework, the paper considers a bounded rationality approach inside the firm. The approach specifies the following three elements: a process of aspiration formation, a search process in which an effort is made to satisfy success aspirations, and an adaptation process in which the decision maker seeks to satisfy one's aspiration profile. It is shown that a decision maker may use some non-optimal choice in these processes.

# The Coordinated Action Theory of the Firm: A Bridge Between Economics and Management

*Dorman, Peter (Evergreen State College, USA)*

This paper proceeds from the assumption that economies are characterized by a high degree of interactive nonconvexity in most activities and at most scales. The consequence is nonconvex production and preference sets and the corresponding inefficiency of

## *Finance / Sentiment*

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7/9/2016 8:30:00 AM: Dorskamp Room 1+2

*Prof. Joanna Sokolowska*

### **Lay representations of monetary policies and money illusion**

*Darriet, Elisa*

This study explores the link between money illusion and monetary macroeconomic expectations of laypeople.

In a typical economic framework the individual is considered to be an "homo economicus" who is not subject to money illusion. The individuals do not think in nominal terms but in real ones. Economic agents are therefore considered to be able to correctly take into account a movement of price in their economic calculus and make rational choices. However, a number of studies in experimental economics (Schiller et al, 1997) and in neuroeconomics (Weber et al, 2009) show the existence of monetary illusion in agents' choice, as it was previously noted by Keynes (1936) and Fisher (1928). Understanding how laypeople reason through monetary illusion is required to define a monetary policy more effective (because not offset by laypeople's monetary illusion). Moreover several articles (Dräger et al, 2014; Gaffeo and Canzian, 2011) study the link between specific economical laws such as the Phillips' curve, the Taylor rule and the Fisher' equation and laypeople' macroeconomic expectations.

In this study, we ask specific questions in order to collect knowledge of monetary policy and the Fisher'equation. Besides, participants have to solve some problems linked with money illusion. We also completed the questionnaire by a Locus of Control scale from Levenson (Rossier et al, 2002) and a Belief in a Just World scale (Dalbert, 1999). Socio-demographic variables were taken into account. We collected 250 completed questionnaires between November 2014 to May 2015 in France.

We hypothesized that the participants who are subject to money illusion would have a different perception of monetary policy. The applications of these findings in terms of monetary and economic models are discussed.

## How lay people understand economic theories as economic crisis' explanations

*Darriet, Elisa ; Bourgeois-Gironde, Sacha ; Wagner-Egger, Pascal*

This study explores laypeople's perception of economic theories as explanations of economic crisis. Differences in perception about economic variables between "experts" and "laypeople" already have been found (Caplan, 2007). More precisely, differences in social representations of economic crisis have been found among individuals according to their sociodemographics and psychological variabilities (nationality, economic knowledge, beliefs in a just world, etc). Scientists and economic experts offered many theoretical explanations of economic crises. We still ignore how these scientific explanations are perceived by laypeople yet. The main goal of this study is to analyze and explore the perception of economic theories by laypeople and their underlying concepts. Consequently, we elaborated a questionnaire, in which the main economic theories (Keynesian, Classical, Neoclassical, Monetarist, Galbraith, Marx, Minsky and Schumpeter) as explanations of economic crisis are presented. We also gathered measures about Belief in a Just World and Locus Of Control, and used an economic knowledge questionnaire to assess the level of expertise in economics of our participants. We collected 450 completed questionnaires between November 2014 to December 2015 in France and in Switzerland. First we look at the data via principal component analysis and multidimensional scaling in order to explore the underlying dimensions of economic theories according to laypeople. Secondly, we test the relationships between sociodemographics indicators, psychological variabilities and economic theories as explanations of economic crisis. Applications of these findings will be discussed.

## Affect and risk preferences in investment decisions

*Sokolowska, Joanna ; Zylowska, Aleksandra*

Aims

The main goal of studies presented here was to investigate the relation between affect and risk preferences. From previous research, one may conclude that risk preferences reflect affect toward a given risky activity. For example, in the study of McGregor, Slovic, Dreman and Berry (2000), business students evaluated industries represented on the New York Stock Exchange. First, they evaluated industries on semantic differential dimensions such as "bad – good", "boring – exciting". Next, they declared the likelihood that they would invest in companies associated with each industry. Affective ratings were highly correlated with the likelihood of investing.

A majority of research on such relation relies on affect heuristic (Finucane, Ahakami, Slovic, Johnson, 2000; Slovic, Finucane, Peters, MacGregor, 2004). In this view, people base judgments of an activity on how they feel about it, and then affect guides their perception of benefits and risks. For example, Alhakami and Slovic (1994) found that hazards judged as high in danger are also considered low in benefits, whereas hazards judged as low in danger are perceived as high in benefits. Therefore, the impact of affect on risk preferences is indirect: affect causes people to confound benefits and losses, which in turn influences risk preferences.

One may, however, propose a different interpretation that involves direct impact of affect on risk preferences. According to this interpretation, affect guides risk preferences even though the judgment of benefits and risk is unbiased. Empirical findings that people make unbiased judgment when they do not to make a choice (e.g. Montgomery, 2000) are in favor of this interpretation.

Thus, the main goal of the presented studies was to check whether affect impacts preferences either directly or indirectly, through biased perception of benefits and risk.

## Pilot Study

In a study, carried out via the Internet, 95 private investors evaluated 10 industries represented on stock markets on 9 semantic differential scales with respect to affect, payoffs and their probabilities, and the probability that they would invest in a company representing a given industry. Factor analysis (PC method, Varimax rotation) performed on average rates for 10 industries revealed two-factor structure that explained 90% of the variance. The first factor included affect, amount and probability of gain and the probability to invest. The second one consisted of risk rates and amount and probability of loss (see Figure 1).

Figure 1. Two-factor structure for average rates for all industries

In agreement with the previous research, affect and probability to invest were positively correlated. However, in contrast to predictions of the affect heuristic, rates of benefits and risk were not negatively correlated.

When rates for each industries were considered, for two industries – insurance and developers - the patterns of rates were similar to those predicted by the affect heuristic. Insurance was rated positively on affect. It was perceived as relatively low on risk, yielding high, probable gain and low, unlikely losses. In contrast, developers were given low rates on the positive scales and high rates on the negative scales (see Figure 2).

Figure 2. Average rates on 9 semantic scales for developers and insurance

Therefore, these two industries were selected for the further investigation aimed at determining whether affect impacts probability to invest directly or indirectly.

## Study 1

This study was carried out with 315 visitors of investors' blogs via the Internet. They evaluated insurance and developers on the same 9 scales.

In this study, the same two-factor structure of rates as in Study 1 was revealed for both industries. These relations were also checked with the aid of the mediation model with 1000 bootstrap resamples proposed by Hayes (2009). The results for insurance are shown in Figure 3.

Figure 3. The relation between affect and probability to invest. Rates of risk and benefits act as mediators. Non-standardized coefficients (and standard errors in parentheses) are shown. \*\*\* $p < .001$ ; \*\* $p < .01$

As it can be seen in Figure 3, affect influences both rates of risk and benefit, as well as the probability to invest. However, in contrast to predictions of the affect heuristic, there is no negative relation between rates of benefits and risk. The same model has been obtained for developers.

## Study 2

Taking into account that biased judgment of benefits and risk might be associated with information processing within System 1, respondents evaluated industries either with or without time pressure. Based on the previous research it was expected that rates given under time pressure would be more biased.

In this study, carried out via the Internet, 200 private investors evaluated the same 10 industries that were evaluated by respondents in the pilot study. The same 9 semantic differential scales as in the pilot study were used. An additional measure of affect was applied: respondents listed two associations for each industry that and evaluated them as positive or negative.

## Conclusions

The strong positive correlation between affect and probability to invest was observed. In contrast to predictions of affect heuristic, no inverse relation between judgments of risk and return was observed. Instead, these judgments were positively correlated. This points at direct impact of affect on preferences.

The two-factor structure of rates leads to a conclusion that judgments of risk and affect are independent, whereas judgments of probability to invest and affect are related.

Independence of risk judgment of affect and its dependence on acceptance supports the views that risk judgment and risk acceptance are independent processes, as assumed in Risk-Value models.

Alhakami A.S., Slovic P. (1994). A psychological study of the inverse relationship between perceived risk and perceived benefit. *Risk Analysis*, 14 (6), 1085-1096.

Finucane, M. L., Alhakami, A., Slovic, P., Johnson, S. M. (2000). The affect heuristic in judgments of risks and benefits. *Journal of Behavioral Decision Making*, 13 (1), 1-17.

MacGregor, D. G., Slovic, P., Dreman, D. Berry, M., (2000). Imagery, Affect, and Financial Judgment, *Journal of Psychology and Financial Markets*, 1(2), 104-110, DOI: 10.1207/S15327760JPFM0102\_2

Montgomery, H. (2000). Decision rules and the search for a dominance structure: Towards process model of decision making. *Analysing and Aiding Decision Processes*, 14, 343-369.

Slovic, P., Finucane, M. L., Peters, E., MacGregor, D. G. (2004). Risk as analysis and risk as feelings: Some thoughts about affect, reason, risk, and rationality. *Risk Analysis*, 24 (2), 311-322.

## **Do Europeans like nudges?**

*Reisch, Lucia A. ; Sunstein, Cass R.*

In recent years, many governments have shown a keen interest in “nudges” – approaches to law and policy that maintain freedom of choice, but that steer people in certain directions. Yet to date, there is little evidence on whether citizens of various societies support nudges and nudging. We report the results of nationally representative surveys in six European nations: Denmark, France, Germany, Hungary, Italy, and the United Kingdom. We find strong majority support for nudges of the sort that have been adopted, or under serious consideration, in democratic nations. Despite the general European consensus, we find markedly lower levels of support for nudges in two nations: Hungary and Denmark. We are not, in general, able to connect support for nudges with party affiliations.

# Parenting

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7/9/2016 8:30:00 AM: De Peppel Room 1+2

*Dr. Nicolas Salamanca*

## **“Never Again!”: Do rich parents enjoy children less?**

*Le Moglie, Marco ; Mencarini, Letizia ; Rapallini, Chiara*

Do children make people happy? Are mothers happier than fathers, or vice versa? Moreover, does income matter for enjoying children? Recently there has been a sharp increase in the number of studies looking into the relationship between subjective wellbeing (henceforth, SWB) and fertility. Whereas earlier studies suggested that the relationship is negative (Clark et al., 2002; Clark et al., 2008; Nomaguchi et al., 2003), recent analysis shows a more mixed and complex picture (Aassve et al., 2012 and 2015; Kohler et al., 2005; Baranowska-Rataj et al., 2011). On the one hand, this literature suggests that there are important anticipation and adaptation effects, which means that whether the effects are negative or not crucially depends on the point at which SWB is measured with respect to the childbearing event itself. On the other hand, the inconsistency in findings may result from the fact that the effect is moderated or mediated by characteristics that are not always adequately considered in studies, as for example those related to parents, beyond the age, education and working status.

In this paper we revisit this issue by considering the effect of childbearing on SWB, but with a special focus on labor income – for both men and women and both individual and equivalent. Women's earnings are usually taken as a key indicator of female opportunity cost associated with childbearing, and their increase over recent decades is consequently interpreted as the driver of a general decline in fertility. This stands in contrast to the literature considering the correlation between female labor force participation and fertility at the macro level, which suggests that this has recently changed from being negative to positive in most developed countries (Myrskylä et al., 2009; Luci et al., 2014). This important feature seems to also hold at the micro level, but only for selected most advanced countries (Andersson, 2000; Vikat, 2004; Berninger, 2013; Andersson et al., 2014; Hart, 2015).

Germany – the country we analyse in this study – has so far remained among those developed countries where the relationship between female earnings and fertility is still negative, contrary to what has recently been verified for other affluent Nordic countries. At the same time, Germany is a country where families policies have continued, until very recently, to favor the single-earner family model not supporting maternal full-time employment (Andersson et al. 2014). By studying this case we therefore contribute either to the debate on childbearing and SWB and on that about the relationship between income and fertility behavior at the micro level.

In particular, we estimate SWB trajectories around the birth of the first child, taking the gender of the parents and their income as the key mediator variables for SWB. Unlike previous studies which have used SWB trajectories (Clark et al., 2008; Myrskylä et al., 2014), we therefore estimate them for different income groups, and consider both individual and equivalent income, which is then interacted with the gender of the parents. Our focus is on the first child because of the bidirectional nature of the relationship between SWB and fertility. If parental SWB is affected by the first child, and subsequent parental SWB positively predicts the birth of a second child – as recent studies have shown (e.g. Le Moglie et al., 2015), then income as a mediator of parental SWB around the first childbirth affects the probability of a second parity – the lack of which is the main factor responsible for German fertility decline (Miettinen et al., 2015).

We find that equivalent and individual income affect SWB differently, with the latter strongly shaping mothers' SWB trajectories. Women in the upper tertiles of individual income distribution show a negative effect in the years following childbirth, compared not only to women in the first tertile but also with respect to their pre-childbearing SWB treadmill level. On the contrary, for men we found a negative effect of childbearing on SWB in the years following the event, not differentiated by income groups.

## **Trading off market and parental quality childcare time: differences between mothers and fathers in Australia**

*DINH, HUONG; Racionero, MARIA*

Parental childcare is a powerful determinant of children's development and wellbeing. It is well-known that parental childcare at early life (a window of three years) provides a strong attachment, bonding between parents and child – a significant predictor of children's success in later life. Time with children in turn provides both intermediate and long-term benefits to parents. The bonding, interaction with children helps parent reduce stress, motivate them at work; time with children is one of the important investments parents have with children, something parents can get their return when the children contribute to the support of their parents (Hallberg and Klevmarken 2003). Parents report spending time with their children, especially in recreation or educational child care, to be among their more enjoyable activities, especially when compared with other standard home production activities (Juster 1985; Krueger et al. 2009; Robinson and Godbey 2010).

Given time as a limited resource, parents are struggling to balance between work and family. While it has been well-described that employed parents spend less time with children than non-employed counterparts, there has been little evidence on how much childcare time parents are willing to trade off for each extra hour of work; if there exists a balancing mechanism of parental childcare time between mothers and fathers if their spouse increases work hours; if the childcare-market time trade-offs are varying the type of childcare; and if the trade-offs are higher for school-aged children than preschool-aged fellows. We answer these questions by adopting a system of Tobit regressions that model the interrelationship between work time and market time and deal with zero value problems. We also use data of 1602 parents in 869 two-parent households aged from 24-65 from the 2006 Australian Time Use Survey which provide the most updated data on how Australian parents allocate their time between work and childcare.

The key time variables for our paper are time for childcare and market work. Following Kalenkoski and Foster (2008), Stafford and Yeung (2005), we classify childcare into development-oriented (high-quality) and non-development-oriented (low-quality) care. Time for development-oriented childcare is the total sum of minutes during which a person reported being engaged in teaching children, playing with children, performing physical or emotional care of children. Non-development-oriented care is the total time spent for minding children, taking care of sick children, traveling in association with children and other miscellaneous childcare. Provide some justification for using this classification. Care is taken to avoid double counting. Our measure of childcare time explicitly excludes any time that the reporting individual sleeping and napping with the child. Their 'default care' time is counted only if they were awake while their child slept. Ideally, the time with children should be recorded for each individual children, but in reality, it is hard to do so, especially for families with multiple children. So the childcare time here is the total time each parent spend with all children in the family.

Time for market work is the total sum of minutes that the reporting individual spent for work (including overtime and work brought home), travel and communication associated with employment-related activities and any other employment-related activities. We use the actual work hours recorded in the diary rather than the contracted work hours as the former is more responsive to daily changes such reasons as own sickness or a child's care need (Hallberg and Klevmarken

2003), therefore more accurately capturing the trade-off between market time and parental childcare time.

Our empirical model also includes personal-level and household-level characteristics as covariates. Personal-level variables include age groups (25-34, 35-44, and 45-64), education level (completing year 12 or higher versus year 11 or lower), country of birth (Australian or main English speaking country background versus otherwise), self-rated health (very good or excellent versus good, fair or poor), receiving non-labour income or not, the number of weekend days reported in the two-day diary. Household-level information includes number of children (1, 2-3, 4 and more), household income group.

Our results indicate that parents value different childcare time differently and their valuation also changes with child age. Specifically, mothers place more emphasis on high-quality childcare while fathers prioritise low-quality childcare when their youngest child is at pre-schooled age. With an increase in their own work time, there is no evidence that mothers change time for high-quality childcare but there is evidence that they would cut time for non-development childcare. For fathers, they would cut time for high-quality childcare but give more time for low-quality childcare.

Compared with families having a child at pre-school age, mothers in those families having a school-aged child emphasize on non-developmental childcare and fathers give more priorities on development childcare. At the older age of the youngest child, with an increase in their own work time, there is evidence that mothers cut time for development childcare but no evidence that they would cut time for non-development childcare. For fathers, they would cut for both child care types, especially for low-quality childcare at a larger magnitude.

Our results imply a balancing/complementary mechanism between mothers and fathers in minimizing the time lost for kids because of their work. In an average family with a pre-schooled child, a mother would increase time for development-oriented childcare and maintain time for non-development-oriented childcare as her partner's extra work hour would make him cut time for the high-quality childcare and increase time for low-quality childcare. A father in return would maintain time for high-quality childcare and increase time for low-quality childcare as his wife would keep time for the former childcare unchanged and reduce time for the latter. In an average family with a schooled child, a mother would maintain time for both childcare dimensions as her partner's extra time at work would lead him to cut all time with children. Meanwhile, a father would maintain time for high-quality childcare and increase time for low-quality childcare as his partner would cut time for the former childcare dimension and keep time for the latter unchanged because of her additional work hour. Our results are consistent with Hallberg and Klevmarken's (2003) finding that the caregiving time of Swedish husbands and wives are complementary where they adopt a similar approach in terms of sampling (working couples and diaries are available to both parents). Our results provide a more detailed picture of balancing: the complementary happens at all types of childcare and at every stage of child development. Our findings of couple-based work-childcare balancing resonate with recent evidence of sharing childcare between parents. Parents work at different schedules so that they can share care with children, especially little children (Guryan, Hurst et al. 2008). About one-third of working parents in two-parent families with a preschool child work different schedules and thus can share childcare (Presser 1989). Fathers' participation increases dramatically with the number of nonoverlapping working hours between parents (Brayfield 1995). Also, mothers' work schedules often are such, at least for school-age children that they can be at home at the end of the school day.

With limited and mixed evidence on the impact of market time on parental childcare time in the literature, our study sheds a light into this relationship by providing multi-layered evidence of the trade-offs between parents' market time and childcare time. Our results suggest that there is a gender difference in the way each member of the couple adjusts childcare time in response to an increase in own or partner's market time that may need to be accounted for when considering policies to promote labour participation.

## Parenting Style as an Investment in Human Development

*Cobb-Clark, Deborah Ann (2,3,4); Salamanca, Nicolas ; Zhu, Anna*

We propose a household production function approach to human development in which the role of parenting style in child rearing is explicitly considered. Specifically, we model parenting style as an investment in human development that depends not only on inputs of time and market goods, but also on attention, i.e. cognitive effort. Socioeconomic disadvantage is linked to parenting style and human development through the constraints that it places on cognitive capacity. Our model finds empirical support. We demonstrate that parenting style is a construct that is distinct from standard goods- and time-intensive parental investments and that effective parenting styles are negatively correlated with socioeconomic disadvantage. Moreover, parenting style is an important determinant of young adult's human capital net of other parental investments.

## Beliefs, exams and social media: a study of girls and boys in the UK.

*Della Giusta, Marina ; Jewell, Sarah ; Vukanovic-Greetham, Danica*

Despite good performance in secondary school exams in science and maths by girls in the UK, there is a gender gap in the choice of science and maths subjects (Institute of Physics, 2013; Smith and Golding, 2015) that affects the selection of women out of both STEM (Science, Technology, Engineering and Maths) subjects at University and in the labour market, with important effects on pay gaps, career gaps and individual and household outcomes later on (Petrongolo and Olivetti, 2006; Ceci and Williams, 2010). The subject decision process is affected by a range of factors, including students' beliefs about labour markets and related choices (education, jobs, starting a family), which evolve over time depending also on parents, peers and the general mood surrounding exams. We build on literature addressing the factors influencing teen's expectations of going to university (Anders and Micklewright, 2015) and on the shaping of beliefs in social networks (Corazzini et al, 2010; Algan et al, 2015) and make use of two samples of boys and girls, one drawn from the UK household panel survey (Understanding Society) and the other from an evolving network of Twitter users to study the evolution of beliefs about the labour market in teens that make intensive use of social media and the effect of moods around General Secondary Compulsory Education (GCSE) exams. The first sample covers all respondents that were surveyed both before and after they took GCSE exams in the period 2009 to 2014 and analyses the role of personal characteristics and various influences (family -including parents' attitudes to gender roles-, friends, social media) on their beliefs about further education, job and family formation and, for those observed in the adult panel later on, their own attitudes to gender roles. The second sample is built from Twitter data of around 12k Twitter users exchanging around 28k messages containing words 'Maths, Science, English' during 29/05/2008 till 05/11/2014 period. A smaller subset of 413 individuals had explicitly 'GCSE' mentioned in their messages creating a subnetwork. Tweets were sent from 15/02/2012 to 05/11/2014. Twitter users often direct or address their public tweets to other users by using mentions with the @ symbol. Although mentions are used to address other users in a tweet, the tweet itself is still public and the messages may be read and commented on by other users. We created an evolving network with Twitter IDs as vertices and a timestamped edge in the network if a user mentioned another user. In this way if there is an edge in both directions, we can assume that two users have a more meaningful relationship and can focus on the at the structural and dynamic properties of this network and a subnetwork containing 'GCSE' as main topics of conversation in relation to gender of users and how the structure and topics changes over the time. We make use of both econometric modelling and social networks modelling to disentangle the various influences, and draw some preliminary policy implications.

# Insurance

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7/9/2016 8:30:00 AM: Tarthorst Rooms 1+2

*Anna Poleć*

## **Health Insurance Choices and Coverage Expansion in the United States: Dominated Choices by Low-Income Consumers**

*Hsu, John; Fung, Vicki*

**Research Objective:** The Affordable Care Act (ACA) sought to expand health insurance coverage in part through new, state health insurance exchanges through which consumers could choose an insurance plan. In theory, consumers would make judicious individual choices that balanced their preferences for coverage generosity and their willingness to pay for that coverage. The ACA also provides premium tax credit (PTC) and cost-sharing reduction (CSR) subsidies to lower-income enrollees to improve the affordability of the private insurance coverage. In other words, these consumers could have either greater coverage at the same price, or the same coverage at a lower price with the subsidies. To receive these subsidies, however, lower-income enrollees must choose qualified plans, i.e., a subset of the available plan choice set. There is limited information on which plans lower-income enrollees are choosing, whether they forego available subsidies, and the financial implications of these choices.

**Study Design:** We conducted interviews in English and Spanish among a random sample of 2,103 adult enrollees in individual market health insurance plans offered in California in 2014. The ACA permitted continued sales of health insurance plans through the pre-ACA channels, i.e., off-exchange plans, but these plans had to meet the ACA's minimum standards to be qualified health plans (QHPs). Accordingly, we included enrollees in individual market insurance QHPs offered both on- and off-exchange. We used self-reported household income and size to assess subsidy eligibility. Those eligible for CSR+PTC subsidies had incomes  $\leq 250\%$  of the federal poverty level (FPL), those only eligible for PTC subsidies were between 251-400% FPL. For 18% of respondents with missing income data, we used multiple imputation with chained equations. We examined whether these enrollees chose subsidy-eligible plans: to receive the PTC, enrollees had to select a plan through the exchange (Covered California); to receive the CSR, enrollees had to select an on-exchange Silver-tier plan. We also examined the types of assistance enrollees received when choosing their plan and the perceived affordability of their premiums and out-of-pocket costs during the year. We used multivariate models to adjust for sociodemographic characteristics (e.g., age, gender, race/ethnicity, education, self-reported health).

**Principal Findings:** We estimate that 51% of enrollees in California's 2014 individual insurance market were  $\leq 250\%$  FPL, 22% were between 251-400% FPL, and 27% were  $>400\%$  FPL. Among those eligible for subsidies, 17% purchased plans off-exchange (e.g., directly through insurers), thus potentially forgoing subsidies (14% of PTC+CSR-eligible and 25% of PTC-eligible). Among CSR-eligible enrollees who chose on-exchange plans, 77% enrolled in Silver plans vs. 17% Bronze and 7% Gold/Platinum plans. Subsidy-eligible enrollees who purchased off- vs. on-exchange plans were less likely to receive help from Covered California counselors (9% vs. 32%) and more likely to use insurance agent/brokers (31% vs. 24%). Among subsidy-eligible enrollees, those who purchased off- vs. on-exchange were more likely to have a lot of difficulty paying premiums (e.g., 27% vs. 12%, OR=2.7, 95%CI: 1.5-4.9 among those 251-400% FPL); among CSR+PTC-eligible enrollees ( $\leq 250\%$  FPL) those who purchased on-exchange Bronze vs. Silver plans more frequently had difficulty paying out-of-pocket costs (16% vs. 8%, OR=2.3, 95%CI: 1.3-4.3).

Conclusions: The majority of enrollees in California's 2014 individual insurance market were lower-income, but many appeared to forfeit available premium and/or cost-sharing assistance by purchasing plans that were ineligible for subsidies. Enrollees who received subsidies perceived their insurance and medical care to be more affordable than those who did not. Those receiving assistance from a Covered California counselor were less likely to forego subsidies, but fewer than one-third of subsidy-eligible enrollees received this assistance.

Implications: Many lower-income enrollees in the post-ACA individual health insurance market appear to make suboptimal plan choices. Because California requires mirroring of on- and off-exchange plans, those who purchased off-exchange potentially paid more for plans that were otherwise identical to subsidy-eligible plans. Additional efforts are needed to steer enrollees away from dominated plans.

## Insurance and Solidarity

*Lenel, Friederike ; Steiner, Susan*

Assume an individual in your neighborhood has just lost a considerable part of his belongings due to a large fire. You are asked for donations. How much will you donate? Will you donate less in case you learn that your neighbor had been offered an affordable and fair insurance some weeks before the fire; that this insurance would have covered the loss but the neighbor had declined to purchase it? What if you have reasons to assume that your neighbor had declined the insurance because she expected she would receive sufficient support from her neighbors in case of a loss; will that affect your donation decision?

The relationship between accountability and solidarity forms the core of our paper. We investigate whether solidarity transfers are reduced when individuals can be held accountable for their misfortune. We analyze this question in the insurance context. This context is of scientific and political relevance. Over the last years, there have been considerable efforts, both from the private sector as well as from the donor community, to expand formal insurance into previously unattended markets in developing countries (for a documentation of the rapid expansion, see Churchill and McCord 2012). For low-income people in these countries one major risk-management tool are informal support arrangements. Relatives, friends and neighbors assume insurance functions by providing monetary and in-kind transfers, shelter and labor assistance in times of need, as has been well-documented in a number of studies (Ligon, Thomas, and Worrall 2002; Fafchamps and Lund 2003; De Weerd and Dercon 2006). The motives behind such support arrangements are separated into selfish, incentive related motives (such as reciprocity) and altruistic, social preference related motives (Cox and Fafchamps 2007; Ligon and Schechter 2012). The question emerges how these informal support arrangements change when formal insurance becomes available. Evidence is scarce and not clear-cut (Hintz 2010; Landmann, Volland, and Frölich 2012; Mobarak and Rosenzweig 2013). It is relatively straightforward to expect that incentives to engage in these arrangements decline as the autarchy value increases, i.e., when insurance becomes available (for a theoretical and empirical analysis, see Lin, Liu, and Meng 2014); it is less clear how social preference related motives are affected.

This is where this paper sets in. Guided by the literature on fairness and accountability (Roemer 1998; Konow 2003), we study the relationship between accountability and solidarity with a lab-in-the-field experiment conducted in Cambodia. We designed a game that borrows both from the dictator game and the solidarity game. Players are randomly assigned the role of provider or recipient. Each provider is anonymously matched with one recipient. Both receive the same endowment. The recipient can lose a large proportion of her endowment due to a random shock. The provider is asked how much of his endowment he would transfer in case the recipient lost. We vary whether the recipient has the option to purchase an insurance which covers the loss from the shock and whether the recipient is informed about the provider's support possibility. We investigate to what extent the provider reduces his transfers when the recipient can be held accountable for

the outcome as she forewent the insurance option. Specifically, we analyze how much of this reduction can be attributed to a response to the choice per se of the recipient, in line with the accountability principle (Konow 1996), and how much to a response to the recipient's informed choice, i.e., his intentional reliance on the solidarity transfers, in line with intention-based reciprocity (e.g., Charness and Rabin 2002). We complement the results with detailed survey data on subjects' characteristics and attitudes.

We present a theoretical model on conditional solidarity based on Konow (2010) where a provider incurs an internal cost when deviating from what he perceives as the adequate transfer to a less well-off recipient. We allow this adequate transfer to depend not only on the recipient's endowment but also on the recipient's choice set and information (i.e., his decision calculus). We define different types of solidarity behavior based on the extent to which transfers are conditioned on the recipient's decision calculus. The anonymous, within-subject design of the experiment allows us to classify the subjects' transfer behavior according to these types and to contrast the types with subjects' characteristics and attitudes.

The experiment and the survey were conducted in 21 villages in two neighboring provinces, Siem Reap and Banteay Meanchey, in Northwestern Cambodia from July to October 2015. The context of Cambodia is interesting as insurance for the low-income population (more specifically, health insurance) has recently been introduced, yet is still not available in all provinces. In one of our two provinces, Siem Reap, health insurance was introduced in the rural areas in 2012. In the other province, Banteay Meanchey, health insurance is not yet available. We first conducted a comprehensive household survey with close to 1,300 households in these villages. From the surveyed households, 672 respondents then took part in the experiment. Between the household survey and the experiment there was a time gap of two weeks in order to reduce confounding factors. Data collection was finalized at the end of October 2015. All findings presented in this version of the paper are preliminary. Data analysis is ongoing.

On average, providers transfer 15% of their endowment to a recipient who had no option to insure. There is a significant reduction in transfers provided when the recipient can be held accountable for her loss: providers reduce their transfers on average by 30% when a recipient forewent the option to insure. This reduction is mostly driven by a response to the recipient's choice per se and less by a response to the perceived intention behind this choice. Interestingly there is a large proportion of providers (42%) that transfer the same amount, independent of the option the recipient had available. This proportion is comparable to the findings by Trhal and Radermacher (2009). Potentially, individual accountability receives more consideration with a higher valuation of autonomy. When we contrast the participants' behavior in the experiment with their self-reported autonomy elicited in the survey, we find support for this proposition. Participants who see their lives to depend on themselves punish the foregoing of insurance significantly stronger in the experiment. Also, participants who reportedly rely less on the support of others punish the foregoing of insurance stronger. Surprisingly, the response to a recipient who decides informedly against the insurance (suggesting a willful reliance on the provider's support) is less clear-cut. The majority of the providers (80%) do not punish the recipient's willful reliance. In fact, 20% transfer even more (or, punish less), in case the recipient was informed about the support possibility when deciding against the insurance. We can only speculate about the reasoning behind this behavior. One possible explanation is that these providers wish to fulfill the expectations of a recipient who intentionally did not take up insurance specifically because she counted on the provider's transfer in case of loss, i.e., they wish to fulfill the expected transfer. Additional analyses will be done.

# Personal experience of a small-probability event with severe consequences influences willingness to buy insurance: The mediating role of worry and subjective probability

*Połeć, Anna ; Traczyk, Jakub ; Sobków, Agata ; Tyszka, Tadeusz*

## AIM

Normative decision theory posits that rational choices result from multiplicative combination of the severity of consequences and their probabilities. However, such assumption does not hold in case of natural hazards, i.e., people often tend to diminish or even ignore information about low probability of dreadful consequences of natural hazards. Instead, they base their insurance decisions on emotional reactions evoked from personal experience of a disaster. In the present study, we aimed at experimentally verifying the causal relationship between personal experience of low a probability loss and insurance behaviour. Specifically, we assumed that personal experience of severe negative outcomes would increase feelings of worry and ratings of subjective probability which in turn would influence willingness to pay for insurance.

## EXPERIMENT I

### Method

At the beginning of the experiment, participants received 100 tokens and they were instructed to retain as many tokens as possible at the end of the game. Participants were informed that they would take part in a simple game in which they would have to build and protect from a disaster their own cardboard building for a time span of several virtual years. Participants were not informed about the exact time of the game. To monitor the time course of insurance decisions, participants were given the opportunity to purchase an insurance policy at the beginning of each year of the game. The decision about buying an insurance was voluntary and the insurance was valid only for one year. Participants in the experimental condition experienced the disaster (windstorm): the experimenter ran a fan which destroyed the cardboard building. In this case, they lost 50 tokens minus insurance coverage. Buying the insurance policy compensated possible losses in case of a disaster. In the control condition, participants did not experience a similar disaster. Additionally, each quarter, subjective feelings of worry and subjective probability that the disaster would happen in the next three months were assessed.

### Results

As expected, we found a significant interaction effect of experimental manipulation and year of insurance,  $F(3, 204) = 4.237$ ,  $p = .006$ ,  $\eta^2 = .059$ . Participants who experienced losses (i.e., their cardboard building was destroyed) between second and third year of the game, were willing to pay more in third ( $p = .028$ ) and fourth year ( $p = 0.025$ ) for the insurance policy.

The similar pattern of results was observed when measures of worry and subjective probability were taken into account,  $F(12, 816) = 2.636$ ,  $p = .002$ ,  $\eta^2 = .037$  and  $F(12, 816) = 2.022$ ,  $p = .020$ ,  $\eta^2 = .029$ , respectively. That is, personal experience of disaster led to higher ratings of worry and subjective probability in the experimental but not in the control condition.

## EXPERIMENT II

We decided to monitor the process of insurance decision-making in a group of participants who lost their tokens due to activities unrelated to the disaster.

### Method

The experiment was conducted in the same way like the previous one, but with one fundamental difference. Instead of experiencing a disaster, participants in the comparative group were informed that they decided to buy a holiday trip. Participants were then losing 50 tokens minus insurance coverage like in the condition with a windstorm.

## Results

Affirming earlier results, we received a significant interaction effect of experimental manipulation and year of insurance  $F(3, 204) = 7.004$ ,  $p = .001$ ,  $\eta^2 = .093$ . Participants who experienced a disaster were willing to pay more for insurance in the third ( $p = .006$ ) and fourth year ( $p < 0.001$ ) compared to participants who lost tokens by purchasing a holiday trip.

However, we could not observe a significant interaction effect of worry  $F(12, 816) = .628$ ,

$p = .648$ ,  $\eta^2 = .009$  and subjective probability  $F(12, 816) = 1.623$ ,  $p = .134$ ,  $\eta^2 = .023$ . Partial loss of tokens caused by both disaster and holiday trip purchase led to higher ratings of worry and subjective probability.

Next, based on the data collected from the first and second experiment, we tested two multiple-step multiple mediator models independently for worry and subjective probability as a first mediator to determine whether personal experience of a disaster exerts an effect on willingness to pay for the insurance policy through changes in those mediator variables. Interestingly, we found a significant indirect effect via feelings of worry (Figure 1) as a first mediator  $b = .250$ , 95% CIs [.016, .805], and an indirect effect for subjective probability (Figure 2) as first factor that was not significant  $b = .411$ , 95% CIs [-.257, .342]. The total effect in this analyses was  $b = .4133$ , 95% CIs [.088, .932].

## CONCLUSION

To our knowledge, this study is the first to show that experimentally induced personal experience of high-consequence low-probability events increases the willingness to pay for insurance. Importantly, this process is causally mediated by enhanced feelings of worry and ratings of subjective probability. Our experiment offers a novel perspective in studying the role of affect and cognition in insurance decisions and provide an experimental tool to disentangle affective and cognitive processes.

# *Moral Behaviour / Corruption*

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7/9/2016 8:30:00 AM: Roghorst Room

*Dr. Behnud Mir Djawadi*

## **The collaborative roots of corruption**

*Shalvi, Shaul; Weisel, Ori*

We examine how corruption persists in collaborative settings. In our studies, participants were paired and had the opportunity to lie about the outcomes of private die rolls. Two participants rolled a die sequentially, and earned money only when the pair rolled a 'double'. Several experiment revealed clear evidence for collaborative dishonesty, especially when parties' payoffs

were completely aligned. When payoffs were not aligned, lying decreased. Further evidence revealed that dishonest people used 'corrupt signaling' to bully honest people into bending ethical rules. We introduce several interventions that prevent collaborations from turning corrupt.

## **Bribes and Reciprocity**

*Czap, Hans; Czap, Natalia*

Corruption is defined as the misuse of public office for private gain. To fight corruption traditional economic analysis advocates a mix of one or more policies that directly change the expected pecuniary costs and benefits, e.g. increasing wages, improving monitoring, raising fines, increasing staff rotation, lowering red tape, and rewarding whistleblowers. However, experimental evidence shows that non-pecuniary factors play an important role in deterring corrupt behavior.

The purpose of this paper is to experimentally investigate bribing behavior and the effect of reciprocity in the context of bribes. Compared to previous experiments on corruption, we are introducing two main variations. The first variation is that there are no negative externalities of corruption to other citizens. An example for this situation is the procurement of public projects, where multiple firms may choose to make side payments to a public official to ensure favorable treatment when it comes to awarding a governmental contract, for example a contract to exploit a local natural resource. For the public it is arguably largely irrelevant who gets the permission to do so, since both firms have to invest locally similar money to extract the resource. Even if negative externalities are present, they are mostly negligible for any one corrupt action and in their impact on individuals. By incorporating an explicit (and usually substantial) externality into the experiment one is most likely significantly overemphasizing this aspect of corruption, especially from an individual perspective (compared to a societal perspective where externalities should typically be included), and hence is likely to observe behavioral responses that do not have an equivalent in the field.

The second major difference to previous experiments is that there is competition in bribing. There are two firms that try to gain favorable treatment by one public official. Especially when it comes to procurement of public contracts it is much more common to observe multiple firms, rather than one firm as in most corruption experiments, attempting to influence the public official to achieve a favorable outcome. So while we do not have an externality on citizens we do have a negative effect of corruption on competitors.

The objective of the experiment is to determine factors that drive a public official to accept or reject a bribe and what factors determine the subsequent allocation of public funds by the public official in a situation when there is competition in bribing. Of particular interest in this context is the role of reciprocity, in how far discretionary power over acceptance of bribes and total allocation of funds matters for corrupt behavior by public officials, what role punishment plays, and in how far competing bribes alter behavior.

In our bribing game there were 4 players: two firms, a public official, and a third party citizen. Every round the two firms independently decided on the amount of money from their funds to bribe the public official. Subsequently, the public official decided on how to allocate the public funds to the two firms. Lastly, the third party citizen chose whether to engage in costly punishment of the public official. We had a 2x2 randomized design with (a) the public official having/not having the option to reject the bribe; and (b) the public official having /not having to distribute all of the public funds between the two firms.

The experimental data are analyzed with respect to two aspects: a) the impact of the size of the bribe and the potential or occurrence of punishment on acceptance rates by the public official; b) the allocation of public funds based on the size of the bribe and the decision to reject or accept the bribe, if applicable. For the first area of inquiry we use various logit regression models for analysis.

Preliminary results support that the impact of the size of the higher bribe on acceptance rates is statistically significant (at the .05 level) and positive. It is noteworthy that the size of the lower bribe did not affect the likelihood of the public official accepting the high bribe, so what seems to matter is not the relative bribe size but the size of each bribe on its own. Importantly, it also turns out that punishment is ineffective in deterring subjects from accepting bribes. For the second area of inquiry we ran various tobit regressions. The results support that if the public official can distribute less than the total amount s/he will on average do so (significant at .01), even though there is no inherent personal advantage for the public official to do so. Similarly, the public official tends to distribute much less if they can reject a bribe offer (significant at .01). This strongly hints at the presence of reciprocity in the decision making process of the public official. If the public official must accept then s/he may feel that they also must reciprocate by allocating most of the funds to the firms. The ratio of high bribe to low bribe statistically significantly affected the subsequent allocation (at .01). The same result holds when controlling whether the high bribe actually was accepted. We also investigated the role of personal dispositions in the decision of the public official to reciprocate and we found that the personality scales "locus of control", "trust", "equity-fairness", "self-deception" and "Machiavellianism" are among the significant determinants of such behavior.

The results in this paper are important for furthering our understanding on what drives corrupt behavior. Contrary to the believe that it is all about personal greed and the desire to maximize profits, the results in this paper show that reciprocity and fairness, and various personality traits are equally, or, perhaps, more important determinants of the decision to accept a bribe and the subsequent allocation of funds. This should inform policy to decrease the use of punishment as a way to fight corruption but instead aim to influence the norms and believe system of public officials.

## **Creative Monetary Rewards: Small Bonuses Can Motivate Ethical Behavior**

*Wang, Long*

Although both intuition and a large body of empirical research suggest that the pursuit of money can be inconsistent with moral precepts, money's effects as a universal reward often make it an all-purpose motivator (Lea & Webley, 2006). Monetary rewards not only increase effort and performance (Bijleveld, Custers, & Aarts, 2012), they also provide beneficial outcomes for social interactions (Mead & Stuppy, 2014, for reviews). For example, classic studies (e.g., Isen & Levin, 1972) in social psychology have shown that finding money in a public telephone not only made people feel happy; it significantly increased their kindness and willingness to help others. Zelizer (1996) suggested that money can activate norms of fairness and Al-Ubaydli et al. (2013) found that priming people with a market/trade mindset increased their trust of strangers. Thus, in spite of its oft-cited negative effects on morality, money can also have a potentially positive effect on sociality.

The current research focuses on these two contrasting effects by investigating the impact of small monetary rewards on honesty. More specifically, this research addresses how small monetary rewards for honest behavior influence the likelihood that people will lie to boost their monetary payoffs. We suggest that small incentives to encourage honesty lead to two contrasting effects: a reward effect, which combines the intrinsic value of being honest with a nominal monetary payoff, and a temptation effect, in which people focus more on their monetary outcomes, with larger payments increasingly luring them to act selfishly and unethically.

We conducted four experiments to investigate these conflicting forces. Each of the experiments used different versions of the Deception game (Gneezy, 2005) to test whether using small bonuses can motivate honesty. Specifically, Experiment 1 showed that a \$1 bonus led people to act more

honestly when they could have lied to obtain \$4; an identical bonus, however, did not increase dishonesty. Experiment 2 used a different context and again showed that a \$1 bonus led people to act more honestly; it also found no evidence that this small payoff crowded out subsequent altruistic behavior. Experiment 3 showed that a \$1 bonus increased people's honesty even when the payoffs for lying increased to \$8, \$12, and \$16 but not when the payoff for lying further increased to \$20. Experiment 4 found that even smaller bonuses for honesty had an impact, although it tended to be somewhat weaker. In addition, compared to no bonus, the combined effect of several small monetary bonuses (1 dollar, 75 cents, 50 cents, and 25 cents) marginally reduced lying.

Our results suggest that small monetary rewards are effective in stimulating honesty even in the presence of much larger incentives for lying. As a result, this research provides new insights into the psychological meaning of money; it also has practical implications for rewarding ethical behavior in organizations. Although money is a ubiquitous medium of exchange in market transactions, people tend to have a wide array of attitudes toward money, from viewing it as a representation of self-worth, success, and achievement, to more religious prescriptions suggesting that it is the root of all evil. The current research used small amounts of money as an incentive for honesty and found that they were effective in reducing lying. Thus, it appears that people do not need huge inducements to act morally; instead, they seem to benefit from a small monetary push.

## **The impact of risk perception and risk attitudes on corrupt behavior: Evidence from a petty corruption experiment**

*Mir Djawadi, Behnud ; Fahr, René*

We investigate one possible explanation for observed rates of corrupt behavior namely that individual decision makers who frequently engage in illegal actions may underestimate the overall probability of being caught. This might in particular be true for petty corruption where small amounts of bribes are involved and the detection rate is rather low. To abstract from confounding effects of reciprocal behavior, we design an experiment where a public official decides upon accepting a bribe that leads to a higher present period income while facing the risk of being audited and being left with a considerable lower income in all subsequent periods. Because risk attitudes might differ when putting earned versus endowed income at risk, we compare treatments where participants either receive an endowment beforehand, or earn their income by conducting a real effort task in every period.

Independent of the treatments we already find high rates of corruption in very early periods. Risk attitudes measured with a subsequent lottery-choice experiment do not correlate with the behavior observed in the corruption experiment. We explain our findings by a systematic underestimation of the overall probability of being audited. Although the detection probability is small in each period, the probability of being caught only once is substantially high when engaging in corrupt behavior on a regular basis. Our findings have important political implications because the underestimation of the total risk involved in engaging in corrupt behavior might nullify measures to fight petty corruption by increased governmental auditing.

# Personality

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7/9/2016 8:30:00 AM: Kolkakker Room

*Prof. Natalia V Czap*

## **Can't wait to celebrate – Holiday euphoria, impulsive behavior and time preference**

*Lahav, Eyal; Shavit, Tal; Benzion, Uri*

The pre-holiday effect is a well-documented phenomenon especially for financial markets. The average return immediately before holidays is greater than the average return on an ordinary day and the trading volume is higher on exchange-open holidays. The holiday season has a strong effect on life, not only financial markets. For example, during the holiday season there is an increase in percent of body fat and fat mass among people.

The good mood caused by the holiday euphoria is the behavioral explanation for the pre-holiday effect.

In this paper, we investigate how holiday euphoria affects time preferences before a holiday. Although there is considerable research on the pre-holiday effect and its influence on investors in the capital market, we are unaware of any prior research on the influence of the pre-holiday effect on time preference. Time preference varies from one person to another. It is influenced by age, gender, income and many other personal characteristics. It also depends on the person's feelings and emotions. It should be remembered that time preference is related to self-control, the ability to delay gratification and impulsive behavior. People are more present-oriented (have higher SDR) because of a poor ability to delay gratification or to control impulsive behavior. Some studies show that a positive mood leads to impulsive behavior such as compulsive buying, risk-taking, gambling, drinking or general rash action. This means that we expected to find that the good mood caused by holiday euphoria will induce a higher tendency for impulsive behavior, which will be captured in higher present orientation (higher SDR).

The subjects in this study were 170 undergraduate students in economics at a University in Israel. The survey was conducted before and after the Passover vacation, which is a two-week break in studies at schools and universities in Israel (the Passover holiday itself is one week, generally the second week of the vacation). It falls in late March or April, after approximately one-third of the spring semester has passed. The subjects were divided into two groups: the before group, which was asked to answer the questionnaire prior to the vacation (n = 82); and the after group, who were asked to answer the questionnaire approximately one week after the vacation (n= 88).

The questionnaires were distributed in class. There were six time preference questions. In each question, subjects were told that they can receive a sum of money today, but are also offered the chance to receive another amount in the future. They were asked to fill in the minimum amount that they are willing to accept (WTA) in the future. The Extended Life Orientation Test (E-LOT) questionnaire was used in the second part of the questionnaire to assess subjects' level of dispositional optimism and pessimism. In order to measure risk aversion simply, we used a lottery question. In order to better understand the effect of the Passover holiday we asked two additional questions. The subjects were asked if they were feeling down at the moment, and to rate how pleased they are with their studies.

The results, suggest that students demonstrate a stronger preference toward the present (higher SDRs) before the holiday than after. The results are consistent with our hypothesis that holiday

euphoria induces impulsive behavior that will be captured in higher present orientation (higher SDR). The impulsive behavior due to holiday euphoria affects time preference but not risk-taking.

It seems that holiday euphoria does not affect the optimism and pessimism, which is not surprising because optimism and pessimism are more closely related to the way people view their life. Holiday euphoria induces a good mood but does not change how people perceive their life. On average, the students before the Passover holiday felt less down at the moment of the survey and are more pleased with their studies than those after the holiday.

In order to further understand possible influences on time preferences, we conducted a multivariate regression analysis. In both groups optimism has no effect on time preference. However, subjects in the before group who show more pessimistic feelings (higher pessimism) have a lower SDR, meaning that they are more future-oriented (less present-oriented). In the after group pessimism has no effect on SDR. The regression analysis also shows that the down feeling has a positive effect on SDR only in the before group. This is consistent with the studies who have found that negative mood can lead to impulsive behavior, because people who are feeling bad or are in a negative mood behave impulsively in ways they hope will improve their feeling. This impulsive behavior induces higher SDR. The difference between the students before and after the holiday is not limited to different SDRs or different feelings at the moment of the survey. The differences are deeper, and it seems that the emotions have a different effect before and after the holiday.

The SDR is a good indication of impulsive behavior, and our results show that it is also a good measure to the behavior induced by holiday euphoria. Our findings suggest that holiday euphoria is a complex phenomenon. In addition to affecting impulsive behavior, it also has some effect on how immediate mood influences impulsive behavior.

We suggest that future research examine the effect of holiday euphoria on people's individual behavior, rather than focusing only on financial markets. The higher SDR before the holiday might mean that holiday euphoria causes people to take more loans or save less before the holiday. Therefore, financial institutions who want to increase their loan business could augment their marketing before the holidays.

## **Authenticity and self-control in consumer choice: The role of intuition and deliberation**

*Kokkoris, Michail; Hoelzl, Erik; Alós-Ferrer, Carlos*

Many situations that consumers face every day require self-control. Although evidently beneficial in achieving long-term goals and important for success in many spheres of life, in this research we argue that exerting self-control may also make people feel less authentic. Authenticity describes the subjective feeling of acting in accordance with one's true self and abundant research has demonstrated its positive impact on a wide range of life outcomes, such as subjective well-being, self-esteem and meaning in life. However, prior research has largely neglected what the experience of exerting self-control implies for authenticity. This research attempts to fill this gap by investigating the interplay between self-control and authenticity in the domain of consumer choice. Drawing on dual process theories of information processing we propose that preference for deliberation and preference for intuition determine whether exerting self-control leads to higher or lower feelings of authenticity. We predicted that making a consumer choice reflecting high (as opposed to low) self-control will make individuals with a higher preference for deliberation feel more authentic than individuals with a lower preference for deliberation, whereas making a consumer choice reflecting low (as opposed to high) self-control will make individuals with a higher preference for intuition feel more authentic than individuals with a lower preference for intuition. Results from an online study (N=254) provide preliminary support for our predictions. Theoretical

and practical implications (e.g., for health campaigns or consumer policies employing self-control messages) are discussed.

## Risk Preference as Regret Control?

*Summers, Barbara ; Darren, Duxbury*

### AIM

A common perception, particularly in economics and finance, is that an individual's propensity to engage in risky behavior, such as investing, is driven largely by their risk preference. Emotions, however, have been shown to play a role. Summers & Duxbury (2012) show that in the disposition effect (selling winning shares, while holding losing ones) risky investing behavior, previously thought to be explained by prospect theory, is driven by emotional responses to prior outcomes, with a determining element of the individual's emotional reaction being the responsibility they feel for the decision leading to the outcome (in line with Zeelenberg et al., 1998). This raises the issue of if and how responsibility and emotions also link to initial decisions to become involved in risky situations such as investment. In other words, does emotional response affect our propensity to take part in risky investment behavior or, put another way, our risk preference? We examine this in two studies.

### STUDY 1

Our initial investigation uses the data from Summers & Duxbury (2012) to examine the links between feelings of responsibility and initial investment behavior (not examined in the original paper).

### METHOD

We looked at individuals who had the chance to invest in a stock either by purchasing shares or by being endowed with shares and choosing not to sell. Individuals who purchase (active choice) should feel higher responsibility than those who passively retain shares (Cioffi & Garner, 1996). We measured participants' emotional response to the outcome of one period of investment. Individuals provided a self rating of risk preference.

### RESULTS

- There is a positive relationship between risk preference and the number of shares held ( $p=0.028$ )
- Adding active/passive choice makes this relationship more significant ( $p=0.011$ )
- Active/ passive choice is significant in the model ( $p=0.029$ ), controlling for the different starting points in terms of number of shares held in the two conditions (0 for active, 10 for passive)
- Responsibility for the initial decision, and hence potential future outcome, is predictive of shares held ( $p=0.029$ ), with those feeling less responsibility holding more shares
- Including all three predictors in the model leads to a strong significant effect for responsibility ( $p=0.008$ ) and active/ passive choice ( $p=0.042$ ), but risk preference is reduced to marginal significance ( $p=0.080$ )
- Risk preference becomes insignificant if a gender dummy is included ( $p=0.007$  for responsibility,  $p=0.047$  for active/ passive choice in this model)

### STUDY 2

Investigation 1 supports the idea of a link between risk preference and responsibility. This study explores the link further focusing on the initial decision to invest.

## METHOD

Participants were presented with information on a stock and were told they had £500 which they could choose to invest. They were asked to:

- Rate how risky the stock was
- Say how many shares they would choose to buy using their £500

They were asked to imagine they had bought those shares, and had suffered a loss of £5 per share (equivalent to 10%) and:

- Indicate the levels of responsibility and regret they would feel in that situation
- Indicate how they felt the shares were likely to perform in the next period

We also asked them to rate their risk preference. Participants were then asked to indicate their levels of responsibility and regret for a situation where they had purchased the maximum number of shares – this let us compare individuals at the same level of share ownership

## RESULTS

Here we compared those self rated as risk averse (n=24) with those who see themselves as more willing to accept risk in exchange for a possible improved return (n=25)

- The risk averse group buy fewer shares ( $p=0.031$ )
- BUT ratings of how risky the stock is are not significantly different across risk preference groups ( $p=0.415$ )
- The risk averse group felt more responsibility ( $p=0.037$ ) despite having fewer shares
- BUT there is no significant difference in the amount of regret ( $p=0.673$ )
- There is no significant difference in expectation of next period performance between the two groups ( $p=0.372$ )

When we look at the situation where participants had purchased the maximum number of shares:

- The risk averse group feel more responsibility ( $p=0.014$ )
- There is a marginally significant difference in the amount of regret ( $p=0.099$ ), higher for the risk averse
- There is a significant positive correlation between responsibility and regret ( $p<0.05$ )

## CONCLUSION

These findings support our hypothesis of a link between responsibility and risk preference. People who are more risk averse feel more responsibility and more regret for an equivalent number of shares. It appears though that, although some individuals are more prone to feeling responsibility and regret, appetites for experiencing regret are similar across individuals. The higher levels of responsibility felt by risk averse individuals seem to lead them to control their potential exposure to regret by limiting the risk they take on (by buying fewer risky shares in the first place), suggesting risk preference is a manifestation of regret control. Our findings have important implications for policy in relation to the use of defaults ('nudges') that may be seen as recommendations in the context of pensions and saving for retirement, in that some people may feel much worse about any negative outcomes experienced. Further investigations are in progress.

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## **Empathy conservation: expanding laboratory experiments into the field**

*Czap, Natalia V ; Czap, Hans J ; Banerjee, Simanti ; Burbach, Mark E ; Lynne, Gary D*

The purpose of this paper is to expand the idea of empathy conservation from the laboratory into the field. This leads to three objectives. The first objective is to summarize and analyze the findings from laboratory experiments exploring the role of empathy in pro-environmental and conservation decisions. The second objective is to show how empathy conservation can be tested in field experiments. The third objective is to offer ways of incorporating empathy conservation into environmental and conservation policies and programs.

Empathy conservation refers to the individual conservation decisions motivated by empathy toward nature, other fellow human and non-human beings, and future generations as suggested by the metaeconomics framework (MEF) and dual-interest theory (DIT) (Lynne et al. 2016). MEF and DIT posit that individuals are motivated by two inseparable, yet conflicting interests: self-interest and other (shared with others)-interest. This conflict gets resolved through empathy tempering self-interest, resulting in a balanced decision, in which (usually) neither of the interests is maximized, but we rather observe sacrifices in both interests. Empathy is based on imagining the struggle of others, on "walking-in-the-shoes-of-others" and, as a result, perhaps joining in sympathy with a shared causes like conservation and sustainability. The importance of empathy in conservation and pro-environmental decisions has been demonstrated in several laboratory experiments with the findings summarized in Czap et al. 2014 and expanded on in Lynne et al. 2016.

Environmentally-friendly behavior in general and conservation in particular are domains of economic decisions where empathy plays a prominent role. In the course of several laboratory experiments we have explored the role of empathy and other-shared interest, and whether we can use soft nudges to make people's empathy motivations salient and move them toward more environmentally conscious choices and toward empathy-driven conservation. From these experiments we have learned several lessons that can be loosely organized in three sections:

1. Feedback, exposure to consequences, and self-reflection increase conservation:

- Receiving feedback of negative emoticons/disapproval generates greater levels of conservation than monetary fines to penalize low conservation (which lowers conservation levels further).
- Being exposed the consequences of their decisions makes people conserve more even if zero conservation is still the profit-maximizing choice.
- Frequent reflection on "who I am" and "how do I treat others" results in more balanced and environmentally friendly actions.

2. Soft nudges and framing affect conservation in a positive way:

- Nudging for empathy via emoticons works. If victims express negative emotions/disapproval of others' conservation decisions, this leads to more conservation by others.
- Nudging for empathy via calling to "walk-in-the-shoes-of-others" works well in conjunction with financial incentives. This type of empathy nudging showed superior performance in terms of increased conservation levels and leads to more profit sharing/more equitable distribution of profits as compared to only financial incentives. The empathy considerations temper self-interest, leading decisions in which self-interest and other-interest are in

balance. These sacrifices in profits result in both greater sharing with other people who are affected by the individual decisions and higher levels of conservation.

- Individuals are willing to empathize and walk in the shoes of others when making environmentally-relevant decisions. Moreover, individuals readily respond to other-interest framing that invites empathy and imagination of how others feel. Self-interest framing, on the other hand, is not a strong determinant of environmental friendly decisions.
- There is a positive relationship between the behavior of leaders/first movers and followers in environmental contexts.

### 3. Norms and personality traits play a significant role in conservation:

- A certain percentage of behavior, such as anonymous donations, is purely altruistic/not involving financial incentives. This percentage is independent of the opportunity cost, i.e. the financial incentives offered to deviate. The remaining percentage of decisions is affected by a mix of altruistic considerations and financial incentives.
- Individuals scoring higher on empathy personality scales are in general more likely to be moved by other people's behavior and as a result "join the cause" for conservation, and sustainability.

Future research on empathy conservation involves field experiments on encouraging environmentally conscious behavior by nudging for empathy conservation. Czap et al. (2015) conducted a pilot experiment on encouraging enrollment of agricultural operators in the US Department of Agriculture (USDA) Conservation Stewardship Program via nudging for empathy in Nebraska, US. In the current paper we build on our previous research on empathy conservation and explore it in the context of governmental conservation policies and programs as well as non-governmental environmental initiatives.

In this paper we will offer insights, supported by this experimental evidence, into conservation behavior and develop suggestions for environmental policy makers and private environmental initiatives. Some examples of the suggestions include:

- Incorporating non-pecuniary incentives and soft nudges into the conservation policy narrative. For example, the USDA Natural Resources Conservation Service webpage on the Conservation Stewardship Program and the associated factsheet is mostly devoted to the explanation of payments and eligibility. It is not clear why an agricultural producer should participate if not for the money. It would be beneficial to redesign the page, the factsheet, and other communications about the program to outline the challenges and the environmental benefits of the program with concrete cases (including pictures) of improved watersheds, saved habitats, etc.
- Complementing financial incentives with empathy nudging. For example, the USDA Farm Service Agency regularly sends out letters to join/renew contracts for the Conservation Reserve Program (CRP). Along with information about the financial benefits, these letters could include a statement inviting the reader to imagine the state of the land with and without environmental protection, for example along the lines "before making a decision about participation/reenrollment in CRP, please contemplate how your decision will affect ...".
- Including communities in the coordination of conservation efforts. The USDA service centers and/or extension offices can support agricultural producers to become leaders in conservation in order to provide a good example to other farmers in the region. To more directly expose farmers to this leadership effect, conservation work-groups could be created, including both high and low conservation level producers.

# Finance / Decision Making 1

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7/9/2016 11:30:00 AM: Dorskamp Room 1+2

*Prof. Simon Kemp*

## **Financial beliefs, risk attitudes and determinants of risk taking among professional investors and lay people**

*Jansson, Magnus Lars; Tronnberg, Carl-Christian; Hemlin, Sven*

This paper investigates the role of financial expertise for stock investors' financial beliefs and risk taking. In study 1 we compared financial beliefs among a group of Swedish professional portfolio managers and financial analysts (n=67) with a group of lay people (n=278). It was found that endorsed financial beliefs significantly differed between professionals and lay people. Professional investors were less confidence in the efficiency and the rationality of stock market but had more confidence in financial expertise than lay people. Professional investors also believed in a stronger association between risk and return and between being a long term investor and achieving a high return than lay people.

In study 2 risk taking in portfolio decisions among professional investors (n=63) and lay people (278) was studied. It was found that professionals and experienced investors were more risk taking than lay people in their portfolio decisions. Lay peoples' risk taking were to a large extent influenced by positive affect, self-confidence, financial risk attitude and beliefs about a strong relationship between risk and return. Among professional investors risk taking were influenced by financial risk attitude and perceived financial risk norms within the organization.

The importance of risk attitude, self-confidence and positive affect as determinants of risk taking in portfolio decisions were negatively associated, albeit weakly with self-rated financial knowledge among lay investors. We draw the conclusion that lay people and professional investors have different beliefs about the financial market and more specifically regarding the relationship between risk and return. Professional and more experienced investors are more willing to take financial risks than lay people as they believe in a stronger relationship between risk and reward. The results indicate that professional investors such as mutual fund investors and managers of pension funds should be more concerned in communicating their financial beliefs to their beneficiaries.

## **Predictive Coding Of Forecasted Economic Change: How Economic Messages Alter The Brain's Response To Error Prediction And Influence Individuals' Decisions**

*Petropoulos-Petalas, Diamantis; Hendriks Vettehen, Paul; van Schie, Hein*

Literature on the relation between economic news and the financial markets has put forward the assumption that negative news about the economy can shape individuals' economic decisions and as a result boost an economic crisis. For instance, studies in finance and communication science have found relations between the valence of (macro)economic news and market responses (e.g. Casarin & Squazzoni, 2013; Hollanders & Vliegthart, 2011; Kleinnijenhuis, Schultz, Oegema, & van Atteveldt, 2013), as well as between exposure to economic news and individuals' attitudes about the economy (e.g. Akhtar, Faff, Oliver, & Subrahmanyam, 2013; Boomgaarden, van Spanje, Vliegthart, & de Vreese, 2011; Goidel, Procopio, Terrell, & Wu, 2010; Hetsroni, Sheaffer, Zion, & Rosenboim, 2012). However, direct evidence that economic news can affect individuals' economic

behavior is lacking. Aiming at filling this gap, our study investigates if simple messages about forecasted economic change can impact behavioral economic choice.

We adopt a “prediction-error” approach based on the predictive coding account for decision-making (den Ouden et al., 2012; Rushworth et al., 2009; Summerfield & de Lange, 2014). This approach suggests that based on prior experience our brains generate predictive models of the costs and benefits associated with the given economic options. Such a model codes a probabilistic scheme of economic expectations about the future. Our brains then compare new input from experience to the model; in case of a match, the model is confirmed and behavior has no motive to change. In case of a mismatch, the brain elicits a prediction-error signal used to update its model. Hence, we propose the idea that by stressing certain aspects of the economic reality news about future economic prospects bias people’s internal models of the costs and benefits associated with their economic options (i.e. shaping economic expectations). This biased representation of the future economy remains impervious to change especially when actual evidence about the future direction of the economy varies strongly as it does in the real world, providing little motive for updating economic behavior based on the current economic reality.

Results from one behavioral (N=40) and one electrophysiological experiment (N=22, analysis pending) corroborate our reasoning that individuals’ predictive models of their economic reality can easily be biased through simple messages about forecasted economic changes. Specifically, using a within-subjects design, simple messages about possible economic changes (positive or negative) in expected outcomes of future trials during a modified version of namely the BART task, a known risk taking game originally developed by Lejuez et al. (2002), had a direct effect on behavioral risk taking, in absence of any changes in actual trial outcomes. Results of the behavioral experiment showed that, following negative and positive messages participants exhibited significantly less ( $F(1,39) = 18.733, p < .001, \text{partial } \eta^2 = .324$ ) and more ( $F(1,39) = 7.405, p = .010, \text{partial } \eta^2 = .160$ ) risk taking respectively, compared to baseline performance. Post-hoc testing indicated a stronger effect size for the case of negative messages ( $r = .569$ ) compared to positive ( $r = .399$ ). The direct effect of the messages on risk taking was found strong and robust ( $p < .001, \text{partial } \eta^2 = .466$ ). Most notably the effect persisted across a series of 60 trials at each of the two experimental blocks ( $R_{\text{negative}2} = .079, \beta_{\text{negative}} = .073; R_{\text{positive}2} = .045, \beta_{\text{positive}} = -.006$ ), indicating that participants changed their behavior even if no actual economic changes were realized. Analyses of response times showed increasingly longer times for increasingly riskier decisions, and a steeper increase for the case of negative news compared to positive ( $t(39) = 2.514, p = .016, d = .397$ ).

Starting from these behavioral findings, we are currently analyzing EEG data (analysis expected by the end of April) as to further support the idea that economic messages can alter brain electrophysiological responses associated with real-time processing of the costs and benefits of the given decision situation. In particular, three Event-Related Potentials (ERPs) have been previously identified to associate with expectation of error and and processing of reward: the ERN (error-related negativity), the FRN (feedback-related negativity) and the P300 responses. The amplitude of these ERPs is dependent on the degree of expectancy, surprise and magnitude of errors and rewards (McCoy, 2015; Mussel, Reiter, Osinsky, & Hewig, 2015; Poleszi, Sartori, Rumiati, Vidotto, & Daum, 2010). We expect that changes in amplitudes of these ERPs to be associated with successively riskier decisions in the BART task, with (1) higher ERN amplitudes reflecting prediction of error; (2) higher P300 amplitudes for positive outcomes representing heightened surprise; (3) lower FRN amplitudes for negative outcomes reflecting lower anticipation for reward. Most notably, and in accordance with the hypothesis that economic messages can bias people’s model of their economy, we hypothesize that (H1) positive (negative) messages will diminish (amplify) the amplitude of the ERN response; (H2) positive messages will diminish amplitudes of the P300 response, following positive outcomes in highly risky decisions in the BART; last, (H3a) positive (negative) messages will amplify (diminish) amplitudes of the FRN response, following negative outcomes for highly risky decisions in the BART task.

Findings of our study have implications for theories of widespread media effects about the role of economic news in boosting market panics and for the psychological mechanisms attributed to such media effects. The core idea discussed is that individuals' predictive models of economic reality can easily be biased through speculative messages about important future economic events and remain impervious to change, especially when actual evidence about economic outcomes varies strongly. Consequently, this can impact the many small risky economic choices from ordinary citizens that, taken together as a whole, might even result in a vicious circle of actual economic downturns.

[WORD COUNT: 958 words – excl. references]

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# How Past Performance Framing Impacts Investors' Belief Updating

*Gerhard, Patrick; Hoffmann, Arvid; Post, Thomas*

Updates in individual investors' beliefs, such as return expectations and risk perceptions, drive investment decisions (Hoffmann, Post, and Pennings 2013). Prior work shows that individual investors rely on naive reinforcement learning when updating beliefs (Dominitz and Manski 2011; Hoffmann and Post 2015a; Greenwood and Shleifer 2014). Accordingly, investors update beliefs by extrapolating past return experiences. Importantly, larger updates of beliefs lead to more active trading, hurting investment performance (Hoffmann, Post, and Pennings 2015). We examine how framing of past performance information affects updating. In particular, we analyze whether presenting longer information horizons as a default option leads to smaller updates in beliefs. Doing so is important, as finding such an effect provides an easy-to-implement nudge that can positively affect investor welfare by reducing trading activity. We contribute to the literature by showing that the effectiveness of such a nudge depends critically on whether subjects can easily opt out of the default or not.

We perform two experiments – one laboratory experiment and one field experiment – in which we place subjects in a situation closely resembling an online brokerage environment. We present subjects with a stock portfolio that they should imagine to own, and assess their belief updates over six evaluation rounds, while providing performance information of this portfolio. Subjects are randomly assigned to three experimental conditions, which differ with regard to the default information horizon (annual, monthly, daily) at which portfolio performance is shown. The treatment group determines the default information presented first in each evaluation round and does not change over the course of the experiment.

One experiment we conducted in a controlled laboratory environment. This experiment focuses on the default information horizon subjects are presented with. Subjects can easily opt out of the default and obtain past performance information on each of the three information horizons in each round. To be able to derive more generalizable results, and to compare with past studies that restrict the possibility to change the information presented, we conduct a second experiment outside the lab. The second experiment checks for robustness of our laboratory results in the field. Moreover, in addition to the condition in which subjects can easily opt out of the default condition, we also employ a second version of the experiment which restricts subjects' choices in that they cannot choose which information horizon they would like to see. That is, those subjects cannot opt out of their randomly assigned treatment and have to stick with the information given at hand. This is in line with previous work on information horizons, such as Gneezy and Potters (1997), Beshears et al. (2014).

In line with previous research, we find that a longer past return horizon shown reduces belief updating in the restrictive setup. In the non-restrictive version, that is, when subjects are able to opt out of the default we find a new result: Across treatments, varying the default does, on average, not impact the magnitude of belief updating. However, an important pattern emerges when dividing the sample into subjects staying in the default vs. those opting out of the default. Over all rounds and treatments, about half of the subjects opt out of their default information horizon. Specifically, for subjects staying in the default condition, showing returns over a longer information horizon reduces (like in the restrictive version) the magnitude of their belief updating. We find the opposite result for subjects opting out of the default. For subjects originally assigned to the longer information horizon default, opting out confronts them with returns over a shorter horizon, leading to larger updates in their beliefs.

Our paper builds on previous work that examines how different evaluation horizons influence individual investors' decision-making, such as Benartzi and Thaler (1995), Beshears et al. (2014), and Gneezy and Potters (1997). These studies typically recommend longer evaluation periods to improve individual investor decision-making in terms of larger equity allocation or overcoming myopic loss aversion. However, the results of these previous studies are based on experiments

which restrict access to information and make it cumbersome or even impossible for subjects to opt out of the default. In a setting that more closely resembles individual investors' actual decision-making environment, in which subjects have immediate access to alternative information horizons and can easily opt of the default, we find that presenting returns over a longer information horizon is not necessarily beneficial. That is, only for subjects staying in their default information horizon, presenting portfolio performance over a longer information horizon has a mitigating effect on the magnitude of their belief updates.

Our results imply that showing a longer information horizon as a default option does not help or harm investors on average when solely focusing on aggregate results. In order to implement an effective nudge, however, it is important to gather evidence which fraction of an investor population will stick to the default and finding out their particular characteristics. In our sample, especially subjects with high financial literacy opt out of the default. This finding implies that long default information horizons will be primarily effective for populations of investors that score relatively low on financial literacy.

## **Psychological factors in investment choice in New Zealand, Hong Kong, and Germany**

*Kemp, Simon*

Adair Turner, in his recent (2016) book "Between Debt and the Devil", claims that the Global Financial Crisis that began in 2008 was attributable in part to a growing tendency for people to invest in residential real estate. He goes on to point out that, even after this crisis, substantial debt levels remain in industrialised economies and the bulk of the debt is tied up in housing. It is hard to think of any country where this is truer than New Zealand, where indeed house and other real estate prices have continued to rise even since the financial crisis.

There are a number of reasons why people might prefer to invest in residential real estate than in investments such as the stock market or long-term deposit accounts. Some have to do with tax regimes and the lower demand for capital by industry. This paper focuses on psychological factors and does so by comparing New Zealand investment with that in Hong Kong and in Germany. Hong Kong was chosen as one point of comparison because the stock market there appeared to be an important part of the region's culture, Germany because there appeared to be a strong tradition of renting rather than buying accommodation in German cities.

Two studies were conducted, one comparing New Zealand and Hong Kong, one comparing New Zealand and Germany. Both studies required non-students respondents to complete questionnaires, usually online. Both studies asked respondents for both behavioural data (whether they owned residential real estate, shares, a term deposit) and their preferences for investing a capital windfall (either NZ \$10,000 or NZ \$100,000). Both studies also measured Investment Risk Attitude, using a 6-item scale with a range from 6 to 30, with higher scores showing greater appetite for risk (Wärneryd, 2001).

Study 1 found, as expected, that people in Hong Kong were likely to invest more of a hypothetical windfall in stocks than New Zealanders, were more likely to own stocks and less likely to own real estate. There was no significant difference in risk attitude (NZ M = 15.1, SD = 4.9; HK M = 16.1, SD = 3.9), and thus the differing investment patterns cannot be explained by risk attitudes. Within both samples, however, greater appetite with risk was associated with investing more of the hypothetical windfall in shares and with share ownership itself. There was no association with real estate investment, either hypothetical or actual.

Study 2 found little difference in investment of the hypothetical windfall between the German and New Zealand respondents. However, the German respondents were more likely to own shares or a

term deposit and a little less likely to own real estate. There was a small but significant difference in risk attitude between the samples, with the Germans being slightly more risk averse than the New Zealanders.

Two other psychological factors were considered in Study 2. A measure of economic trust was developed. On this measure, the Germans were slightly less trusting than the New Zealanders. Taken over both samples, more trusting people were more likely to own shares and to invest more of the windfall in shares. Thus, although greater economic trust accompanies more investment in shares, this does not explain why Germans are more likely to invest in stocks than New Zealanders.

Study 2 also asked New Zealanders about the investment behaviour of close others (parents, grandparents and friends), with the idea of seeing whether investment might be partially explained by what people perceive as the social norms of investment. In general the close others of New Zealanders were more likely to own houses than those of Germans, but there were no consistent difference between the samples' close others in stock ownership. Stepwise logistic regression analyses over both samples showed that share ownership was significantly predicted by whether one's parents owned shares (Odds ratio = 4.2), Age (OR = 1.8, using a 6 point age scale), Sample (OR = 3.1, Germans more likely to own than New Zealanders), and Risk Attitude (OR = 1.2, scale ranges from 6 to 30). House ownership was significantly predicted by Age (OR = 2.5), whether one's best friend owned a house (OR = 3.7), and Sample (OR = .37, Germans less likely to own than New Zealanders).

In conclusion:

1. Risk attitude, the behaviour of close others, and to a lesser extent economic trust are reasonable predictors of people's investment preferences and behaviour within all three countries studied. Indeed, the pattern of predictive factors replicates rather well across these countries.
2. Although there are differences in actual investment and investment preferences between the countries, these differences are not readily predictable from international differences in risk attitude, behaviour of close others, and economic trust.

## References

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- Wärneryd, K-E. (2001). *Stock-market psychology: How people value and trade stocks*. Cheltenham, UK: Edward Elgar.

# Games 2

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7/9/2016 11:30:00 AM: Tarthorst Rooms 1+2

*Prof. Pablo Branas*

## **The Economics of Bilingual Identity: The Politeness Equilibrium**

*Uriarte, José Ramón*

We put together linguistic politeness theory and game theory to build a bayesian game of language use. From these tools we derive the concept of politeness equilibrium. A central element in politeness theory is the notion of face, a self-delineated set of positive features that every person, in every culture, has. Face could be understood in economics as belonging to the non-material reference point each person has and uses to evaluate material payoffs.

We consider modern, economically advanced, multilingual societies endowed with two official languages denoted A (spoken by every member of the society) and B (spoken by the bilingual minority). It is assumed that in the economically relevant parts of those societies (i.e., the urban areas) the linguistic type (bilingual or monolingual) is private information. The language use game models the strategic language choice behaviour of bilinguals. The purpose of politeness equilibrium is to understand the bilinguals' behaviour in societies such as the Basque Country, Ireland, Scotland and Wales.

We show that the language use game has two politeness equilibria that are evolutionary stable. Associated to each equilibria there is one language that bilinguals would use in the interactions between them. In one equilibrium bilinguals use language A and in the other equilibrium bilinguals used language B. In the context of the language use game these evolutionary stable equilibria are linguistic conventions. We then study the likelihood of each equilibria and answer the question of why bilinguals have a relatively low use of their preferred minoritarian language B.

We end the paper by deriving some language policy measures to increase the use of minoritarian language B.

## **Overcoming coordination failure in a critical mass game**

*Masiliunas, Aidas*

In situations with multiple Nash equilibria a historical accident may establish coordination on an inefficient equilibrium. For example, an inefficient technology may become a standard or citizens may fail to take political action because they expect others to take no action. In this paper we study how groups can move from the inefficient to the efficient equilibrium. We run an experiment using a critical mass coordination game in which we first establish coordination failure and then test whether it is more often overcome if players can easily disclose information about their actions. We allow players to not only choose their action, but also to choose whether this action should be observed by other group members, and disclosure costs are varied between treatments. We find that no group overcomes coordination failure when action disclosure costs are high, but half of the groups do so when the costs are low. Whether a group overcomes coordination failure can be predicted by the number of group members who initially attempt to coordinate on the efficient outcome and disclose their actions.

Our second goal was to understand the motivation behind the decision to deviate from the inefficient convention. These deviations could be myopically optimal given beliefs and preferences,

or they could be used strategically, to influence the future choices of other group members. The disclosure decision helps us separate these two classes of explanations because players who deviate from an inefficient convention for strategic reasons may be willing to pay to disclose their actions, while those who do it for myopic motives would not. We find that many players are disclosing their actions even when it is costly and disclosures are systematic: a decision to deviate from an inefficient convention is disclosed much more often than the decision not to deviate, and disclosures are more frequent at the start of the game. In addition, we created a novel task that measures the length of subject's planning horizon, and we show that those participants who have a longer planning horizon more often deviate from an inefficient convention and disclose this action, while the effect of risk and social preferences is not significant.

## The effects of being distrusted: How we react to active and inactive distrust

*Schutter, Manon; Van Dijk, Eric; De Kwaadsteniet, Erik; Van Dijk, Wilco*

### Background

In the field of economics, the trust game (TG)—initially described as the "investment game" by Berg, Dickhaut and McCabe (1995)—is frequently applied as a behavioral measurement of trust and reciprocity. In this two-player game, the first player (Player A; trustor) is endowed with a sum of money and decides whether to distribute this money him- or herself or to send it to an anonymous second player (Player B; trustee). If Player A decides to distribute, both players receive their allocated part and the game ends. However, if Player A decides to pass the money to Player B, the amount sent will be tripled. Then, Player B makes the final decision concerning the distribution of the increased sum of money. Player A's decision to send the initial amount to Player B is taken as a measurement of trust. Not sending the money, in contrast, captures distrust. Moreover, trustworthiness is measured by taking the amount Player B returned to A. So in this game, Player A decides to trust or distrust Player B and if A chooses to trust, Player B may either reciprocate or exploit this given trust.

The many studies using this paradigm show highly comparable results; a vast majority of the Players A is willing to trust; around two-thirds of the players are willing to trust their opponent and this trust is also reciprocated in about eighty to ninety percent of the cases. An additional beneficial aspect of the TG is that it measures not only trust, but also how trusted players react to this given trust (i.e., Player B's trustworthiness). This feature enables researchers to obtain insights on the behavioral consequences of being trusted. It appeared that many people are willing to reward appropriate behavior by reciprocating given trust. Although these insights are very valuable, note that this measurement only focuses on consequences of trust. What about distrust? How will people react to being distrusted?

In its current form, the trust game—and unfortunately also the research—stops after distrust. To solve this issue we designed a trust game setting that continues after distrust. Moreover, based on important research on (reactions to) actions and inactions (e.g., Kahneman & Miller, 1986), we distinguished between an active and inactive form of distrust. Distrust in the traditional TG equals a situation in which player B is not offered a chance to prove his/her trustworthiness. While it is conceivable that distrusted ones will react negatively to such an event, it may be even worse when someone takes away – instead of just not offers- a chance to prove one's trustworthiness. As the literature on actions and inactions in other domains reveal important differences in reactions towards these two events, we distinguished between inactive distrust (i.e., not offering a chance) and active distrust (i.e., taking away a chance).

## Method

In the inactive distrust setting, the game we used resembled the traditional trust game. If Player A would have handed chips to player B, they would have been tripled. However, Player A in our study did not offer any chips to the participant leaving him/her being distrusted. In the active distrust setting, Player B (instead of Player A) started out having a (tripled) amount of chips and Player A could choose to let B divide these chips (i.e., decide to trust), or to divide these chips him/herself by taking the chips and therewith B's chances to show his/her trustworthiness. The chips were then divided by 3, after which Player A could distribute the lowered amount.

Affective reactions to distrust were measured directly after. Subsequently, behavioral reactions to distrust were measured by letting the distrusted participants play a dictator game with either the initial distruster or an unrelated other.

## Results

Results revealed an overall higher impact of active distrust. Although the payoff structure and the outcome of the exchange were held constant for both types of distrust, active distrust was evaluated more negatively than inactive distrust. For instance, they experienced significantly more negative emotions and evaluated the distruster as less kind and less moral. Moreover, actively distrusted participants subsequently behaved less prosocially, as evidenced by significantly lower allocations in the following dictator game. Interestingly, subsequent negative behavior was not restricted to the person responsible for the distrust; actively distrusted players allocated significantly less money to the distruster as well as to an uninvolved other.

## Conclusion

Previous research already concluded that not trusting your economic counterpart may be costly; it pays off to trust. Our study indicates that the costs of distrust may be even higher than initially expected: You may not only miss out on profits, earnings in subsequent exchanges may be negatively affected as well, especially in cases of active distrust.

## **Around a table: Social lubricants for trust building**

*Branas, Pablo ; Cabrales, Antonio ; Mateu, Guillermo ; Sanchez, Anxo ; Sutan, Angela*

Motivation: Many transactions in economic life are preceded by social interactions. They are central, for example, to negotiations, mergers and acquisitions procedures, and often at the start of business, government, and personal negotiations. These interactions are an important part of the culture of organizations all over the globe. This importance can be recognized, for example, by the fact that business meals tend to be tax-deductible at least in part (the IRS considers that 50% of such expenses are deductible in general, for HMRC the part of the expense that is "wholly and exclusively" for the purpose of generating profits). Not just private businesses, government offices and universities also engage in subsidizing meals between members of their organizations and external agents. Given this widespread practice it is surprising that there is no research showing the extent to which these meals serve any purpose that is aligned with the overt organizational objectives of improving negotiation outcomes.

This paper's main goal is to investigate the effectiveness of social interactions in the context of trust-building and negotiations. Since a social interaction is a complicated social process, involving communication, and other aspects, such as food and beverage intake our experiment involves teasing apart and measuring the importance of these components in order to understand how they influence economic outcomes.

Methods: Participants were recruited from among the MBA students at ESC Dijon an elite business school in the Bourgogne region of France. The process was as follows:

1. Subjects were invited to participate in a wine/water tasting activity (groups are all-male or all-female) followed by some games. They were advised not to eat or drink in the hour prior to the experiment.
2. When participants gathered for the experiment, they first read instructions, signed consent forms and their weight was measured.
3. The participants had 15 minutes to interact (except in the control treatment which had no interaction) and in this process there were four treatments depending on the availability of food and drinks: only water, only wine, food and water, food and wine.
4. They played a strategy-method trust game and the beliefs on team members' trustworthiness was elicited.
5. Their risk aversion was measured.
6. They played a standardized negotiation game.
7. A de-briefing questionnaire was administered.

Results:

Social interactions increased trust and trustworthiness very significantly in all-male groups, but not so in all-female groups. The effect was significantly bigger when only drinks were available (both water and wine), whereas adding food decreased the (still significant with respect to the no interaction baseline) effect of only drinks in all male groups. Interestingly, the positive effect of social interactions on trust for males was not reflected on negotiations, where the efficiency is reduced by the presence of interactions.

## Welfare

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7/9/2016 11:30:00 AM: De Peppel Room 1+2

*Dr. Maryam Dilmaghani*

### **The Marital Satisfaction of Differently-Aged Couples**

*Lee, Wang Sheng ; McKinnish, Terra*

The Marital Satisfaction of Differently-Aged Couples

This paper analyzes data from the 2001-2013 waves of the Household, Income and Labor Dynamics in Australia (HILDA) data to estimate the effect of the age difference between husband and wife on the marital satisfaction of the husband and wife, on the gap in satisfaction between the husband and wife, and on the evolution of their satisfaction over the duration of the marriage. These longitudinal data are well suited to this study as they contain annual reports of satisfaction with relationship with spouse from both husband and the wife.

Analysis of the evolution of marital satisfaction includes individual fixed-effects specifications. Rather than comparing recently-married couples to couples with longer marital duration, identification uses within-couple changes in marital satisfaction over time.

Our key findings are: 1) The marital satisfaction of the husband decreases as the age of the wife increases relative to the husband. 2) Interestingly, the marital satisfaction of the wife likewise decreases as the age of the husband increases relative to the wife. 3) Among men in relatively new marriages, men with younger wives report the greatest marital satisfaction, but this higher level of satisfaction diminishes rapidly with marital duration. 4) Among women, marital satisfaction declines more over time both for women married to older husbands and women married to younger husbands compared to women married to similarly-aged husbands. 5) A larger age difference between husband and wife generates a greater the difference in marital satisfaction between husband and wife, and this gap in satisfaction increases over the duration of the marriage.

The HILDA is a household-based panel study which began in 2001 with a nationally-representative sample of Australian households. Each year, the HILDA survey asks respondents to report level of satisfaction with relationship with partner on a scale from 0 to 10. Our analysis sample contains observations in which: 1) both members of the couple report that they are currently married, 2) both are in their first marriage and 3) both members are ages 20-55.

The independent variable of interest is the within-couple age difference:

$\text{AgeDiff} = \text{Husband's Age} - \text{Wife's Age}$ . The effect of age difference is allowed to vary by whether the husband or wife is older. The two primary explanatory variables are:

$\text{AgeDiff\_Pos} = \text{AgeDiff} * \text{Pos}$ , and

$\text{AgeDiff\_Neg} = \text{AgeDiff} * (\text{Pos} - 1)$ ,

where  $\text{Pos} = I(\text{AgeDiff} > 0)$ .

$\text{AgeDiff\_Pos}$  measures, for couples where the husband is older, the number of years the husband is older than the wife.  $\text{AgeDiff\_Neg}$  measures, for couples where the wife is older, the number of years the wife is older than the husband.

Because the typical couple has a husband who is a few years older than the wife, we estimate an alternative specification in which change point for the slope is at an age difference of 3 rather than an age difference of 0. In these specifications, the RHS variables are:

$\text{AgeDiff\_Pos\_cp3} = (\text{AgeDiff} - 3) * \text{Pos3}$ ,

$\text{AgeDiff\_Neg\_cp3} = (\text{AgeDiff} - 3) * (\text{Pos3} - 1)$ ,

where  $\text{Pos3} = I(\text{AgeDiff} > 3)$

The primary regression specification, estimated separately for husbands and wives, regresses the relationship satisfaction measure on the above age-difference measures and a set of controls. Control variables include, for both husband and wife: education, employment status, indigenous background, born abroad, chronic health/disability, and number of own children in household, as well as household income, homeownership, house value, urban and inner-region residence, local area unemployment, state fixed-effect and survey year fixed-effects. Standard errors are clustered at the individual level.

Relationship satisfaction changes with the duration of the marriage, and it is possible that satisfaction evolves differently for couples with different age gaps. Interaction terms between marital duration and the age-difference variables are added to the model to estimate this differential effect. We also incorporate an individual fixed-effect in the model and identify the estimates using only within-couple changes in relationship satisfaction over time.

When individual fixed-effects are included, the main effects of the age difference variables drop from the model, as they are perfectly collinear with the individual fixed-effect. Additionally, when individual fixed-effects are included, the linear terms for age and marital duration become perfectly collinear with the survey year fixed-effects. This specification, however, still allows us to test whether relationship satisfaction changes over time differently for couples with different age gaps.

The results indicate that for husbands with younger wives, every additional year they are older than their wife increases marital satisfaction by 0.031 points. Among husbands with older wives, every additional year their wife is older than them decreases marital satisfaction by 0.043 points.

For men who are more than 3 years older than their wives, an additional year of age gap does not change their reported relationship satisfaction. For men who are no more than 3 years older than their wife, every additional year their wife is older relative to their own age reduces their relationship satisfaction by 0.055 points.

The results for women are surprisingly symmetric with the results for men. For women with older husbands, every additional year their husband is older than them decreases their satisfaction by 0.032. For women with younger husbands, every additional year their husband is younger than them increases life satisfaction by 0.046.

In our baseline results above, we found that the coefficient on the positive age difference variable becomes small and insignificant when the change point was shifted from 0 years to 3 years. When we add the interactions between marital duration and age difference, we see that this null effect masked considerable heterogeneity by marital duration. The results indicate that there is a higher level of marital satisfaction for men with much younger wives at the beginning of the marriage, but that this higher level of satisfaction dissipates rather rapidly and is erased by the 10th year of marriage. The magnitude of the negative interaction effect is even larger when individual fixed-effects are included in the model.

When similar models are estimated for women, the results indicate that marital satisfaction declines more over time for both women married to older husbands and women married to younger husbands compared to women married to similarly aged husband

## **“Is it the size of the pie or its share that matters?” European empirics on financial satisfaction of partners**

*Mysikova, Martina*

A tendency of more equal distribution of income between partners stems from a trend of increasing female labour market participation and a deviation from male-breadwinner family model in many advanced countries in past decades. In Europe, the most equal within-couple income distribution is in Scandinavian countries, while women in southern European countries contribute the least to the couple's budget (Bonke, 2008). Central-east European countries are located around the middle of the scale (Mysíková, 2015a). The within-couple income distribution can affect various family decision-making outcomes as well as satisfaction of individual members.

This study follows the existing empirics on the impact of relative income on satisfaction (for instance, Bonke, 2008; Bonke and Browning, 2009). As suggested by Bonke (2008) the relationship between the relative income in the couple and partners' individual satisfaction with financial situation differs across countries. Couples in some countries might see an advantage in dual earnings, while partners in others might favour a more traditional model with only one breadwinner. Bonke and Browning (2009) concluded that the relative income is indeed the most important factor affecting partners' different levels of financial satisfaction in Denmark.

The above-mentioned studies by Bonke and Browning are based on European Community Household Panel (ECHP) data from 1994. The ECHP survey only included the “old” EU member states and thus an overall European empirical overview is, to my knowledge, still missing. This study is based on the European household survey Statistics on Income and Living Conditions (EU-SILC) that replaced ECHP in 2005. EU-SILC does not regularly include questions on subjective satisfaction, however, it includes a special ad-hoc module every year, which in 2013 focused on well-being. For the first time since ECHP it is therefore possible to use data on well-being collected on a large sample of population. This analysis thus extends the empirics to (some) “new” EU countries.

Unfortunately, not all countries covered by EU-SILC can be analysed. First, this study highly relies on information on both partners living in a household. Some EU-SILC countries utilise administrative registers for income and other variables and these countries are allowed to collect some variables, including those on subjective well-being, for one person per sample household only (typically Scandinavian countries). Second, EU-SILC binds national statistical offices to provide gross income variables only while net values are optional in fact. Net values of income are necessary for this study as it is the “actual” income brought to the budget that should matter to financial satisfaction. The sample of countries thus shrinks to 15 (out of 32 - EU countries plus CH, IS, NO, and RS).

Each country sample includes only nuclear childless couples living in the same household. Households with other adult members are excluded in order to avoid a possible bias stemming from other household members’ contribution to the budget as well as from possible women’s higher family care responsibility in countries with prevailing large families (similarly to Bonke, 2008). Couples with children are excluded due to the theoretical complications and an ambiguous impact of children-related expenditures reflected in male and female partners’ utility (for different result for childless couples and couples with children in the Czech Republic see Mysíková, 2015b).

Responses to the following question were used as the dependent variable in the models: “To what extent are you satisfied with the financial situation of your household?” Responses were measured on 11-point scale, from 0 (not at all satisfied) to 10 (completely satisfied). As the dependent variable obtained from the data is ordinal, ordered probit regression models are applied.

The effects of first, female share of total (assignable) income, and second, total household disposable income on financial satisfaction of individual partners are those of my interest. The preliminary results differ substantially across the analysed countries. The expected relationship between female share of income and financial satisfaction is an inverse U-shape with a peak located at lower values of female share of income for men than for women. Bonke (2008, p.2298) states: “The rationale is that men do not wish to be married to non-income earning wives and that wives do not wish to provide for their husbands. In other words, the income share maximizing the husband’s satisfaction is expected to be smaller than the share maximizing the wife’s satisfaction”.

This hypothesis is significantly confirmed for Poland, Serbia and Bulgaria (and men in Portugal), suggesting that some degree of income equalization preferred by both partners. On the other hand, Austria and Luxembourg exhibit a U-shape relationship: financial satisfaction is a convex function of female share of income with a minimum far beyond the mean and median values. This indicates a preference of a traditional breadwinner model. Surprisingly, the same result is significant for (only) women also in Spain, Croatia, Ireland, and Romania (supported by negative linear relationship for men in the latter). In the remaining five countries, no significant impact of female share of income appeared for men or women.

Total income has a significant impact on financial satisfaction of individual partners in majority of the countries with a convex increasing function. In Belgium, Estonia, and Latvia, it is only the total income that matters to both individual partners’ financial satisfaction while relative income does not have any significant impact. The opposite seems to hold in Luxembourg and Romania: relative

income instead of total income plays a significant role. In about half of the countries both total and relative income matters to partners' financial satisfaction.

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## **Altruism and bargaining: evidence on theories of marriage revealed on Zillow.com**

*Phelps, Charlotte DeMonte*

We studied evidence on altruism and bargaining in the American housing market: 1980-2011. We collected the evidence from a cohort of 233 men and women who took a course in behavioral economics at Temple University in the 1980's. We obtained addresses for graduates in November 2011 and found data on their house values on Zillow.com. The study was designed to collect evidence that motives assessed in a Thematic Apperception Test explain transitive and intransitive preferences in a Marriage Game that is similar to an experiment (May, 1954). Another goal was to collect evidence that TAT motives explain sorting in the marriage market. The Game required choices between three hypothetical marriage partners. Adjectives described the alternatives with respect to intelligence, looks, and wealth. We found that a model of choices in the Game explained differences in house values. Fears revealed in the TAT explained intransitive choices in the Game and (unrealized) losses in house values related to the housing bubble of 2008. Men and women who revealed a preference for a "very intelligent" marriage partner in the Game wrote stories with a bargaining theme about a TAT picture of a man and woman. Men who revealed a preference for "a very good looking" partner in the Game wrote stories with an altruistic theme about the picture of a man and woman. The locations of houses were consistent with examples discussed by Becker and by Lundberg and Pollak.

## **Union Formation Behaviour and Outcomes of Individuals without any Tie with Religion or Spirituality: Evidence from Canada**

*Dilmaghani, Maryam*

Using the latest wave of the Canadian General Social Survey focusing on family, I examine marital behaviour of individuals who are proxy-identified as "atheists." Noting that for every two females in this group, there are at least three males, I investigate how this gender imbalance impacts union formation and marital stability within this group. I find that atheist males are appreciably more likely to experience marital dissolution, while atheist females are not statistically significantly different from the religiously affiliated. This result lends to support to theories that posit religiosity as a complementary marital trait, requiring the mating of the likes. I also find that union formation behaviour of atheist females manifest a larger shift away from traditional conceptions of marriage, compared to atheist males. Various explanations are explored.

# Market / Individual

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7/9/2016 11:30:00 AM: Pomona Room 1+2

*Dr. Sven Fischer*

## **Self-employment and stress: Cross-sectional, longitudinal and experimental evidence**

*Rietveld, Cornelius A. ; Hessels, Jolanda ; van der Zwan, Peter*

We compare self-reports on stress at work between the self-employed and wage workers in a large, world-wide, cross-sectional sample. Next, we examine what happens with stress levels when people leave paid employment and become self-employed in a longitudinal framework. Lastly, we analyse within an experimental framework how the self-employed and wage workers respond to stressors. The analyses reveal that self-employed workers report less work-related stress than wage workers. The higher degree of decision autonomy of the self-employed is largely responsible for this finding. The results hold in particular for the self-employed without employees. The analysis of responses to stressors induced by experimental tasks suggests that the self-employed and wage workers do not differ in their capabilities of dealing with stress. Together, these findings suggest that job characteristics of self-employment rather than individual characteristics of the self-employed are responsible for the stress differences.

## **Further Examining the Relations between Materialism and Employees' Optimal Functioning: The Mediational Role of Need Satisfaction and Need Frustration**

*Gomez Mella, Marcos Esteban ; Unanue, Wenceslao ; Rempel, Konrad ; Van den Broeck, Anja*

A growing body of evidence shows that materialism is linked to lower human functioning. Self-determination theory posits that low satisfaction of the psychological needs for autonomy, competence and relatedness play a key role in this process. However, studies in organization contexts are lacking, particularly in the non-Western world. Importantly, although deemed essential, the explaining power of need satisfaction seems relatively limited and recent claims are arguing for including also need frustration as a mediator. In response, we explored, for the first time, need satisfaction and frustration as the underlying processes through which materialism may impact employee functioning in two Latin American contexts: in Chile in the financial sector, and in Paraguay in the retail sector. Using structural equation modeling, we found that in Chile (N = 742) materialism at work was associated with less positive (work satisfaction and engagement) as well as with more negative (burnout and turnover intentions) functioning. We replicated these findings in Paraguay (N = 518) using different measures of positive (organizational commitment and meaning at work) and negative (negative emotions and job insecurity) functioning, adding empirical and cross-cultural evidence to self-determination theory. In both countries need satisfaction and need frustration explained the detrimental effects of materialism in employees' functioning in a unique manner, showing that it is desirable to distinguish between both constructs. Theoretical and applied implications are discussed.

# The Effect of Time Pressure on Real Effort Investment under Ambiguity

*Zizzo, Daniel ; Fischer, Sven ; Kleine, Marco*

Many real world investments are characterized by a strong component of real effort rather than monetary investment. Be it education, or applying for a patent or other form of certification, in many cases one needs to invest real effort, and outcomes are, amongst others, determined by ability. While one may have some sense of one's ability, there always remains enough ambiguity, especially in contexts where one has little experience. This makes prospects of success of the investment fundamentally uncertain. For the granting authority, however, it is ex-post possible to evaluate the overall efficiency of a system. A large number of drop-outs or failures to achieve the required threshold are a clear indication of inefficient over-investment, as both should not have started investment in the first place. Such inefficiency raises the question how the process can be changed in order to discourage those with negative prospects on the one hand, and to encourage those with good ones on the other. One very common and readily available "lever" in this context is time pressure, i.e. deadlines and compliance dates in the certification process. Without undercutting a threshold which would make it impossible for many to comply: Is it better to give a bit more time than necessary, or will this merely encourage those with insufficient ability to (over)invest?

We explore this question in a set of two-stage experiments in which participants have to invest real effort over a longer period of time in order to reach a threshold required to earn a substantial prize. Prospects depend on one's relative performance in a quiz in the first part (conducted in the laboratory), which decides whether someone will have a return on real effort high enough to be able to reach the threshold or not. In our main treatments participants are only informed about their absolute but not about their relative performance, resulting in uncertainty about the prospect of earning the prize. In the second part (conducted online), participants then had the opportunity to complete a set of boring, repetitive tasks in order to reach the threshold. They were either given one or three weeks to complete these tasks, and could at any time decide to skip the tasks in order to receive a low baseline payment instead. We also measured confidence in one's performance in the quiz, risk and ambiguity preferences, as well as an optimism score based on Weinstein (1980).

We find that the time horizon does not affect investment decisions significantly, with overall weakly less effort in the longer time horizon. Effort is at most weakly correlated to one's belief in one's relative performance or to one's confidence level. Those with higher optimism scores, however, are significantly more likely to invest. Our risk and ambiguity measures are also unable to explain the effort decision. Increasing the workload required to reach the threshold, however significantly reduces effort, independently of quiz performance or belief about one's performance.

We compare behaviour of our laboratory participants to that of professionals from the intellectual property industry whom we recruited at two major industry events. While professionals are significantly less likely to complete both parts of the experiment and to invest effort in case they do, their behaviour by and large replicates our laboratory results.

# *Moral Behaviour / Scams and Crime*

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7/9/2016 11:30:00 AM: Roghorst Room

*Dr. Martin Salm*

## **The scammers reply: A qualitative analysis of the persuasive techniques used in scam emails following a recipient's expression of interest.**

*Lea, Stephen E. G.; White, Jay-Jaye; Mewse, Avril J.*

Modern technology has provided criminals with the opportunity to commit crime in ways and on a scale that were unimaginable decades ago (Whitty, 2013, 2015). The Internet and the growth of computer-mediated communication in particular, have enabled access to vast amounts of information and mass communication with individuals across the globe (Viosca, Bergiel & Balsmeier, 2004). Accordingly, some traditional crimes have been adapted to accommodate these technological advances, by implementing strategies that increase the ease with which they can be committed, the number of victims that can be targeted and the subsequent gains that can be obtained (Muscanell, Guadagno & Murphy, 2014). One specific type of crime to undergo such alterations are scams, which are defined as 'a misleading or deceptive business practice where you receive an unsolicited or uninvited contact and false promises are made to con you out of money' (Office of Fair Trading, 2006, p. 12).

From the recipient's point of view, complying with a scam is by definition a non-optimal economic choice, and this raises the question of why people make such choices, and how scammers persuade them to. Analysis of scam communications (e.g. Fischer, Lea and Evans, 2013) has revealed that scammers rely upon well-established persuasion techniques, as documented for example by Cialdini (2009), to exploit psychological processes that lead to non-optimal decision-making and hence to scam compliance. However, systematic analysis has largely been confined to the initial approaches made by scammers. The present study aimed to explore the effect that a recipient's expression of interest, following receipt of an email scam communication, had on the persuasive strategies used in subsequent emails from the scammer. We responded, once only, to a sample of scam emails (categorized according to an extended version of the typology proposed by Beals, Deliema and Deevy, 2015) and then conducted thematic analysis (Braun & Clarke, 2006) of both the initial scam emails and the 100 corresponding replies that we received.

A comparison of the initial approaches and the scammers' first replies to our expressions of interest suggests that the persuasive strategies used by scammers change in type, quantity and direction between the initial scam email and the response that follows a recipient's expression of interest, in the general direction of trying to establish a more personal relationship with the intended victim. The scammer's replies tended to be longer and more oriented to what the scammer wanted the recipient to do. As might be expected in any correspondence, there was an increase in specificity and a reduction in formality (though this was rather more abrupt than might occur in a normal conversation). These were coupled with more strenuous efforts to induce the recipient to like the scammer. There was a sharp increase in references to Christian religious themes, and this may be one more such effort, with the scammers making the assumption (probably unjustified for UK recipients, but more plausible in the US) that this would be an affiliation the recipient would see as shared. References to authority and social proof decreased, but trust, already a strong theme, was further emphasised, and there was an increased emphasis on commitment. Some themes, on the other hand, changed little in their incidence between initial approaches and first replies. These

included attempts at legitimation through photographs, sympathy appeals, and references to the urgency and scarcity of the opportunity the scammer was holding out.

We argue that scammers are, in effect, engaging in relationship marketing, and we discuss how these findings might help in educating Internet users so as to reduce the risk that they will fall victim to scams.

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## **To Pay or Not to Pay? Determinants of Unlawful Product Acquisition” in relation to Unlawful File Sharing**

*Fleming, Piers ; Parravano, Melanie ; Zizzo, Daniel John*

We present a laboratory experiment that systematically investigates the determinants of acquisition behavior with a negative externality on a third party. The original motivation of this experiment comes from a context where people may consume a product without buying it, beyond the obvious reason that they save money by doing so; a classic example of this is unlawful file sharing, where unlawful downloads bring about a negative externality on copyright holders, and other examples relate to criminal behavior such as theft or fraud. Our goal is to get a better understanding of why consumers engage in such behaviors, in a setting that, while stylized, allows better interpretability. This evidence is therefore meant to complement non experimental evidence. A total of 223 students from the University of East Anglia (UEA), in Norwich, U.K., took part in the experiment. We manipulated a number treatment variables, i.e. rights holder presence and frame, penalty, punishment probability, rights holder's wealth, rights holder's effort and rights holder's profit margin. "Consumers" in the experiment decided whether to buy, consume without buying or not to buy. We considered social and moral determinants of unlawful behavior as well as standard penalty and punishment risk trade-offs. We found clear evidence for legal and financial deterrents to unlawful file sharing in the experiment. Increasing the punishment probability and the penalty clearly reduce unlawful file sharing in our experiment. As the field evidence on this is rather more ambiguous while pointing to awareness of the deterrents, this result supports the interpretation that consumers do not ignore but rather try to circumvent and avoid legal deterrents. Making salient the role of copyright holders is useful to reduce unlawful file sharing. We found that, if the copyright holders/vendors have made an effort, less unlawful product acquisition takes place (by

around 5%). Social norms are important in predicting unlawful file sharing. We estimate that, controlling for a range of variables as well as individual level clustering, one point more of social appropriateness increased unlawful product acquisition in our experiment by around 30-40%. This implies the potential usefulness of policy measures that try to shift the perceptions of social norms.

## Testing the effectiveness of online warning messages on security behaviour

*van Bavel, Rene ; Rodriguez-Priego, Nuria ; Briggs, Pam ; Vila, Jose*

Insights from psychology and behavioural economics can help in the design of systems to 'nudge' cybersecurity behavior, leading to clear cybersecurity improvements (Pfleeger & Caputo, 2011). Here, we examine those factors that encourage users to pay attention to security warnings and render them less vulnerable to cyber-attacks. The objective was to redesign security messages and test their effectiveness on user behaviour.

An online experiment tested the effect of ten warning messages on the security level of the behaviour of the participants at five steps of the purchasing process. The experiment involved 5000 participants (100 per experimental condition in 5 European countries: Spain, UK, Germany, Poland and Sweden). Participants were asked to make a purchase via a mock e-commerce website where they were presented with one of ten 'pop-up' warning messages.

### Behavioural measures

During the shopping process, participants had to make four decisions which affecting their security. These decisions constituted four dependent behavioural measures:

1. Secure connection: Participants could choose either a secure connection, which took 60 seconds to connect, or an insecure connection, which was immediate. They could move from the secure to the insecure connection during the 60 seconds of the connection process.
2. Password strength: Participants had to register by creating a username and a password. The behavioural measure was the password strength, which was measured according to seven parameters and scored between zero (if subjects did not meet any of the parameters) and seven (if they met all).
3. Trusted vendor: When purchasing a product, participants could choose between two vendors: one offered the product for free, but the link to download the product had no trust kitemark (no image of e-trusted site appeared). The other vendor charged €2, but the link to download it was of the type https (Hypertext Transfer Protocol Secure) and appeared next to the e-trusted site image.
4. Log-out: After completed the purchasing process, participants could choose whether to log out from the site (safe option) or whether to continue browsing without doing so.

### Treatments

Participants were allocated to one of ten treatments. In each, a warning message appeared as a pop-up in the centre of the screen before the purchase process began. The ten conditions were:

1. Control message: this condition presented a simple pop-up message associated with the need to navigate safely.
2. Gain framed warning message: this condition presented a gain-framed message on the basis that users would feel more encouraged to elude losses than they would be attracted to obtain a similar gain.

3. Loss-framed warning message: following the rationale of the previous condition, this pop-up presented a loss-framed message associated with the need to navigate safely.
4. Female anthropomorphic character: the same warning message as in the control condition was accompanied by a female anthropomorphic character. Such characters can lead users to behave more securely and disclose less personal information (Heckman & Wobbrock, 2000; Qiu & Benbasat, 2009).
5. Male anthropomorphic character: as in the previous condition, but here with a male anthropomorphic character.
6. Heightened coping appraisals: Based on Protection Motivation Theory (PMT), this experimental condition sought to heighten self-efficacy and response efficacy, both components of "coping appraisals". It told users they had the ability to make decisions easily on how safely they navigated, and gave directions on how to protect themselves.
7. Heightened threat appraisals: Based on PMT, this experimental condition sought to heighten the cybersecurity threat. We included a message saying that if they did not navigate safely, their personal data could be compromised or they could introduce a virus onto the computer.
8. Combined PMT insights condition (threat and coping appraisal): this condition included both elements of the "coping appraisal" and "threat appraisal" messages.
9. Probabilistic loss condition: Based on Prospect Theory, we know that people will prefer a 50% chance of losing 1000 Euros than a certain loss of 500 Euros. Does this apply to secure behaviour online as well? We stated that 1 out of 10 people who did not navigate safely in this website would suffer a cyber-attack and lose 90% of the points in their mock credit card.
10. Certain loss condition: Here, the message said that 9 out of 10 people who did not navigate safely in this website would suffer a cyber-attack and lose 10% of the points in their credit card.

## Results and Discussion

A "security index" was composed out of the 4 behavioural measures, intended to capture the overall level of secure behaviour. A probit regression model was conducted revealing that heightening coping appraisal (treatment 6) and combining heightening coping appraisal with heightened threat appraisal (treatment 8) were effective in generating more secure behaviour when compared to the control. They were also more effective, for all countries taken together, when analysing each behavioural measure individually. The loss-framed condition was also more effective than the control in Germany, but not in other countries nor for the analysis of all countries combined.

Heightening coping appraisal is effective in generating more secure behaviour, as posited by PMT. This finding has implications for the design of warning messages that may help users to make secure decisions while purchasing online. It also contributes to the literature on nudges in security behaviour. These results are useful for policy-makers, who could create a series of recommended best practices in terms of cybersecurity message construction for companies. By constructing warning messages more carefully, companies that operate online could improve consumers' experience and, in the end, build online consumer trust and increase the total volume of e-commerce.

## How risk perceptions evolve after a change of environment

*Salm, Martin; Vollaard, Ben*

Perceptions about the frequency of an adverse event have been found to be adjusted sharply upwards in response to experiences with the event, even when the objective risk remains unchanged and accurate descriptions of the risk are readily available. We build upon this finding by studying how risk perceptions evolve after a change of environment where descriptions of local risk are available, but local experiences with the risk only start to accumulate with exposure to the new environment. We focus on changes in the perceptions of neighborhood crime risk after having moved house. We match household-level data for the complete history of moves between 1995 and 2011 for the population of the Netherlands with four successive waves of a large crime survey. Following cohorts of movers for up to ten years while keeping the actual neighborhood crime risk constant, we find that risk perceptions of each cohort are adjusted upwards with increasing time of exposure. The adjustment is large and continues for many years. Part of the observed adjustment can be explained by the accumulation of victimization experiences in the years after a move. Experiences from elsewhere cannot substitute for local experiences: the upwards adjustment holds irrespective of whether the new neighborhood has a higher or lower crime rate than the previous neighborhood. Avoidance behavior adjusts in line with the observed changes in perceptions.

## *Promoting sustainable behaviour: The role of nudges, design and incentives*

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7/9/2016 11:30:00 AM:

*Dr. Ellen Van der Werff*

## **I nudge myself - Exploring “self-nudging” strategies to drive sustainable consumption behavior**

*Torma, Gabriele*

Objectives

Nobody doubts the existence of an intention-behavior gap in the environmental field (Leire & Thidell, 2005). Even consumers themselves are aware of their dilemma and willing to act against it: “Consumers talk about being driven to buy something against their own better judgment, and, as a result, we commonly observe attempts by consumers to control their own behavior” (Hoch & Loewenstein, 1991, p. 493). Also, “impulse buying” has been identified as a major source of dissatisfaction after a typical shopping experience (Dittmar & Bond, 2010; Kacen & Lee, 2002; Vohs & Faber, 2007). Avoiding the temptations in regular supermarkets is one possible self-control strategy (Lades, 2014; Moruzzi & Sirieix, 2015). Similar strategies are known from the health area (e.g. weight control), where people develop action-plans either alone or together with supporting experts (Hoch & Loewenstein, 1991; Schifter & Ajzen, 1985).

We propose that consumers who make use of these self-control measures in fact apply a “self-nudging” strategy (Lades, 2014). They “nudge” themselves to drive their own sustainable consumption behavior by changing their “choice architecture” cf. (Thaler & Sunstein, 1999). In this

“proof-of-concept” case study, we explore if consumers knowingly applied a self-nudging strategy when they decided to sign up for an organic delivery box scheme (ODBS). In particular, this might be a key reason for signing up for consumers who live in an area where organic food is already easily available in conventional supermarkets (Vermeir & Verbeke, 2006). Do consumers signing up for an ODBS under these circumstances consider their decision making as a self-nudging strategy, to avoid the temptation to buy cheaper conventional produce in the supermarket?

#### Research questions

- When and how do consumers with a pro-environmental mind-set experience an intention-behavior gap in their food purchasing, if at all?
- Which strategies do they follow to overcome this gap, if any?
- How did ODBS subscribers make the decision to sign up for an ODBS? What was/is driving this decision? (Why did some sign up temporarily?)
- What do ODBS subscribers value about an organic delivery box?

#### Method

We explore the manifestation of self-nudging strategies in practice by using an open, non-directive approach to examine the specific case of signing up for a ODBS. We apply a qualitative approach, interviewing existing ODBS-customers using problem-centered interviews (PCI´s), a type of semi-structured interviews (Flick, 2015; Witzel, 2000). PCI´s take into account that the researcher unavoidably has pre-knowledge and expectations regarding possible explanations of the assumed self-nudging strategies. Especially, the PCI employs probing questions to discover which underlying motives consumers had for signing up for an ODBS.

We rely on word-of-mouth to identify ODBS-customers for the interviews. The sampling will therefore be a purposive selection. The interviews will be recorded for subsequent transcription and coding.

#### Results

The data-collection will be carried out in March and results will be analyzed and reported before the conference.

We expect that participants will mention a range of motives for having an organic food box delivered on a regular basis. A pre-analysis has been made of expressions in social media to get a first impression of the colloquial terms consumers use when reporting about their experiences with such ODBS´s. The pre-analysis suggests that customers especially highlight making everyday life easier:

- “a big relief, I have not to do anything, even the menu has been settled for me”
- “easy and healthy concept in stressful times”
- “until we started with the box, we were shopping every day, threw away a lot of food, did eat the same meals all the time”
- “finally, we put an end to using energy for thinking about what we are going to eat as well as spending less time for grocery shopping”
- “it is so nice to set the brain on “autopilot” and just follow the recipes”

During the interviews, we assume that we can get a richer, deeper and more comprehensive understanding of the underlying motives making participants sign up for the ODBS. It is expected that participants will mention and reflect on their savings of time and cognitive resources, among other things.

We expect further that consumers will mention their intentions to consume (more) sustainable, but also compare those to their everyday shopping experiences. Consumers to whom sustainable behavior is part of their self-identity (Bamberg & Möser, 2007) might as well mention different (foresighted) strategies on how to avoid these intra-personal conflict between desire and will-power. Strategies like that we would label as self-control strategies (Lades, 2014).

Further, we expect that in the case of households with more than one member, participants will give us insight into the different shades of "green" of the different household-members and if and how they might attempt to influence each other through signing up for an ODBS (Aschemann-Witzel, 2013).

## Conclusion

We propose that signing up for an ODBS to save cognitive resources is an example of a self-nudging-strategy, employed by environmentally concerned consumers to overcome impulse buying. It can be argued that self-nudging is a dual coping strategy to overcome the intention-behavior gap:

- Avoiding as an emotion-focused coping strategy and
- problem-solving as a problem-focused coping strategy (Folkman & Lazarus, 1980; Moruzzi & Sirieix, 2015).

Self-nudging occurs in reflective situations, where "system 2" can overrule "system 1" (Kahneman, 2003) and where consumers realize their intention to consume more sustainable while having to fight against temptations and impulses (Haldy, 2004, p. 115). Because the decision to subscribe is much bigger than most individual choices in the supermarket and not carried out under the same time pressure, an ODBS offers a possibility for transferring the everyday grocery shopping from a low-involvement to a high-involvement decision. In this context, the decision to sign up for an ODBS may also be a strategy to be at peace with one's self-concept as an environmentally caring human being. Put differently, signing up for an ODBS is a self-nudging strategy to drive sustainable consumption behavior.

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## **I nudge myself - Exploring “self-nudging” strategies to drive sustainable consumption behavior**

*Torma, Gabriele (Aarhus University); Thøgersen, John (Aarhus University); Aschemann-Witzel, Jessica (Aarhus University)*

Nobody doubts the existence of an intention-behavior gap in the environmental field (Leire & Thidell, 2005). Even consumers themselves are aware of their dilemma and willing to act against it: “Consumers talk about being driven to buy something against their own better judgment, and, as a result, we commonly observe attempts by consumers to control their own behavior” (Hoch & Loewenstein, 1991, p. 493). Also, “impulse buying” has been identified as a major source of dissatisfaction after a typical shopping experience (Dittmar & Bond, 2010; Kacen & Lee, 2002; Vohs & Faber, 2007). Avoiding the temptations in regular supermarkets is one possible self-control strategy (Lades, 2014; Moruzzi & Sirieix, 2015). Similar strategies are known from the health area (e.g. weight control), where people develop action-plans either alone or together with supporting experts (Hoch & Loewenstein, 1991; Schifter & Ajzen, 1985).

We propose that consumers who make use of these self-control measures in fact apply a “self-nudging” strategy (Lades, 2014). They “nudge” themselves to drive their own sustainable consumption behavior by changing their “choice architecture” cf. (Thaler & Sunstein, 1999). In this “proof-of-concept” case study, we explore if consumers knowingly applied a self-nudging strategy when they decided to sign up for an organic delivery box scheme (ODBS). In particular, this might be a key reason for signing up for consumers who live in an area where organic food is already easily available in conventional supermarkets (Vermeir & Verbeke, 2006). Do consumers signing up for an ODBS under these circumstances consider their decision making as a self-nudging strategy, to avoid the temptation to buy cheaper conventional produce in the supermarket?

# The interplay between incentives and values to promote environmental behaviour

*Van der Werff, Ellen*

## Introduction/ Objectives

Policy makers often they try to promote specific target behaviours by making these behaviours more rewarding. For example, waste reduction is promoted by providing financial incentives for the reduction of waste. Financial incentives can be effective to promote the targeted behaviour. However, in order to significantly reduce environmental problems an important question is how they influence spill-over to other pro-environmental behaviours.

Policies may promote spill-over to other pro-environmental actions when the targeted behaviour strengthens environmental self-identity. Environmental self-identity reflects the extent to which people see themselves as the type of person who engages in environmentally-friendly actions (Van der Werff, Steg, & Keizer, 2013). Environmental self-identity can be strengthened by reminding people of their past pro-environmental behaviour. When people realize they often engaged in environmentally-friendly behaviour in the past their environmental self-identity is strengthened, which in turn promotes pro-environmental actions (Van der Werff et al., 2014).

Environmental behaviours are more likely to strengthen environmental self-identity and thereby promote positive spill-over when they clearly signal that one is a pro-environmental person. Extrinsic incentives, such as money, can reduce positive spill-over as these incentives undermine the effect of pro-environmental behaviour on environmental self-identity.

However, studies found that extrinsic incentives for pro-environmental behaviour may promote positive spill-over (Lanzini & Thøgersen, 2014; Kaida & Kaida, 2015). Furthermore, incentivized pro-environmental behaviour may strengthen environmental self-identity (Poortinga et al., 2013). This may be particularly the case when the incentive is weak. In that case the initial pro-environmental behaviour is not likely to be attributed to the incentive, but instead will be attributed to the self, thereby strengthening environmental self-identity (cf. Festinger & Carlsmith, 1959). Furthermore, incentivized pro-environmental behaviour may strengthen environmental self-identity when the incentive is strongly linked to environmental goals.

An important question is for which type of people incentivized pro-environmental behaviour is most likely to strengthen environmental self-identity. This may depend on the extent to which people find the environment important. Therefore, this study will test the interaction between the incentive and biospheric values on environmental self-identity and subsequent spill-over behaviour.

## Method

In total 232 participants participated in the study. 141 females and 70 males (21 participants did not indicate their gender). Age ranged from 20 to 79 ( $M = 47$ ,  $SD = 12.7$ ). On average the household of the participants consisted of 2.96 members ( $SD = 1.49$ ).

## Incentivized pro-environmental behaviour

The incentivized behaviour was the reduction of waste. Of the participants, 148 live in an area where one needs to pay per unit of general waste disposed thereby providing an extrinsic incentive to recycle or reduce one's waste. Participants pay €1.18 per bag of general waste, making it a weak incentive to reduce waste. Furthermore, the introduction of the incentive is strongly linked to the environmental impact of reducing one's waste. 84 participants live in an area where households pay a fixed yearly amount for their waste and thus do not receive a financial incentive to reduce waste.

## Measures

Amongst other things we measured participants' biospheric values, environmental self-identity, recycling behaviour, waste reduction behaviour, and spill-over behaviour.

## Results

We found that the financial incentive increased recycling ( $M = 5.71$ ,  $SD = 1.19$  versus  $M = 5.05$ ,  $SD = 1.36$ ;  $t(213) = -3.69$ ,  $p < .001$ ,  $d = 0.52$ ). The incentive also promoted waste reduction ( $M = 85.8$ ,  $SD = 102.04$  versus  $M = 156.5$ ,  $SD = 110.66$ ;  $t(211) = 4.75$ ,  $p < .001$ ,  $d = 0.66$ ).

The incentive was thus effective in promoting the behaviour it targeted. Next, we tested the effect of the incentivized behaviour on environmental self-identity. We found that environmental self-identity was indeed higher amongst those who receive the incentive for reducing their waste ( $M = 5.37$ ,  $SD = 1.09$ ) compared to those who do not receive the incentive ( $M = 4.99$ ,  $SD = 1.32$ ;  $t(145.97) = -2.17$ ,  $p < .05$ ,  $d = 0.31$ ).

Next, we tested the influence of the incentive and biospheric values on environmental self-identity. When the incentive, biospheric values and the interaction between the incentive and biospheric values were included the model explained 28% of the variance in environmental self-identity ( $F(3, 209) = 27.55$ ,  $p < .001$ ). Biospheric values were positively related to environmental self-identity ( $\beta = .68$ ,  $p < .001$ ) as well as the incentive ( $\beta = 1.15$ ,  $p < .01$ ). We found an interaction between biospheric values and the incentive ( $\beta = -.98$ ,  $p < .05$ ). Interestingly, we found that the incentive was more likely to strengthen environmental self-identity when people have weak biospheric values. When people have strong biospheric values the incentives strengthens environmental self-identity to a weaker extent, when people have very strong biospheric values the incentive is not related to environmental self-identity.

Using Hayes' process macro we tested moderated mediation by testing if environmental self-identity mediates the relationship between the incentive, biospheric values and their interaction on the one hand and the spill-over behaviour on the other hand. We indeed found that environmental self-identity mediates this relationship ( $a \times b = -.14$ ), the confidence interval ranges from  $-.28$  to  $-.03$ . As the confidence interval does not contain 0 the mediation is significant.

## Conclusion

This study found that incentivized pro-environmental behaviour can strengthen environmental self-identity and thereby lead to spill-over to other pro-environmental behaviour. In this study the incentive was relatively weak and was linked to environmental goals.

The incentivized pro-environmental behaviour was most likely to strengthen environmental self-identity and promote subsequent pro-environmental behaviour among those with weak biospheric values. This is particularly interesting from a practical perspective. Those with strong biospheric values are more likely to have a strong environmental self-identity and engage in pro-environmental actions already. Therefore, policies targeting those who do not engage in environmental actions yet are particularly important.

The findings suggest that financial incentives may be a fruitful start to promote initial pro-environmental actions. Subsequently, by keeping the incentive weak and linking it to environmental goals the incentivized behaviour may strengthen environmental self-identity thereby promoting other pro-environmental behaviours as well.

## How to stimulate pro-social behavior in others

*Keizer, Kees*

No abstract available

## Framing choices or addressing fundamental human needs? A design theory to behaviour change

*Tromp, Nynke; Hekkert, Paul*

No abstract available

# Decision Making / Cognition

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7/9/2016 2:30:00 PM: Tarthorst Rooms 1+2

*Dr. Carola Grebitus*

## Methods for tracing cognitive processes of economic decisions: The complementarity of verbal protocols and eye tracking

*Johannessen, Trond Vegard; Fuglseth, Anna Mette*

The purpose of our paper is to explore how the combined use of verbal protocols and eye tracking may enhance the understanding of human decision making in complex tasks by linking actors' cognitive processes and their performance.

Several authors recommend the use of a multi-method approach in process-tracing research on human decision making in order to triangulate findings (e.g. Todd & Benbasat, 1987; Russo, 1978). Our contribution to this research is particularly to study how concurrent verbal protocols and eye tracking may enhance the understanding of managerial decision processes in rather complex economic decision tasks. Such tasks contain both spatial and analytical subtasks (Campbell, 1988). Handling such tasks, we therefore expect that decision makers apply both spatial and analytic cognitive processes (Paivio, 1986), and that they need various types of decision aids to support their cognitive processes (Vessey, 1991). In our research, we are particularly concerned with enhancing the understanding of how presentation formats such as graphs and tables may support decision makers in complex tasks.

We report on an experimental study asking 79 master students in a business school to take on the role as manager of a summer restaurant and make decisions for 17 weeks regarding the price of meals and the number of staff members. The goal was to maximise the profit, that is, the task requires accuracy (Vessey, 1994). The task was characterised by a multiplicity of paths to a well-specified outcome with a limited random variation in the demand. To support the students' decision processes, we had designed a computerised system that presented the task as either graphs, tables or combined graphs and tables. The system was built with a spreadsheet as user interface presenting decision data (input data) and result data for each week in columns so that the rows

showed the development over time. In addition to the system, the students were allowed to use various kinds of decision aids, such as spreadsheets, calculator and pen and paper.

To trace the students' decision processes handling the task, we used verbal protocols and eye tracking. The recordings of the students' verbalisations of how they made decisions were transcribed. The software BeGaze was used to convert the students' eye-movement data into scan-path videos, showing animated projections of the students' eye fixations and movements (Bojko, 2013). In addition, we observed the students during the sessions.

In the design of our study, we particularly built on the cognitive fit theory (Vessey, 1991; 1994) and Paivio's dual-code theory (Paivio, 1971; 1986; 2007). The dual-code theory states that human beings have developed two types of mental representation and operation assigned to different information processing functions. One system is specialised for the representation and processing of information concerning nonverbal objects and events, and one system is specialised for dealing with language. Paivio refers to the two systems as the imagery system and the verbal system. According to the cognitive fit theory (Vessey, 1991; 1994), humans prefer a graphic presentation format solving spatial subtasks and a table handling analytical subtasks.

In the analyses and interpretations of our findings, we used the theory of cognitive complexity (Schroder, Driver and Streufert, 1967) to evaluate the students' level of information processing in addition to the actual profit attained. The theory of cognitive complexity emphasises the usefulness of well-developed cognitive structures when handling complex tasks under uncertainty. The theory also explains how the development of cognitive structures influences individuals' information processing, indicating that individuals with well-developed cognitive structures handle such tasks more effectively than others. In our study, we assess the students' level of information processing (LoIP) using a seven-point scale that we developed from a general manual for scoring structural properties (Schroder et al., 1967 pp. 186-189).

Our results show that verbal protocols and eye tracking complement each other:

In general, the students' eye-fixations supported their verbalisations of the decision process, thereby serving as a source of validation of each method. For example, students who attained high scores on the LoIP scale, had many vertical eye movements, indicating that they focused attention on understanding causal relationships among the variables. Students with low scores on the LoIP scale were characterised by having mainly horizontal eye movements linking variable labels to data values.

As expected, the correlation between the students' performance and their score on the LoIP scale was high. However, in cases with large discrepancies, the eye-tracking data helped us understand the reasons. For example, one student had not attained a high profit even though she had derived almost correctly the causal relationships among the input and the result variables. Inspection of the eye-tracking data revealed that she had used wrong input data in one of her calculations, seriously affecting the profit.

We also experienced that students often stopped verbalising when focusing on the graph presentation formats. This finding corroborates with the finding by Ericsson and Simon (1993) that it is hard to verbalise non-verbal content when applying the imagery system. In these cases, the scan-path videos supported our interpretations of the differences in performances. The scan-path video revealed how the high performers extracted numerical data from the graphs, that is, they managed to attain accuracy in their calculations because they took on the extra effort to extract numerical data.

Furthermore, the eye-tracking data enhanced our understanding of errors in the students' interpretation of the task, for example that they talked about increasing the profit, but had eye fixations on sales instead of the contribution.

As discussed above, the eye-tracking data in general complemented and supported our interpretations of the verbal protocols. We were, however, surprised that the eye-tracking data did not indicate that the students used the line graphs to get an overview of the development of their decisions and their performance. Based on the verbal protocols, we got the impression that at least some of the students had such an overview. A possible explanation of this discrepancy is that the eye tracker only records the eye fixations, also termed the foveal vision. However, humans are capable of noticing elements just outside the foveal vision (Bojko, 2013). Thus, students looking at the line graphs might have been able to grasp a holistic image of the development of variable values. Future research should therefore include retrospective verbal reports where students are asked about their use of the various presentation formats while they watch the scan-path video.

Furthermore, in our experiments we use a task with a well-specified outcome and low uncertainty in the demand. It only reflects aspects of the complexity that managers must handle in real-life situations. Future research should include tasks that are more closely related to real-life managerial decision tasks in ever-changing environments.

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## **Investigating the influence of visual attention in predicting choice**

*Roosen, Jutta ; Grebitus, Carola*

Investigating the influence of visual attention in predicting choice

Choice experiments are frequently used in the field of applied and behavioral economics. In this context, attention to the presented decision variables has been found to influence the likelihood of choice of the alternative options in a choice set. In order to determine this likelihood, various econometric models have been proposed in the literature that include attention recall or model attention endogenously from the choice data. In this paper, we combine data from eye tracking with hypothetical choice experiments to uncover the influence of visual attention on choice modelling. To do so, we use data from a series of choice experiments that vary with respect to products as well as the degree of task complexity. Specifically, we focus on four different products

characterized by three, four and five attributes. In addition, we vary the number of alternatives. All designs include a none-of-these option. The experimental design is as follows:

- Product 1: 2 Alternatives & 3 Attributes (N=55) and 2 Alternatives & 5 Attributes (N=55);
- Product 2: 2 Alternatives & 3 Attributes (N=54) and 2 Alternatives & 5 Attributes (N=55);
- Product 3: 2 Alternatives & 4 Attributes (N=55) and 4 Alternatives & 4 Attributes (N=61);
- Product 4: 2 Alternatives & 5 Attributes (N=80).

In order to compare the effect of complexity of the choice experimental design on attention and resulting choice we use a between subject design. In each of the experiments participants had to make a choice between a number of alternatives and a none-of-these option. During the experiment, visual attention was measured using a table mounted or screen embedded eye tracker of the type Tobii® T60/XL. Eye tracking recordings were analyzed using the software Tobii Studio 2.3.

To test the effect of attention on choice likelihood the paper implements different econometric models. To start with, the base model measures the impact of visual attention on choice likelihood per se. Second, we adopt the model of attribute non-attendance (ANA) by Hensher, Rose, and Greene (2005), which models non-attention to attributes by reducing the utility weight of the non-attended attribute in the random utility function to zero. Third, we allow for a more flexible estimation of the weight of each attribute by using attention to attributes via a general mixed logit model (Fiebig et al., 2010) to account for the impact of visual attention on heterogeneity in utility weights. Models are compared based on fit measures such as the likelihood function and prediction success.

Results show that visual attention has a significant impact on choice probabilities. Furthermore, reducing the probability weights of non-attended attributes to zero deteriorates model fit. However, excluding non-attended attributes from the utility function explains a large share in heterogeneity of choice likelihood. An overview on the results for products two and three using the multinomial models with and without restrictions on utility weights is presented focusing on attribute non-attendance reveals the following:

- ANA in choice: Product 2 – 3 attributes: LL=-482.873; Product 3 – 2 alternatives: LL=-324.583.
- ANA in utility weights: Product 2 – 3 attributes: LL=-527.569; Product 3 – 2 alternatives: LL=-347.674.
- ANA in choice: Product 2 – 5 attributes: LL=-510.058; Product 3 – 4 alternatives: LL=-445.184.
- ANA in utility weights: Product 2 – 5 attributes: LL=-536.595; Product 3 – 4 alternatives: LL=-446.985.

In addition, a general mixed logit model was estimated using visual attention to explain subject heterogeneity. The total fixation count for the attribute price has been used as an indicator of subjects' involvement. Preliminary results using the data from product three provide evidence that accounting for subjects' heterogeneity improves prediction success from 37% to 41%. In order to analyze the performance of the models more deeply we also compare the visual attention measures to self-reported attention measures. Overall, this research provides recommendations for researchers and practitioners using choice experiments and related choice modeling to predict preferences and willingness to pay.

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# *Special Session Nudging for public health: effectiveness, legitimacy and feasibility*

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7/9/2016 2:30:00 PM: Ir. Haak Room

*Prof. Emely De Vet*

In the national Dutch project WINK, nudging is explored as a novel tool for promoting public health. Nudging refers to exploiting knowledge about human decision making is exploited to steer individuals in the right direction without prohibiting any options. The project investigates the administrative feasibility, normative acceptability and psychological effectiveness of nudging to support healthy decisions (e.g., eating, alcohol consumption, exercise or vaccination).

WINK is a multi-disciplinary research where societal partners (i.e., Netherlands Institute for Public Health and the Environment, the Scientific Council for Governmental Policy, Municipality of Utrecht, Netherlands School for Public Administration, the Council for Health and Society) collaborate with academics in the fields of health and social psychology, public administration, and philosophy.

In this symposium we will give an overview of the WINK project and its first results. In the first talk Emely de Vet (Wageningen University) will introduce the project and will outline how nudging is embedded in the Dutch public health context. Next, Tina Venema (Utrecht University) will present empirical psychological studies evaluating the effectiveness and working mechanisms of a specific nudge, namely nudging through social proof information. Finally, Anastasia Vugts (Wageningen University) presents ethical reflection on nudges adopting both a philosophical and empirical perspective.

## **Nudging in the public health context**

*De Vet, Emely (Wageningen University); Feitsma, Joram (Utrecht University); Schillemans, Thomas (Utrecht University); De Ridder, Denise (Utrecht University)*

Healthy behavior plays a pivotal role in the prevention and management of various diseases, yet many people display unhealthy behavior. Given that unhealthy behavior is responsible for a substantial burden of disease, there is a need for strategies that support individuals in making decisions that favor health. In public health, there has been a tendency to shift responsibilities away from governments to individuals. Governments that previously adopted a paternalistic approach increasingly tend to favor individual responsibility for important decisions about health and wellbeing. The value that is attached to individual choice places a large burden on people, and disproportionately so among people who experience difficulties in making such choices (e.g., living in disadvantaged neighborhoods, young people).

In project WINK we investigate nudging as a new model that enables governments to implement policy arrangements that facilitate people to make decisions about health and wellbeing, including those who experience difficulties in doing so. In the first subproject, it is investigated how behavioral insights can be successfully embedded into existing policymaking practices. This is done by adopting a practical, actor-based, and ethnographic stance of inquiry, extracting lessons from real everyday practices of pioneering behavior experts at Dutch central government. Particularly, we ask what these behavioral experts actually do, and how they develop their practice against the backdrop of institutional counter-pressure. Results reveal the broad scope of behavioral policymaking practice, in which behavioral experts do not only shape choice-architectures directly. They also analyze them, regulate private choice-architectures, and teach other partners how to be choice-architects themselves.

## **When in doubt, follow the crowd. Resolved ambiguity as underlying mechanism in social proof nudge**

*Venema, Tina (Utrecht University); Kroese, Floor (Utrecht University); Benjamins, Jeroen (Utrecht University); De Ridder, Denise (Utrecht University)*

With increased media attention for healthy lifestyles, people are often ambivalent towards the food choices they have to make. For instance, some options may be more hedonic while alternative options would be healthier, hence making these choices is not always easy.

In this study we investigate how a gentle nudge could affect the experienced ambivalence and the difficulty of the choice. A well-known nudge is the 'social proof'. The social influence literature states that, when people are uncertain about a choice, they are more easily persuaded to do what others do. We hypothesize that ambivalence will be reduced and participants will be more easily led to the healthy option when a social proof nudge is presented in a food choice dilemma.

We used a 2 (dilemma vs. no dilemma) by 2 (social proof vs. no social proof) within-subjects design. Participants were asked to make several choices related to dinner options. Results showed that, for food choices where participants experienced a dilemma between tastiness and healthiness, a social proof nudge reduced their ambivalence. Consequently, participants were more likely to choose the healthy option when it was presented together with a social proof.

This study contributes to the knowledge on nudge interventions designed to improve healthy choices. Future directions of this line of research will be discussed.

## **Which conceptualizations of autonomy are addressed in the ethical discussion on nudging?**

*Vugts, Anastasia (Wageningen University); Van den Hoven, Mariette (Utrecht University); de Vet, Emely (Wageningen University); Verweij, Marcel (Wageningen University)*

One of the strongest ethical concerns about nudges is that they threaten personal autonomy. Autonomy can be understood in various ways. The aim of this systematic literature review was to identify different conceptualizations of autonomy as used in the literature on the ethics of nudging.

Scopus, PubMed and Google Scholar databases were searched for articles on the ethics of nudging. From the 101 search results, 33 articles were included in a literature review in Atlas.ti. The analysis consisted of three steps: First, autonomy arguments were identified in the text and labelled with autonomy-codes. Next, a more limited set of super-codes was developed and applied in a

deliberation round. Finally three conceptualizations of autonomy were identified that connect to the super-codes and to the philosophical literature on freedom and autonomy.

Three conceptualizations of autonomy were identified in the literature on the ethics of nudging: 1) autonomy as freedom of choice involves the availability of options that are accessible and between which persons can choose; 2) autonomy as agency involves being able to lead one's life and act on the basis of reasons and intention; 3) autonomy as self-constitution emphasizes a person's individuality and authenticity.

Autonomy as self-constitution was less frequently used than the other conceptualizations. These conceptualizations of autonomy will eventually be operationalized and used in a series of empirical studies in various health related contexts. The aim of these experiments will be to investigate the impact of nudges on personal autonomy.

## *Social Preference / Norms and Preferences*

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7/9/2016 2:30:00 PM: De Peppel Room 1+2

*Dr. Katrin Schmelz*

### **That's impossible: An Experiment on Participation Constraints**

*Renes, Sander ; Hoffmann, Timo*

Before a group can take a decision, its members must agree on a mechanism to aggregate individual preferences. In this paper we present a first experimental test of the effect of participation constraints in such group choice situations. While efficient mechanisms are desirable, Myerson and Satterthwaite (1983) show that participation constraints can prevent their implementation. We experimentally show this effect in the context of social choice mechanisms for the provision of an indivisible public good. We find strong indications that individual preferences for choice rules are sensitive to individual expected payoffs. This highlights the importance of considering participation constraints when designing choice institutions. We contrast the empirical performance of the theoretically optimal mechanism (AGV) with the common Simple Majority voting mechanism (SM). Both do not achieve their theoretical efficiency. The SM is more robust to changes in the environment, but the AGV is more efficient in most treatments.

### **How Nudging with Descriptive Social Norms Influences the Deaf Effect for Risk Warnings**

*Verbraak-Kolevska, Violeta*

ABSTRACT

Purpose: In this paper we investigate whether the concept of 'nudging' might be of help to internal auditors in reporting their message effectively to senior management. Specifically, this research focuses on two questions: 1) are recipients less likely to exhibit 'deaf effect' when they are nudged

by the messenger with a descriptive social norm? and 2) is the influence of the nudging with a descriptive social norm on the deaf effect moderated by the messenger-recipient relationship (i.e. the messenger is seen as a partner or as an opponent)?

Design/methodology/approach: In a scenario-based experiment we test whether inclusion of a descriptive social norm in the risk warning message of the internal auditor influences the 'deaf effect' for internal auditors' warnings.

Findings: Our experiment showed that (1) the 'deaf effect' was reduced when the messenger included a descriptive social norm in the risk warning message, and (2) the influence of the descriptive norm on the deaf effect was moderated by the messenger-recipient relationship. More specifically, the inclusion of a descriptive social norm in the risk warning was more effective when the messenger was seen as a partner. Our results indicate that the inclusion of a descriptive social norm in the risk warning is less effective when the messenger is seen as an opponent.

Research implications/limitations: With this study we address an important theoretical gap concerning the effectiveness of internal audit as well as in our understanding of the 'deaf effect'. We also apply concepts of nudging to business related risky choice decision making on the continuation or termination of large projects.

Key words: Deaf Effect, Nudging, Descriptive Social Norm, Internal Audit Effectiveness, Internal Auditor

## **Control Aversion in East and West Germany: Evidence from a Large-Scale Internet Study**

*Schmelz, Katrin ; Anthony, Ziegelmeyer*

Do politico-economic systems influence control preferences? We hypothesize that less individuals acquired control-averse preferences under the coercive regime of East Germany than under the liberal regime of West Germany. We test this hypothesis in a large-scale internet study consisting of two experiments with four treatments. The core of all treatments is a repeated principal-agent game where the principal can enforce a minimal effort from the agent, preceded by a survey on individual characteristics that could potentially be related to control preferences.

We also present a model of cultural evolution in which the level of state coercion affects the process by which control-averse preferences are acquired or abandoned, so that a population's stationary distribution of preferences towards control depends on state coercion.

Indeed, we find that control aversion is largely stronger among West than among East Germans. The differences are significant and systematic for graduates older than 30 years but only in specific cases for students and never for graduates younger than 30 years. The differences are largely driven by lower fractions of control averse individuals in the East whereas the strength of control averse reactions is similar among East and West Germans. Our findings corroborate the idea that for East Germans who have been socialized under a coercive regime as children and adolescents, the experience of a liberal regime in their adulthood does not make them abandon completely the preferences they acquired in early life. Differences in control aversion are vanishing in younger generations of East and West Germans who essentially grew up in unified Germany.

# Market / Organizational

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7/9/2016 2:30:00 PM: Pomona Room 1+2

*Prof. Bruce Kaufman*

## **Identity, Threat Aversion, and Organisational Decision-Making: Experimental Evidence from Public Officials**

*Kuehnhanss, Colin Raico ; Murdoch, Zuzana ; Geys, Benny ; Heyndels, Bruno*

In any organisational decision-making process, distinct policy options are typically characterised by a number of advantages (or 'opportunities') and disadvantages (or 'threats'). The selection of one option over another depends on the opportunity-vs.-threat perceptions of the individuals within the organisation. In this article, we argue that individuals' organisational identification constitutes a key determinant of this threat perception. We propose that a stronger organisational identity strengthens individuals' motive to avoid a negative outcome and shifts their attention towards potential threats rather than opportunities in the payoff distribution. As decision-making is context dependent, we also argue that this 'prevention focus' in individuals' motivational basis for decision-making is stronger under negative than under positive selection strategies. An original survey experiment with civil servants in the European Parliament (EP) finds significant supportive evidence for the empirical implications of our argument.

## **HUMAN CAPITAL CONSTRAINTS TO ACHIEVING OPTIMAL RETURNS BY POOR WOMEN ENTREPRENEURS ACROSS REGIONS IN INDIA: A CASE STUDY**

*VELAN, NIRMALA; PRAKASH, VIJAY*

The recognition of entrepreneurship has caught the attention of global policy-makers, governments and researchers as the key driver of economic growth and development. It is widely accepted that development of entrepreneurship among women would help to integrate them into the development process of the country (Azad, 1988). It is also recognized that female entrepreneurship is different from the male's, as the former is inter-connected with the system of social relationships rather than being an independent economic entity. However, earlier literature indicate female entrepreneurs to be in low proportion compared to their male counterparts (Brush 1992; Delmar and Davidsson 2000; and Bosma and Harding 2007). Brown, et al. (2001) reported that this may be due to lack of support, resources or different growth motivations and intentions. Social structure of a country, comprising family, social life and work place, influences women's access to entrepreneurial opportunities and their performance. Their occupational segregation, the family role expectations and under-representation in labour market, in general, tends to restrict them to traditional activities, and affects their motivation and goals of business enterprise, which consequently affects their business performance as well. The degree to which social aspects affect women's entrepreneurship is also governed by the cultural norms and traditional expectations of the society in a country. Insufficient human capital development also acts as a major constraint to their achieving optimal returns and sustenance of their business ventures. Hence, it has been stressed upon that government policies be introduced, particularly in developing countries, to raise women's access to information, skill improvement and funding (Allen and Truman, 1993) to ensure that they sustain their entrepreneurship and earn potential returns.

Given the growing significance of female entrepreneurship for inclusive, and sustained growth and development, in the wake of their human capital constraints among poor women, the objectives of the present paper are as follows:

Objectives:

1. to over-view the socio-economic background and human capital constraints of the rural and urban poor female entrepreneurs in Pondicherry region;
2. to analyse the effects of human capital constraints on achieving optimal returns by female entrepreneurship across the two regions;
3. to identify the determinants of earnings of the poor rural and urban female respondents; and
4. to examine the region-wise entrepreneurial motivations, problems, personal/general constraints, and socio-psychological constraints of the two groups.

Data and Methodology: This paper addresses the issue of human capital constraints on achieving optimal returns by female entrepreneurship, besides examining their entrepreneurial motivation and constraints in Pondicherry region, India. The study is based on a survey conducted during May-June 2013, covering a random sample of 256 rural and urban female entrepreneurs. To pursue the objectives of the study simple average, ratio, percentage, multiple regressions and Garret ranking technique are employed. Ordinary least squares (OLS) multiple regression has been estimated to analyse the factors influencing the annual earnings of the female entrepreneurs by region. The estimated equation is as given: -

$$ANERN_i = b_0 + b_1AGEBS + b_2REDCN + b_3REXPN + b_4VTRNG + b_5INITK + b_6EMTYP + b_7AWKDY + b_8MKTD T + b_9REGON + U$$

where,

ANERN<sub>i</sub> = annual earnings of the respondent entrepreneur in Rupees by region,

AGEBS = age of respondent in years at the time of starting enterprise,

REDCN = education of respondent in years,

REXPN = work experience of respondent in years,

VTRNG = training dummy, taking value one if undergone any vocational training and zero otherwise,

INITK = amount of initial capital invested in Rupees,

EMTYP = employment type dummy, taking value one for agriculture-based or manufacturing production activities and zero for trade or services,

AWKDY = annual number of days worked,

MKTD T = distance of market in kilometer,

REGON = region dummy, taking value one if urban and zero for rural, and

U = error term.

Findings: The findings of the study showed that majority of the sample respondents in both regions had low education levels and skills, resulting in severe human capital constraints. They had commenced their business venture at a young age. The rural respondents were comparatively more socially and economically backward than their urban counterparts. The entrepreneurial business activities undertaken by both categories of women were traditional and less remunerative due to their low human capital. The activities undertaken were mainly started with bank loans by the two groups. The main factors motivating them to establish business enterprise were almost identical, viz., to earn income, employment security and economic independence respectively. The monthly earnings of majority of the two categories of entrepreneurs were quite low, with the urbanites earning much higher than the rural women.

The most significant variables positively influencing the entrepreneurial earnings of the rural women were higher initial capital, annual days of work and type of production activity. Whereas for the urban sample respondents, the significant factors positively influencing earnings were age at commencement of business, education, training and initial capital investment. In the combined analysis, increased annual days worked and moving to urban region also positively and significantly enhanced earnings. But, employment type significantly negatively affected urban entrepreneurs' earnings. This calls for training these women for more remunerative business activities, besides making available more diversified market opportunities.

Wholesalers constituted the main raw material suppliers to both rural and urban sample entrepreneurs, and the supplies were reported to be easily available. In rural areas, the women managed their enterprise on their own, while in urban areas they were mainly assisted by their husband. Direct sales to consumers constituted the main marketing practice in both regions. The average monthly sales and returns of the urbanites were comparatively much higher than those of the rural entrepreneurs. The region-wise entrepreneurial problems confronted and personal/general constraints experienced by the two sample groups varied considerably across the two regions. The major socio-psychological constraints faced by the two sample respondents were identical, with conflicts due to dual responsibility, lack of social contact, and lack of self-motivation, respectively comprising the major problems.

In sum, although it is encouraging to note that poor women are making entrepreneurial efforts in the study area, human and economic capital constraints act as barriers to optimal earnings by them. Diversification of product line could help in overcoming the problem of competition, and thus improve the earning and profits of female entrepreneurs in Pondicherry. Information on credit availability and various schemes/programme for women needs to be widely publicized. Further, it is observed that while motivations, and certain personal and socio-psychological problems are identical to women in general, cutting across regional barriers, the work-related problems of the sample respondents vary considerably due to the difference in socio-economic and cultural differences between the region. This needs to be supported by their family through skill development and training. For developing sustainable entrepreneurs, the government should also consider the effects of non-economic factors, like socio-cultural factors and identify the specific kind of knowledge required by women entrepreneurs so as to improve their efficacy and assist them to grow (Doyle, 1991, p. 7).

## **The Impossibility of a Perfectly Competitive Labor Market: The Role of Social Distance in Adam Smith**

*Kaufman, Bruce*

Across all of standard economics the model of a perfectly competitive market, depicted by the demand-supply (D/D) diagram, represents the base-line for theorizing and evaluating policy. Of course, economists then extend, qualify, and complicate the competitive model in many ways but,

at the end of the day, it remains the foundation stone on which microeconomics is built, per the first welfare theorem.

The situation is the same in applied fields, such as labor economics. Illustratively, Ehrenberg and Smith (2006) state in their best-selling labor text, "analysis of the labor market begins and ends with demand and supply." Likewise, analysis of the minimum wage almost always starts with the competitive model as benchmark.

This paper uses a behavioral economic insight from Adam Smith in the *Theory of Moral Sentiments* (1759) to demonstrate that at least in one part of the economy, the labor market, by matter of pure logic (not empirical realism) a competitive market and demand/supply diagram are not coherent constructs.

The behavioral insight is Smith's claim in TMS that all economic agents are born with a conscience (the 'invisible spectator') and the conscience, operating through the psychological mechanism of sympathy, makes each agent concerned about social/ethical approbation and disapprobation. Sympathy thus makes the utility functions of individual agents interdependent or 'social.' It is well-known when utility functions are interdependent, it introduces a behavioral externality into the competitive model.

Smith's key hypothesis is that the strength of sympathy is a negative function of the social distance between two agents. Thus, the strength of sympathy is very large for people in a family, positive but smaller for people in neighborhood, and zero for people located on the opposite side of the world. I use this insight to show that sympathy must always be  $> 0$  for a labor market because, for the employer (buyer) and worker (seller) to exchange labor services (the good), they must have face-to-face contact in a workplace (unlike wheat traders).

With face-to-face contact universal in labor markets, and often being of a long-term nature, it is a necessary condition that sympathy  $> 0$  between both employer and employee, and among fellow employees. The result is the firm's labor supply curve changes from horizontal to positively sloped on grounds that workers and firms are no longer pure individualist wage-takers but agents with social preferences which make their labor supply curves upward sloping as a function of elements affecting sympathy (e.g., fair treatment).

When the firm's labor supply curve is upward sloping (sympathy  $> 0$ ), it can be shown that (1) the labor market becomes always and everywhere imperfectly competitive and (2) the firm no longer has a well-defined labor demand schedule. Hence, the D/S diagram deconstructs as both a predictive and policy evaluation tool, with significant implications for standard economics.

# Games 3

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7/9/2016 2:30:00 PM: Dorskamp Room 1+2

*Dr. Andries Richter*

## **Not All Income is the Same to Everyone: Cognitive Ability and the House Money Effect in Public Goods Games**

*Hackinger, Julian Christopher*

### Motivation

Due to their characteristics of non-excludability and non-rivalry, public goods are particular in the economic world. The free-rider problem predicted by classic economic theory causes private provision of public goods to be too low. Yet, anecdotal evidence and experiments in linear public goods games reveal positive contributions, albeit below the social optimum. Although vital to know, it remains an open question how contributions materialise. Uncovering the main drivers of high contributions might enable us to partly solve the social dilemma.

Research on mental accounting suggests that subjects treat windfall money differently than income they have earned. This is referred to as the house money effect (Thaler, 1985). As economists who *inter alia* want to explain and predict economic behaviour, we should take this into account. For this reason, scholars have tested whether the effect exists in a number of economic games. For dictator games, the results provide concordant evidence. Here, subjects show less generosity with earned than with windfall income (e.g. Cherry, Frykblom and Shogren (2002), Oxoby and Spraggon (2008), and Reinstein and Riener (2012) for a more recent experiment). Corresponding evidence in public goods games however remains mixed (Spraggon and Oxoby, 2009). Cherry, Kroll and Shogren (2005) find that contributions in public goods games are independent of endowment origin. This is in line with results obtained by Antinyan, Corazzini and Neururer (2015) and Clark (2002). Others indicate that contributions are decreasing in effort which hints at a house money effect (Muehlbacher and Kirchler, 2009). However, the discussion has ignored a major factor indispensable for explaining the house money effect. Research in various fields shows that humans differ with respect to their cognitive abilities. The complexity of most economic problems requires analytical reasoning. As a result, cognitive skills might be one of the fundamental determinants of varying responses in economic issues. The concept of mental accounting sketches that individuals categorize income in order to simplify economic decisions. This suggests that cognitive skills are associated with the extent to which individuals practice mental accounting and thus with related phenomena like the house money effect.

Following this rationale, I argue that individuals differ in the degree to which they exercise mental accounting. While subjects with low cognitive skills need to simplify economic problems by applying mental accounting, the opposite is true for subjects with high cognitive skills. Since mental accounting constitutes the origin of the house money effect, one should observe respective behaviour for individuals with low but less so for individuals with high cognitive skills. Therefore, I hypothesise that subjects with low cognitive skills contribute less the higher the share of earned income. For contributions by individuals with high cognitive skills the origin of income has little or no effect.

### Experimental Design

To test my hypotheses I ran a classroom experiment among first year business administration students who were randomly divided into three treatment groups. Each group had to colour in a

different number of a total of 150 circles. 67 subjects had to colour in 10 percent (15 circles), 39 subject had to colour in 50 percent (75 circles), and 55 subjects had to colour in 90 percent (135 circles). This task was used to simulate a real effort task that is not cognitively demanding. In total, 161 students participated in the experiment. For having coloured in all circles appropriately all subjects received an endowment of 100 tokens (10 tokens = 0.60 EUR). As the participants had to colour in different fractions of circles, this induced different proportions of earned and endowed income (i.e. either 10, 50, or 90 percent of the total income was earned). Subsequent to their task, individuals could decide on how much of their endowment to invest into a one-shot three-person linear public good with a marginal per capita return of 0.5. Subjects did not know the effort levels of the other two players but knew that all combinations were possible. In order to control for cognitive ability, subjects had to perform the cognitive reflection test proposed by Frederick (2005). One week after the experiment, 18 participants were randomly picked in groups of three and received their final pay-off.

## Results

In line with Cherry et al. (2005) the contributions do not differ significantly across effort levels (55 percent in the low versus 48 percent in the high effort treatment,  $p = 0.2302$ , Mann-Whitney-U test). More importantly, however, distinguishing between cognitive skills I find that subjects' contributions in a public goods game depend on an interplay of cognitive abilities and endowment source. When compared to individuals with high cognitive skills, those with low cognitive skills invest more into the public good when their endowment is windfall and less when it is earned. To be more precise, contributions by individuals with high cognitive skills do not differ significantly by endowment source (48 percent in the low versus 55 percent in the high effort treatment,  $p = 0.5775$ , Mann-Whitney-U test). These subjects do not exhibit a house money effect whilst contributing 50 percent on average. On the contrary, contributions by individuals with low cognitive skills are significantly higher in the low effort treatment (63 percent) than in the high effort treatment (44 percent,  $p = 0.0157$ , Mann-Whitney-U test). Thus, these subjects exhibit the house money effect. The result is robust to controlling for session fixed effects, sex, age and risk preferences in OLS regressions with cognitive ability as continuous and as a dummy variable.

## Conclusion

This the first paper to show that contributions to a linear public good depend on an interplay of income origin and cognitive skills. Contributions to a public goods game can be regarded as subjects' revealed preferences in favour of the considered public good. If the composition and the source of income have an influence on preferences, policy makers should consider the impact of a changing composition of income in decisions on taxation and redistribution. Policies that increase the fraction of earned money could shift preferences towards less support for public goods for a certain subgroup of the population. In addition, my results can help to explain voting behaviour as a means to express preferences (i.e. the approval of publicly financed large-scale projects). The described dynamics could in turn be exploited in order to implement policies that need the population's support. Hence, this ongoing research provides multiple paths for further investigations.

## **When kindness generates unkindness. Why positive framing cannot solve the tragedy of the commons - an experimental investigation**

*Brekke, Kjell Arne ; Isaksen, Elisabeth Thuestad ; Richter, Andries (2,1)*

We replicate the result by Andreoni (1995) that contributions to a linear public good (PG) are higher if the externality is framed positively, rather than negatively. We further show that this finding does not carry over to a non-linear PG game or the common pool resource (CPR) game. We find that the presence of a framing effect is largely affected by whether a social dilemma features

strategic interactions. In the linear PG game, the best response is always to contribute nothing, and hence, independent of actions by others. With reciprocal preferences, however, contributions serve as strategic complements and kindness generates more kindness. With multiple equilibria a positive frame facilitates cooperators to coordinate on a cooperative equilibrium. In the CPR game and the non-linear PG game, the best response would be to contribute less if others contribute more. The material incentives hence counteract the effect of reciprocity, and the frame no longer serves as a coordination device. Positive framing therefore does not help to solve the tragedy of the commons. Further, we find that rivalry, as present in the CPR, is eroding the foundation of reciprocal interactions as the ones who contribute most are the ones who benefit least. In line with these results, we find that cooperation is highest in the linear PG game, and lowest in the CPR game.

## **The effect of in-group and out-group prescriptive norms in Dictator Game decisions: A test in the context of a presidential election**

*Freidin, Esteban; Sency, Carlos Maximiliano; Ryan, Brenda Elisabeth; Carcallo, Fabricio*

Background: Social norms have been shown to play an ubiquitous role in Dictator Game (DG) decisions. For instance, when participants estimate others' opinions about the most socially appropriate behavior in the game (i.e., the prescriptive norm), they are more likely to choose the equitable distribution (Krupka & Weber, 2009) or a distribution closer to the equity norm (Senci et al., in preparation) relative to a control group.

In the present study, we explored normative influences on DG decisions after participants thought about in-group or out-group prescriptive norms in the context of the 2015 Argentine presidential election.

Others' group identity is supposed to be a key factor influencing people's sensitivity to these others' opinions. On one hand, many theoretical developments (e.g., Social Identity Theory, Tajfel & Turner, 1986; gene-culture co-evolution of parochial altruism, Bowles et al., 2003) and empirical results (e.g., Bernhard et al., 2006; Baldassarri & Grossman, 2013) lead to expect in-group normative opinions to have a stronger influence on behavior than out-group norms. This could be so for many reasons such as people seeking to assert their social identity by following in-group norms or learning to expect punishment from transgression of such norms. From this view, we would expect DG decisions to be closer to the equity norm when participants estimate in-groups' than out-groups' normative opinions. On the other hand, reference to the out-group norm in the context of an election might lead to social identity performance, namely behaviors that attempt to change the others' stereotypes and treatment of the in-group (Klein et al., 2007). This notion is close to the idea of competitive altruism (Roberts, 1998), though applied to concerns for the reputation of the group. From this view, we would expect more pro-social decisions after participants estimate out-groups' than in-groups' normative opinion. This prediction should stand in the pre-election context when the reputation of the group can have strong consequences on the group's success, but not after the election when stakes are much lower.

Methods: We recruited 70 university students (56% women) from a wide variety of disciplines (e.g., economics, psychology, biology, education, engineering, among others) in Bahía Blanca, Argentina, and we did a paper-and-pencil DG at the Universidad Nacional del Sur. We ran sessions in a period involving a few weeks before and a few weeks after the 2015 presidential balloting that defined the election between candidates Mauricio Macri (who was eventually elected) and Daniel Scioli. We defined the in-group and the out-group based on participants' reported sympathy for each presidential candidate. All participants had to estimate previous participants' opinion about the most socially appropriate behavior in the DG before actually playing the game for real money. In sessions both before and after the election, we implemented two independent treatments: 1) in treatment Macri (n=35), participants had to estimate Macri sympathizers' prescriptive norm before

making their decisions in the DG, whereas 2) in treatment Scioli (n=35), participants had to estimate Scioli sympathizers' prescriptive norm before playing the game.

Results: Participants' estimation of the prescriptive norm was similar (close to the 50-50 split) regardless of whether they had to estimate the opinion of one or the other candidate sympathizers (Mann-Whitney U test,  $Z=0.62$ ,  $P=0.54$ ). Nevertheless, those guessing the opinion of the right-wing-candidate sympathizers (i.e., Macri) made significantly more selfish decisions than those guessing the opinion of the by-then-official-candidate sympathizers (i.e., Scioli) (Mann-Whitney U test,  $Z=2.32$ ,  $P=0.02$ ). Furthermore, for each participant, we built a score with the difference between his or her degree of sympathy for one candidate and the other. This score was built so that positive numbers indicated more sympathy towards the candidate whose sympathizers' opinion the participant had to estimate. Then, we divided Macri-Scioli treatments in halves by the median of this candidate-sympathy score to compare DG decisions of those that guessed the opinion of in-groups (Macri sympathizers that guessed Macri sympathizers' opinion, or Scioli sympathizers that guessed Scioli sympathizers' opinion) versus those that guessed the opinion of out-groups (Macri sympathizers that guessed Scioli sympathizers' opinion, or Scioli sympathizers that guessed Macri sympathizers' opinion). This analysis showed that, before the election, participants estimating the out-group norm chose in closer consistency with the equity norm (i.e., less selfishly) than participants estimating the in-group norm (Mann-Whitney U test,  $Z=2.43$ ,  $P=0.015$ ). This effect disappeared after the election (Mann-Whitney U test,  $Z=0.17$ ,  $P=0.86$ ). In addition, participants estimating the out-group norm chose more altruistically before than after the election (Mann-Whitney U test,  $Z=2.12$ ,  $P=0.03$ ).

Discussion: Present results showed that people follow group norms in a flexible context-dependent manner. When group competition for votes was at stake, participants behaved more pro-socially when thought about the out-group than the in-group norm (despite both estimated norms were similarly close to the fair share). Once the election was behind, there was no difference in DG decisions after thinking about the out-group or the in-group. In addition, those thinking about the out-group chose more pro-socially before than after the election. These results are in stark contrast with the idea that in-group norms are always more influential than out-group norms. Nonetheless, these data can still be interpreted as consistent with an underlying motivation to impose the interests of the in-group. In particular, results are consistent with Klein and collaborators' (2007) notion of social identity performance. Nonetheless, future studies should confirm whether participants' increased pro-sociality when reminded of the out-group norm was strategically unraveled to influence out-groups' opinion of the in-group.

Last but not least, participants primed to think of the right-wing candidate sympathizers' norm chose more selfishly than participants who thought about the other candidate sympathizers' opinions. This result cannot be attributed to differences in the estimated norm between the groups because there was no such difference. It seems plausible that reference to one and/or the other candidate might have activated specific attitudes in relation to altruism and pro-sociality. This interpretation would be consistent with the association found between political (liberal vs. conservative) and social value orientations (cooperative and pro-social vs. pro-self) (Van Lange et al., 2012).

# Heuristics and biases / Decision Making

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7/9/2016 2:30:00 PM: Roghorst Room

*Dr. Nick Benschop*

## Deception and Self-Deception

*Van der Weele, Joel J. ; Schwarzmann, Peter*

We experimentally investigate the determinants of overconfidence and test the hypothesis, advanced by Robert Trivers, that overconfidence serves to more effectively persuade or deceive others. After performing a cognitively challenging task, half of our subjects are informed about the possibility of earning money by convincing others of their high relative performance in a structured face-to-face interaction. Privately elicited beliefs show that informed participants are 50% more overconfident than those in a control condition, and are less responsive to objective feedback on their performance. Using random variation in confidence generated by our feedback mechanism, we find that increased confidence indeed leads to higher evaluations in the ensuing interactions, unless the evaluators have been explicitly instructed to watch out for lies. Our results suggest that self-deception has social origins.

## A Model of Indecision

*Ip, Edwin*

In this paper, I introduce a decision utility model based on multi-attribute conflict. Using this simple model, I am able to derive four well-known behavioural phenomena which have so far lacked consistent theoretical explanations. These are the decoy (attraction) effect, the compromise effect, choice overload and information overload. Given the simplicity of the model, it can be applied to many classical settings to give different predictions on market outcomes. As an example, I show that indecisiveness allows for a range of non-social optimal equilibria in a Bertrand-style price-quality competition model.

## How even factors unrelated to a project can cause escalation: A Construal Level Theory perspective

*Benschop, Nick ; Nuijten, Arno ; Keil, Mark ; Rohde, Kirsten ; Lee, Jong Seok*

Many projects struggle to meet their goals with regard to time, budget and functionality. A recent study found that around 17% of projects fail outright and that fewer than two-thirds meet their goals (Project Management Institute, 2013). Many of these troubled projects seem to take on a life of their own—a situation known as project escalation—because managers are often reluctant to terminate or redirect them.\* Information system (IS) projects, appear to be particularly prone to escalation. Keil et al. (2000) found that 30 to 40% of IS projects escalate and that these projects perform “significantly worse in terms of perceived implementation performance and perceived budget/schedule performance.” - Keil et al. (2000), p. 632. Project escalation thus poses a significant problem.

A variety of factors have been found to influence escalation decisions, including various psychological biases (see Sleesman, Conlan, McNamera & Miles (2012) for a recent overview and meta analysis). However, while some potential causal factors of escalation have received a lot of

attention, there are other factors which remain almost completely unexplored. In this study we investigate a causal factor of project escalation, construal level, which has thus far received little attention in this context. Construal Level Theory (CLT) assumes that people use different 'construal levels' to think about objects/situations that are psychologically distant (i.e. high construal level) as compared to those that are psychologically close to them (i.e. low construal level) (Trope & Liberman, 2010). Psychological distance can, for instance, refer to geographical, temporal, or social distance as well as to a high degree of hypotheticality. CLT suggests that a high or low construal level can influence perceptions and preferences (Trope & Liberman, 2010). In this study, we test whether a difference in construal levels can increase the likelihood of project escalation by affecting perceptions of feasibility and desirability as well as perceptions of the pros and cons of the project.

We conducted a basic randomized design experiment comparing two treatments. The independent variable in this experiment was construal level and the experiment was split into two parts. The first part included an exercise that has been used in prior CLT studies to induce differences in construal level. This exercise was however completely unrelated to the (scenario of the) project itself. In other words, all decision makers received identical information about the project itself, regardless of the treatment condition that they were in. The goal of the experiment was to test whether decision makers with a high construal level are more likely to escalate commitment as compared to decision makers with low construal level. The dependent variable thus was the willingness of the decision makers to continue with a troubled project. One hundred fifty-four Dutch undergraduate students participated in the experiment, 153 of whom completed the experiment. In addition to the DV, we also tested and measured several potential mediators for the effect of construal level on project escalation. These are based on prior literature on CLT, which suggest that construal levels can influence perceptions of feasibility and desirability as well as perceptions of the pros and cons. In addition, the experiment included a manipulation check, which measures decision makers construal level, as well as several control variables such as age and gender.

The results from our experiment indicate that there is indeed a significant relationship between construal level and project escalation. Specifically, we found that decision makers with a higher construal level were more willing to continue with the troubled project as compared to decision makers with a lower construal level, in line with our predictions. This finding is of particular interest, but simultaneously troubling, because construal level has a noticeable difference with many other causal factors that have previously been linked to project escalation.

Many previously identified causal factors, and other psychological biases, are linked to characteristics of the project itself or organization in which the project takes place. Biases can occur when changes are introduced in factors that rationally should not influence a project decision maker. For example, even though the sunk costs of a project rationally should not influence people's perceptions of future investment decisions, several studies show that when the same project is presented with higher sunk costs, people are more likely to escalate commitment. In our case however, the available information about the project was identical for every decision maker, even those in different treatment conditions. In other words, these findings show that even a factor completely unrelated to the project itself, specifically the construal level of decision makers, is still capable of creating a bias in the decisions that people make about the project, which can lead to project escalation. Implications for theory and practice are discussed.

\* Project escalation refers to continued commitment to a previously chosen course of action despite negative information concerning a project's prospects for success (Keil 1995).

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## *Gender pay gap*

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7/10/2016 8:30:00 AM: De Peppel Room 1+2

*Dr. Andre Wolf*

### **Wage gap in the family An economic decision?**

*Siniver, Erez*

Recent studies have shown that even high-skill women suffer from a motherhood wage penalty. One explanation is that these women are often married to men with very high potential earnings. If the household desires very high-skill child-rearing, it may still be efficient to devote more of the wife's time to this task.

But what about high-skill women with higher potential earnings than their husbands? Intuition suggests that for this group we should observe the opposite of the standard pattern. The wives should increase their labor supply in terms of hours or effort while their husbands shift into jobs with more flexibility and reduce their hours.

We show first that this intuition is not necessarily correct. In line with the Becker /Gronau model, when women are the higher earners in the household, they should tend to specialize in market production while their husbands tend to specialize in home production. However, it does not follow that an increase in the value of home production will cause the husband to specialize even more. At the extreme, if the husband is already specialized in home production, he cannot reduce his market production in response to a child.

We therefore examine how earnings and employment are related to the presence of a child in a sample of married women college and university graduates in Israel. We find that even among those who initially had much higher earnings than their husbands, children are associated with a sharp decline in earnings relative to their husband and with reduced employment.

### **Self-Selection into Payment Schemes? The Gender Pay Gap in a Large-Scale Choice Experiment**

*Beblo, Miriam ; Schröder, Melanie ; Beninger, Denis ; Schmitt, Norma*

We use a large-scale online experiment run all over Germany to investigate the gender-pay gap from a new perspective. 880 female and male participants performed an effort task after having decided on their preferred compensation scheme. The decision task consisted of 21 choice rounds with two compensation options each: one always providing a linear piece-rate payment for the task and the other one varying either in (i) difficulty level, (ii) a bonus based on a performance

threshold or (iii) competition involved with other participants. An additional variation was introduced by (iv) the payment spread between the two options.

The gender pay gap resulting from the participants' preferred type of contract and their later performance in solving mazes amounts to 14 percent for the full sample and 21 percent for a subgroup of most meaningful rounds. Since compensation is based on a randomly drawn choice round at the end of the experiment, it cannot be attributed to systematic favoritism of male participants in the experiment. This is to say, from a labor market perspective, we can rule out employer-side discrimination and are able to isolate and focus on the supply-side determinants of gendered earnings. Socio-economic variables, such as children and employment experience, which we collected with a pre-experimental questionnaire, are only weakly related to the pay gap, though.

An Oaxaca-Blinder decomposition reveals that some of the pay gap may be attributed to the participants' innate ability in the task, measured by individual performance in test runs prior to the choice rounds. It also shows that the most part of the gap can be attributed to the types of contracts female and male participants chose and the returns to these contracts, hence, the participants' conditional performance in the maze task once the rules of the compensation scheme (i.e. the randomly drawn choice round) had been known. The performance gap ranges from 9 to 12 percent and is always statistically significantly different from zero.

The importance of the choice of the contract is supported by a simulation where we assign the participants to the alternative, not chosen, contract option. Although the gender pay gap is still 7 percent if we consider all choice rounds and 9 percent if we take only selected rounds into account, none of these hypothetical pay gaps are significantly different from zero any more. Hence, a significant part of the gender pay gap in our experiment can be attributed to women's self-selection into compensation schemes which yield lower earnings by themselves but also impel less effort. Equal opportunity policy should consider this different sorting into contract types along gender lines and the accompanying incentives for performance.

## **The EU Gender Earnings Gap: Job Segregation and Working Time as Driving Factors**

*Wolf, Andre; Boll, Christina; Rossen, Anja; Leppin, Julian*

This paper estimates size and impact factors of the gender pay gap in Europe. First, we provide an update of existing figures on the unadjusted and adjusted gender pay gaps in EU countries based on the most recent wave of the Structure of Earnings Survey (SES). To this end, we performed an Oaxaca-Blinder-decomposition of the observed (unadjusted) gender pay gap. Second, we enrich the literature by undertaking comprehensive country comparisons of the gap components. Overall, we analyze 21 EU countries (plus Norway), which clearly exceeds the scope of existing microdata studies. Third, we differ from other studies in that we also examine and compare the sources of the unexplained gap, thus providing additional insights into the sources of the pay differential. Among our central results, we find that about one third of the gap can be traced back to the role of the explanatory factors included in our analysis. At country level, the picture however varies drastically. An analysis of the relationship of the gender pay gap with female employment rates hints at selection effects as a major source of these country differences. Moreover, selection of male and female workers into different sectors is identified as a main barrier to gender pay equality. In addition, the fact that women are more frequently observed to have part-time positions contributes to the gap. We conclude that policies for tackling the gender earnings divide should focus more on the sector level than on the aggregate economy. Strategies to decrease the cost of time flexibility at firm level are one crucial aspect in this.

# *Social Preference / Cooperation*

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7/10/2016 8:30:00 AM: Kolkakker Room

*Dr. Barbara Hartl*

## **Title: Believe me, you are (not) that bad: Status provision and cognitive performance.**

*Victor, Gonzalez*

Evidence establishes the importance social comparisons when assessing well-being (Layard, 2005; Clark and Oswald, 1996), economic value (Fleischbach et al., 2007) and establishing consumption habits (Neumark and Posttlewaite, 1998). The recent research focusing on the effects of social status on economic decision-making responds to this evidence and challenges the traditional models of decision-making that focused on maximization of absolute consumption or income levels.

Social status affects economic decision making in that the quest for status becomes a source of motivation that leads individuals into choices in order to acquire or display it. The introduction of social comparisons and status in models of wealth and consumption has shown to be useful to explain phenomena such as excessive or too moderate risk seeking behavior (Robson, 1992; Ray and Robson, 2012), excessive consumption of a positional good (Frank, 1985; Hopkins and Kornienko, 2004; 2009), changes in income distribution and in economic efficiency (Fehrstman and Weiss, 1993) and growth (Fershtman et al., 1996)

However, from the perspective of optimal design, the institution that determines the provision of status has received relatively small attention in the economics literature (A good theoretical study on this respect is Moldovanu et al. (2007)), with the majority of the studies focusing on status as a good that is earned on the basis of high performance or wealth. This ignores the economical consequences of status being provided to the least wealthy or productive classes.

This paper investigates the causal link between the institution that governs status provision and individual performance. In specific, I study two institutions of status provision: meritocracy, or a distribution of status that guarantees that high status is given on the basis of merit and skills, and an institution in which status assignment is random. I examine the differences in cognitive performance between individuals with similar initial skills that happened to face different institutions of status assignment.

I investigate this hypothesis in a controlled laboratory setting with two experiments, further referred as experiment 1 and experiment 2. In both experiments, as in Ball and Eckel (1998) and Eckel et al. (2001), subjects could be in a high status class, by being provided with a positional good, or in a low status class if they did not receive the positional good. Moreover, I exogenously vary the distribution of status: In some experimental groups, analog to a meritocratic institution, high status is restricted to subjects with high cognitive abilities. In the other group the assignment to high status is orthogonal to such abilities. The criterion used to assign status in the experimental groups is never disclosed to the subjects.

To measure of cognitive performance through the experiment, I implemented the Advanced Progressive Ravens Matrices (APM) test. A standard task that has been used in the literature of psychology to measure fluid intelligence or the ability to solve novel non-verbal problems and that constitutes an important part of the IQ test administered to adults with above-average intelligence. In spite of the importance of this test to measure intelligence, I ensured that subjects faced only

Pay-for-performance monetary incentives, since each correctly solved task counted toward the subjects' earnings and they were not told about the role of this test to measure intelligence or were given any feedback in the form of IQ.

The two experiments differ in the inclusion of a performance ranking in experiment 2. This ranking allowed subjects to consult their relative standing with respect to other participants in the session. This additional feature is introduced in the experimental design with two purposes: First determine whether more clarity about personal abilities would weaken the effect of the institution governing status assignment. Second, have an accountability of subjects accessing this information, which would serve as an indication of attention management.

A theoretical framework is provided in order to develop a set of predictions. The theoretical model builds upon a standard agency model in which the agent faces a pay-for-performance incentive scheme. In the framework of perfect information about personal abilities, subjects with high abilities would always outperform subjects with low abilities irrespective of their status class. Alternatively, in a setting in which personal abilities are not known, status is interpreted as a signal about abilities. Instead of assuming that the agents would fully believe such signals, I allow them to choose the degree to which they inhibit or internalize them through the exertion of cognitive effort. Hence, these agents strategically use cognitive resources to boost expected utility. The model predicts that agents with high cognitive abilities that received an incorrect signal allocate more resources to inhibit such signal at the cost of a drop in effort exertion.

The data confirms this prediction and suggests that subjects with high cognitive abilities that are not given the high status experience an acute decrease in performance of the magnitude of 0.7 standard deviations. This result is robust across experiments. Moreover, I find no changes in performance for subjects with low abilities that received the high status. The intuition of this result is that economic organisms that do not allocate status according to a meritocratic rule can lose efficiency through the demotivation of the most diligent individuals.

Two mechanisms explain this finding. The first one emphasizes the role of attention allocation, subjects with high cognitive abilities are more likely to access the relative performance rank when they are not provided with the high status class. In a setting in which attention is limited, these subjects allocate more attention and time to disclose their type in detriment of effort exertion to perform the task. The second explanation relies on a deficient personal goal strategy. High ability subjects without high status do not update as often their goals as their high status counterparts. This is reflected on lower aggregated goal setting levels and on a lower goal trend across the experimental rounds. If goals and effort are complements in the light of the goal setting literature then a constant underestimation of goals would lead to lower performance.

## **Rethinking spontaneous giving: Evidence for an inverted-U effect of cognitive effort on cooperative behavior**

*Capraro, Valerio ; Cococcioni, Giorgia*

The conflict between cooperation and competition is one of the most important conflicts in human decision-making. Competition is individually optimal, but it may lead to war and destruction; cooperation requires individuals to incur a cost to benefit unrelated others, but it leads to peaceful, healthy, and ultimately more successful societies.

Over recent years, there has been increasing interest in studying this conflict from a dual-process perspective. Dual-process theories posit that human decisions result from the interaction between two cognitive systems: one that is quick, automatic, and intuitive; and one that is slow, controlled, and deliberative. Adopting this lens raises the following question: is cooperation automatic and effortless, or does it require deliberation?

Previous research suggests that cooperation is intuitive and subjects become greedy only after deliberation. To explain these results, Rand and colleagues have introduced the Social Heuristics Hypothesis (SHH), which maintains that people internalize strategies that are successful in their everyday life and tend to use these heuristics when facing a new and atypical situation which resembles a situation they have encountered in the past. Then, after deliberation, they may override these heuristics and shift their behavior towards the one that is optimal in the given situation.

There are, however, two reasons to think that this theorization may be too simplistic to be complete and that, in particular, spontaneous and effortless choices may not be as cooperative as it predicts. One is that cooperation may also emerge as a result of a moral action. Since there is an inverted-U relationship between cognitive complexity and moral choices, it is not clear how this non-linear effect may agree with the linear and negative effect predicted by the SHH. The other one is that the SHH assumes that cooperative heuristics in new and atypical situations are automatic and effortless. This is also unlikely, since these heuristics are shaped outside the situation which a subject is currently facing and thus, in order to access them, the subject must be able to recognize the similarity between the current situation and the social interaction in which their heuristics have been shaped. Recognizing this similarity may not come for free and may require a positive amount of cognitive effort.

What should we expect, then, when taking these factors into account? Given the aforementioned inverted-U relationship between cognitive complexity and moral choices and given previous results, which suggest that subjects making effortless choices tend to cheat more and be less altruistic, we should expect an inverted-U relationship between cognitive effort and cooperation: effortless and automatic responses should tend to be egoistic, as well as effortful and deliberative ones; while cooperation may emerge at intermediate levels of cognitive effort as a result of the emergence of heuristics and moral motivations.

To shed light on these questions, we carried out a series of experiments, in which all subjects played a Prisoner's Dilemma (PD) game under different conditions. In the PD, subjects are given a certain amount of money and asked to decide how much, if any, to give to another anonymous participant. Every unit transferred would be multiplied by 2 and earned by the other participant. Thus, both participants would be better off if they both transfer money to each other (cooperate), than if they both keep the money (defect). However, each participant is better off by keeping the money, no matter what the other is doing.

Our Pilot Experiment aims at showing that forcing subjects to make extremely quick choices decreases cooperation, rather than increasing it, as predicted by the SHH. Results show that subjects forced to make extremely quick decisions act indeed more selfishly than those forced to stop and think about their decision. Additionally, this effect is driven primarily by naïve subjects, those participating in experiments involving cooperation with strangers for the first time. Yet, unfortunately, such a tight time pressure interacted with participants' understanding of the game such that subjects in the time pressure condition were 50% more likely to fail the comprehension questions than subjects under time delay. Although we are able to show that the size of the effect of time pressure on cooperation is too big to be driven by selection bias alone, to further support the statement that spontaneous and effortless responses tend to be egoistic, we conducted another experiment.

Experiment 1 uses ego-depletion to disentangle automatic choices from calculative ones. Brand new subjects were randomly divided between two conditions. In the depletion (resp. no-depletion) condition, they had to complete a cognitively demanding (resp. easy) task, before playing a standard Prisoner's Dilemma. Results show that ego-depletion has a significant and negative effect on cooperation, but only on naïve subjects.

This moderating role of experience is consistent with the SHH, which, however, predicts the opposite effect of ego-depletion and extreme time pressure on cooperation among naïve subjects.

Our findings are more in line with the experimental literature showing the depleted participants tend to cheat more and be less altruistic, which is, in turn, consistent with Kohlberg's rationalist approach, which assumes that automatic responses are egoistic and that social heuristics and abstract ethical principles appear only at later stages of moral reasoning.

Thus, one potential explanation for our results is that social norms learned in typical and familiar situations interact with behavior in new and atypical situations through a non-linear model which integrates Kohlberg's rationalist approach and the Social Heuristics Hypothesis as follows:

1. According to Kohlberg's approach, we assume that automatic and effortless responses are self-regarding, but only in new and atypical situations.
2. Indeed, in typical and familiar situations, we assume that moral norms can evolve thanks to direct and indirect reciprocity and, according to the Social Heuristics Hypothesis, they can get internalized as heuristics.
3. When people face a new and atypical situation, they tend to rely on these heuristics, as long as they make, or have the ability to make, the minimum cognitive effort needed to recognize the similarity between the new situation they are facing and the typical situation in which those heuristics have been shaped.
4. Thus, when people face a new and atypical situation in a condition of ego depletion or extreme time pressure, they act according to their automatic egoistic impulse.
5. When the ability to make a cognitive effort is not depleted, people get access to their heuristics and to their moral motivations (according to Kohlberg's rationalism), and, consequently, they may start cooperating.
6. After additional deliberation, individuals may override their heuristics (according to the SHH) and their moral motivations (via moral rationalization) and adjust their behavior towards the one that is optimal in the given situation.

Therefore, this model states that decision-making in new and atypical situations passes through three main steps: Selfishness, Heuristics & Morality, and Selfishness again. For this reason, we use the acronym SH&MS to briefly refer to it.

One compelling feature of the SH&MS model is its ability to explain apparently contradictory results. Previous research has shown that light time pressure and conceptual priming of intuition increase cooperation, particularly among naive subjects; in apparent contrast, our Pilot Experiment and Experiment 1 show that extreme time pressure and ego-depletion decrease cooperation, particularly among naive subjects. According to the SH&MS model, this happens because light time pressure and conceptual priming of intuition are not powerful enough to reduce cognitive complexity at the level in which heuristics and moral motivations are not yet reached. In other words, according to the SH&MS model, previous research was able to detect only one arm of an inverted-U relationship between cognitive effort and cooperation.

Indeed, another compelling feature of the SH&MS model is its ability to make new and testable predictions. Specifically, while previous research suggests that reaction time has an inverted-U effect on cooperative behavior, the SH&MS model predicts that this inverted-U relationship (i) is driven by cognitive effort, rather than reaction time; (ii) regards only naive subjects; and (iii) regards both subjects with high levels of trust in the setting where they live (because they are more likely to use cooperative heuristics) and subjects with low levels of trust in the setting where they live (because they do not have cooperative heuristics, but are still able to use abstract ethical principles).

Experiment 2 aims at providing evidence for these predictions. We recruited brand new subjects, who, after playing a Prisoner's Dilemma, were asked "How much mental effort did you spend to reach a decision in the previous decision problem?". Answers were collected using a 6-item Likert scale from 0 = "no effort" to 5 = "much effort". Results, depicted in Figure 3, provide strong evidence for the predicted non-linear effect, entirely driven by naïve subjects. Importantly, although there is a significant correlation between (log transformed) response time and mental effort, multivariate analysis shows that this inverted-U effect is entirely driven by cognitive effort rather than reaction time. Additionally, as predicted, this non linear effect turns out to be driven by both subjects who trust their social relationships and subjects who do not, although the effect seems stronger among subjects who do not trust their social relationships.

Another prediction of the SH&MS model is that forcing subjects to make choices involving intermediate amounts of cognitive effort increases cooperation relative to when they are forced to make automatic or deliberative choices. Experiment 3 aims at testing this prediction. To avoid selection biases of the type discussed in the Pilot Experiment, in this experiment, brand new subjects did not play a Prisoner's Dilemma, but they were asked to answer four questions about how they would behave in some specific real life situations involving cooperation with unrelated others. Participants in the time pressure condition were asked to make a decision within 5 seconds; those in the light time delay condition were asked to think for at least 15 seconds; those in the time delay condition were asked to think for at least 30 seconds.

Results provide evidence for the predicted inverted-U effect, although only marginally significant ( $p = 0.064$ ). However, the fact that the "decreasing part" of the effect is weak is not surprising since our manipulation to disentangle choices involving intermediate levels of cognitive effort from those involving high levels of cognitive effort was extremely weak.

In sum, we have provided evidence for two major results. First, automatic and effortless responses tend to be egoistic, rather than cooperative, as argued by previous studies. This suggests that previous studies, reporting spontaneous cooperation, cover only the "decreasing part" of an inverted-U relationship: making automatic and effortless choices in a social dilemma can be as damaging for cooperation as overthinking. Our results indeed provide also direct evidence for an inverted-U relationship between cognitive effort and cooperation.

From a theoretical viewpoint, we have suggested one potential explanation: people may need a small, but positive, amount of cognitive effort to get access to their heuristics and engage in the moral reasoning needed to overcome their selfish impulse. Then, after deliberation, they may override their heuristics and their moral motivations and act selfishly again. However, we note that one of the main limitations of our studies is that they do not show that the emergence of cooperation at intermediate levels of cognitive effort is caused by the emergence of cooperative heuristics and moral reasoning. Given the importance that understanding the effect of cognitive effort on cooperation may have in designing institution to encourage or discourage certain behaviors, comprehending the ultimate origin of this quadratic effect is an important direction for future work.

## **The 'Neighbour Effect' dilemma**

*Noh, Zamira; Goddard, Paul; Hylton, Patrick; Parke, Adrian*

The Neighbour Effect (NE) is a bias in social decision-making exhibited by actors that (usually) favours their direct-spatial-neighbours rather than non-neighbours. We tested NE using participants seated in a lecture theatre ( $n=229$ ) by getting them to play a closed form of the Prisoner's Dilemma (PD) game. Participants had to choose whether to cooperate or defect with either their direct-spatial-neighbours or non-neighbours. Participants were significantly more cooperative with their lateral (left/right) direct-spatial-neighbour(s) than non-neighbours but participants became significantly less cooperative with their longitudinal (front/back) direct-spatial-

neighbour(s) than their non-neighbours,  $\chi^2(1) = 7.376, p = .007$ . Therefore, NE is not just a bias based on simple spatial proximity but is based on the relative lateral/longitudinal positioning of actors.

## Sanctions in different social dilemma situations: Impact and intervening factors

*Hartl, Barbara; Hofmann, Eva; Olsen, Jerome; Kirchler, Erich*

Many of the most challenging problems people face are at their core social dilemmas, that is a situation, in which the personal interest of an individual is opposed to the interest of the community. The implementation of sanctions exercised by other group members (peers) or by a regulating authority, which holds coercive power is a widely used solution in order to overcome the problem of uncooperative behavior in social dilemmas. The impact of sanctions on cooperation has been proven in public good games, free of real life context. These social dilemmas mainly comprise laboratory experiments free of real life context, in which contributors are allowed to punish exploiters. Contrary to laboratory experiments, in real life social dilemmas often regulating authorities exist which sanction free riding, holding coercive power.

We assume that the impact of sanctions on cooperation differs over social dilemmas in real life and that these differences rest upon dilemma related factors. The current research aims to investigate in the difference of impact of mild vs. severe sanctions for non-compliance in different social dilemma situations (taxation, insurance, public transport, waste disposal, illegal music download) and examines psychological factors to explain these differences (social norms, perception of legitimate power, feelings of security, evaluation of offence).

In Study 1, a convenience sample of 331 individuals (66.4% women;  $M_{age} = 24.76, SD_{age} = 5.69$ ) had to indicate their cooperation in a 2 (mild vs. severe sanctions) by 3 (taxation vs. insurance vs. public transport) between subjects laboratory experiment. In Study 2, another convenience sample of 391 individuals (35.5% women;  $M_{age} = 31.06, SD_{age} = 12.80$ ) had to indicate their cooperation but this time in via a 2 (mild vs. severe sanctions) by 5 (taxation vs. insurance vs. public transport vs. waste disposal vs. unauthorized download) between subjects experimental online-questionnaire. Additionally, they filled in scales on social norms, perception of legitimate power, feelings of security, and the evaluation of offence.

Study 1 and 2 revealed that with severe sanctions participants were more likely to be cooperative and that cooperation differed over social dilemma situations. In Study 1 participants complied more often in the insurance than in the taxation and public transport contexts. In Study 2 compliance in the unauthorized music download context was the lowest and in the public transport context the highest. Examining the intervening factors in Study 2, the impact of the severity of sanctions becomes insignificant; cooperation is rather predicted by participants' evaluation of the offence that is related to legitimate power of the authority that again is related to social norms, but the strength of these relations differs over contexts. The current studies provide evidence that the context of social dilemmas is crucial for the impact of sanctions and that the differences base upon the personal and social evaluation of the context.

# Compliance

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7/10/2016 8:30:00 AM: Pomona Room 1+2

*Dr. Christoph Kogler*

## **The role of emotions in tax compliance behavior: A qualitative approach**

*Enachescu, Janina; Kirchler, Erich; Kogler, Christoph*

Although economic and socio-psychological determinants of tax compliance have been heavily investigated in recent years, little is known about underlying emotional processes. The aim of this study is to explore the influence of taxpayers' emotional reactions to actions taken by tax authorities and how these emotions affect compliance motivation. For a long time decision theories such as expected value theory or subjective expected utility theory, have neglected the role of emotions. However, decision scholars currently envision an "emotions revolution" suggesting that decision making models should include emotional processes (Ekman, 2016; Volz & Hertwig, 2016).

While decision research has leaped a big step forward with the development of prospect theory (Kahneman & Tversky, 1979), the role of emotions is still not addressed in this theoretical framework and its subsequent versions (Schmidt, Stramer, & Sugden, 2008; Tversky & Kahneman, 1992). However, recently scholars have extended research on prospect theory and suggest that the shape of the probability weighing function differs between affect-rich and affect-poor situations (Suter, Pachur, Hertwig, Endestad, & Biele, 2015), where affect leads to an overweighting of probabilities. These results help to explain why fear and hope seem to impair rational evaluations of situations with very low probabilities (e.g., winning the jackpot in a lottery). With regard to tax compliance, these results offer a possible explanation for the relatively high compliance rates although audit rates are quite low. If people experience fear when thinking of being caught evading taxes, they might overestimate the probability of being audited.

Tax compliance decisions incorporate different cognitive aspects. On the one hand taxpayers might consider their profit maximizing strategy pondering about the consequences of cheating if they are audited. On the other hand they might think about the ethical aspects of tax paying, considering the situation as a social dilemma. Furthermore, considerations of distributive and procedural justice play an important role. Emotions potentially influence all these cognitive processes. Research on the interaction of citizens and authorities in various domains (e.g., taxation or police interaction) suggests that the relationship between justice evaluations of authorities' actions and compliance behavior is mediated by emotions elicited in individuals (Barkworth & Murphy, 2015). In this vein, Coricelli, Joffily, Montmarquette, and Villeval (2010), find that higher emotional arousal is associated with decreased tax compliance.

Moreover, inter-individual differences regarding emotionality in the taxation context have to be considered as well. While one person could experience strong emotions with regard to an audit, another person might react rationally and emotionally cold. Dulleck and colleagues find three different clusters of taxpayers concerning their emotionality and tax morale (Dulleck et al., 2016). These differences may be explained by affect intensity (Van Den Bos, Maas, Waldring, & Semin, 2003) or differences in emotion regulation. The discussion oriented focus group approach is an appropriate means to provide further insight into such individual differences.

Zeelenberg and Pieters (2006) postulate that specific emotions, rather than broad valence approaches, help to explain economic behavioral outcomes. Therefore, it is necessary to focus

research on the investigation of specific emotions that arise in economic decision processes. However, up to now there are no useful tools to assess emotions relevant in this context.

Experience shows that existing tools for emotion measurement are not convenient to investigate the taxation context. Implausible and inapt questionnaires trigger reactance in participants. Therefore focus groups with both self-employed and employed taxpayers are planned in order to explore the role of emotions in the process of taxpaying. This qualitative approach pursues three main goals: First, relevant situations within the process of making compliance decisions are extracted; second, situations in which the interaction with the tax authorities leads to emotional responses are identified; and third, a relevant specific emotions are assessed.

In addition, a survey study will be developed, applying the results from the focus groups in order to validate the extracted scenarios and the developed set of emotions. The aim is to develop a comprehensive set of emotions relevant in the context of taxation that can be used as a tool for assessing emotional responses in future research on tax compliance.

Data collection and analysis are done at the moment and will be completed by the end of May.

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## Direct vs. indirect taxation: The influence of VAT on income tax compliance

*Olsen, Jerome ; Saredi, Viola ; Kogler, Christoph ; Mittone, Luigi ; Kirchler, Erich*

The field of tax behavior research has grown noticeably in recent years. According to the scientific database ScienceDirect, within the 50-year time span from 1949 through 1999 a total of 178 journal articles dealing with tax compliance, tax behavior or tax morale in the field of psychology were published. In the subsequent 16 years until today another 448 publications were added to this record, implying a large growth of the research field. However, for these sixteen years, only three articles are listed that explicitly address value added tax (VAT) behavior.

The particularity of VAT as an indirect tax is that – unlike income tax – there are more than two agents involved: (1) The taxpayer, more precisely the buyer in the transaction process, (2) the seller who acts as a tax collector, and (3) the tax authorities that receive collected VAT from sellers. It is thus more complex to study than income tax compliance alone. Our aim was to design a simple study that mimics the basic mechanisms involved in the collection and forwarding of VAT, while investigating its impact on income tax compliance.

One key property of VAT is that it influences competitiveness. A simple example will illustrate this: Imagine a seller offers a product at a price of € 10. After a successful transaction the seller has to cover costs and make a decision whether to pay income tax. Based on a negative relationship between sales price and selling probability an increase in price should decrease the probability of selling the good. If 20% VAT was imposed on the aforementioned transaction of € 10, the price would rise to € 12, decreasing the probability of a successful transaction with a buyer. If the seller now offers the good for € 12, she has to forward € 2 VAT to the tax authorities and then cover costs and pay income tax. If, however, she decides to evade VAT in collusion with the buyer, she can offer the product for € 10, thereby improving her market position. At the same time evading VAT means that the transaction does not get filed, thus the share of income tax from the transaction is also evaded.

Considering the effect of VAT in the transaction process, income tax compliance is not always a deliberate risky choice subsequent to the transaction, but could be entailed in the offer period of transactions. We hypothesize that the introduction of VAT for sellers that were previously not facing the obligation to collect VAT will negatively affect income tax compliance in order to make up for the decline in selling probability and thereby increase competitiveness.

For the sake of simplicity this experimental study focuses only on the effect produced by the introduction of VAT on sellers' behavior. The task consists of a decision-making problem that involves 20 repeated tax decision rounds. Thus, in all experimental sessions, subjects are assigned the role of self-employed sellers. As for the demand side, we introduce a demand function that mimics buyers' behavior. In other words, in each round, the seller sets a price (chosen from a vector of three); each price level corresponds to a certain (exogenous) probability of finding a counterpart willing to buy the good at that price. The negative slope of the demand function implies that an increase in price produces a decrease in probability (i.e., on the number of buyers potentially interested).

A total of 48 students from the University of Trento participated in the current study. In the first ten rounds sellers had to choose a price from a list of three prices at known selling probabilities. Additionally, they had to indicate whether they would be willing to file the transaction if the sale was successful, thereby paying 30% income tax or evading at a known audit probability of 20% with an appendant fine. After the tenth round, participants received information regarding the introduction of 20% VAT. The decision context changed at this point. The list of three prices was expanded by another three prices, constituting the VAT-inclusive sales prices. Due to the nature of the demand function, VAT-inclusive prices had lower selling probabilities than VAT-exclusive prices.

Choosing a VAT-inclusive price (tax compliant) means accepting a lower probability to sell the good. In case of a successful transaction VAT is forwarded to the authorities and personal income tax is paid. If, however, the participant chooses the VAT-exclusive price (tax evasion), the good is offered at a higher selling probability, but both taxes are evaded. Thus, the decision to comply or to evade is incorporated in the pricing decision.

The results suggest that compliance significantly decreased from 37% to 27% after the introduction of VAT. Risk preference had no effect on the outcome.

Our findings have relevance for real market transactions and indirect taxation for two reasons: (1) Due to turnover threshold rules some sellers are obligated to collect VAT while others in the same market sector are not. This difference could be perceived as a distortion of competition and might lead to VAT evasion as a tool to increase competitiveness. (2) Certain market areas are not subject to VAT in many countries. However, recent OECD (2014) policy recommendation advice policy makers to abandon these practices, which would lead to an introduction of VAT in these market areas, constituting the decision setting of our experiment in the field.

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## **The role of social norms in tax compliance: overview, future research directions, and practical considerations**

*Onu, Diana; Oats, Lynne*

Within fields as diverse as psychology, economics, sociology, and law, researchers have become increasingly interested in how societal norms influence individuals to comply (or not) with tax laws. This paper provides a narrative review of empirical research on the effect of social norms for tax compliance behaviour. First, we look at research that investigates the role of social norms for tax compliance. Second, we review the few studies that have applied social norms behavioural interventions to taxpayers and discuss their findings.

The first part of the paper looks at research aimed at understanding the role of social norms for tax compliance behaviour. After a brief overview of current results, we focus our analysis on describing the role of social norms in greater depth, while highlighting the different types of norms involved and the conditions under which norms are effective. Throughout this analysis, we focus on providing conceptual clarification and discussing future research directions that would address current gaps of knowledge.

First, we discuss the distinct effects of personal versus social norms (see Bobek, Roberts, & Sweeney, 2007; Bobek, Hageman, & Kelliher, 2013, Wenzel, 2004a, 2004b, Alm & Torgler, 2011). We then look at the distinct effects of descriptive norms (i.e., the observed behaviour in society) versus injunctive norms (i.e., societal approval/disapproval of the behaviour) (e.g. Bobek et al, 2007, 2013; Hashimzade, Myles, & Tran-Nam, 2013).

Second, we look at the role of norms in different types of groups. The majority of studies have looked at tax compliance norms in national groups (e.g., Alm & Torgler, 2006; Cummings et al., 2001; Schmolders, 1959), while others highlight the role of norms for occupational groups (Sigala, Burgoyne, & Webley, 1999; Ashby & Webley, 2008; Ashby, Haslam, & Webley, 2009; Wenzel, 2007). We discuss these results as well as future research directions for investigating several other types of group norms.

Third, we look at conditions under which social norms are more or less effective. We discuss the role of: (1) communication, highlighting research that has found an important role of the ability of

group members to communicate on normative influence (Alm, McClelland, & Schulze, 1999; Stalans, Kinsey, & Smith, 1991); (2) identification with the social group - the group's importance to the individual (see Wenzel, 2004a); (3) the centrality of the behaviour for that particular group identity (see Ashby, Haslam, et al, 2009).

The second part of the paper focuses on the way that knowledge about social norms can be used to change taxpayer behaviour. First, we review the small number of behavioural interventions that have attempted to use normative information in order to deter tax evasion (see Blumenthal, Christian, & Slemrod, 2001; Hallsworth, List, Metcalfe, & Vlaev, 2014; Wenzel, 2004). Second, we use insights from the social norms approach to changing individuals' behaviour, including data from relevant health and environmental campaigns, to discuss several options for designing future social norms campaigns for tax compliance, including the use of descriptive, injunctive, and affective norms, and appeals to different group identities. We also discuss potential caveats and ways in which social norms interventions may 'backfire' to produce unintended consequences.

This paper should be of interest to academics looking at the role of social norms in tax compliance in particular, and economic behaviour more broadly. It should also be of interest to those looking to design behavioural interventions based on social norms 'in the real world'.

## **The effect of presenting expected values on tax compliance decisions and information processing**

*Kogler, Christoph; Olsen, Jerome; Kirchler, Erich*

Tax behavior – compliance, avoidance and evasion – is heavily investigated in economics and social sciences as indicated by a remarkable increase in scientific publications in recent years. The scientific database ScienceDirect lists 178 journal articles for the 50-year time span between 1949 and 1999 dealing with tax compliance, tax behavior, or tax morale in the field of psychology. Strikingly, in the following sixteen years from 2000 on, 448 publications were added to this record.

A scientific paradigm that has played a major role in tax research since the early 1970s defines tax evasion as an individual decision under risk (Allingham & Sandmo, 1972; Srinivasan, 1973). According to this view, taxpayers' decisions to declare taxes honestly or to evade, depend exclusively on taxpayers' income, tax rate, audit probability, and severity of fines. Rooted in the economics-of-crime paradigm by Becker (1968), the central assumption is that tax compliance increases with higher audit probability and tougher fines. In contrast, alternative theories highlight the importance of socio-psychological factors, where taxpayers are perceived as a heterogeneous group of people with differing beliefs and preferences. According to these approaches, trust in governmental authorities and other citizens, motivational postures, attitudes, personal, social, and societal norms, fairness considerations, as well as tax morale are hypothesized to shape tax behavior significantly (e.g., Braithwaite, 2009; Kirchler, Hoelzl, & Wahl, 2008; Wenzel, 2004). Empirical studies neither reveal consistent effects of purely economic factors on tax payments (e.g., Andreoni, Erard, & Feinstein, 1998; Fischer, Wartick, & Mark, 1992; Kirchler, Muehlbacher, Kastlunger, & Wahl, 2010), nor are the effects of socio-psychological factors convincingly clear (Kirchler, 2007; Kirchler, Kogler, & Muehlbacher, 2014). Thus, it seems that depending on the complexity of presented information, and on personal and situational factors people consider information differently in their tax compliance decisions. If, for instance, the only available information is audit probability and fines, this information clearly influences compliance (Alm, Sanchez, & De Juan, 1995), whereas in case of additional information on socio-psychological aspects the effects of audits and fines can be suppressed (Collins & Plumlee, 1991; Spicer & Lundstedt, 1976).

Investigating which information is attended – how often, how long and in which sequence – and processed is key in explaining under which circumstances certain factors influence tax compliance

decisions and when they remain ineffective. Disregarding the process of information acquisition is a fundamental shortcoming of research in the field of tax behavior, since theories and analyses are merely output-focused and, additionally, do not take into account inter-individual differences in information processing. In contrast to other fields of judgment and decision making, where the significant contribution of process data to the development and testing of models and theories is widely acknowledged (e.g., Ford, Schmitt, Schechtman, Hults, & Doherty, 1989; Payne & Venkatraman, 2011; Schulte-Mecklenbeck, Kühberger, & Ranyard, 2011), studies investigating the process of information acquisition are missing in tax research.

In this vein, the aim of the experiment was to investigate information processing in a between-subjects tax experiment with 24 repeated decisions. Information on income, tax rate, audit probability and fine levels was presented in both conditions, while the sure outcomes in case of compliance and the expected values for evasion were additionally indicated for each round in only one condition. Furthermore, in this condition the concept of expected value was explained in a comprehensible way, in order to guarantee that participants understand what expected value means. Hence, non-understanding of the concept of expected value or problems in calculating expected values were considered as potential explanations for decisions not conforming to the predictions of the Allingham and Sandmo model (1972). In both conditions, participants were informed that there might be a tax audit and in case of detection of tax evasion they had to pay a fine. Income, tax rate, audit probability, and fine level were subject to change from round to round and the respective information was always presented directly before deciding whether to comply or evade. The relevant parameters were arranged to end up with three different types of situations concerning expected values: (a) decisions where the optimal choice from a purely rational perspective was compliance; (b) decisions where the optimal choice was evasion; (c) decisions where the sure outcome of compliance and the expected value for evasion were equal. Right at the beginning, participants were informed that their payment depended on their decisions in the experiment.

Besides analyzing compliance decisions, the acquisition of information was tracked by applying MouselabWeb (Willemsen & Johnson, 2011). It allows to observe mouse cursor movements and thereby analyze content, amount, and sequence of the information acquisition process. In MouselabWeb, the decision maker has to open visually covered cells (boxes) of an information matrix displayed on a computer screen with a mouse cursor, in order to get access to underlying information. Each box has a label that tells the decision maker what particular information is hidden in the respective box. As soon as the cursor moves outside the respective box, the information disappears again. Time data on the openings and closings of boxes are recorded.

Results reveal that participants decisions are often not conforming to the predictions of the Allingham and Sandmo model, even when expected values are explicitly presented. The analysis of the process data allows to identify different types of decision makers with regard to the information they attend in order to reach a tax compliance decision. These findings suggest that considering individual differences is essentially important in research on tax behavior.

# Choice Overload / Scarcity

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7/10/2016 8:30:00 AM: Hoeverstein Room

*Prof. Tommy Gärling*

## **The Cost of Paying Attention: Cognitive Resource Scarcity and Investor Activity around FDA Announcements**

*Rothman, Tiran ; Kliger, Doron ; Huberman, Gur*

In the summer of 2012, the FDA approved a pioneering drug for obesity, developed by Arena Pharmaceuticals (NASDAQ: ARNA). ARNA's stock price increased gradually in the preceding three months, from \$2 to \$10 on approval day. However, one month after FDA approval, Arena's stock price had declined by 20%, to \$8. What went wrong? Why did ARNA's stock price decrease after the 'good news' dissemination? Was this a specific case of ARNA, or did it reflect a general, intriguing, phenomenon?

A sample of FDA resolutions we have collected for a period from 2002 to 2014, consisting of 163 New Drug Application (NDA) and Biological Licensing Application (BLA) cases, shows ARNA's case was not specific. Yet another sample we have collected of 295 New Molecule Entity (NME) approval cases, corroborates our findings as well.

We document an interesting picture of price adjustments around FDA announcements. In the cases where the FDA has not approved the drug application, as well as in the cases of approval, stock prices tended to decline after the announcement. The price decline after non-approvals was rapid (within a few days), while in the case of approvals it took longer (approx. 30 trading days); the latter is especially puzzling as, ostensibly, it stands at odds with the nature of the released positive information.

Our paper's goal is to document this phenomenon, and suggest possible explanations for its existence. To the best of our knowledge, of the several studies which have investigated the effects of FDA resolution announcements on stock prices, none has delved into regulatory analysis or explore this phenomenon of the stock prices subsequent to the FDA resolution.

We suggest preferences for skewness investment, such as investment in the stocks of drug development firms, can explain the intriguing pricing pattern we have detected. The industry's seminal milestone events attract investors' attention, forming reaction to the new information. This preference for skewness, mainly with small capitalization firms, leads to overreaction based on the positive skewness payoff perceived in pre-seminal milestone events, reflected also in high trading volumes. Post event, even if the firm received good news, positive skewness is no longer imbedded, and other firms' seminal milestone events pop-out. Thus, we found bio run-down in stock prices in the two months after the event.

The events we study are different from common corporate events: First, their valence is clear cut. Second, assessing the events' value implications requires technical and professional knowledge about the pharmaceutical industry. Third, in spite of the technical nature of the information, its potential effect on the new drugs makes it interesting for many people. Thus, presumably, "individual investors" (cf. Barber and Odean, 2000, 2001, 2011) buy the involved stocks at inflated prices and, once the publicity wave passes, sell them while prices subside.

We believe our study is important in several aspects. (i) it contributes to financial research by shedding light on the role of behavioral biases in investors' decisions; (ii) understanding market

patterns is invaluable for the investors, as well as for the firms, which rely on the market to finance their activity; (iii) our results have immense welfare implications: mispricing in the vast magnitude we have detected casts tremendous efficiency costs by tilting financial markets' resource allocation. Our research will hopefully enable us to suggest ways for mitigating the phenomenon.

## Evidence for Opportunity Cost Neglect in the Poor

*Plantinga, Arnoud; Krijnen, Job M.T.; Zeelenberg, Marcel; Breugelmans, Seger M.*

People tend to neglect opportunity costs: They fail to spontaneously consider forgone alternatives outside of a particular choice set (Frederick, Novemsky, Wang, Dhar, & Nowlis, 2009). Several researchers have suggested that poor people should be more likely to spontaneously consider opportunity costs because budget constraints lead to a focus on trade-offs (Fernbach, Kan, and Lynch, 2015; Mullainathan & Shafir, 2013; Shah, Shafir, & Mullainathan, 2015; Spiller, 2011). For example, Spiller (2011) found that participants were more likely to consider opportunity costs when they were made to feel financially constrained. We tested this hypothesis in five high-powered (quasi-)experiments (total N = 2325, participants recruited on Amazon Mechanical Turk). Participants were presented with a scenario in which they encountered an attractive product and were asked whether they would buy the product or not. In the first four experiments, some participants were reminded of opportunity costs by framing the not-buying option as "keeping the money for other purchases" (Frederick et al., 2009). In the fifth experiment, some participants were asked to list alternative products before making the buying decision. The experiments used different products (both material and experiential) with both high and low prices (from \$8.50 to \$249.99). There was considerable variation in household income: across the 5 experiments 31.90% of the participants were in the lowest income quintile of the U.S. population, and 25.05%, 23.98%, 14.16% and 4.91% were in the second, third, fourth, and fifth quintiles, respectively (DeNavas-Walt & Proctor, 2015). Both high-income and low-income participants showed a strong decrease in willingness-to-buy when reminded of opportunity costs, implying that both the rich and the poor tend to neglect opportunity costs. In conclusion, opportunity costs do not seem to be on the top of the minds of people, regardless of their income. However, opportunity cost neglect should be especially important for the poor because their budget constraints lead to narrow margins of error (Bertrand, Mullainathan, & Shafir, 2006). A simple reminder of opportunity costs could help both poor and rich consumers to make choices that are more in line with their long-term goals.

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# From Desire to Despair: Scarcity Mindset and Young Adults' Borrowing to Purchases of Consumer Products

*Gärling, Tommy; Michaelsen, Patrik*

In order to understand young adults' borrowing to consumption, we present a new approach which posits that a scarcity mindset is induced by consumers' desires to purchase conspicuous consumer products exceeding their ability for paying in cash. An induced scarcity mindset is hypothesized to lead to a present bias such that choice of credit payments overrides a negative attitude towards credit as well as to a focus effect reducing the role of financial knowledge. In order to test these implications, we conducted an experiment employing 64 university students (84.4% women; mean age 25.95 years, standard deviation = 6.33 years) who in an internet questionnaire were asked to imagine that they desired to purchase a new smartphone of a premium brand. They choose to pay by one of six different installment plans varying in repayment length (10 to 30 months), monthly payment (from USD 48 to USD 89), and total product cost (from +5% to +25%). We measured attitude towards use of credit card, store installment plan, payday loan, and secured bank loan for purchases of non-essential consumer products in the same price range as premium-brand smartphones. Ratings of each credit type were obtained on scales of positive versus negative, reasonable versus unreasonable, acceptable versus unacceptable, and practical versus impractical. For an aggregated index we obtained a Cronbach's alpha of .72. A multi-item measure of self-reported interest in and knowledge of household economy was also obtained and aggregated (Cronbach's alpha = .80). The results showed that choice of a longer installment plan (lower monthly payment, higher total cost) correlated positively with a positive attitude towards credit ( $r = .24, p = .056$ ;  $r = .314, p = .011$ . for attitude towards store installment plan) and negatively with interest in and knowledge of household economy ( $r = -.22, p = .088$ ). Other variables correlated more weakly in the expected direction with choice of installment plan, including strength of desire to purchase a new smartphone ( $r = .13$ ) and disposal income ( $r = -.07$ ). In order to experimentally induce the scarcity mind set, participants were randomly assigned to two conditions in which they were asked to either imagine having a debt of SEK 400 (USD 47) or SEK 1400 (USD 165) due to be paid the same month as the first repayment of the smartphone. Pilot data and manipulation checks showed that paying the larger debt was economically strenuous while paying the smaller debt was not. In a multiple linear regression analysis on choice of number of months of repayment, attitude towards credit and financial knowledge were close to significant (Beta = .22,  $p = .083$ ; Beta = -.19,  $p = .132$ ). In another regression analysis, condition was close to significant (Beta = .23,  $p = .066$ ) but no longer attitude towards credit (Beta = .17,  $p = .185$ ), whereas financial knowledge was not changed (Beta = -.22,  $p = .081$ ). Average chosen installment plan length was 19.70 months for the large debt and 16.19 months for the small debt. In summary, the results partially supported the conclusion that inducing a scarcity mindset results in a present bias in that a longer installment plan is chosen such that the cost of the product is higher. As expected, the influence of the negative attitude towards credit then becomes weaker. Yet, the influence of financial knowledge remains. Desire strength was weakly in the expected direction. This is possibly due to that some participants did not desire a new smartphone but were asked to imagine they did. Disposable income had no effect probably because in the student sample the variation is low.

# Heuristics and biases / Reference effects

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7/10/2016 8:30:00 AM: Roghorst Room

*Dr. Reza Kheirandish*

## **Underuse and Misuse of the Gain/Loss Valuation Disparity Finding**

*Knetsch, Jack L.*

That people commonly value many losses more, and often much more, than otherwise commensurate gains is likely the most widely known, and arguably the most significant, finding from all of behavioural economics research. Yet, outside of behavioural finance applications where it has achieved considerable prominence, it has gained but limited use in other areas and has led to the revelation of misuse in others. An example of the former, is the failure to take account of the different reactions of buyers to increases and decreases in the price of goods in estimating price elasticities, in spite of the importance of this distinction for policy design and efficient management of private firm operations. An important example of the latter is that in spite of the dictates of standard economic theory calling for the WTP measure to assess gains, and the WTA measure to assess losses, and reductions of losses, in practice essentially all changes continue to be assessed with the WTP measure in benefit-cost analyses, damage estimates, and risk assessments, thereby often seriously understating the importance of changes in the domain of losses and consequently distorting the guidance which such analyses are intended to provide.

Except for some entitlements, such as those held for resale rather than consumption, and those with very close substitutes, the empirical findings from hundreds of tests reveal that for large classes of goods and services, and especially those which are frequently the subject of explicit valuations and policy choices dependent on them, are overwhelmingly inconsistent with the further standard assumption of equivalence. The ratios of WTA to WTP valuations have instead, been found to generally range from around 2 to 1, to 6 or 7 to 1, thereby providing strong empirical evidence that people value many losses, and reductions of losses, more and often much more, than they do gains. The continuing failure to take these findings into account seems due to such factors as unfamiliarity with the issues and the empirical tests, scepticism over the available evidence of large valuation disparities, the lack of generally accepted methods to estimate many WTA values, and perhaps particularly importantly, the continuing substantial degree to which economists and other analysts choose the dictums of standard theory over empirical evidence as the final arbiter in such matters.

In addition to demonstrating the likelihood of serious bias resulting from the current WTP-for-all practice, the empirical tests also show that people usually do not value changes in terms of final outcomes, but instead value both positive and negative moves as changes from what they regard as a neutral reference state, which may or may not be the status quo. This implies that positive changes may be either gains, and most accurately assessed with the WTP measure or they may be reductions of losses and best assessed with the WTA metric. A direct and important implication is that the choice of measure matters— for example, is the positive change of cleaning up an oil spill best taken as a gain and the decision to proceed dependent on an assessment made using the WTP measure or is it considered by people to be a reduction of a loss from a reference of a “clean” environment and more accurately assessed, and therefore yielding more useful decision guidance, with the WTA measure?

While determining the appropriate reference state, to best determine whether positive changes are best considered a gain or a reductions of a loss may sometimes be ambiguous – although means to determine many, if not most, cases are at hand – the criteria for the choice seems no longer an

issue. That is, except for one, potentially very large, class of cases. These are ones exemplified by the costs of mitigation measures to reduce or eliminate a loss being borne by the same people who would benefit from the remedial action. An illustrative case might be that of a foreign owned ship spilling a noxious substance in a harbour – clearly a loss to the local residents (best assessed with the WTA measure) and the decision to clean-up, as well as to invest in measures to prevent such events, both of which are widely agreed to be best based on an assessment of the compensation necessary for the residents to forego the clean-up (the WTA measure). This easy agreement on the choice of measure appears to breakdown when the owners of the ship are the same residents suffering the loss.

It appears to many analysts that in such cases of beneficiaries paying the cost of reducing the harm, that the value of the loss reduction used to decide the economic feasibility of a clean-up, and of prevention, should be the maximum that people are willing to pay for this change (the WTP, and not the WTA measure). Along with what seems a common sense observation that “people should not be made to pay more than they are willing to pay for reducing a harm”, this strong intuition has led to a variety of seemingly intuitively plausible assertions, such as, “WTP, rather than WTA, is of course the preferred approach to monetization when a proposed public policy will compel people (taxpayers, workers, investors, consumers) to bear the costs of implementing it”.

On somewhat further examination – to be detailed here -- taking particular account of the likely reference dependent nature of people’s valuations of positive and negative changes, it seems that many seemingly satisfying assertions that WTP should be the measure of choice when beneficiaries pay the costs, may often be at odds with their intent of a guide to efficient as well as equitable, or fair, resolutions. Instead here again, the measure of the value of preventing or reducing a harm even when the beneficiaries bear the cost of the mitigation, is the WTA measure.

## Preference Biases

*Rizzo, Mario J*

### PREFERENCE BIASES

#### ABSTRACT

This paper is a chapter from my forthcoming book on rationality, behavioral economics and paternalism for Cambridge University Press. The purpose of the chapter is to make two points: first, to determine the precise standard against which preferences (in the sense of observed choices) are considered “biased” and second, to show that preferences biased in this sense can be perfectly “reasonable” and pragmatic ways to effectively maximize or otherwise attain the agent’s goals in more nearly realistic contexts. Together these points support the conclusion that departures from “normative” preferences need not make individuals worse off, as has been claimed by many behavioral economists. In fact, the departures can make them better off. Thus a pragmatic or ecological approach to rationality may well undermine the perceived need to correct “decisionmaking failures” and to impose paternalist policies.

#### Normative Standard.

It is clear from the work of the more careful behavioralists that biases are defined by reference to traditional neoclassical criteria summarized in the term “well-behaved” preferences. Specifically, Bernheim and Rangel (2007, p. 10) list the criteria: coherence, complete ranking of “lifetime state-contingent consumption paths,” constancy across time and states, and no mistakes in the sense that the individual always selects the most preferred alternative. These are what I call the “constitutive norms” of standard rationality. Violations of these are viewed as “anomalies.” It is also clear that Bernheim and Rangel think of the anomalies as having implications for individual welfare. This is what I challenge.

The following are some of the major instances of biases relative to the above normative standard that I discuss:

#### Preference Inconsistency.

Observed choices may well be inconsistent in some way. In contrast to the usual behavioral strategy, we do not take these as indications of some sort of derangement of the individual's true preferences. We simply look at them as phenomena that may not be fully understood. Furthermore, a fundamental difficulty in assessing choice inconsistencies lies in the ambiguity of the term "inconsistency" itself. In colloquial English inconsistent behavior sometimes means inconstant behavior. Sometimes a person may be polite and considerate while at other times he may be impolite and selfish. This may be important for some purposes but it avoids the obvious questions of whether circumstances have changed or, more importantly, whether there is some level at which the changing behavior is consistent with an unchanging objective, rule or strategy. I give examples of intransitive choices when individuals are following reasonable objectives, rules and strategies.

#### Intertemporal Inconsistency and Hyperbolic Discounting.

Without the assertion of a norm of constant discounting, preference reversal is at most an example of different tradeoffs at different points in time. It is important to make clear what such behavior would be inconsistent with. Consistency is most usefully looked at as following a rule or following a heuristic. If an individual continually and successfully applies the same rule in a series of choices, then these choices will be consistent with that rule. Intransitive intertemporal choices can be the outcome of consistently applying a reasonable rule to one's circumstances. While neither exponential nor hyperbolic discounting are compatible with intransitive choices, reasonable decision rules like subadditive discounting, the use of heuristics when outcomes or time periods are similar and when time preferences are vague all are (Manzini and Mariotti 2009, pp. 266-67). To say that intertemporal intransitive choices are not rational, in the absence of showing that agents are being harmed in terms of their own standards, is simply to say that these choices are inconsistent with, for example, exponential discounting. But exponential discounting is in the first instance merely a constitutive norm and not a prescriptive one. There is nothing substantively irrational about following a particular rule unless the rule is somehow self-defeating.

Berg, Eckel and Johnson (2010) survey some literature on the subject (which is very small) and do not find anything that sheds much light. In their own study of 881 participants they find that time-inconsistent individuals earn substantially more than consistent ones across the 40 time-tradeoff payoff-options in the experiment. This is because the time inconsistent individuals are more patient in their choices. Of course, this is not a *ceteris paribus* experiment. That would require comparing two groups of individuals each with the same distant rate(s) of discount ( $\delta$ ) but only one of which had present bias ( $\beta$ ). However, if in the real world time-inconsistency is associated with other traits that increase performance, it would suggest that we do not fully understand the role of time inconsistency in decisionmaking. Along these lines, it is instructive to note that the time-inconsistent individuals also earned more on risky option decisions that had no time variation component, since they were more risk preferring. Furthermore, in terms of this particular standard of performance, time-(in)consistency by itself is not sufficient to determine the consequences of behavior. Performance by this standard depends on the degree of impatience over all. Therefore, if time-inconsistency is to be considered irrational in more than a constitutive sense, the comparison cannot be with just any time consistent agent. It must be with a suitably patient consistent agent. Impatience in whatever form can depress lifetime earnings or wealth. Why single out inconsistency?

#### Affective Forecasting and Misprediction.

Preferences can be technically biased if they are made on the basis of systematic misprediction of the relevant affective consequences. However, the traditional treatment of hedonic misprediction is

one-sided and superficial. It does not recognize the logically and psychologically prior role of emotions and expectations of feelings in structuring a problem for a cost-benefit balancing. It assumes that the structure is just there or is obvious. It also confuses the expectation of feelings associated with a future event with the constitution of the whole value of the event to the individual. Sometimes people want to do or avoid something for reasons that go beyond hedonic states.

Exaggerated expectations of the hedonic value of a future event have a particular value in a world of uncertainty (Miloyan and Suddendorf, 2015, p. 197). They heighten current emotions so as to direct the attention of the agent to an important matter (Lerner et al. 2015, p. 815). The emotions the agent experiences which are directed toward expected future states are thus not only markers for “the value of what is represented but also...a booster for continued working memory and attention” (Damasio 1994, p. 198). In essence they make it possible to simplify a problem so that the agent can, at least in principle, apply standard cost-benefit reasoning in making his decision. Even if the hedonic prediction errors produce some degree of suboptimality with respect to decisions – after framing and structuring is accomplished – it is clear that trying to “debias” these decisions will short-circuit important decisionmaking processes.

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## **Framing consequences**

*Jullien, Dorian; Borie, Dino*

The goal of this paper is to provide an axiomatic framework that can account for framing effects violating the so-called axiom of description invariance. Most existing discussions of the latter in economics are made with respect to Kahneman and Tversky's 1980s work. However, other psychologists have, over the last twenty-five years or so, progressively refined the conditions under which framing effects violating description invariance hold. Our axiomatic framework is motivated by these developments. We argue that description invariance is an implicit axiom of the standard model primarily on the formal structure of its object of choice and only derivatively on the formal structure of preferences. The conditions under which it is violated in psychologists' experiments are a useful guide to make it formally explicit. Furthermore, they also provide normative justifications for weakening it. We propose a way to do so in a mathematically tractable fashion that can account for all the variations in framing effects for which prospect theory cannot (at least straightforwardly) account for.

## **Heuristics in Business and Economics: A Survey of Recent Contributions**

*Kheirandish, Reza ; Mousavi, Shabnam*

According to Gigerenzer and Gaissmaier (2011), “Heuristics, are efficient cognitive processes, conscious or unconscious, that ignore part of the information”. In this view, heuristics are simple rules of thumb that can be successfully used in situations of irreducible uncertainty and complexity.

The more dominant view of heuristics, heuristics and biases, studies instances where people make less than rational or biased judgments, and attaches these instances often to the use of heuristics. In their initial research, Tversky and Kahneman (1974) argued that three heuristics, namely availability, representativeness, and anchoring and adjustment can be used to explain the processes underlying a wide range of intuitive and often fallible judgments.

Interestingly, social scientists are not the only group, or the first group, who use and study heuristics. Engineers, computer scientists, and mathematicians, as well as theoreticians in many scientific fields have been using heuristics, simple rules, and rules of thumb extensively as strategies for problem solving. Gathering the ways in which different fields define heuristics and spelling out the similarities and differences between these definitions is a theme of this paper.

The other, more specific goal is to survey the different conceptions of heuristics stemming from different psychological approaches to human decision-making processes. The paper demonstrates which concepts have or have not been extended to economics and other business disciplines. It specifies instances where the study of adaptation, use of heuristic strategies, and less-than-rational behavior is modeled in behavioral economics. It argues that in cases where the predominant conception of heuristics has been adopted in behavioral economics, the implications for understanding and describing decision processes can be traced back to the traditional neoclassical economic theory of rational decision-making.

Finally, it illustrates the ways in which the less explored extension of simple heuristic strategies to economic behavior holds operational promises, which can shed light on our understanding of puzzling behavior in economic markets. Examples from the prevalent use of simple rules in entrepreneurial domain provide a fruitful area for turning the focus of the study of heuristics from being a source for biased judgment to a functional way of treating the actual problem at hand.

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## *Pension Choice*

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7/10/2016 8:30:00 AM: Dorskamp Room 1+2

*Dr. Caezilia Loibl*

### **Life Insurance and Financial Vulnerability**

*Mountain, Travis Patrick ; Hanna, Sherman D*

Objective: The purpose of this study is to evaluate the impact of financial vulnerability on both the likelihood of life insurance ownership and the amount of life insurance owned. Ownership extent is measured by the amount of life insurance owned as well as by the proportion of insurable human wealth insured by life insurance. Insurable human wealth is the lost earnings that must be replaced in order to sustain the household's current standard of living, in the event a spouse/partner dies.

Financial vulnerability is defined as the change in consumption a household would face after the death of a spouse/partner without life insurance.

The results will be applicable to both financial planning educators and financial advisors. It may be applicable to policy makers with regards to life insurance regulation and recommendations as well as future changes to the Social Security system. This issue will become more urgent in the future due to the combination of increased life expectancy putting more stress on social safety net programs (Lee, 2014), declining life insurance ownership (Chen, Wong, & Lee, 2001; Mulholland, Finke, & Huston, 2015; Outreville, 2013), and household net worth not fully recovering from the 2006 peaks as of the second quarter of 2013 (Dunn & Olsen, 2014).

**Significance:** This research extends the life insurance literature in several ways. First, it improves the annual consumption estimates using the Survey of Consumer Finances (SCF). Prior life insurance studies that used the SCF and incorporated consumption expenditures either assumed consumption was equal to income (Bernheim, Carman, Gokhale, & Kotlikoff, 2003) or did not take into account SCF expenditure data but used average replacement rates from Consumer Expenditure Survey (CEX) data based only on income (Frees & Sun, 2010; Lin & Grace, 2007). This current study incorporates both SCF and CEX data when calculating household expenditures. This study also improves the way financial vulnerability is measured to better represent changes in household consumption by accounting for multiple consumption stages for households with child dependents under the age of 18 and also incorporates Social Security Survivors benefits. Finally, this study is the first to incorporate this updated financial vulnerability index first created by Lin and Grace (2007) into a model that examines the proportion of human wealth households insure.

**Method:** The dataset used to conduct the analysis is the 2013 Survey of Consumer Finances (SCF). The sample consists of 2093 mixed-sex coupled households, between the ages of 30 and 64, all with earnings above the federal poverty guidelines. Two different multivariate analyses were conducted. One was a Cragg model, consisting of a Probit procedure and a truncated regression, and the other was a Tobit model. The results of a likelihood ratio test indicated that the Cragg model was the appropriate model for determining total, term, and whole life insurance ownership and extent while the Tobit was the appropriate model for determining the proportion of insurable human wealth insured.

The proportion of insurable human wealth insured dependent variable is modified from that used in some recent studies (Finke, Huston, & Waller, 2009; Gutter & Hatcher, 2008; Scott & Gilliam, 2014) and is defined in Equation 1 as:

**Results:** Most couple households, 78%, owned life insurance but the median proportion of their insurable human wealth households insured with life insurance was only 28%, suggesting an underinsurance problem. One reason to explain the prevalence of underinsurance may be the overestimation of cost. This overestimation likely impedes a household from making a rational decision when trying to determine if, and how much, life insurance is optimal for the household.

Previous literature that explored financial vulnerability is limited and has had mixed results. Our Hypothesis is that those households whose standard of living would be most negatively impacted would be more likely to have life insurance and have higher amounts of it. Those with a higher financial vulnerability had higher amounts of life insurance, as expected. However, the level of financial vulnerability was not related to the likelihood of owning term, whole, or any life insurance, thus the ownership hypotheses are not supported. The most interesting finding, however, is that even though these households had more life insurance, contingent on ownership, this higher amount replaced a lower proportion of their insurable human wealth. Thus, it appears these households were able to identify the need for an increased amount of life insurance but underestimated the amount needed.

**Conclusions/Relevance:** Financial planners and brokers can better prepare households by making households more aware of the consequences of having too little or no life insurance. Life insurance

is not a topic that receives as much attention with the financial media or media in general; perhaps this makes households less aware of the importance of life insurance. Retirement planning, for example, is likely a more complicated issue for most and perhaps the constant saving requires significant “nudging”. Life insurance, by comparison, should be a goal that is much easier to attain.

Educational publications from sources outside of the insurance industry, such as from Cooperative Extension and the Consumer Financial Protection Bureau, to better educate households on various types of life insurance and also convey the importance of ownership and the detriments associated with not having any or enough when needed may be helpful. Public service announcements, videos, and websites that households have become accustomed to seeing and hearing regarding health insurance over the past several years is a good roadmap for the type of work that could be done to better inform households of the importance of life insurance.

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## Understanding Heterogeneity in Pension Plan Decisions: The Retirement Belief Model

*Eberhardt, Wiebke; Brüggem, Elisabeth; Post, Thomas*

**Abstract:** Our aim is to identify factors that influence whether participants in occupation pension scheme take the first step and search for information about their expected retirement benefits. We develop a unifying framework for these factors: the Retirement Belief Model. We conducted a survey involving 583 pension plan participants to identify the most relevant beliefs and emotions.

We find that participants are more likely to acquire pension information when perceived barriers are low, while perceived benefits and severity are high. If participants perceive low self-efficacy to inform themselves, their intention to do so is actually high. We show how behavioral intention of pension plan participants depends on different beliefs and emotions regarding retirement and pensions, and provide segmentation guidelines for pension communication.

Background: Reforms of funded occupational pension systems result in more choice and greater responsibility and investment risk for individual plan participants (Knoef et al., 2016; Van Rooij et al., 2007). Yet, studies suggest that participants in occupational pension schemes know very little about their pension and do not read information provided by pension providers (e.g. Gustman & Steinmeier, 2004). Given the pressure on pension systems around the world, participants who are not sufficiently informed may encounter significant pension gaps, which will have detrimental welfare effects at retirement (Post et al., 2014). However, research on the very first step, becoming active and acquiring the necessary information about one's personal pension situation is scarce. There is some evidence that participants differ significantly in their approach towards retirement planning. For instance, some participants may suffer from retirement anxiety, i.e. "concerns about one's income and health, emotional and mental well-being" (Hayslip et al., 1997), whereas others do not. The emotional tone in communications with those participants should not add to the anxiety, whereas for others, it may be effective to stress the urgency of the situation (Brüggen et al., 2013). Pension providers are confronted with very heterogeneous participant bases, and they do not know which demographic and psychographic dimensions of heterogeneity determine whether participants seek information about their expected pension benefits

The Retirement Belief Model: The purpose of this article is therefore twofold: we first develop a unifying model including identified factors that determine whether participants inform themselves about their pension situation, the Retirement Belief Model. Second, we determine whether segmentation of pension plan participants is worthwhile.

The Retirement Belief Model (figure 1), which is based on the idea that pension plan participations will only become active and inform themselves if they (1) believe that the consequences of (not) engaging in a behavior are severe (severity), (2) that they are at risk of experiencing an undesirable outcome (susceptibility), (3) think that benefits of taking action weigh heavier than the costs (benefits vs. barriers), and finally (4) feel that they are able to change something about their situation (self-efficacy). To identify heterogeneity among participants, we measure socio-economic characteristics (e.g. age, gender, income), financial preferences (e.g. risk-taking, propensity to plan), financial literacy, and emotions (e.g. retirement anxiety) of pension plan participants.

Method: We design an online survey to test the Retirement Belief Model with Dutch pension plan participants of a large international insurance company and occupational pension provider. Together with a newsletter, the survey was sent out via e-mail to 7,122 participants. We match survey and anonymized administrative data of the pension provider and receive a final sample of 583 participants.

We estimate the RBM by building a partial least squares structural equation model, which allows us to test a network of relationships between different latent variables (measured by several indicators) simultaneously. Afterwards, we employ a finite mixture segmentation model.

Results: We find that benefits, severity, retirement anxiety and trust towards one's own pension provider significantly influence information search intention in a positive way. Barriers (mediated by financial literacy) and self-efficacy have a significant, negative influence on the intention to look up retirement information. Several significant relationships between socio-demographic factors and beliefs and emotions are presented in the paper.

We identify three segments and label them according to their characteristics: the overconfident, the emotional and alpha males. These segments differ significantly as to the beliefs and emotions that are most important in determining participants' motivation to gain information. For the overconfident (N=60, 55% male, lowest income and financial literacy), self-efficacy has a significant negative impact, these participants feel that they can inform themselves, while they actually do not do so in the end. The emotional (N=264, 61% male, youngest, 37% have no children) experience high levels of retirement anxiety, which together with their perceived benefits of informing themselves stimulates them to take action. Our last segment, the alpha males (N=259, 100% male, highest income and financial literacy), needs trust towards their pension

provider for them to inform themselves. For this segment, the belief that the consequences of not informing oneself are very severe, is also a main trigger to act.

While previous research focused on average participants, we considered differences between participants among multiple dimensions to achieve a better explanation of individual information search behavior. We show how the impact of the distinct beliefs on motivation to inform oneself about one's pension differs in sign and magnitude among different groups of participants, and elaborate on implications for research, policy and pension communication practice.

## **Pension Freedom Day in the United Kingdom: Liberation or Irresponsibility?**

*Loibl, Caezilia ; Summers, Barbara ; McNair, Simon ; Bruine de Bruin, Wandl*

This research examines a recent, substantial change to pension regulation in the United Kingdom in 2015. We focused on one part of this regulation, the newly established flexibility in obtaining a lump sum payout from personal or occupational pension savings. To the best of our knowledge, this is the first academic study to examine the effects of this new pension regulation.

We find that almost half of study participants plan to obtain a lump sum payout. The three most frequently indicated intended uses of the lump sum were holiday/travelling, home improvement, and moving the funds into an easy access savings account. Respondents typically indicated several different uses for the lump sum. Planned uses for the lump sum payout differ by lump sum amount, with investment goals, in particular, associated with larger sums.

We investigated whether and how older adults who plan to take a lump sum payout differed from those who do not plan or are undecided about whether to take a lump sum payout. Lump sum takers tend to have higher pension-freedom related knowledge and report greater readiness to access and decide about their pension savings. Lump sum choice was also associated with lower expectancy for years spent in retirement, greater odds of blowing the pot, and stronger materialistic values. No differences were identified with regard to financial planning, numeracy, self-efficacy, and risk tolerance. Undecided respondents differ more strongly from lump sum takers than non-takers. Compared to undecided respondents, lump sum takers show higher pension-freedom related knowledge, higher interest in accessing and deciding about pension savings, and expect or had experienced less drastic decreases of living standard during retirement.

Close to one-third of study participants still planned to invest retirement savings into an annuity. This choice was associated with higher retirement age, expectations/experience that living standards during retirement might decrease, and a desire for security and lifelong coverage of pension savings.

When asked about plans to cover a shortfall of pension savings, lump sum takers more frequently planned to rely on state pension compared to non-takers. About equally-sized groups of study participants commented positively and negatively about the changes to pension regulation. Positive comments addressed flexibility and choice for investing pension savings; negative comments highlighted self-control issues and information gaps.

The discussion summarizes further research ideas and limitations of the study.

# Decision Making / Dual Process and Intertemporal Choice

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7/10/2016 8:30:00 AM: Tarthorst Rooms 1+2

Prof. Kirsten Rohde

## Rational decisions and strategy selection among multi-attributes options – in light of dual-process theories.

*Sleboda, Patrycja*

Aims

The goal of the studies was to investigate the influence of individual differences in information processing on the strategies used to select among multi-attribute options. The following properties of the selected strategies were investigated: requirements of trade-offs (compensatory vs. non-compensatory), maximization vs. satisficing, option-wise vs. attribute-wise information processing. It was checked whether these properties are related to individual differences: (1) in processing information either intuitively (System 1) or rationally based on analytical thinking (System 2) and (2) in numeracy skills. The information processing was measured by The Rational-Experiential Inventory-24 short (REI) proposed by Pacini and Epstein (1999) while numeracy skills were checked with Cognitive Reflection Test (CRT) proposed by Frederick (2005).

In the traditional approach rational decision is directly related to integration of outcomes and probabilities in a compensatory way where chosen option is the one with the highest weighted sum of all attributes. Trade-offs are necessary and one has to create a global evaluation (Multi-Attribute Utility Rule - MAU). There are many empirical examples, which are not in line with such a model.

One solution came from Herbert Simon (1957) who proposed the concept of Bounded Rationality, i.e. rationality means meeting aspirations. This can be reached by using the conjunctive rule (CON) that does not require trade-offs, an option is satisficing when all its attributes meet at least minimum level of satisfaction. Another non-compensatory strategy is lexicographic rule (LEX) - people compare options along attributes and only the most important ones are considered. This very simple rule, however, may lead to choices that do not obey such axioms as transitivity.

On the other hand, trade-offs between different attributes are not always possible and people do not like and do not want to trade-off. Especially when people are faced with conflict. Are people not rational when using non-compensatory models in such situations? In light of Simon's concept of bounded rationality, non-compensatory strategies still can be rational, in particular when they fulfill basic axioms like symmetry or transitivity and/or have high score in rationality measure in line with Dual-Process Theories (DPT).

In the presented studies it has been expected that the high scores in Rationality subscale of the REI and in (CRT) are related either to the option-wise compensatory processing of information and to maximization or to the option-wise non-compensatory information processing and satisficing. In contrast, the high score in Experientiality subscale and the low score in CRT are related to the dimension-wise non-compensatory information processing. This was investigated in two studies. In Study 1 respondents chose one out of two apartments described on three common dimensions. In Study 2, participants made identical choices, however, between two abstract options that were

described on three common dimensions that had no specific modalities. Choices' options were constructed such as the chosen option indicated which strategy was used.

The additional goal of this study was validation of the Rationality subscale of the REI through checking its relation to the transitivity axiom of the utility theory. To check this, choice options were constructed such as patterns of choices let to conclude whether participants obeyed this axiom.

## Method

The aim of Study 1 and Study 2 was to design two identical schemed and instructed studies which would differ only by content. Study 1 was context – choice between two apartments and Study 2 was context-free (abstract).

## Measurements

Multi-attribute options' choices. 26-choice questions between two options were presented to participants. Each option contained three attributes and questions were constructed in such way to always determine which strategy was applied when chosen. In particular, three strategies were considered: MAU, conjunctive (satisficing) and lexicographic (which in case of abstract choices was alternative strategy). Each option was pictured as a histogram always described on three characteristics.

Configuration of sets of choices allowed to check whether choices are consistent with transitivity axioms.

CRT and REI-short 24. The second block was composed of short 24-item REI (Pacini and Epstein 1999) translated in Polish (by Sleboda and Sokolowska), previously validated in Ayal, Zakay, Hochman (2011, 2012) and Ayal, Rosou, Zakay, Hochman (2015) studies. Additionally, we added Cognitive Reflection Test (Frederick, 2005) which contains three questions that check the objective numeracy ability.

Confidence. Confidence, also called a subjective belief of the right choice, usually occurs automatically after a goal-oriented task is completed (Zakay, 1997). Two measurements of confidence level can be distinguished: local confidence and global confidence. Local confidence relates to a specific choice and was asked right after a single choice was made. Participants were asked to estimate their level of confidence on the scale from 50 to 100 where 50% indicated "I guessed" and 100% - certain that I made correct decision. Global confidence relates to a whole task, number of question answered correct and it was asked right after the 26-choices were completed (after Dida & Zakay, 2014).

## Study 1

105 people from which 53,3% were women (M age = 27,9; SD=5,71) voluntarily participated in the study that was conducted online. 61,9% of the participants had master degree, 8,6% bachelor degree, 21% were students.

## Study 2

104 participants (48,1% of women) completed the survey online (M age = 29,4; SD=6,71). 66% of the participants had master degree, 13,5% bachelor degree, 13,5% were students.

## Results

Preliminary analysis showed that 1) groups of specific strategies' users differ on rationality score on REI scale, numeracy ability, transitivity level and confidence with the highest score for

compensatory strategy users 2) applying non-compensatory strategy can still lead to rational choices understood as obeying transitivity axiom. There was correlation between REI, CRT and transitivity.

## The Maximizing Norm. Encouraging to Get the Best Enhances Decision Avoidance

*van Putten, Marijke; Noordewier, Marret*

Wanting the best for others is a noble ambition. The most straightforward strategy to fulfill this ambition seems to encourage people to only settle for the maximum outcome. In the present research, we strongly question the effectiveness of this strategy. In many situations, people are assumed to opt for maximum outcomes. For example, among our students we regularly notice that good is not good enough and see their disappointment when they pass sufficiently rather than with excellence. Previous research on maximizing showed that people who habitually strive for maximum outcomes are less satisfied with their decisions and experience more decision regret (e.g., Schwartz, Ward, Monterosso, Lyubomirsky, White, & Lehman, 2002). Notably, these are prime determinants for decision avoidance (e.g., Anderson, 2003; Beattie et al., 1994). Thus, encouraging people to strive for the best might seem like a good strategy to motivate people to act. However, the consequences of the resulting maximizing mind-set might have the opposite result. This leads to the counterintuitive prediction that encouraging people to go for the best is not motivating at all, but actually leads people to avoid decisions altogether. We tested this new prediction in three studies.

### Methods and Results

In all studies, students were faced with the decision to find an internship (which is part of their obligatory curriculum).

Study 1. 150 students were instructed to think about finding an internship. One third was told that former students always found the best internships (Maximizing condition), one third was told that former students always found an internship that was good enough (Satisficing condition), and one third received no extra information (Control group). Subsequently, all students filled in the 13 items of the Maximizing scale (e.g., "No matter what I do, I feel like I have the highest standards for myself."; 1 = disagree completely, 9 = agree completely;  $\alpha = .72$ ,  $M = 5.03$ ,  $SD = 1.11$ ; Schwartz et al., 2002). Results showed that the score on the Maximizing scale was higher in the maximizing condition ( $M = 5.23$ ,  $SD = 1.27$ ) than in the satisficing condition ( $M = 4.79$ ,  $SD = 1.04$ ),  $t(145) = 1.94$ ,  $p = .05$ , 95% CI  $[-.01, .87]$ .

Study 2. 90 students were exposed to similar maximizing, or satisficing information about finding an internship. Subsequently, they filled in 9 items of a Decision Avoidance measure (e.g., "If I think about finding an internship, my mind goes blank"; "I feel like having someone else choose an internship for me", 1 = disagree completely, 9 = agree completely;  $\alpha = .84$ ,  $M = 4.26$ ,  $SD = 1.36$ ). Results showed that decision avoidance was higher in the maximizing condition ( $M = 4.76$ ,  $SD = 1.46$ ) than in the satisficing condition ( $M = 3.88$ ,  $SD = 1.02$ ),  $t(82) = 2.51$ ,  $p = .01$ , 95% CI  $[.18, 1.57]$ .

Study 3. 166 students received the same information as in Study 2. Subsequently, they indicated (1 = certainly not, 9 = certainly) if they would a) immediately make a choice; b) wait with a choice; c) search further; d) ask their supervisor to choose (  $\alpha = .58$  after re- they received information about two attractive internship opportunities and indicated whether they chose internship A, B, or if they would look for a better option. Results showed that students in the maximizing condition were more likely to avoid a choice ( $M = 5.23$ ,  $SD = 1.49$ ) than participants in the satisficing condition ( $M = 4.73$ ,  $SD = 1.42$ ),  $t(164) = 2.17$ ,  $p = .031$ , 95% CI  $[.05, .94]$ .

Moreover, the number of participants avoiding choice by choosing to look further for a better option was marginally higher in the maximizing than in the satisficing condition,  $\chi^2(1, N = 25) = 3.24, p = .072$ .

## Conclusion

Wanting the best for others is a noble ambition. However, we provide evidence that telling people to go for the best might backfire, because it sets a maximizing norm which increases the likelihood that the decision is avoided altogether. Our results show that setting a maximizing norm increases the tendency to maximize (Study 1), increases the tendency to avoid decisions (Study 2) and decreases the likelihood that will act (Study 3). These results extend the maximizing literature in two important ways, by a) showing that situational factors can increase individual maximizing tendencies (cf. Ma & Roese, 2014); and, b) by showing that setting a maximizing norm can lead to decision avoidance.

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## **A QUANTITATIVE VIEW ON THE RELATION BETWEEN DELAY DISCOUNTING AND TIME PERSPECTIVE**

*Ianole, Rodica; Druica, Elena*

Intertemporal choice is a framework that applies to almost all our consequential decisions (Loewenstein et. al, 2003), thus it is by its nature an interdisciplinary topic of interest. In the case of economics, both conventional and behavioral approaches are predominantly preoccupied by the mathematical shape and formulation of discounting, specifically exponential versus (quasi) hyperbolic discounting (Strotz, 1955; Loewenstein & Prelec, 1992; Laibson, 1997; Prelec, 2004), with an increasing consensus inclining towards the latter and the correct elicitation and computation of the discount factor as a relevant measure. The phenomenon is labeled quite different in psychological research, the focus being more on the interacting mechanisms behind it, leading to less aggregated insights: individual differences (Wittmann & Paulus, 2008; Shamos et. al, 2008), situational determinants (Read & Read, 2004), or emotions (Agerström et. al, 2012). Among these, time perspective stands out as a very rich and comprehensive concept, defined as the collective ensemble of an individual's views of past, present and future (Lewin, 1951) and extensively explored and measured by social psychologist Philip Zimbardo. More precisely, time perspective comprises in a synthesized manner both psychological and sociological inputs, expressed in five different orientations towards time: past-negative (PN), past-positive (PP), present-hedonistic (PH), present-fatalistic (PF) and future (F). Moving on their separate paths, both research agendas have successfully developed large streams of literature, associated with a variety of economic behaviors and psychological processes. While this perimeter illustrates some over used and explored areas, it also points out only towards thin evidence responding to the question of whether and how these different time constructs – delay discounting and time perspective - are related.

The departure point of our research is based on the literature review article of Teuscher and Mitchell (2011) and some previous results obtained by Daugherty and Brase (2010) illustrating a

significant, but small, correlation between the discount factor elicited through the MCQ method (Monetary Choice Questionnaire, Kirby et al., 1999) and Zimbardo's time perspective (elicited both through Zimbardo Time Perspective Index (ZTPI) and a 'consideration of future consequences' (CFC) scale).

Data was collected in the period March-April 2015 using an on-line survey targeting bachelor and master students, mostly economics and administrative science profiles, from Bucharest, Romania. The survey had three parts: a first set of questions trying to elicit the inclination towards saving, following Rodermund's procedure (2012), a second set of 27 questions represented by the monetary choice questionnaire (MCQ) of Kirby, Petry and Bickel (1999) and lastly the Zimbardo Time Perspective Inventory (ZTPI), comprised of 56 items. For the purpose of this study we have employed only the last two components of the survey, thus a sample containing 211 subjects (with a total of 5697 observations and 12 variables).

In this context, our paper aims to explore the complex relationship between time perspective and delay discounting, trying to minimize the existing gap on the association of the two constructs through an extensive quantitative analysis composed of logistic regressions under different analytical regimes. While the main expectancy was related to the importance of the future oriented perspective, the results point out to a more complex framework with the fatalistic present time perspective as the most relevant predictor among all the models and a richer dimension of the socioeconomic characteristics (particularly gender and income class).

The specific contribution of our approach lays in the examination of the root influences encountered in the delay discounting process, by taking into consideration absolute values of the discount factor components (delay reward, immediate reward, delay time and the level of the reward), as a more realistic analogy to the common decision-making path. We compare unadjusted and adjusted regressions models for the entire sample, respectively separate models by gender, and we delve into a careful discussion about the contextual values of the differences in inter temporal preferences. We believe that, from a methodological point of view, these results may hint toward a possible response to the issue of intra-individual variability of time discounting, underlined by Prelec and Lowenstein (1997), by improving the degree of misspecification of the discounting model through a more extended horizon of psychological motives that may act as significant predictors.

The paper is structured as follows: section 2 reviews some of the important findings related to time perspective and delay discounting, section 3 introduces the data and describes the methodology, while section 4 is reserved for results and discussions. We conclude in section 5.

## **Intertemporal choice - discounting and projection bias**

*Li, Chen; Rohde, Kirsten*

Intertemporal choices concern tradeoffs between optimal sizes of outcomes and their optimal timing. A popular model to describe such tradeoffs is the discounted utility model. Discounted utility evaluates an outcome to be received in the future by multiplying its utility by a discount factor. Utility captures the expected attractiveness of an outcome irrespective of its distance to the present. The discount factor captures the attractiveness of the timing of the outcome irrespective of its expected utility. Utility refers to the psychological process where people project themselves to the future and imagine how valuable an outcome will be to them once consuming it. Discounting refers to the value one derives today from foreseeing to experience the value of the outcome once consuming it. Traditional measurements of discounted utility assume that utility is constant over time. Thus, it is commonly assumed that the value one derives from an outcome today equals the value one expects to experience in the future once consuming the outcome. The difference between the value of receiving an outcome today or at a later point in time, it thereby entirely attributed to the discount factor applied to future values. Yet, it is well possible that the value one

derives from an outcome today is different from the value one expects to derive from it in the future. If individuals, for instance, project themselves to the future and expect their future consumption level to be higher than their current one, it is well imaginable that they expect the value of an outcome in the future to be different from its value today.

In this paper we study intertemporal decisions and disentangle discounting and the expected changes in utility. We measure whether people expect their utilities to change with time. This allows us to measure discounting independently from utility and expected changes in utility. We employ a methodology from measurements on subjective well-being to assess strength of preferences. This allows us to assess the extent to which subjects expect their utilities to remain constant over time. We also assess the extent to which the expectations about future utilities are correct. That is, we assess the extent of projection bias in predicting future utility.

## *Environment / Nudging*

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7/10/2016 8:30:00 AM: Ir. Haak Room

*Dr. Roberta Muramatsu*

### **Green defaults of energy providers in Germany – self-propelling process or political challenge?**

*Rauber, Julius ; Bernauer, Manuela ; Reisch, Lucia A.*

“Green” (i.e. renewable) energy defaults have been proposed as a major policy instrument to support the Energiewende, i.e. the transition to renewable energy in Germany and beyond. While energy defaults have empirically proven to be very powerful and “sticky” (see e.g. Pichert and Katsikopoulos 2008, Thaler and Sunstein 2008, Sunstein and Reisch 2013, 2014, Ebeling and Lotz 2015, Momsen and Stoerk 2014), their use in public policy as a green “nudge” is highly debated (see e.g. Theotokis and Manganari 2015). Major concerns have been aired in particular regarding their legal base. Interestingly, green energy defaults seem to have found their place on the energy market also without public support, and are increasingly offered to end users by energy providers, both private and public.

This paper aims to shed light on the current state of renewable energy defaults of energy providers in Germany. In order to analyze the supply side, we provide the results of a market overview focusing on whether German energy suppliers use “green” energy as default option for their customers instead of “grey” (i.e. non-renewable). Moreover, we analyze the approval of green defaults from the demand side in Germany. We use an online-representative sample of German citizens who were asked whether they approve or do not approve green energy defaults. The results of this study will feed into the public debate whether market based mechanisms are sufficient or if political interventions (regarding defaults) are necessary to realize a more sustainable energy supply and demand.

The paper is structured as follows:

In Part 1, we outline the research question and define the difference between “green” (i.e. renewable) and “grey” (i.e. non-renewable) energy.

In Part 2, we describe and discuss the concept of nudges in general and defaults in particular. From a conceptual point of view, we base our study on the concept of behaviorally based regulation or “nudging”. One of the major applications of nudging in the past years has been the promotion of greener consumption choices. Green nudges harness on human biases such as the inertia of humans (Status quo bias) in order to generate more sustainable decisions (see e.g., van Vugt et al. 2013, Sunstein and Reisch 2013, 2014). Defaults have been found to be one of the most effective and powerful nudges. Changing the default option, i.e. offering green energy instead of grey energy as default, might influence the choice of customers significantly. Thus, nudges can help to achieve goals with respect to a more sustainable lifestyle in today’s society without implementing hard regulations. With respect to energy supply, the effects of using green energy defaults instead of grey energy are expected to be significant.

In Part 3, we present empirical data on the actual supply of green defaults by German energy providers. We collected information from 1,135 energy suppliers in Germany (out of a total of 1,190 according to statista.com ) and indicated whether the default option for the basic supply tariff is green or grey energy. Results reveal that about 23% of the companies do offer green energy as default option. However, the definition of green energy is quite fuzzy and depends on the labels and certificates. Thus, we distinguished between more and less trustworthy labels. Out of the 262 energy providers that offer green energy as default option, only 43 (16%) can label their energy with one of the two top labels (i.e., “Grüner Strom Label” (GSL) and “ok Power Label”). Despite these low figures of “good” green defaults, the relatively high share of firms offering green defaults in general indicates that there is a business case by labeling their default services as “green”.

Having investigated the supply side of green energy defaults, we then have a look at customers’ approval of such defaults. System 1 nudges in general and defaults in particular have been criticized as working on a subconscious level which disrespects and limits people’s deliberative choices (See, e.g. Sunstein 2015). This concern may be reflected in people’s opinion towards nudges and defaults. In order to test if green defaults are accepted among Germans, we rely on a representative dataset of 1,012 people that were asked by the GfK (among other questions) if they approve a) the encouragement of green energy defaults by the government and b) the requirement of green defaults by the government. Both ideas were supported by a vast majority (a: 69%; b: 67%). These results indicate that (at least in Germany) the population is strongly in favor of green defaults, even if they are imposed on suppliers by the government.

In Part 4, we discuss whether political interventions such as promoting green defaults should be recommended in Germany and beyond. Our conclusions are based on the insights of both, the supply as well as the demand side of green energy defaults. Finally, we summarize our findings, outline the limitation of our work and show possible future research options on this topic.

## **Using smart defaults in a Rasch-based decision support system to help consumers in energy-saving decisions**

*Starke, Alain; Willemsen, Martijn C.; Snijders, Chris*

Aim:

Government initiatives that promote energy conservation often fail to effectively persuade individuals to change their energy-saving behavior (Abrahamse et al., 2005; Luyben, 1982). A main cause for this is that energy policy often focuses on educating consumers, helping them understand how to save energy (Schultz, 2002). Most conservation studies point out, however, that merely providing information has no impact on behavior (McMakin et al., 2002).

In recent years, there has been a call for the use of more behavioral sciences in energy policy to improve its effectiveness (Allcott, 2010). Various field studies have demonstrated the effectiveness

of using social comparison and feedback in tailoring conservation advice (Steg, 2008). Most of these studies, however, rely on highly-motivated individuals (Staats et al., 2004), making it difficult to scale such an intervention to a size that yields significant effects among a larger population.

We argue that web-based interventions can play an important role. Recommender systems can provide real-time help by suggesting tailored energy-saving measures based on estimated preference information (Knijnenburg et al., 2014). In particular, Starke et al. (2015) have set out a recommender system that tailors conservation advice to an individual's energy-saving attitude using the psychometrical Rasch model. Rasch formally describes the relation between an individual's attitude (i.e. preferences) for a certain attitudinal goal (e.g. saving energy), and the costs of a behavior that can be employed to attain that goal (e.g. installing solar PV; Kaiser et al., 2010). Using this relation, Rasch can arrange both individuals and behaviors according to their respective attitudes and execution costs onto a single one-dimensional scale, as two sides of the same coin (Bond & Fox, 2006).

Employing this scale, Starke et al. (2015) show that recommender system users prefer measures that have relatively low costs, but have on average a smaller impact on energy savings. The current research seeks to improve this situation and investigates whether we can support users in selecting energy-saving measures with a larger energy-saving impact, measures that on average bear higher costs. We do so by focusing on the order of the Rasch scale itself and attitude-tailored advice.

First, we investigate whether the initially presented energy-saving measures influence the user's choice and system satisfaction. Similar to sticking to a default, a user may stick to a certain part of the Rasch scale when first being presented measures with a certain cost level. For instance, if the system first suggests a user to install solar PV (i.e. a relatively high-cost measure), then he may be more likely to choose other high-cost measures compared to being initially presented an easy-to-execute measure.

Second, we research whether the user's relative attitudinal level influences choice and system satisfaction, investigating to what extent Rasch-based recommendations are helpful or that the scale is sufficient. This question adheres to research on smart defaults (Smith et al. 2009; Sunstein & Reisch, 2014), which argues that suggested choices stick better if they fit the decision maker's preferences. For example, Kaiser et al. (2014) use the Rasch model for organ donation consent to point out that individuals do not comply with an opt-in system, because the costs of that behavior often exceed the individual's organ donation attitude.

#### Method:

We addressed both research topics by developing an energy-saving web-tool 'Besparingshulp.nl'. It presented users the opportunity to browse through a one-dimensional Rasch scale of 79 energy-saving measures and choose from them those that they were willing to implement in the upcoming weeks. The scale was rank-ordered according to their behavioral costs, as determined in a Rasch analysis conducted by Starke et al. (2015). Each measure consisted of a title (e.g. 'Install double-glazed windows'), a detailed description, and a number of attributes, such as the amount of continuous effort and saved kWh's.

Before browsing through all energy-saving possibilities, users were asked to indicate for each of thirteen energy-saving measures whether they already executed them ('yes', 'no', 'n/a'). Subsequently, the system presented users a set of five measures. This set was subject to four conditions in a 2x2 between-subjects design. First, the scale measures presented on the website were either arranged in ascending or descending order of costs. Second, users were either explicitly recommended a set of five energy-saving measures that matched their energy-saving attitude, or presented the first five measures of the scale, either bearing the lowest or highest costs possible.

After selecting energy-saving measures, users were asked to respond to questionnaire items regarding their subjective user experience. These questions were derived from the user experience framework of Knijnenburg et al. (2012), concerning 'perceived support', 'system effort' and 'choice satisfaction'. Finally, users were sent a follow-up survey four weeks onwards, to report whether they had actually implemented the chosen measures.

To determine the effectiveness of the Rasch-based recommendations, we compared the subjective user experience between conditions. Moreover, we compared conditions for chosen energy-saving measures in terms of relative behavioral costs and also logged each user-system interaction to analyze users' browsing behavior.

#### Results:

226 participants interacted with our conservation web-tool and completed the survey. We performed multiple analyses of variance and a structural equation modelling analysis to investigate differences across experimental conditions, as well as mutual relations between subjective user experience concepts, browsing behavior and attitude-cost differences.

In terms of subjective user experience, system users reported higher levels of perceived support if they had received an attitude-tailored suggestion:  $F(1,219) = 4.87, p < 0.05$ . Moreover, the SEM analysis revealed other differences across conditions if the user's attitudinal level was considered: Users reported higher levels of perceived support, as well as lower levels of system effort if the scale order was congruent with their attitude. For instance, users with a relatively weak energy-saving attitude benefited from a scale that had an ascending cost order, compared to a descending order.

Finally, we employed a clustered logistic regression analysis to analyze users' chosen measures. Preliminary results indicated that users presented with an attitude-tailored recommendation had chosen measures with on average higher behavioral costs compared to non-recommendation conditions, suggesting that Rasch-based recommendations are beneficial.

## **AFFECT AND THE ADOPTION OF PRO-ENVIRONMENTAL BEHAVIORS**

*Coelho, Filipe ; Barata, Eduardo ; Cruz, Luis ; Pereira, Maria ; Simões, Paula*

Environmental degradation, associated with both the over exploitation of natural resources and with the production of excessive amounts of waste and pollutants and its disposal into the environment, is a serious problem. Thus, there is a need for change in our daily lives, given the many areas in which households exert pressure on the environment (e.g. residential energy use, domestic water use, and waste generation). Therefore, it is critical to bring new light on what might influence households' action towards environmental protection and the conservation of natural resources.

Environmental concern, generally referring to attitudes and beliefs about the environment, is one of the most studied influences on the adoption of environmental behaviors. The New Environmental Paradigm (NEP) and of the Revised NEP scales, devised by Dunlap and Van Liere (1978) and Dunlap et al. (2000), respectively, are among the most common ways to assess whether environmental concern influences decisions to engage in pro-environmental behaviors. Sociodemographic factors (e.g. age, education, gender, income, rural-urban place of residence) may also play a role in environmental behaviors, though the direction and extent of the influence found for several of these attributes on environmental concern and action has not been definitive (Wolters, 2014). Indeed, many studies have been undertaken on what shapes individuals' propensity to adopt environmentally friendly behaviors. However, this is a complex issue that it still is not fully understood.

The goal of this research is to further enlighten what drives consumers to adopt pro-environmental behaviors. More specifically, this research contributes to existing knowledge by relating positive and negative affect with consumers' environmentally friendly behaviors. To the best of our knowledge, this is one of the first studies linking affect with pro-environmental behaviors by consumers.

Affect is understood as a broad term concerning both moods and emotions (e.g., Lee, Barrowclough, & Lobban, 2011). The dominant view looks at affect as having two dimensions: positive and negative affect (e.g., Watson et al., 1988). Hence, affect encompasses the negative or positive subjective experiences of individuals (cf. Moneta et al., 2012). Positive affect concerns the extent to which individuals describe themselves as feeling joyful, energetic, alert, enthusiastic, fully concentrated, whereas negative affect comprises emotions such as disgust, fear, guilt, anxiety, and sadness (e.g., Watson et al., 1988). Individuals scoring higher on positive affect tend to "approach their environment with more favorable expectations, and display a stronger willingness and enthusiasm to seek out and actively engage in various life events" (Kuyper et al., 2000: 480). Individuals with higher levels of negative affect tend to perceive the world surrounding them in a negative manner (Kuyper et al., 2000).

The adoption of environmentally friendly behaviors is likely to be demanding for individuals. More specifically, pro-environmental behaviors frequently require individuals to spend time, as well as economical and psychological resources. For example, recycling implies that individuals take time to separate their waste. In addition, energy-efficient home appliances are frequently more expensive than their counterparts. Moreover, purchasing decisions encompassing environmental concerns are likely to require greater cognitive efforts, due to the need to search for more information, as well as to ponder additional purchase attributes. Given that positive and negative affect influence the extent to which individuals are willing to engage in various life activities, it is likely that affect determines, in particular, the degree to which individuals follow an environmental-friendly posture.

Accordingly, we develop a model in which positive and negative affect are directly and indirectly related to the adoption of pro-environmental behaviors by consumers. Hence, the model specifies mechanisms for the transmission effects of affect on environmentally-friendly behaviors. This model is tested with a sample of over 200 Portuguese consumers. Moreover, we rely on structural equation modelling to test the research hypotheses. The results indicate that the influence of positive and negative affect on environmentally friendly behaviors is only partially mediated. These are novel results, helping to illuminate the complex question of what shapes pro-environmental behavior. Managerial and academic implications are derived, noting limitations and offering suggestions for future research.

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## **Behavioral Economics, Public Choice Theory and Austrian Economics: remarks about why integration better inform public policy debate**

*Muramatsu, Roberta ; Baribieri, Fabio*

Behavioral Economics and its empirical applications have gained its momentum at the end of the 20th century ( Heukelom 2013). It goes on to hold the promise of changing the face of neoclassical financial economics, labor economics, health economics, environmental economics, law and economics, among others (Diamond and Vartiainen 2007, DellaVigna 2009). Not only does the behavioral move in economic analysis purport to provide psychologically more plausible accounts of actual behavior, it aims to guide regulation and policy that help boundedly rational people to choose in their best interests (Camerer et al 2003, Thaler and Sunstein 2003, Thaler and Sunstein 2009, Sunstein 2012). Very recently, behavioral economics has inspired the theory as well as the practice of development economics (Bertrand, Mullanaithan and Shafir 2004, Mullanaithan 2007, Hands 2012).

Last September 2015 President Obama ´s administration published the White House Executive Order that draws on the view that behavioral science insights can be used to design government policies to better serve people. In this paper, we try to fill a blank in the behavioral economic literature on policy that often does not give much attention to the fact that experts, bureaucrats and government officials are also boundedly rational agents. Just like the targets of their designed public policies, they are influenced by public choice motives as well as electoral context dependencies that can bias their judgment and decision-making. As a result, some of their development programs of policies can be conducive to welfare losses rather than gains (Viscusi and Gayer 2015).

More precisely, the article attempts to examine whether and how research on public choice theory and behavioral economics can be integrated so as better inform policy makers and development agencies about the prospects of nudging in a world where fragmented knowledge and incomplete contracts seem to be pervasive and inevitable.

In order to pursue the foregoing task, it is structured as follows. Section 1 attempts to scrutinize critically the behavioral approach to policy and some of its underlying nudge proposals. In our perspective, it assumes an asymmetric knowledge between policy makers and the targets of the policy (Rizzo 2008). Section 2 presents some contributions from Public Choice Theory that explains why government failures are often phenomena. Section 3 analyses whether Austrian economics ideas about uses and misuses of knowledge in society can be useful to think over libertarian paternalism and nudges (Hayek 1948, Sunstein 2014). Section 4 tentatively provides a framework to integrate behavioral economics and public choice theory that better informs policy and initiatives to identify and overcome government failures, such as regulatory capture and corruption. Section 5 wraps the overall argument up and concludes.

7/10/2016 11:30:00 AM: Pomona Room 1+2

*Jennifer Stark*

## **Tax climate in the national press: a cross-cultural comparison**

*Castiglioni, Cinzia; Colombo, Valentina; Lozza, Edoardo*

Drawing on the Slippery Slope Framework, suggesting that the tax climate in a society can vary on a continuum between an antagonistic climate and a synergistic climate, the present article aims to make a comparison between two different countries, Italy and Switzerland. In fact, according to previous research, Italy and Switzerland – despite bordering one another – appear to differ greatly for both the levels of tax compliance and shadow economy in general. In order to compare the different tax climates, we decided to analyze the contents and representations of tax systems conveyed by the national press, on the assumption that media can act as mirrors of society. The analysis allowed to detect how the tax situation is interpreted and proposed by the print media in each country and to give a further interpretation of the respective tax climate.

2341 articles dealing with tax and fiscal issues were recollected from the leading Italian and Italian-language Swiss newspapers (in order to run a lexical analysis using the same language) between January 2010 and December 2014. The lexical material was approached using both a qualitative and quantitative perspective, through the support of a lexical-text analysis software (T-LAB 9.0). T-LAB software is an all-in-one set of linguistic and statistical tools for content analysis and text mining, which allows analyzing statistically the frequency of words in a written text and performing other linguistic analyses (analysis of word occurrence, correspondence analysis, thematic analysis, etc.).

The main results show that, despite sharing the same language, the two countries differ significantly in the way national press portrays their respective tax climates.

In particular, Italy appears to be characterized by an antagonistic, ‘cops and robbers’ climate, with taxpayers portrayed by the national press as feeling persecuted and living in fear and terror. Taxes are perceived as oppressive and inadequate compared to the public services in return. To aggravate the situation, the bigger tax dodgers seems to be able to get away with tax evasion and, when discovered, they are not adequately punished. Therefore, power is perceived neither legitimate nor just.

On the other side, tax climate in Switzerland appears to be synergistic and characterized by mutual trust, with tax authorities performing a service for the community. The fiscal system described by the national press appears to be more transparent, just, and, most important, there is a fair exchange between taxes and services in return.

Practical implications and consequences of how fiscal climates are depicted in the press are further discussed.

## **Empowering consumers to reduce corporate tax avoidance**

*Fatas, Enrique ; Morales, Antonio ; Sonntag, Axel*

We analyse corporate tax avoidance in a stylized experimental Bertrand setting with homogenous products and symmetric firms and consumers. More specifically we investigate how market concentration and information disclosure of firms' tax avoidance behavior could reduce corporate tax avoidance. We find that making corporate tax behavior more transparent by introducing a tax rating, makes consumers actively and costly boycott firms that do not pay their taxes. Firms anticipate consumer boycotts and increase their tax payments accordingly.

## **Mapping the social representations of taxes: An explorative and comparative study of five occupational groups in Austria and France**

*Stark, Jennifer ; Bazart, Cecile ; Olsen, Jerome ; Kirchler, Erich*

Taxes make up a complex system that provides states' income and serves as their financial bases. As such taxes are indispensable to guaranteeing functioning government structures, education, and social welfare. Although this necessity is widely, if sometimes reluctantly, accepted by citizens, demands for tax reductions and complaints about unjust tax burdens as well as irresponsible use of tax money are ever present. Given the economic crisis, following tax increases, the spending off taxes to save the culprits of the crisis, and tax planning schemes by multinationals, these demands and complaints must be taken seriously, because to ensure their financial bases, governments depend on citizens' compliance in paying taxes. As tax evasion presents a serious threat, and some occupational groups, i.e., entrepreneurs, have more opportunities to evade taxes than others, i.e., employees, investigating the determinants of tax compliance is of great importance. While sociodemographic and socio-psychological determinants have been intensively researched, too little is known of the concepts, beliefs, feelings, attitudes, and lay theories individuals have of taxes. These concepts, beliefs, feelings, attitudes, and lay theories comprise individuals' social representations of taxes and underlie as well as guide their tax behavior. Depending on their content, social representations of taxes can guide behavior towards tax compliance or tax evasion. For it is neither the actual tax law nor the actual tax rates or actual economic situation which explain tax behavior, but the perception and subjective thoughts as well as subjective interpretations of tax law, tax rates, tax burdens, and use of tax money which determine social representations of taxes, and hence tax compliance.

The current study aims to gain a differentiated insight into the social representations of taxes and attitudes towards tax behavior among five occupational groups - blue and white-collar workers, civil servants, entrepreneurs, and students - in Austria and France. An Austrian sample of 1743 participants and a French sample of 2553 participants completed a questionnaire comprising two parts. In the first part, participants were asked to think about taxes and to list all thoughts on the subject that came to their mind. Then, they evaluated their free associations as positive, neutral, or negative, and recorded the order of their production. In the second part of the questionnaire, which served to assess attitudes towards tax compliance, participants were presented with Peabody's (1985) semantic differential, comprising 32 adjective pairs, and asked to judge 'typical tax payers', 'honest tax payers', and 'tax evaders'.

The results show that the associations made by the different employment groups and the two countries differ. Tax avoidance seems to be a crucial concept. Evaluations of taxes are generally negative. Regarding attitudes towards tax behavior, the results show that tax evasion is not perceived as a major offense but as a misdemeanor that the clever commit. Reactance theory and exchange theory are useful in interpreting these results, in particular the differences among the occupational groups.

In sum, these findings should be considered in tax policy measures and the communication as well as justification of tax law changes and tax expenditures.

## Children

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7/10/2016 11:30:00 AM: De Peppel Room 1+2

*Dr. Eyal Lahav*

### **Child deprivation and social benefits: Europe in cross national perspective**

*Barcena-Martin, Elena ; Blázquez, Maite ; Budría, Santiago ; Moro-Egido, Ana I.*

In this paper we examine the ability of social benefits to soften the level of child deprivation. We construct a dedicated child deprivation indicator which allows us to better capture children's circumstances, and examine the effect on it of contextual and socio-demographic factors jointly through multilevel models. We contribute to the scarce literature on the effects of social spending on child specific deprivation from a cross-national perspective. We separately estimate the effect of each social benefit function on child deprivation to evaluate the impact of those benefit functions directly targeted at children and those benefit functions with no explicit intention of child deprivation protection. Our findings suggest that in order to explain differences across European countries in the level of child deprivation, country level determinants are crucial. Moreover, social benefits play a key role that remains even when we control for country level determinants. An additional finding is that the most effective social benefits functions are not necessarily those targeted at children.

### **Children's Time Use Patterns and the Trade-off Within**

*See, Sarah Grace*

The amount of time spent on an activity reflects the individual's demand for it, such that spending more time on an activity implies greater demand (Becker, 1965). In the case of children and young adults, time investments affect cognitive and non-cognitive outcomes that go well beyond adulthood (Sandberg, 2011).

Existing studies have largely focused on parental time investments (Monna and Gauthier, 2008), because of its strong association with employment. Parental time is mostly measured in aggregate terms of total time (Hsin, 2009), supervision (Aizer, 2004; See, 2014), involvement (Stacer and Perrucci, 2012), and quality activities (Hsin, 2009), and are investigated in relation to children outcomes, such as verbal tests (Hsin, 2009), body weight (You and Davis, 2011), delinquency and risky behaviors (Aizer, 2004; See, 2014). The investment role of the children and adolescents' own time has rarely been considered in the production function of an outcome, despite evidence of its important role in determining cognitive test scores, even compared to the mothers' time input (Del Boca et al., 2012).

A few studies have focused on the allocation decision of the children's time use patterns, exploring specific activities such as watching television (Brown et al., 2011) or playing video games

(Vandewater et al., 2006). Significant differences in activity engagement are found not only according to family socio-economic characteristics (Wight et al., 2009), such as parental education, employment, and family income (Bianchi and Robinson, 1997; Hofferth and Sandberg, 2001), but also according to child-specific characteristics such as gender (Bonke, 2010). For instance, males, whites, and children with more educated parents generally spend more time doing activities that are believed to contribute to their developmental outcomes (Bianchi and Robinson, 1997). Similarly, the intergenerational transmission literature has shown that children with more educated parents spend more time on developmental activities such as reading (Mancini et al., 2011). The results provide possible explanations for the disparities seen in children outcomes. These studies, however, do not consider the 24 hours adding-up constraint in a given day and the trade-off that occurs among the performed activities.

Using a sample of children and adolescents interviewed within the Child Development Supplement of the Panel Study of Income Dynamics, this research explores how time use patterns of children and adolescents differ according to individual-specific and household-specific characteristics under a multivariate analysis framework. The analysis also extends the works of Hofferth and Sandberg (2001) and Hofferth (2009) by applying a fractional regression estimation approach which considers the trade-off among the different activity categories. To the best of my knowledge, this method has not been used in time use studies, except for Mullahy and Robert (2010) and Cardoso et al. (2010) on adult samples. Given a constrained endowment of 24 hours each day, a higher participation in one activity reduces the chance for engaging in others. If the children and adolescents spend more time doing one activity, in what activities do they spend less time?

Given that time is believed to be a crucial input in the achievement production of the child, a better understanding of the children's time use patterns provides an insight on how to improve cognitive and non-cognitive outcomes, which can then influence later outcomes in life. Time use studies provide several advantages (Juster, 1985; Mullan and Craig, 2009), including allowing for the quantitative investigation of how children's time is allocated to different activities, and how the allocation varies according to different characteristics and family conditions. When coded as mutually exclusive events, time use studies allow for the analysis of allocation made for a specific activity (e.g., studying) versus other activities (e.g., leisure). This research can then provide a breakthrough in understanding children time use allocation decisions by utilizing household and education economic concepts coupled with a novel econometric methodology.

Estimation results using Tobit and OLS specifications showed differences in time use patterns according to the child's age, gender, race, and maternal education and employment, both for weekdays and weekends. Older children and adolescents spent more non-discretionary time, consistent with entering school. Non-discretionary time was also found to be positive with maternal employment, in line with that found by Coneus et al. (2009). Two possible explanations lie in time unavailability of employed mothers, such that they substitute for formal child care instead, or increased income to afford such a service. At the same time, the negative relationship between time spent watching television and maternal education proved similar to the findings by Vandewater et al. (2006). Paternal characteristics did not show any significance, except for doing hobbies and arts for weekend observations, with positive results. This could be as what Sayer et al. (2004) suggested, that when fathers spent time with their children, they did more fun activities. Meanwhile, the sex-typed participation in household activities was consistent with the findings of Bonke (2010). The gender-based differences persisted with using a fractional multinomial logit estimation, as male children and adolescents spent less time doing household and personal care activities for more active and passive leisure activities. The results also indicated a substitution of less television viewing for more studying and reading during weekdays for children and adolescents with mothers who had at least some college education. This might suggest the presence of intergenerational transmission patterns, as found by Cardoso et al. (2010). The fractional regression analysis not only identified the relationship between children's time use and various child-specific and household-specific characteristics, but also showed from which the time trade-

offs for these activities may have come from, and is a relatively novel application in time use studies. The general results held true with a subsample composed of older children.

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You, W. and Davis, G. (2011). Childhood overweight: Does quality of parental childcare time matter? *Journal of Family and Economic Issues*, 32(2):219–232.

## **Are present-oriented teenagers more affected by fees & gifts on saving certificates?**

*Lahav, Eyal; Shavit, Tal; Benzion, Uri*

Financial institutions, especially banks, charge fees for many services, loans and savings instruments. In some cases, they also offer gifts in order to attract new customers. The current study investigates whether teenagers offered two options for a saving certificate choose the financially preferable option. Participants were asked two questions. In one they were given a choice between a savings certificate with a fee for making a deposit and another that did not charge a fee but offered a much lower interest rate. The second question included a choice between a savings certificate for which the depositor received a gift, and another that did not offer a gift but paid interest at a much higher rate.

The findings indicate that a high percent of participants choose the inferior financial decision. However, having a bank account contributed to avoiding this decision, which may indicate that having an account reduces financial illiteracy. In addition, choosing the inferior financial decision is correlated with a higher subjective discount rate (higher present orientation), but only for the question concerning a fee. We also find a gender effect; females have higher subjective discount rates, and this effect is stronger for females with a bank account. The effect is also stronger for females who choose the inferior financial decision on the fee question.

We suggest that different forces drive teenage boys and girls to open a bank account, and that this might be the reason for the opposite affect it has on their subjective discount rates (and their chance of making an inferior financial decision). The findings suggest that financial education programs are needed during high school in order to increase financial understanding among teenagers, and produce better financial decisions then and in adulthood.

## *Determinants*

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7/10/2016 11:30:00 AM: Ir. Haak Room

*Dr. Marie Briguglio*

## **More knowledge, less reliance on the 'heuristics' trust and affect? The moderating effect of information and knowledge on judgements about a local hydrogen fuel station**

*Huijts, Nicole*

Trust and affect have often been found to influence judgments about risky technologies, in addition to a weighing of perceived risks and benefits. This study focuses on the question whether the role of trust and affect on judging a technology depends on the availability of information and knowledge about the technology.

Two opposing hypotheses are posited. First, it can be expected that trust and affect influence judgements of a technology less strongly when people have more information and knowledge. This hypothesis is based on the assumption that trust and affect are heuristics that are particularly relied on when it is not possible to perform careful deliberation (because knowledge or time is lacking, see e.g. Siegrist and Cvetkovich, 2000; Alhakami and Slovic, 1994). Second, it can be expected that trust and affect equally strongly or even more strongly influence judgements of a technology when people have more information and knowledge (cf. Kahan, 2010). This is based on the idea that trust and affect are crucial elements to making judgments about a technology, among both knowledgeable and unknowledgeable people.

The two opposing hypotheses were tested for the case of hydrogen fuel stations, which have been considered risky by citizens. The results showed that trust and affect equally or more strongly influenced risk perceptions, benefit perceptions and the overall evaluation of the technology among the informed respondents. However, a mixed picture was found for the moderating effect of self-rated knowledge: trust and affect often equally and sometimes less strongly influenced risk perceptions, benefit perceptions and the overall evaluation of the technology among people that rated their own knowledge level as higher. Overall there is more support for the second hypothesis than for the first. The analyses further showed that self-rated knowledge level did not explain the moderating effect of information, which suggests that other knowledge-related factors may play a role in the effect of information.

Rather than being heuristics that are an alternative to the proper weighing of risks and benefits, trust and affect may play an important role on attitude formation among both knowledgeable and unknowledgeable people. Trust (also called a social emotion) may be important to the decision making of citizens, because the knowledge necessary to judge complex technologies and the actual management of the technology resides with the experts that are placing and maintaining the technology. Independent of one's knowledge level, citizens need to rely on what the responsible persons do. Affect may be important to the decision making of all citizens, because emotions arise when something that is important to us is at stake. Without emotions, people would not be able to make good moral and risk decisions (Damasio, 1994).

## **A construal level theory approach to energy saving behavior: A field experiment**

*Griffioen, Anouk; Handgraaf, Michel; Antonides, Gerrit*

Individual energy use is a great contributor to total CO<sub>2</sub> emissions and behavior change is therefore essential in reducing total emissions, as technology alone will likely not provide solutions in time. A plurality of intervention programs have been implemented to instigate behavior change, some more successful than others. Many of such programs combine two or more approaches (e.g., feedback plus a financial incentive). On the one hand it has been argued that combined approach interventions are more effective than single approaches when trying to stimulate pro-environmental behavior (Dietz et al., 2009), as combined interventions can target multiple motivations at the same time. On the other hand, previous studies (Bolderdijk et al., 2013; Schwartz et al., 2015) have found quite the opposite, as appealing to environmental benefits and financial benefits at the same time did not have a positive effect on pro-environmental behavior. To date, the underlying processes that may explain why and under which circumstances such combined interventions work better have been largely overlooked. To our knowledge, this study is the first to apply construal level theory to investigate the effectiveness of a combined intervention approach aimed at reducing individual energy use behavior.

According to construal level theory (Trope, & Liberman, 2010), people can process information at different levels of abstraction; either at a high level of construal, in abstract and distant terms, or at a low level of construal, in concrete and immediate terms. This level of abstraction can be

temporal (now vs. later), spatial (here vs. somewhere else) or social (self vs. other). Accordingly, stressing the benefits of environmental behavior could lead to a high level of construal, as the concrete and immediate benefits of such behavior are difficult to assess and positive effects can only be experienced in the distant future.

When designing interventions to stimulate energy saving behavior, intervention approaches could also be classified as either low or high level of construal approaches. Trope and Liberman (2011) argue that people are more likely to reach a goal when this matches their level of construal. In contrast, a mismatch in terms of construal level may be ineffective in changing behavior. Indeed, a study by Schwartz et al. (2015) showed that appealing to financial benefits and environmental benefits at the same time was not effective. In this case, the financial benefits could be regarded as a low level of construal approach, as this is concrete and immediate, whereas the environmental benefits could be classified as a high level of construal approach, as this is more abstract and distant. We therefore argue that a mismatch in construal level may explain the ineffectiveness of some combinations of interventions. When there is a mismatch, the low level of construal component may become the driving force behind the behavior, whereas the high level of construal component may be more important for acting pro-environmentally. Moreover, high level of construal approaches may result in a more consistent pattern of behavior across different situations (Trope, & Liberman, 2003), also referred to as positive spillover, as people are more aware of the relatedness of various types of pro-environmental behavior. Based on these findings, we hypothesize that (1) high level of construal interventions are more effective in targeting energy saving behavior, (2) combined interventions are more effective when both approaches have the same level of construal, and (3) high level of construal approaches lead to more positive spillover behavior.

To test the effectiveness of combined approaches we ran a field study focused on reducing warm water use at a student housing facility in the Netherlands. In this experiment, we manipulate construal level in two ways; with a mindset manipulation, by using an adjusted version of the How vs. Why task by Freitas, Gollwitzer and Trope (2004), and by manipulating social distance, by using the norm of reciprocity at two levels of construal. To induce a feeling of reciprocity at different levels of construal, participants either received a gift to self (low level of construal) or a gift to other (a donation to a charitable organization; high level of construal). In collaboration with a partner that offers all-inclusive student housing, we have installed detailed measurement equipment in 156 one-person apartments. This equipment measures electricity, warm water, and thermostat use on a minute-to-minute basis throughout the entire experiment. In a field experiment participants were randomly assigned to a 2 (Non-Contingent Gift: self vs. other) X 2 (Construal Level: low vs. high) plus control condition in-between subjects design, with a focus on reducing warm water use. Participants (N = 197, Mage = 21.18, SDage = 3.76, 53.3% female) were recruited in two waves and filled out two surveys, one before the intervention as a baseline measurement and one survey after the intervention.

Results indicate a significant interaction between time, construal level and gift, indicating that only participants who received a gift to other and were in the high level of construal condition decreased their water use after the intervention. Next to the effect on the targeted behavior, we find that type of gift has a significant effect on electricity use, indicating that gift to other leads to less electricity use after the intervention. This study provides support for the hypothesis that two high level of construal approaches have a larger effect on the targeted behavior than the other combinations. Likewise, a high level of construal approach seems more appropriate for pro-environmental behavior, as it matches the behavior it is targeting. Finally, in terms of spillover behavior we find that positive spillover occurs when participants receive a gift to other, which we also classify as a high level of construal manipulation. Further implications and future research will be discussed.

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## When households go solar: determinants of uptake of a photovoltaic scheme

*Briguglio, Marie; Formosa, Glenn*

The need to reduce dependence on fossil fuels has resulted in escalating interest in the generation of energy from renewable sources in several countries across the world. To date, few countries have seriously tested the potential of using households to produce energy from PV panels on their own premises. Propelled by a need to meet mandatory EU targets for renewable energy, and faced with the constraint of a very limited territory, the Government of Malta (one of the sunniest countries in the world) launched a subsidy scheme in 2009, with a view to encouraging households to install PV systems on their own premises, to feed the national energy grid. The scheme reached the desired adoption levels by households within a very short period of time. The study takes an entire-country dimension to assess the motives and barriers of household investment in PV panels based on uptake of the scheme. We model household behaviour as a function of economic and moral motives, subject to a number of constraints and set out to test whether these factors were indeed relevant determinants of uptake. A unique dataset is specifically constructed for this study by merging data from several different sources. We find that younger households, dwelling ownership and unshared roof space result in higher rates of uptake. Despite the considerable subsidy provided by the PV scheme, high income localities still demonstrate higher uptakes. Beyond educational levels, environmental motives do not contribute further explanatory power to uptake of PV panels. However trust in the government significantly and positively influence the take-up of the grants. We posit that this may be due to the contractual nature of the uptake, where payment (to government) is made upfront but returns accrue over time. We conclude by identifying some pointers for policy makers interested in harvesting the clean energy production potential of household.

# *Pension and Ageing*

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7/10/2016 11:30:00 AM: Dorskamp Room 1+2

*BERNARDO NUNES*

## **Citizens' preferences for a tax exemption for care-giving heirs – an empirical analysis**

*Kusa, Nataliya; Bischoff, Ivo*

### 1. Introduction

In Europe, the next decade will see unprecedented private wealth transfers from the generation born around the end of World War II. These transfers are taxed by an inheritance tax in many European countries (e.g., Büttner et al., 2004; Gift and Inheritance Tax Survey, 2014). At the same time, we observe a massive increase in demand for long-term care together with decreasing number of potential caregivers. Additionally, dependent individuals have a strong preference to be cared at home (Huber et al., 2009). These factors lead to a growing demand for informal care. The huge amount of downward wealth transfers expected for the next decade has the potential to bring relief to the fiscal pressure many countries are currently in - even with moderate tax rates. On the other hand, these wealth transfers frequently represent a substantial part of the remuneration that care-giving relatives receive in exchange for the informal care. Wealth transfer taxation results in a tax wedge reducing the incentives for caregivers to provide home care. A tax exemption for care-giving heirs may be a solution.

We investigate citizens' policy preferences on the proposal to introduce a tax exemption in the inheritance tax for heirs who gave long-term care to the bequeather:

- 1) Why do some citizens support a tax exemption for care-giving heirs while others oppose it?
- 2) Why do some citizens want to restrict the tax exemption to care-giving relatives?

### 2. Main Hypotheses

Citizens' policy preferences are expected to depend on sociotrophic arguments and on monetary self-interest. Sociotrophic arguments suggest that subjects are more likely to support the tax exemption if they believe that the tax wedge causes substantial damage to intergenerational exchange relations within the family. According to material self-interest, the support for the tax exemption is lower the more likely a subject expects to be paying the tax. Our main hypotheses are:

H1: Subjects who believe that the old generation's trust in the young generation is low are more likely to support the tax exemption than subjects who believe that trust is high.

H2: Subjects who believe in norm of indirect reciprocity are more likely to support tax exemptions for heirs who have given long-term care to their relatives.

H3: Subjects who expect an inheritance in the near future and/or have been or expect to be involved in long-term care are more likely to support the tax exemption.

We include a large array of control variables (e.g., gender, household income, level of education, age, government trust, belief in the role of the family, Big Five personality traits).

Regarding question 2 (restriction of tax exemption to care-giving relatives), we believe that self-interest plays a crucial role. A substantial amount of long-term care is provided neither by family members nor by professional personnel in long-term care institutions, but by female migrants coming from low-income countries. Relatives may see these caregivers as competition reducing the expected inheritance for themselves, but they many also see them as relief. Depending on the point of view, citizens who await to give care to family members are more or less likely to support restricting the exemption.

### 3. Empirical analysis

We test these hypotheses using data from a representative survey among 3500 individuals from Germany. The endogenous variables are based on the answers to the following question: "... Some people demand an appreciation of home care by a tax exemption. Others are against this proposition ... Should there be an inheritance tax exemption for care-giving heirs? If yes, should it be restricted to care-giving relatives only? "

Results on question 1 (tax exemption): Among all respondents, almost 80 percent support the proposal to introduce a tax exemption for care-giving heirs. We find support for hypothesis H2 but not for H1. Self-interest factors play an important role. Subjects expecting an inheritance and subjects whose parents are alive are more supportive of the tax exemption as are subjects overestimating the tax burden. We test an impact of Big Five personality traits and find extraversion to be positive and significant. Support is lower among highly educated subjects but it is not found to depend on age.

Results on question 2 (restriction of tax exemption to care-giving relatives): Among those supporting the tax exemption, about 36 percent support restricting it to care-giving relatives. Females and subjects, who were involved in providing long-term care to family member, are less likely to support this restriction.

These results hold regardless of the empirical model specification (separate binary regressions, Heckman model, multinomial probit).

### 4. Discussion and conclusions

We provide a comprehensive study on the driving factors behind citizens' policy preferences regarding tax exemption for care-giving heirs. Both sociotrophic arguments and material self-interest are found to drive citizens' support for this exemption. Support is not higher among women than among men, even though women are at the heart of intergenerational transfer relations (both as caregiver and as care-receiver). Women do, however, more strongly oppose the restriction to family members. The same holds for subjects who have personal experience in long-term care giving. This suggests that non-relative persons providing home care are regarded as relief to the relatives rather than their competition.

Our paper contributes to the growing strand of empirical studies on citizens' preferences regarding taxation in general and wealth transfer taxation in particular (e.g., Bischoff and Kusa, 2015).

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## Does population ageing really decrease saving? An empirical evidence from Tunisia

*Frini, Olfa ; Kadria, Mohamed*

There is a great concern that the increasing proportion of elderly will create important macroeconomic problems and pose important public policy challenges consequences of a prediction of the lifecycle model that population ageing will put downward pressure on private saving and so on national saving. Even though the theoretical conclusion of the lifecycle model is clear, the empirical evidence is not often proved. There is an evidence that the elderly do not dissave, at least not to the extend hypothesis suggested by the pure lifecycle model which abstracts a number of factors that would complicate this prediction.

First of all, if the decrease in the proportion of the population in the youth-dependent category outweighs the small increase in the proportion of the population in the elderly dependent category this increases aggregate savings rates for at least a decade or two other things being equal. Furthermore, with the increase of longevity saving behaviour can change among elderly. If the share of youngest elderly is greater relative to the share of the oldest elderly, as dissaving of youngest elderly is usually less than that of oldest, in that way the average dissaving of the old age can be smaller or savings may at least not decrease.

Second, the unsuitable security system, as generally observed in the developing countries, may increase the perceived need by both young generation (occupied) and old generation (retired) to delay the dissaving. The fear of the inefficient social security pension increases the need for retirement saving from private sources and pushes elder generation to continue to save or at least to not dissave at early retirement period to face future uncertainty.

Third, the labour market unbalance with high unemployment rate and an increase in the average age of unemployed may lead to an increase in precautionary savings. The late employed save a less amount of wealth as if they are early employed; to offset this lack after retirement youngest elderly do not immediately dissave but at their oldest elderly.

Fourth, the intergenerational transfer motivation reverses the lifecycle model prediction since it is formulated ignoring the inter-household transactions. Intended transfers to other households can represent a form of precautionary saving. If bequests are an important motive for savings, having children may raise their parent's saving throughout the lifecycle in order to help offspring to face the uncertainty of environment and hard economic conditions.

In other hand, discrepancies in view can be explained by different evidence on life cycle saving of the econometric approaches used. The micro econometric analysis invalidates lifecycle model's prediction but their results are difficult to aggregate because of severe problem of heterogeneous behaviour at the household level. Studies based on macro data for a country generally support the prediction. However, most of them refer to developed societies while in developing societies people face different economic challenges and social conditions, which may lead to different evidences on this relationship. In that way, these studies could not be very useful for understanding saving behaviour in developing countries. In my point of view the failure in some sense of the previous research to exactly describe impact of ageing on aggregate savings is due to the use of the total dependency ratio which includes both the youth and the elderly proportion, thus it does not reflect specifically aged people. It is more indicate to use the elderly dependency ratio to explicitly consider the effect of aged population on savings rate. Further ahead we argue that with more caution on the measure of the population ageing, the evidence that the elderly do not dissave may be found and consequently the lifecycle model's prediction may not be endorsed even in macroeconomic approach.

In this paper, we call attention to the factors that may distort the Lifecycle model's prediction in order to find an answer to the obvious question that arises is elderly really dissave?. Although most of the empirical studies cover only household saving rate, we investigate how the ageing of the population affects national saving, to avoid narrowing its impact when we concentrate only on household saving as corporate. We empirically assess the nexus ageing-national saving, by focusing on the elderly dependency ratio besides the total dependency ratio to finally deduce the effect of the youth dependency ratio. Besides, to draw attention to the environment constraint we estimate the unemployment impact.

Furthermore, to fulfil the lack of research on this issue for developing countries we are concerned with Tunisian case. Tunisia is further advanced in terms of population ageing in comparison to the other MENA's countries (Middle East and North Africa).

Our methodology applied times series modelling approach to check out the relationship between demographic transition, national saving and economic growth. The analysis is undergone by using the Structural VAR technique, as defined by Sims (2002), to exhibit a long-run equilibrium relationship between variables during 1970-2012. We discuss and analyse the impulse response functions (IRFs) of different shocks for all variables fluctuations. We also apply bootstrap methods to construct the confidence intervals of the IRFs. We perform, also, our dynamic analysis by the variance decomposition.

Our findings ascertain that ageing does not put a significant downward pressure on saving. Tunisian elderly continue to save. The economic environment constraints through unemployment distort the prediction to increase savings.

Finally as policy implications, measures are required to sustain saving rate or to prevent savings from the decline for instance by the postponement of the retirement age beyond 60 years by five years as intended by policy-makers. Also, important questions arise about how the monetary authority (let alone the fiscal policy-makers) should react.

## **Participation in workplace pension schemes and the effect of provision: evidence from the United Kingdom**

*NUNES, BERNARDO*

Default options and price subsidies are usually suggested as the major policy interventions to promote financial preparation for retirement via pension schemes. Here we examine the effect of provision of workplace pension schemes by employers on workers' participation rates. Our empirical strategy identifies the potential opt-in rate among employees who haven't been offered a pension plan by an employer, had they been offered the opportunity to join a scheme. The results suggest that universal provision of such schemes is a major policy intervention to stimulate retirement savings in a national level.

# Games 1

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7/10/2016 11:30:00 AM: Tarthorst Rooms 1+2

*Dr. Erik W. de Kwaadsteniet*

## **Improving intergroup relations through actual and imagined contact: A field experiment with Malawian shopkeepers and Chinese migrants** *Shachat, Jason ; Gu, Jun ; Mueller, Annika Maxine ; Nielsen, Ingrid ; Smyth, Russell*

Social identity, defined as a person's sense of self derived from group membership, has been shown to lead to numerous positive as well as negative economic outcomes. In particular, there is much evidence from experimental economics that, where there is an in-group and an out-group, participants exhibit in-group bias (see e.g. Chen & Li, 2009; Goette et al., 2006). Such group-based favoritism produces myriad problems that may impede economic development. Based on such evidence, economists have recognized the importance of identifying strategies to address prejudices grounded in social identity (Ben-Ner, McCall, Stephane & Wang, 2009; Fryer & Loury, 2013). One such strategy, the contact hypothesis, was first formulated by the psychologist Gordon Allport (1954), and suggests that positive intergroup contact between individual group members can generalize to affect positive attitude change about, and behavioural change toward, the whole other group.

In this paper, we examine the ability of intergroup contact to ameliorate the effect of in-group (and out-group) bias on economic outcomes in a highly relevant and novel context. Specifically, we test whether contact reduces prejudice in the context of Chinese business migrants in Malawi. We employ randomized experiments to test whether actual and imagined contact is effective in reducing prejudice between indigenous Malawian shopkeepers (in-group), and their Chinese migrant counterparts (out-group), and test the stability of these changes over time.

Our choice of context is motivated by the following considerations: First, recent years have seen a massive influx of Chinese migrants, among them many traders and shopkeepers, into sub-Saharan Africa. These migrants have often met resistance from the local competition, resulting in a sharp social divide. Chinese migrant shopkeepers and their local counterparts are shaped by fundamentally different cultures, with the potential for frictions and consequent loss in economic efficiency. This makes the study of social identity especially critical in this context. Second, Chinese migrants in many African, Asian and European countries are interesting out-groups to consider because while they remain social outsiders, they are often economically successful. And, in many cases, it is their economic success that has fueled tensions. In this sense, our paper contributes to a larger literature on out-group relationships of minority groups of relatively higher economic position.

Against this backdrop, our study extends the existing literature by testing the effect of actual contact from the perspective of both the in-group and out-group. Most studies assume that in-group prejudice toward an out-group will be reciprocated (Chen & Li, 2009). Yet few studies, even in social psychology, test the contact hypothesis from the perspective of reducing out-group prejudice toward the in-group. However, as is clear in our specific study-context, breaking down strongly-held stereotypes about members of an in-group among members of an out-group may be important in reducing negative economic outcomes.

Our study further extends the existing literature by incorporating the following features: First, we examine both the effects of actual and imagined contact on overcoming in-group bias. The latter is especially interesting from a policy point of view as the efficacy of imagined contact would make it

a powerful tool for economic and social change. Second, we use outcome measures that tap both cognitive and behavioural responses to contact. By doing so, we are able to differentiate whether contact produces differences in the way that the groups think about, and plan to act towards, the other group. This distinction is important if behavioural intentions are mechanisms through which cognition spills into actual behaviour. Third, we examine if any observed change in attitude or intended behaviour in response to actual or imagined contact persists over time. If actual or imagined contact is to have a lasting effect on reducing prejudice, it is important that changes in attitude and behavioural intentions persist. We differ from the few existing studies that investigate persistence in seeking to establish if inclusionary, as opposed to exclusionary, attitudinal and behavioural change persists over time.

Our paper employs three randomized experimental studies to test the effect of actual intergroup contact and imagined intergroup contact between Chinese migrant and Malawian shopkeepers. In the first and second studies, we test the effect of actual contact on the attitude of Malawians towards the Chinese, and the willingness of Malawians to spend time with the Chinese and vice-versa. In the third experiment, we employ the notion of imagined contact to test whether Malawian shopkeepers, who imagined contact with their Chinese counterparts, would report a more positive attitude toward, and be more willing to spend time with them. To test the persistence of the experimental effects over time, for all three experiments we conducted telephone follow-ups with participants exactly ten days after the experiment, and resurveyed them regarding their attitude and willingness-to-spend time with the other group.

We find that actual contact facilitates a behavioural response in Malawian shopkeepers toward their Chinese counterparts, but no attitudinal change. At the same time, we find that actual contact facilitates an attitudinal change in Chinese shopkeepers toward their Malawian counterparts, but no behavioural response. We find that the positive effects due to the actual contact interventions are persistent for at least 10 days. We find that imagined contact has no effect on either cognitive or behavioural responses among Malawian participants towards the Chinese out-group. These results are important because they suggest that actual contact is likely to be more effective than imagined contact in reducing the effect of identity-based favoritism, particularly where there is deeply held prejudice and widespread socio-economic disparities between groups.

As academic research into the dynamics of frictions between Chinese migrants and members of the host community is scant and frictions between members of the host community and economically successful out-groups are relatively understudied, our finding of asymmetric effects is very informative. It is believed that intergroup contact influences in- and out-groups through the same process. However, it is also clear that there are inherent strong cultural and socio-economic asymmetries between the two groups in this study. Our results shed new light on the differential impact of actual contact, at least when there are substantive differences between groups.

## **Who do we prefer, leaders who punish or leaders who reward? The moderating role of noise in social dilemmas**

*de Kwaadsteniet, Erik W. ; Kiyonari, Toko ; Molenmaker, Welmer E. ; van Dijk, Eric*

People are often confronted with conflicts between their self-interest and the collective interest. For instance, if you work in a team you can choose for the collective interest and invest a lot of time and energy into the team project (= cooperation), or you can choose for your own interest and free-ride on your team members' efforts (= defection). Such situations, in which individual and collective interests collide, are generally referred to as social dilemmas.

How can cooperation be stimulated? This is a question that is frequently posed, both by scientists (e.g., psychologists, economists) and practitioners (e.g., managers, policy-makers). A straightforward and often proposed solution is to use sanctions, either positive (= rewards) or negative

ones (= punishments). Both rewards and punishments can effectively promote cooperation. However, an issue that is often overlooked is that in order for sanctions to show their effect, they first have to be administered. This administration of sanctions can be problematic, as people are often reluctant to administer them, especially in the case of punishments. In turn, this reluctance may be detrimental to the collective interest. Thus, it is important to understand why and when people are willing to administer sanctions.

Evolutionary theories on indirect reciprocity suggest that people administer sanctions because doing so benefits their reputation, which may yield tangible benefits in the long run. However, whether sanctioning decisions are really beneficial to the reputations of the ones administering them is a question that has remained unanswered. Moreover, the few studies that have been done on this topic have yielded mixed findings. Therefore, the present paper focuses specifically on the following questions: Do sanctioning decisions really benefit a sanctioner's reputation? Are decisions to reward more beneficial than decisions to punish? And if sanctions indeed have reputational benefits, what are the potential moderators of such effects? As real-world sanctioning decisions are usually delegated to people in a leadership role, the present research focuses on leaders' sanctioning decisions and how these decisions affect their reputations.

To test the above questions, we conducted a series of experimental studies (2 of which will be presented in this presentation). In these experiments, participants were presented with a public good dilemma task (which is a specific type of social dilemma) in which a group of 3 people could contribute their personal endowments to a public good. Endowments contributed to the public good were multiplied and divided equally among the group members. Because of this multiplication, contributing to the public good was beneficial to the collective interest (= cooperation), whereas keeping the endowments for themselves was beneficial to the individual group members' interests (= defection). In other words, the payoff structure constituted a social dilemma. A fourth participant was assigned to the role of leader and received feedback about the contribution decisions of the group members. Subsequently, this leader could give the group members monetary rewards or punishments. The feedback participants received indicated that the leader had either punished a defector, rewarded a cooperator, or had refrained from administering any sanctions.

In Study 1, to test whether these sanctioning decisions affected the leader's reputation, participants were asked to judge the leader on three dimensions, which the person perception literature has identified as the primary dimensions on which people tend to judge others, namely: his/her competence, sociability and morality. The findings of our first study demonstrated that both reward and punishment decisions (as compared to administering no sanction) had a positive influence all three of these dimensions, which implies that both types of sanctions can indeed be beneficial to a leader's reputation. In other words, leaders who punished or rewarded had a more positive reputation than leaders who decided not to administer any sanctions at all.

Next, we wanted to test whether these reputational effects would extend to leader preferences, and to test the influence of a potential moderator of these effects, namely behavioral noise. Most real-world social dilemmas are characterized by noise and uncertainty. Imagine, for instance, being a member of a team working on a group project. In such a situation, it may happen that you intended to cooperate (e.g., you tried to be on time for an important team meeting) but due to unforeseen circumstances (e.g., your car broke down) you defected (e.g., you did not show up). When characteristics of the social dilemma at hand cause such uncertainty regarding the actual intention behind a (non-) cooperative decision, this is generally referred to as behavioral noise. Noise does not only create uncertainty regarding the intentions behind people's actions, it also increases uncertainty regarding the appropriateness of sanctions. After all, under noise it is difficult to determine whether a punishment was justified or not. Did the punished group member really intend to defect or did he/she perhaps want to cooperate? And did this person then really deserve to be punished? As such, it may thus very well be that under noise, people find it unjustified to punish (but less so to reward). In turn, this perception of a punishment being unjustified, can

negatively impact the reputation of the punisher. As a consequence, noise may moderate the reputational benefits of punishing. As a matter of fact, we expected that under noise punishing may even be detrimental to the reputation of the sanctioner, which can yield negative consequences in the long run.

In Study 2, we indeed found that noise moderated the influence of sanctioning decisions on the leader's reputation. Under no noise, we again found that both rewarding and punishing were beneficial to the leader's reputation. However, under noise only rewarding had a positive effect on the reputation of the leader, and punishing leaders were evaluated significantly more negatively than rewarding leaders. Moreover, we found the same pattern on leader preferences. Under no noise, participants had a strong preferences for leaders who had sanctioned in the previous rounds (over leaders who had refrained from sanctioning), and there was no significant difference between rewarding and punishing leaders. However, under noise participants had a clear preference for rewarding over punishing leaders.

## *Heuristics and biases / Applications*

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7/10/2016 11:30:00 AM: Roghorst Room

*Dr. Paul Smeets*

### **P(I)aying at the Pump: Budgets and Rules of Thumb in Fuel Consumption**

*Soetevent, Adriaan R. ; Romensen, Gert-Jan*

Driving a car can be expensive. Fuel consumption has accounted for about five percent of U.S. household expenditures in recent years (Dogget and Tarver 2014). Casual observation at the gas station, however, reveals that there are two types of drivers in terms of purchasing fuel: those who look at the pump display and those who look around and wait until they hear the "click" of the tank being full. Budget concerns could be one explanation of this behavior. Private drivers may set a fuel budget that induces them to already have a transaction amount in mind as a reference for how much fuel to consume, resulting in the targeting of salient amounts on the pump display (e.g., €20.00 or €25.00). In contrast, drivers lacking budget incentives (e.g., lessees and employees driving in a corporate-owned vehicle) do not incur the fuel costs and thus have an incentive to fill the tank completely. Budget considerations may, therefore, affect economic decision-making through the use of heuristics in which drivers constrain their fuel consumption and bunch their transactions at specific amounts. This, in turn, may have several market implications such as its effect on fuel price sensitivity and the distribution of transaction amounts at the gas station.

Understanding how budget considerations affect consumption patterns and the use of heuristics in the gasoline market is important for researchers and policy makers interested in household finance (see, e.g., Carvalho, Meier, & Wang, forthcoming) and consumer behavior in energy consumption (Gerarden, Newell, & Stavings, 2015). Recent research documents the tendency of households to use heuristics that can simplify financial matters (Zhang, 2013). For example, households formulate consumption reference points based on some prior typical level of expenditures (Heath & Soll, 1996; Hastings & Shapiro, 2013). They also focus only on the left-most digit of odometer mileages when purchasing used vehicles, resulting in a discrete drop in car valuations when 1,000 mile marks are reached (Lacetera, Pope, & Sydnor, 2012). In our setting, heuristics in fuel

consumption may have implications for fuel price elasticity estimates (Levin, Lewis, & Wolak, 2013), the efficacy of gasoline taxes (Li, Linn, & Muehlegger, 2014), and how consumers form reference points in real markets (Barberis, 2013).

We adopt a two-stage procedure to investigate heuristics in fuel consumption. In the first stage, we assess to what extent heuristics are used by private and corporate drivers in a field setting and discuss alternative explanations for amount targeting, such as the convenience when paying cash and the fun motive. We collected about 2,000 on-site fuel transactions at a manned gas station (possibility to pay cash) and two unmanned stations in the city of Groningen, the Netherlands. Solicitors, trained by a professional actor, also asked drivers for their consent to record license plates, which were used to collect car-specific data from a database maintained by RDW, a Dutch public authority. This allowed us to define private (corporate) drivers as individuals driving a vehicle with a history of only private (corporate) ownership registrations. In the second stage, we plan to study the incidence of heuristics and its implications for fuel consumption and sensitivity to fuel prices by examining two recently obtained databases containing fuel diaries of private and corporate drivers. The first has self-reported information by approximately 7,100 private drivers (readers from a Dutch car magazine) on the odometer readings of their car every time they fill their tank, together with the date, the amount of fuel bought and the price paid. The second database contains details on all cars of the 50 largest corporate clients of a major lease-company combined with the historical transaction records of the fuel consumption of their drivers.

The on-site data reveal significant payment bunching. One in four drivers (25.36%) engage in targeting by paying an amount with the decimals between 98 and 02. Targeting is concentrated around five euro multiples, leading to bunching of transactions: 40.22% of all transactions satisfy €X5.XX or €X0.XX. In line with the idea that targeting salient amounts serves as a financial heuristic, we observe a greater use of the rule among private drivers (28%) compared to corporate drivers (9%). A discrete choice analysis of amount targeting complemented with a regression analysis on fuel consumption reveals that, while controlling for driver and car characteristics, the probability of amount targeting decreases with 26% while fuel consumption increases with 24% when a corporate driver fills the tank. Other predictors, varying from demographics (age and gender) to time of the day, do not affect the probability of targeting. Filling the tank at a manned station does increase the targeting probability with 15%, likely capturing the cash payment motive. The spike at 50 euros (targeting an amount close to where the tank is almost full) and the residual targeting by corporate drivers is indicative of the fun motive.

The next step is to employ the recently obtained fuel diaries in order to observe fuel transactions of a driver over time. This will allow us to study the incidence of heuristics among different types of drivers and at times of high and low fuel prices. Furthermore, the diaries reveal whether drivers show a tendency of constraining fuel consumption or filling the tank completely. We can thus examine the effect of the heuristics on market outcomes. For example, do drivers still constrain their consumption and aim for specific amounts when gas stations offer very low prices (discounts)? How do elasticity estimates differ between drivers who use heuristics versus those who do not? Do stricter budgets induce a greater use of heuristics? The analysis in the second stage will therefore shed light on the implications of heuristics for outcomes in the gasoline market and the financial situation of households.

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## **IRRATIONALITY IN THE HOUSING MARKET: HEURISTICS AND BIASES IN THE DEMAND FOR RESIDENTIAL REAL ESTATE**

*Duani, Nofar; Leiser, David*

Economic models of housing demand consistently fall short in predicting price increases, suggesting the traditional economic framework cannot account for a significant part of the demand for real estate. This work is part of a broader attempt to understand decision making in the context of housing.

We present a mental model through which naive individuals evaluate the desirability of a given housing investment. In choosing a housing tenure mode, individuals must weigh the costs and benefits associated with purchasing the house as opposed to renting it. The decision is mentally oversimplified by applying similarity relations; if the cost of purchasing is deemed sufficiently similar to the cost of renting, individuals select the alternative that provides the greater benefit. Various biases, heuristics and irrationalities are involved in this process. Specifically, we show the demand for residential housing is influenced by: neglect of opportunity costs; exponential growth bias; irrational expectations regarding trends in housing prices; irrationality in the estimation of returns on housing investments, as a result of framing; preference for physical versus 'paper' assets and preference for the illiquidity of housing as a commitment device.

## **The Impacts of Subsidizing New Products on Uptake, Learning, and Diffusion: Experimental Evidence from Rural Cameroon**

*Meriggi, Niccolo Francesco ; Bulte, Erwin ; Mobarak, Ahmed Mushfiq*

Relevance of the topic

Despite their proven benefits, adoption of many welfare improving products and technologies remains puzzlingly low across the developing world (Duflo, Kremer and Robinson 2008; Ashraf, Giné and Karlan 2009; Cohen and Dupas 2010; Duflo, Kremer and Robinson 2011; Mobarak and Rosenzweig 2013). Prices appear to be a major deterrent (Mobarak et al. 2012; Meredith et al. 2013), and subsidies can be an efficient strategy to promote learning and adoption of products that confer positive externalities (Dupas 2014a and Dupas 2014b). However, subsidies may stimulate purchases amongst people with low willingness to pay, who may use the subsidized product infrequently or inappropriately. Subsidies may also undermine market development. The literature has identified so-called screening effects, sunk-cost effects, anchoring effects of subsidies that undermine the welfare gains associated with the new technology (Ashraf, Berry and Shapiro 2010; Dupas 2014a; Fischer et al. 2014).

Understanding the full welfare effects of subsidies is therefore complicated, and requires an analysis of the effects of price variation on: (1) product take-up, (2) product use, (3) longer-run changes in (future) adoption propensity, and possibly (4) spill-over effects on adoption by others, associated with social learning.

We design a two-staged auction experiment with random strike prices to explore these mechanisms together for the same technology in the same context. We then develop a structural model of demand to analyze the full welfare implications of price variation, accounting for changes in immediate product take up and use, and changes in future take-up and use by the beneficiary of the subsidy and her social contacts.

#### Research Methodology

Our study was conducted in the Adamawa region of Cameroon and it consists of two stages. In the first stage (implemented between October and December 2013), 1500 household heads from 199 different villages were given the opportunity to purchase a solar lantern through a BDM auction. The lamp (strike) price was revealed at the end of the auction, following the methodology described in Berry et. al. (2012). Villages were randomly assigned to one of three different price levels. Random assignment of villages to different price treatments allows estimation of the causal effects of different prices (subsidies) on outcomes of interest. The BDM mechanism enables us to determine the full demand schedule for participants, and provides information on counter-factual take-up rates for alternative subsidy levels.

Between September and October 2015, we revisited all households taking part in the auction from 90 villages selected at random. We collected data on product usage, levels of satisfaction with the product, and likelihood of recommending the product to others. In addition, we asked participants in the first stage to name 12 people with whom they had regular interaction ("friends"). Participants of the first stage, a random friend, and 5 random villagers were given the opportunity to (re-)purchase another lamp using the same auction mechanism.

We use this information to test the effect of one-off subsidies on product usage, creation of reference dependence across social network and social learning. We find no evidence of sunk-cost effects and possible insurgency of reference-dependence (anchoring) appears to be more than offset by learning about the benefits of the product. Those subsidized in the first stage bid more, and were more likely to purchase in this second auction. We also document evidence of social learning, but only among friends of early adopters.

#### Potential for generating discussion during the meeting

- The paper speaks to the broad literature on the interaction between subsidies and technology adoption both for product with positive externalities and for product with only individual benefits
- The paper is very relevant for public policy decisions on government and practitioners intervention aiming at promoting the millennium development goal "universal access to clean energy"
- Uses novel techniques and a rigorous experimental design to tackle the effect of subsidies and social learning on technology diffusion, and puts in a formalized framework
- Has the potential of being interpreted as a plea for subsidizing essential (non) health products in less developed countries and elsewhere

# Testosterone and Overconfidence of Investment Managers

*Smeets, Paul ; van Vliet, Pim*

Many retail investors are overconfident, which has negative consequences for their performance (Odean 1999, Barber and Odean 2001, Biias et al. 2005, Daniel and Hirshleifer 2015).

Overconfidence is not limited to retail investors, but also affects the decisions of professionals, such as CEO's, CFO's and investment managers (Malmendier and Tate 2005, 2008, Pütz and Ruenzi 2011, Ben David, Graham and Harvey 2013).

In this paper, we investigate the relation between endogenous testosterone levels and overconfidence of professional investment managers. Specifically, we look at the better-than-average effect: investment managers' overestimation of the probability that they will outperform their peers. The investment managers in our study are employed at a large international mutual fund provider. Their aim is to select securities that outperform a given benchmark. It is important for the investment managers to perform better than other managers, because better performing funds attract larger money inflows (e.g. Sirri and Tufano 1998). Moreover, investors who think they are better than average tend to trade more (Glaser and Weber 2007, Merkle 2013), which in turn can negatively affect their performance (Pütz and Ruenzi 2011).

We hypothesize that testosterone is related to the better-than-average effect. Testosterone is a steroid hormone mainly produced by the testes and thus often considered to be the male sex hormone, although it is also present in women in much lower quantities. Testosterone plays a role in behavior that could be related to the better-than-average effect, such as aggression (Archer 1991), dominance (Mazur and Booth 1998), status-seeking (Josephs et al. 2003), and intuitive decision making (Nave, Nadler and Camerer 2015). In experiments on students, testosterone is positively related to the creation of financial bubbles (Nadler et al. 2015) and to optimism about future prices (Cueva et al. 2015). Prenatal testosterone levels have been found to be related to investment decisions later in life (Cronqvist et al. 2015). Moreover, testosterone is significantly related to profits and risk taking of financial professionals in a sample of London day traders (Coates and Herbert 2008, Coates, Gurnell, and Rustichini 2009). Yet, none of the aforementioned studies directly tests for the relation between testosterone and overconfidence .

To directly test the relation between testosterone and overconfidence, we conducted an incentivized experiment to elicit overconfidence of 49 male investment managers. In the field, overconfidence often hurts financial performance, but it can also have positive consequences. For example, Hirshleifer, Low and Teoh (2012) find that overconfident CEO's are better innovators. Our experiment is designed in such a way that overconfidence is financially costly. Moreover, the design rules out risk preferences as alternative explanation of overconfidence (Möbius et al. (2014) , In our experiment, each manager participates in a calculation task where he is paid a fixed amount per correctly solved calculation. A manager can earn an additional amount for which the probability of winning depends upon the correct estimation of his own relative performance. This estimation forms the basis of our overconfidence measure. We control for risk preferences by presenting the investment managers with choices between a fixed amount and a lottery with a risky, but higher financial payoff (as in Dohmen et al. 2011). In a similar manner, we also control for ambiguity aversion (Ellsberg 1961, Camerer and Weber 1992).

All participants provided saliva samples through passive drool before performing any behavioral tasks. These samples were immediately frozen and later shipped to a professional lab in Dresden, where they were analyzed for both testosterone and cortisol.

While our sample of investment managers is smaller than a sample that can be obtained with students, our sample is particularly relevant because it comprises institutional investors. Today, the large majority of stocks are not traded by owners themselves anymore, but through delegated investment managers working for financial institutions (French 2008).

The data show that a significant percentage of the investment managers is overconfident. Consistent with our hypothesis, we find that testosterone is positively related to the likelihood of being overconfident as well as to the degree of overconfidence among investment managers. Our results are robust to controlling for other investment manager characteristics and to controlling for cortisol, a glucocorticoid hormone related to stress. Taken together, these results help us to understand the biological basis of overconfidence.

## *Choice Overload / Various*

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7/10/2016 11:30:00 AM: Hoevestein Room

*Prof. John Smith*

### **Choosing good credit offers: The role of credit offer structure and cognitive load**

*Blens, Michael; Hoelzl, Erik*

When taking up a credit, consumers often do not consider all the available information. Consumers tend to focus strongly on single attributes as the lowest annual percentage rate (APR), and use a "take-the-best APR" heuristic. Applying a dual-process framework, we theorized that some attributes of credit offers may become particularly influential when consumers apply more automatic processing such as under cognitive load. Specifically, we assumed differences between credit offers structured so that a lower APR also corresponds to a lower total cost (aligned) and offers where a lower APR corresponds to a higher total cost (conflict). In this pilot study, we explored whether cognitive load and credit offer structure influence decision correctness and decision time. Results from an experiment (N = 86) show preliminary support for the idea that both credit offer structure and cognitive load influence specific aspects of decisions about consumer credits.

### **Context Matters: Effects of Emotional Attachment and Information Overload in MCDM**

*Pajala, Tommi Juhani ; Somervuori, Outi ; Korhonen, Pekka ; Ravaja, Niklas ; Wallenius, Jyrki*

In Multiple Criteria Decision Making (MCDM) research, subjects often respond to decision problems, in which they have to choose an alternative from a set of options. Often, what interests us as decision scholars is the accuracy of the choice (Morton & Fasolo, 2009; Wallenius et al., 2008). However, it is often assumed that it is quite irrelevant what the context of the decision problem is. As decision theorists, we are used to expected value or expected utility frameworks, and see choosing a car or choosing a partner as problems with a similar structure - after all, "reliability and maintenance costs" are important variables in both. But, in assuming the same abstract framework for all contexts, we ignore that, in the eyes of the subject, the context is not irrelevant. The subject's perception of that particular context may end up influencing the decision making. And so, the differences in context may result in surprising differences in the results of our decision experiments. In our study, we show as an example that the type of products in question is one such difference in context having an impact.

In this paper we present three main points. Firstly, we show that there is an effect on choice quality depending on whether choices are made with hedonic products or utilitarian products. The difference between these types of products is that they are good in different senses; hedonic products have value in the sense of fulfilling our hedonic needs, while utilitarian products have value in the sense that they are useful. What we find is that the rate of erroneous choices is low when choosing between hedonic products, but only if subjects had enough emotional attachment to this type of products. The hedonic/ utilitarian dimensions of the products (music and office supplies) were measured used were originally developed by Batra and Ahtola (1990) and further developed by Voss, Spangenberg and Grohmann (2003). The emotional attachment scores towards the products (music and office supplies) were measured using a scale from the marketing literature (Thomson, MacInnis & Park 2005). In the scale, participants are asked how well emotional items describe their feelings toward the product on a set of items on a 7 point Likert scale. The emotional attachment measure is simply the sum of the Likert item scores.

Secondly, we present preliminary evidence that when making multiple criteria choices, the quality of information seems to affect the cognitive load. When new information increases the search space – the product of alternatives and criteria - decision quality deteriorates. But when new information does not change the dominance structure, but makes noticing dominance easier, it does not increase cognitive load.

Finally, we contribute a method for measuring choice accuracy objectively in a multiple criteria decision problem. With this method, we only need to assume a monotonic value function, and can measure errors with simple dominance or consistency. This is a desirable feature, since we feel that respecting dominance is one of the hallmarks of a good choice. We find it hard to find a justification for choosing dominated alternatives, barring appeals to effort-saving bounded rationality models. All of our considerations are based on a simple experiment, where the participants were asked to make several multiple criteria choices from 3, 4, and 6 alternatives which were evaluated on 2 or 3 criteria. Many other MCDM research designs preclude us from saying much about the accuracy, since the designs ultimately rely on the subject's relative preferences between alternatives, or on tradeoffs between the criteria. If we find that these preferences are not exactly true, many accuracy measures fall rather flat (Keller & Staelin, 1987). Therefore, there is a clear need for a method that circumvents these issues.

## **Seeking- Simplicity: Variety-Seeking as a heuristic for solving Choice-Overload**

*Baltas, George; Kokkinaki, Flora; Loukopoulou, Apostolia*

This paper conceptualizes variety-seeking as a behavioral consequence of choice overload. It focuses on a particular type of choice overload where decision difficulty is caused by the large number of available decision alternatives in a multi-item simultaneous choice context. Variety-seeking behavior could serve as a heuristic to resolve conflict in difficult choice situations such as choosing from large assortments. Our hypothesis was tested through a computerized laboratory experiment where one hundred forty-nine participants made multiple choices from either a small or a large assortment. The results supported the main hypothesis that consumers tend to seek more variety when they choose from large assortments compared to when they choose from small assortments. The theoretical and practical implications of these findings are discussed.

## Cognitive load and mixed strategies

*Smith, John*

It is well-known that subjects often do not play mixed strategy equilibrium games according to the equilibrium predictions. In particular, subjects often mix with the incorrect proportions and their actions often exhibit serial correlation. However, little is known about the role of cognition in these observations. Here we conduct an experiment where subjects play a repeated zero-sum hide and seek game against a computer opponent programmed to play either a strategy that can be exploited by the subject (naive) or designed to exploit suboptimal play of the subject (exploitative). The subjects play these games with either fewer available cognitive resources (under a high cognitive load) or with more available cognitive resources (under a low cognitive load). While we observe that subjects do not mix in the predicted proportions and their actions exhibit serial correlation, we do not find strong evidence these are related to their available cognitive resources. We also do not find differences in the overall earnings of the subjects by load, however against certain computer strategies, we find that the high load subjects earn more than the low load subjects. Additionally, we find that subjects under a low cognitive load exhibit a greater rate of increase in earnings across rounds than high load subjects. From this we expect that subjects with more available cognitive resources will converge to optimal play at a faster rate than subjects with fewer available cognitive resources.

## *Social Preference / Social Values*

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7/10/2016 11:30:00 AM: Kolkakker Room

*Alexandra Oprea*

### **Pro-Drop and Pro-Sociality: Experimental Evidence**

*He, Taisen; Riyanto, Yohanes E.*

In this present study, we examine the effects of languages on social preferences. In a laboratory environment, we elicited subjects' social preference using a social value orientation (SVO) task developed by Murphy et al. (2011). Subjects were asked to make 15 allocation decisions between themselves and an anonymous beneficiary also participating in the experiment. We first manipulate the instructional languages: English and Mandarin. Subjects in the Mandarin treatment group appeared to be more pro-social than those in the English treatment group. We further manipulate the usage of personal pronoun by simply omitting the personal pronoun "I" in the Mandarin treatment. Interestingly, subjects exhibit significantly higher degree of pro-sociality in the pronoun-dropping treatment than in the non pronoun-dropping treatment. To our best knowledge, this is the first empirical study in economics which directly manipulates the linguistic structure to identify its causal effect on economic decision-making. Our experimental design allows us to conclude that the effect of language is mainly driven by linguistic structure and not by culture.

## The effect of social norms estimation in non-strategic giving: Discarding the role of anchoring and relative incentives

*Senci, Carlos Maximiliano; Ryan, Brenda Elisabeth; Gregoriotti, Natalia; Freidin, Esteban*

Background: Social norms seemingly play an ubiquitous role in economic decisions. Here we focus on the fact that participants that estimate others' opinions about the socially appropriate behavior in the Dictator Game (i.e., the prescriptive norm), then make more generous offers (Krupka & Weber, 2009). Our study attempts to explore whether this results survives after controlling for the effect of factors unrelated to social norms. To start with, we dealt with the problem that the incentivized estimation of norms changes the earning prospects in the session. Our concern was that participants could become more generous, not because they recalled the prescriptive norm, but because they could gain more money in the session. To control for this, the standard social norms treatment was compared against a treatment in which participants could gain extra money by accurately guessing others' opinion of a matter unrelated to social norms (Einstein's death age). Participants in Einstein treatment were similarly generous than those in the control treatment and less so than participants in the social norms treatment. These results did not support the hypothesis that the effect of social norms on DG decisions depended on increased earnings prospects. Second, we were concerned with the possibility of an anchoring effect given its pervasiveness across contexts, including normatively charged settings such as legal decision making (Englich et al., 2006). More specifically, we tested whether the estimation of the prescriptive norm could play its role by anchoring participants' responses to the number associated with the fair share in the estimation (see also Raihani & McAuliffe, 2014). With this goal in mind, we ran a treatment in which the anchoring prediction was pitted against the social norms prediction. We implemented a treatment in which participants' guess prior to the DG still involved thinking about others' normative opinions, but where the numeric anchor, if effective, would drive participants away from the fair share. Results did not support the anchoring hypothesis either.

Methods: We recruited 115 university students from a variety of disciplines (e.g., economics, biology, education, and engineering, among others) in Bahía Blanca, Argentina. We ran paper-and-pencil sessions during the second semester of 2015 at the Universidad Nacional del Sur. In experiment 1a, participants in the prescriptive norms treatment (n=34) had to estimate previous participants' opinions about the socially appropriate behavior in the DG before actually playing the game for real money. We compared this condition against a control treatment in which participants made their decisions in the DG without any prior estimation (n=20). In experiment 1b, we ran a treatment (n=25) in which, prior to playing the DG, participants could earn extra money if they correctly guessed previous participants' estimation of Einstein's death age. The goal of the Einstein treatment was to control whether participants were more generous simply because they had the expectation of earning more money in the session. Last, in experiment 1c, we ran a treatment (n=36) in which participants had to guess the social norm in a DG with a pool of AR\$100 before making their decisions in a DG with a pool of AR\$50. The goal of this condition was to assess whether the numbers involved in the estimation (AR\$50 was the fair split in the AR\$100 game) anchored the subsequent DG decision away from the fair share (which was AR\$25 in the AR\$50 DG).

Results: In experiment 1a, participants were more generous in the treatment in which they had to estimate previous participants' normative opinions than in the control treatment (Mann-Whitney U test,  $Z=2.36$ ,  $P=0.018$ ). Furthermore, participants who had the chance of earning extra money by guessing others' estimation of Einstein death age offered less money in the DG than participants that could earn the extra money by guessing others' normative opinions (Mann-Whitney U test,  $Z=2.55$ ,  $P=0.01$ ). In fact, participants' DG offers in the Einstein treatment did not differ from those in the control treatment ( $P>0.10$ ). Last, in experiment 1c, participants estimating the prescriptive norm in the AR\$100-pool DG were similarly generous than those estimating the norm in the AR\$50-pool DG (Mann-Whitney U test,  $Z=0.21$ ,  $P=0.84$ ), and more so than in the control treatment without estimation (Mann-Whitney U test,  $Z=2.55$ ,  $P=0.01$ ).

Discussion: In the present study, we could successfully replicate the effect of prescriptive social norms on DG decisions (see Krupka & Weber, 2009; Bicchieri & Xiao, 2009). Alike US samples, Argentine participants made more generous decisions after thinking of the prescriptive social norm than in the control treatment without any estimation prior to the DG (experiment 1a). Not only that, but we showed that the effect of the prescriptive norm on DG decisions did not depend on the extra incentives present in the incentivized estimation exercise. When participants could gain extra money by guessing others' estimation of Einstein's death age prior to playing the DG, they were no more generous than the control treatment without estimation (experiment 1b). Last but not least, the mean offer after estimating the social norm in a DG with an AR\$100-pool was no different than in the original treatment in which the estimation was done in an AR\$50-pool DG. This result implies that even when participants thought of AR\$50 as the fair share in the AR\$100 game, their decisions in the AR\$50 game showed no sign of being anchored near the number 50, but instead were closer to the AR\$25 offer which was the equitable share in the AR\$50-pool game. In summary, we found evidence that the effect of estimating prescriptive norms on socio-economic decisions is robust, and depends on neither the extra earning prospects of the estimation exercise nor a numeric anchor after the estimation.

## **Prosocial spending after using individualism or collectivism priming: a Romanian model. Do Romanians behave as they say they do?**

*Oprea, Alexandra ; Alupoae, Cristian ; Coşa, Iulia ; Iordănescu, Eugen*

As defined by Hofstede (2012) Romania is a collectivist country with a score on the Individualism/Collectivism scale of 30. This means that people would have more interdependent values, tend to be more preoccupied and to care more for groups of people, as showed in cultural studies. Studies found out that people can be situationally primed with individualism or collectivism values, which makes a set of values to be salient with the subject (Dunn, Aknin, Norton, 2015). Knowing that priming this sort of values could influence to whom and how much someone would give (Dunn, Aknin, Norton, 2015), we wanted to see if this applies for Romanians too.

Our research focused on answering two main questions regarding prosocial spending in Romania. One of the questions was "Is there a difference between what Romanians say they do and what they actually do regarding prosocial spending?" and the other one was "What happens with prosocial spending in Romanians if we prime them before donating either in an individualist or collectivist way?" This second question was based on the research by Kogut, Slovic, Västfjäll (2015) and we tried to see if, in Romania, the donating pattern is similar as in this research (collectivism implies greater amount of donation to a group than to a single person).

So starting from these two questions we analyzed the following two hypotheses: (H1) There is a significant difference between declarative prosocial spending and prosocial behavior, in Romanians and (H2) Individualism or collectivism priming influence prosocial spending, in Romanians, independent of the individual differences in individualism or collectivism values.

Therefore, we aimed to see if priming people with individualist or collectivist values using a text with singular or plural first person would influence the amount of money they would give and to whom they would give. Also we wanted to see if there is a difference between the declarative prosocial spending and prosocial behavior in a given situation, in Romanians.

A number of 131 subjects completed VSM 2013 (The Values Survey Module) online. Out of these, 104 (78 women, and 26 men) were eligible for the experimental task. From all 104 subjects, only 47 completed the second part of the study, the others dropped out. Statistical analyses were done using this group of 47 people (39 females).

To assess the levels in which people are individualists or collectivists in Romania we used the transculturation version of Hofstede VSM 2013 (The Values Survey Module).

To measure the declarative prosocial behavior we added two questions at the end of the VSM regarding this aspect. The first one was „Did you donate money for charity during the past month?“ and the second one was „How much money did you donate?“ .These two questions were as in Kogut, Slovic, Västfjäll (2015) study.

The effect of the priming was measured by whom subjects gave money to in the experimental phase. Participants were told that experimenters are working in collaboration with an NGO and that they could choose to donate the money they earn to a group of 8 children suffering of leukemia, to one child suffering of leukemia, or to keep the money for themselves. We chose to keep the same plot that Kogut, Slovic, Västfjäll(2015) used in their research.

As part of the experimental design we used real money to compensate for the fact that people read the text and found the right words and also to make the experimental situation as real as possible.

The results indicate a significant difference between the declarative prosocial spending and prosocial behavior. We found no significant effect of the priming in our groups regarding to whom or how much money they gave. Also we did not find any mediation effect of the individual values in the relationship between priming and prosocial spending.

# Poster Presentations

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7/9/2016 4:00:00 PM: Veerzaal

## Can Nudges be Transparent and Yet Effective?

*Bruns, Hendrik ; Jonsson, Marijane ; Kantorowicz-Reznichenko, Elena ; Klement, Katharina ; Rahali, Bilel*

The concept of “nudges” has received growing attention as an effective strategy to improve people's decisions without significantly changing economic incentives or limiting options. However, being often very subtle and covert, nudges are also criticized as being unethical and manipulative. This aspect of nudges raises the problem of transparency versus effectiveness. On the one hand, every public policy should be visible and subject to scrutiny. On the other hand, it is a common belief that nudges are effective only when people are not aware of being nudged. This tension was discussed both in the literature and in governmental reports (e.g. Bovens 2009; House of Lords report 2011; the Dutch governmental report by the WRR 2014). The question of transparency versus effectiveness of a nudge is an empirical question and yet the number of empirical studies addressing this problem is, to the best of our knowledge, very limited. The study by Lowenstein et al. (2015) is an example of such a study. The authors tested the influence of a disclosure on the effect of a default in the context of end-of-life decisions. Their findings demonstrate that disclosure does not change the induced behavior by nudges (in the form of defaults). However, the authors in that study examine only transparency in a pro-self nudge (that is meant to improve the well-being of the decision-maker). It is yet unclear how visibility can influence a pro-social nudge, i.e. a nudge that is meant to increase social welfare (for instance, tax compliance, energy saving). Furthermore, the specific design of the Lowenstein et al. (2015) experiment may have led to a neutral interpretation of the disclosure by the subjects. In other words, the disclosure might have been perceived as merely instructions rather than increasing the visibility of the nudge's manipulative nature.

In our study we try to fill the abovementioned gaps. Our research question is whether it is possible to increase the transparency of a pro-social without limiting its effectiveness. To attempt to provide an answer to this question, we conduct an experiment where we nudge donations to carbon emission reduction (public account) by introducing a default value in the donation choice of the participants. We further test how different types of transparency (i.e. presence and purpose of the default) will influence the intended effectiveness of the default.

We have conducted two pilot experiments. The total sample included 57 subjects, 32 master students from the European Law and Economics Program in Rotterdam and 25 master students in Economics from Stockholm.

All participants were requested to make a contribution-to-the-public-account decision (between 0-10 euros). We considered the four following treatments in both experiments (between-subjects design):

- C group (Control): a free contribution task
- N treatment (Nudge): We proposed a pre-selected default option (8€)
- NI treatment (Nudge and Information): We proposed a pre-selected default option and we informed subjects about a potential influence of the default option on their decision

- NPI treatment (Nudge, Information and Purpose): We proposed a pre-selected default option and we informed subjects about a potential influence of the default option on their decision and about the purpose of the default (i.e. to increase contributions to the climate protection fund).

In the Stockholm session, we added an additional treatment, NP, in which we proposed a preselected default and we only informed the subjects about the purpose of this default.

Both experiments were double blind and after the sessions two subjects were randomly selected for realization of their decisions. If those subjects contributed to the public account, the money was donated to a charity organization as described in the instructions. Thus, participants' contributions to the public account had a real impact on climate protection. The remaining sum was paid to the participants in cash.

Our initial descriptive results demonstrate a few interesting findings. First, as shown in previous experiments, defaults have an effect on climate protection behavior. The contribution level was the lowest in the control group (6.58 euro). Second, transparency seems to have an influence on the nudge's effectiveness. However, it is not a straightforward and clear-cut influence. When subjects were only informed about the manipulation, the contribution rate dropped almost to the level of the control group (from 7.44 euros in the N group to 6.85 euros in the NI group). Finally, once additional information was added (NIP) – the purpose of the nudge – the contribution level increased to a level above all other groups (8.23 euro). The additional treatment (nudge and just purpose) led to a contribution of 8.57 euros. Nevertheless, none of the results is statistically significant. This is very likely due to the limited size of the sample.

Theoretically, the link between psychological reactance and nudges may unveil a possible explanation for the transparency's influence on behavior. Reactance refers to people's objection to the limitation of their freedom. According to this theory, when people experience such limitation, they might choose to follow a behavior that is the opposite from the intended one, in order to restore their threatened freedom. On the other hand, once the perception of freedom is restored, e.g. by an increase in transparency accompanying a nudge, people are more likely to follow the direction of the intended behavior.

Based on the pilot results we have applied for two different funds in order to conduct the experiment with a sample size that can provide us with statistically significant results. Understanding better whether nudges can be more ethical and at the same time effective is an important matter for policy-makers and for the academic debate. Therefore, the findings of our study are expected to theoretically contribute to the growing literature on nudges, as well as to provide insightful information to policy-makers.

## **The Impact of Consumer Involvement on Co-branding Success**

*Lee, Chia-Lin*

The co-branded products are distributed over many different categories. However, not all the co-branded products achieve a success. One critical determinant of co-branding success is consumer involvement. We argue that existing literature on co-branding success remains incomplete since the current discussions on consumer involvement have largely been neglected. Thus, this research tries to bridge this gap. In particular, we investigate how consumer product involvement moderates the strength of the reciprocal effect on each of the partnering brands.

Based on a review of the relevant literature, we provide two research propositions. Proposition 1 illustrates that the negative reciprocal effect on partnering brands is stronger in the scenario of higher-involved categories than in lower-involved categories. In contrast, Proposition 2 argues that the positive reciprocal effect on partnering brands is more significant in the case of lower-involved

categories than in higher-involved categories. We then build a multi-attribute model for validating the two theoretical-driven propositions.

To our knowledge, we advance existing literature in co-branding by first exploring the influence of product involvement on reciprocal effects in the scenario of a good product-fit. Our propositions can assist brand managers of multi-category corporations (e.g., Sony) to choose the most appropriate product category for developing a co-branding partnership.

## **If you want to save, focus on the forest: abstract mind-set promotes willingness to delay gratification**

*Rudzińska-Wojciechowska, Joanna*

To save effectively, individuals must voluntarily postpone immediate gratification for the sake of later outcomes. However, although people's attitudes toward saving are rather positive, their short-run behaviour is often in conflict with their intention to save for the future. As a result of this shift of preferences, insufficient savings tops the list of adult's financial worries, because only a fraction of households have enough "rainy day" savings. Since sub-optimal personal savings have become an important social issue, numerous studies have been carried out on saving behaviour. However, only a few have aimed to investigate factors influencing outcomes of saving decisions and even less employed an experimental design.

In the present research project it is argued that construal level affects people's propensity to save. Construal Level Theory (CLT) (Trope & Liberman, 2003) offers a framework for understanding a wide variety of preference reversals (Fiedler, 2007). According to CLT, any action can be construed at varying levels of cognitive abstraction. Events and objects can be represented at either higher, more abstract level, involving consideration of superordinate goals, desirability, global processing and broad categorisation or a lower, more concrete level, involving consideration of subordinate goals, feasibility, local processing and narrow categorisations (see: Liberman, Trope, & Stephan, 2007 for an extensive review of CLT). The level of construal has been shown to increase with psychological distance (i.e. temporal, social) (Trope & Liberman, 2010) but it can also be procedurally primed. A priming task can trigger high or low-level construals that influence processing of a subsequent target task. Research shows that individuals adopting an abstract construal are more likely to focus on central features of objects or events than their secondary aspects (Trope & Liberman, 2000), object's desirability rather than feasibility (Liberman & Trope, 1998) or arguments in favour rather than against an action (Liberman, Eyal, Trope, & Walther, 2004). As a consequence, preference reversals might be observed as a function of construal level.

The author argues that sub-optimal, lower than previously planned, saving rates can also be explained in terms of CLT. An abstract, high-level construal of saving might focus on the desirability of owning enough money to spend on a certain good or to gain a sense of security, etc. A concrete, low-level construal of saving may concern NOT buying desired items or experiences. As a consequence, saving seems desirable from a distance, as a saving decision is represented in terms of high-level construals – hence positive attitudes toward putting money aside. As the distance gets shorter, the same decision is represented in terms of low-level construals, and the unpleasant consequences gain importance. This may result in spending money despite previously made resolutions, and a behaviour inconsistent with previous intentions might be observed.

The above-mentioned shifts of preferences are often seen as self-control failures. On the basis of the principles of CLT, self-control conflicts are understood as conflicts between behavioural implications of high-level and low-level construals and it has been shown that adopting an abstract construal may result in greater self-control (Fujita, Trope, Liberman, & Levin-Sagi, 2006).

Taking all this into account, it is hypothesised that shifts in levels of construal might affect people's propensity to save. Because high-level representations place greater weight on valued goals, people who want to save money may be able to resist the temptation of immediate spending and decide to save more by construing events in high-level terms than by doing so in low-level terms. Based on these findings, two studies were conducted to address potential consequences of construal level shifting for saving behaviour.

It was hypothesised that priming with a high-level construal mind-set would influence financial decisions and result in greater savings and greater willingness to wait for delayed rewards than priming with a low-level construal mind-set. This assumption was supported by the findings: across two experiments those with an abstract mind-set showed an increased willingness to save and to delay gratification when compared to those with a concrete mind-set.

In study 1, participants were induced to high- vs. low-level construals and subsequently they were asked to make some financial decisions regarding spending and saving money. In order to manipulate participant's mind-set, a Fujita's et al. (2006) procedure was employed. Participants were presented with 40 words (e.g. dog, car, castle). In the abstract-construal condition, participants generated a superordinate category for each word, whereas in the concrete-construal condition they generated a subordinate exemplar for each word. Secondly, they were asked to divide unexpectedly received amount of money among various options, ranging from long-term savings to spending on luxuries and pleasure (Zaleskiewicz, Gasiorowska, & Kesebir, 2013). The result suggests that people in abstract mind-set tend to save more than people in concrete mind-set.

In the second experiment participant's mind-set was manipulated, and a willingness to wait for a delayed gratification was measured. A different mind-set manipulation was employed. Firstly all participants were asked to list three goals they want to accomplish in the near future. Secondly, those assigned to the abstract construal condition were asked to consider why they want to accomplish these goals and list three reasons for each of the goals, whereas those assigned to the concrete construal condition were asked to consider how are they planning to accomplish these goals and list three actions leading to fulfilment of each goal. Next, in an ostensibly unrelated study, participants were asked to make a series of choices between hypothetical smaller immediate or larger delayed rewards (Kirby, 1996). The results suggest that people in abstract mind-set tend to wait longer for rewards than people in concrete mind-set.

## **Losing out on choosing a pension fund**

*Riitsalu, Leonore*

Demographic changes and the shift from defined benefit to defined contribution pension schemes has made individuals responsible for saving for their own retirement. Researchers of financial literacy and behavioural finance have found evidence that people are not capable of taking such complicated financial decisions (Benartzi and Thaler, 2007; Guiso and Jappelli, 2008; Hastings and Mitchell, 2011; Lusardi and Mitchell, 2011a; O'Donoghue and Rabin, 1998; Van Rooij et al., 2011). A rational and financially literate individual would compare the conditions of several pension funds before deciding, which one to join. Empirical evidence reveals that only a few do that and their behaviour cannot be explained by better knowledge in personal finances. It may simply be more appealing to choose not to choose.\*

This study analyzes how the choices between defined contribution pension funds are made using data from a representative financial literacy survey conducted in Estonia in 2015 (Saar Poll, 2015). Estonian pension system relies on three pillars: pay-as-you-go state pension insurance, defined contribution mandatory funded pension and voluntary funded pension or insurance (Võrk et al., 2015). The second pillar follows the principles of "libertarian paternalism" (Sunstein, 2014; Thaler

and Sunstein, 2009); everyone born in 1983 or later has to join a mandatory pension fund and is free to choose among 20 funds, but if the individual has not chosen a fund, the state will automatically enrol him or her into a conservative fund chosen by lottery. Government statistics show that only 5% of citizens in eligible age do not choose a mandatory pension fund themselves and even out of those 5% majority do decide to shift their savings to another fund within a year (Rahandusministerium, 2014). These statistics seem too good to be true, therefore the author of the current study added a question on the reasons for having chosen the fund the participants were enrolled into to the financial literacy survey. The wording of that question was tested in a focus group before adding it to the national survey.

Results reveal that merely 9% of the citizens enrolled into a mandatory pension fund have chosen the fund after comparing the conditions of several providers. Majority have taken the "path of least resistance" (Choi et al., 2002) instead and accepted a fund offered by the bank or state. There are no significant differences in neither socio-economic background, attitudes towards risk or knowledge between the ones who did compare and choose and those who accepted the fund a bank or the state offered them. Only one of the Big Three financial literacy questions advocated by Annamaria Lusardi (Lusardi and Mitchell, 2007, 2011b) is correlated with having compared the conditions of several funds. Financial literacy knowledge score calculated using the OECD methodology (Atkinson and Messy, 2012) is not explaining at all, why some have compared and others rely on opinions of others or the default instead.

However, logistic regression shows those who have compared different pension funds are more confident in having done enough to plan for their income after retirement than those who did not. The only knowledge question significantly correlated with choosing the fund is about risk diversification. Those who knew that the statement "It is usually possible to reduce the risk of investing in the stock market by buying a wide range of stocks and shares" is correct, were four times more likely to have chosen the fund after comparing the conditions of several funds. This supports the findings of Lusardi and Mitchell (2011a) who found knowledge of diversification to have the strongest influence on investment behaviour. However, it is arguable, did these 9% choose themselves because of understanding the need for diversifying investment risks or did they learn about diversification because of comparing the conditions of several pension funds.

The results confirm that failures of influencing financial behaviour can be largely attributed to the unjustified belief that provision of full information and teaching the basics of finance will lead to better retirement planning and making well considered choices. Losing out on choosing a pension fund can happen for a number of reasons: procrastination (O'Donoghue and Rabin, 1998), optimism and overconfidence (Guiso and Jappelli, 2008), problems with self-control (Laibson et al., 1998), treating "various pots of wealth quite differently" (Thaler, 2015), inability to identify with the future self (Ersner-Hersfield et al., 2009) or finding the choice "confusing, difficult, painful, and troublesome" (Sunstein, 2014), to name only a few. Promoters of financial literacy and policymakers should address these issues more when designing financial education programmes, reforming pension systems or using social marketing for reminding of the need to make active decisions for preparing for retirement, rather than providing information only.

\*In this study choosing not to choose is considered to be everything that results in not having made a considered choice, not only the active decision to leave the decision undone as Cass R. Sunstein defines in his article: "choosing not to choose is a form of choice" (Sunstein, 2014).

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## The complexity of consumer debt: Sociological and psychological factors

*Madern, Tamara*

An online survey study (n=2003) of factors correlated with consumer debt investigated several psychological variables which have been suggested as causes or effects of debt.

Economic and demographic factors explain some of the variances between groups, supporting previous results. Further variance between groups was accounted for by people's attitude to debt, social support, financial literacy and by measures of their time horizons.

The group debtors isn't homogeneous. In the analyses a difference was found in factors correlates with consumer debt between respondents with a minor debt situation and a serious debt situation.

Only debtors who have serious arrears in payments score significantly lower on the financial literacy questions. They also experiences less social support than respondents who have minor arrears in payments or non-debtors.

So the results suggest that a complex of psychological and sociological variables affect debt and are affected by it.

## Motivational aspects of numerical abilities

*Traczyk, Jakub; Fulawka, Kamil; Kus, Jakub; Sobkow, Agata*

### Introduction

Numeracy defined as the cognitive ability to understand and process statistical and probability information plays a key role in superior decision making (Cokely, Galesic, Schulz, Ghazal, & Garcia-Retamero, 2012; Peters et al., 2006; Reyna, Nelson, Han, & Dieckmann, 2009). Numerous research has been accumulated over the past decade as evidence for better performance of highly numerate people in tasks involving risky choice, risk comprehension, or probabilistic reasoning (for review, see Reyna & Brnst-Renck, 2014). However, so far few studies focused on motivational aspects of numerical abilities. The aim of this paper is to show and discuss the relationships between numeracy, deliberation time and need for cognition in predicting superior economic decisions.

Everyday observations suggest that high motivation to process information in decision problem results in better choices (e.g., "I collected all information about smartphones and spent time on processing them thoroughly so I should choose the best model in comparison to choosing a smartphone randomly"). It has been recently demonstrated that numeracy and better performance in decision tasks are related to the measures of epistemic motivation - the need for cognition defined as a tendency to engage in and enjoy effortful cognitive tasks (NFC, Bruine de Bruin, McNair, Taylor, Summers, & Strough, 2015; Cacioppo & Petty, 1982) and cognitive effort, such as deliberation time (Ghazal, Cokely, & Garcia-Retamero, 2014). However, these results also raise a question regarding the possible reduction of numeracy to motivation. In other words, do we make better decisions due to high numerical abilities associated with working memory capacity and fluid intelligence or rather high motivation? This problem will be addressed in the present paper.

### Method

We asked 80 participants to complete the Polish version of the Need for Cognition Scale (Matusz, Traczyk, & Gąsiorowska, 2011), Berlin Numeracy Test (an instrument consisting of four tasks that assess statistical numeracy and risk literacy among highly educated samples, e.g., undergraduate and graduate students or medical professionals; Cokely et al., 2012) and a battery of control measures (e.g., subjective numeracy, fluid intelligence). Deliberation time was measured by the time spent on solving the Berlin Numeracy Test.

### Results

We found significant correlations between measures of need for cognition, numeracy and deliberation time. Highly numerate participants scored higher on the NFC scale ( $r = .261$ ,  $p = .015$ ) and spent more time on solving tasks measuring numeracy ( $r = .199$ ,  $p = .049$ ). Additional analysis demonstrated that deliberation time mediated the relationship between NFC and numeracy.

### Conclusion

It is argued that highly numerate individuals make better decisions because they are more fluent in dealing with numerical information. Nevertheless, an alternative explanation is also plausible. As we demonstrated in this study, such people can spend more time deliberating on the problem because their dispositional inclination is to engage in and enjoy effortful cognitive tasks.

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## Multifactor Model of Brand Loyalty

*Antonova, Natalia*

Despite a long history of studying consumer loyalty, it is still a controversy concept. Existing models of loyalty often contradict each other. In this study, an attempt to build a multivariate model of customer loyalty was made, to describe the factors of consumer loyalty formation in the Smartphone market.

### Theoretical background

Consumer loyalty is understood in consumer psychology as "constancy" of consumer preferences towards specific brands. In this study, consumer loyalty is regarded as a brand loyalty. It is considered as a propensity to consume a particular brand, followed by positive emotions in relation to the brand. Researchers emphasize the impact of various factors on brand loyalty. The most common factors of brand loyalty are brand satisfaction, brand image, brand trust, brand commitment and others (Oliver, 2010). There are several models of brand loyalty. Worthington (2009) proposed a three-component attitude model of loyalty (includes cognitive, affective and behavioral components). Some models emphasize the importance of satisfaction: ACSI (Fornell, 1996), ECSI (Eklöf, 2000). Chinese researchers Li, Jie and Jiang introduce a model of brand perception (Li, Ji, Jiang, 2013), which includes brand awareness and brand image. Basing on these models we supposed that brand image and brand satisfaction are the strongest factors of brand loyalty. Researchers usually ensure that the better the brand image is, the higher is the brand loyalty, as well as the more satisfaction is, the higher is the loyalty. However, they often lose sight of the relationship between brand image and brand satisfaction. Some researchers explore an impact of brand image on satisfaction: the better the image of the company is, the greater is the consumer satisfaction (Lee, Jeon, Kim, 2011). We assume a more complex interaction between these constructs.

Purpose: to elaborate the multifactor model of brand loyalty using brand satisfaction and brand image as the main factors.

Hypotheses:

- 1) Brand Image and Brand Satisfaction are the factors of Brand Loyalty;
- 2) Brand Reputation, User Image, Perceived Quality, Corporate Image and Brand Uniqueness are the factors of Brand Image;
- 3) At the higher level of brand satisfaction, the correlation between brand image and brand loyalty is lower than at the lower level of brand satisfaction.

Sample: 206 respondents, mostly Moscow residents, aged from 15 to 25 years, and participated voluntarily.

Method

The study was conducted using a survey method. The questionnaire was made according to our conceptual model based on the brand loyalty models described above.

The questionnaire has three parts. The first part contains 12 statements and measures brand satisfaction. The second part contains 18 statements and measures brand loyalty that consists of three scales: cognitive loyalty, affective loyalty and behavioral loyalty (6 questions per scale). The third part focuses on brand image and includes 20 statements: brand reputation, consumer image, and perceived quality of the product, brand uniqueness and corporate image. Each part includes both negative and positive statements. Integrative indicators of image, satisfaction and loyalty are calculated using the average for all answers on questions of particular scale. The answers on negative statements were previously reversed. Calculations were made using Structural Equation Modeling (SEM) method in Amos program that is an additional package for SPSS. The questionnaire we developed was approved and tested for scales consistency. Indicators of Alpha Cronbach coefficient are above 0.6 on all scales and aspire to 1, therefore the questionnaire scales are consistent.

Results

Conceptual model analysis and adjustments were conducted in SPSS Amos Graphics, which allows using the Structural Equation Modeling method (SEM). SEM combines factorial, regression and correlation connections analysis and represents results in one model. We can verify obtained data consistency with the theoretical model. Model testing showed no connection between brand image and corporate image as well as between brand image and brand uniqueness. Other links have stood the test model and showed good strength. We can conclude that: 1) Brand Image ( $r = 0,45$ ) and Brand Satisfaction ( $r = 0,56$ ) are the factors of Brand Loyalty; 2) Brand Reputation ( $r = 0,74$ ), User Image ( $r = 0,82$ ) and Perceived Quality ( $r = 0,77$ ) are the factors of Brand Image; 3) Corporate Image ( $r = 0,11$ ) and Brand Uniqueness ( $r = -0,34$ ) are not the factors of Brand Image, these factors were excluded from the model.

To verify the third hypotheses we used the intergroup analysis. Two groups were formed by the level of general satisfaction index: lower satisfaction group (1 to 5.74) and higher satisfaction group (from 5.75 to 7 points). Intergroup analysis was as well conducted in SPSS Amos Graphics. On the lower and higher levels of satisfaction the connection between brand image and brand loyalty was measured. Modeling in the two sub-samples showed that in the group with higher level of satisfaction the correlation between brand image and brand satisfaction is lower ( $r = 0,378$ ) than in the group with lower level of satisfaction ( $r = 0,541$ ). The difference between the CFI criterion of Structural weights model (0,935) and Measurement weights model (0,957) was found to be 0,022, which is less than 0,05.

## Conclusions

The first and second hypotheses were confirmed partly:

- 1) Brand Image and Brand Satisfaction are the factors of Brand Loyalty;
- 2) Brand Reputation, User Image, Perceived Quality are the factors of Brand image. Corporate Image and Brand Uniqueness are not the factors of Brand Image, these variables were excluded from the final model;

The third hypothesis was confirmed:

- 3) At the higher level of brand satisfaction the correlation between brand image and brand loyalty is lower than at the lower level of brand satisfaction.

The final model of brand loyalty is functional and concise, so it can be successfully used for the variety of academic and practical purposes. In accordance with the results of the study, it is important to work on both brand image and the product quality, which determines customer satisfaction. However, at the higher level of brand satisfaction brand image plays less significant role for the consumer loyalty formation.

## Limitations

The study was conducted on the example of smartphones brands, and the sample was limited by Russians living in Moscow. Results may vary for other product groups or for respondents of other nationalities.

## **Home ownership and household portfolio choice**

*Michielsen, Thomas; Mocking, Remco; van Veldhuizen, Sander*

We study the effect of home equity and indebtedness on financial portfolio choices of Dutch households during the period 2006-2012. Using a large administrative dataset at the household level we estimate how home equity and the outstanding mortgage amount influence the share of liquid assets held in stocks. We apply different econometric methods to take selection and endogeneity into account. In our preferred specifications both home equity and the household's amount of mortgage debt have a non-significant impact on the risky asset share.

## **Debt advice is better delivered face-to-face than via the telephone**

*Andelic, Nicole; Feeney, Aidan; McKeown, Gary*

### Introduction

Increasing levels of problem debt in the general population (REF) have created a pressing need for greater understanding of what constitutes good debt advice. An exacerbating factor is the range of alternatives available to indebted individuals. For example, in the UK a formal alternative to bankruptcy is an Individual Voluntary Arrangement (IVA), which allows individuals with substantial debt to pay a proportion of their debts for five years before the remaining debt is written off. Individuals who are eligible for an IVA may suffer from psychological distress and isolation associated with their high debt levels and so it is important that prior to making a decision, they receive high quality debt advice.

Although debt advice has been little studied, research on doctor-patient interaction has revealed important relationships between doctors' skills of empathy and patient satisfaction (Derksen, Bensing, & Lagro-Janssen, 2013), doctors' communication skills and patient adherence (Zolnierek & DiMatteo, 2010)

and doctors' affective behaviour and patients' health status (Derksen et al., 2013). Based on these findings, we suggest that good communication needs to be prioritised in debt advice as well.

A key variable is whether advice is delivered face-to-face or by telephone. It is generally accepted that over the past few decades, there has been a shift across a range of domains from face-to-face to telephone-based advice. It is not clear that this is always to the advisee's benefit. For example, we know that non-verbal skills are important in advice giving in a range of contexts (DiMatteo, Taranta, Friedman, & Prince, 1980; Mast, 2007; Roter, Frankel, Hall, & Sluyter, 2006). This may explain why, in a medical context, face-to-face conversations include more counselling and rapport-building than telephone conversations (McKinstry et al., 2010). Given the nature of the problems faced by people with problem debts, rapport, empathy and good quality communication may be particularly important elements of successful debt advice. The aim of this research was to examine whether differing outcomes are experienced by those who receive face-to-face versus telephone debt advice. Furthermore, in a preliminary investigation of the characteristics of good debt advice, we investigated whether advice delivered face-to-face differs from telephone advice in terms of its emotional content and auditory characteristics.

## Methods

The first part of our research was a statistical analysis of successful debt repayment arrangements with Aperture, an IVA provider in the UK who offer both telephone and face-to-face advice. During this analysis we examined whether advice appointment mode had an effect on whether eligible clients proceeded to get their IVA approved, and whether advice mode had an effect on IVA failure rates measured at six monthly intervals. We considered the outcomes of 3812 clients in total.

In the second stage we focused on 22 recorded advice appointments with Aperture. Twelve telephone recordings and 10 face-to-face recordings were split into 11,275 units of speech utterance. Each utterance was categorised by whether the speaker was an advisor or a client, and whether the utterance had taken place by telephone or face-to-face. These units were analysed using the OpenEAR database (Eyben, Wöllmer, & Schuller, 2009) in conjunction with OpenSMILE (Eyben, Wöllmer, & Schuller, 2010), an open source emotion recognition software package which categorises speech by dominant emotion expressed based on auditory characteristics such as voice intensity, pitch variation and jitter/shimmer in voice. We also categorised advisor speech units as carrying out functional or emotional labour. Emotional labour was defined as time spent emotionally engaging with the client and typically occurred in response to client self-disclosure.

## Results

Analysis of client outcomes showed that there is a significant effect of initial advice mode on number of clients proceeding to IVA approval in 2009, such that face-to-face clients were almost three times as likely as telephone clients to get their IVA approved ( $p < .001$ ). Strikingly, advice mode continued to explain significant amounts of the variance in outcomes for up to two years after the initial advice meeting ( $p < .001$ ). A similar pattern was found when we examined IVA approval rates for clients who had their appointment in 2014 ( $p < .001$ ).

Alongside these significant and persistent differences in outcomes due to initial advice type, we also found that there was a significant effect of advice mode on the auditory characteristics of face-to-face and telephone advice conversations. Specifically, telephone advice showed significantly higher levels of Activation (how excited the voice is) than face-to-face advice, for both advisor and client speech (all  $ps < .001$ ). Conversely, the analysis of utterance function revealed that there were significantly more utterances involving emotional labour in face-to-face advice (15.7%) than in telephone advice (4.9%) ( $p < .001$ ).

## Discussion

We have found that people who initially receive face-to-face advice about their eligibility for an IVA have persistently better outcomes than people who initially receive advice over the telephone. Subsequent close analysis of a small number of advice appointments reveals a number of possible reasons for this difference in outcomes. The differences in levels of activation suggest that participants in a telephone advice session compensate for the absence of non-verbal cues by increasing voice activation. This leaves

open the possibility that despite these attempts to compensate, there is a communication failure which occurs when people receive debt advice over the telephone. On the other hand, the effect of advice mode on the amount of emotional labour carried out by the advisor suggests that advisors spend a larger proportion of their time engaging with the client emotionally, possibly due to a higher amount of emotional disclosure from the clients.

Future research should compare clients who have received face-to-face or telephone advice directly after the advice appointment has taken place. This would allow for tests of both the "communication failure" and the "emotional engagement" hypotheses. Whatever the cause of the advantage to clients of receiving debt advice face-to-face, our results clearly show that such an advantage exists. Given that the stakes are so high, perhaps more debt advice should be given face-to-face, even if it is more expensive.

## **The promise of interventions to improve financial literacy**

*Jungmann, Nadja; Madern, Tamara*

My english is not very well. I will write the paper in Dutch and ask someone to translate it en make sure to have a proper English text when I give the presentation

Meta-analyses on the effects of interventions to improve financial literacy show a sad picture. Willis (2008, 2009, 2011), Mandell (2012) en Fernandes (2014) show little to no effects of interventions. Commissioned by the Dutch board of scientific research for the Dutch government (Wetenschappelijke raad voor het regeringsbeleid, WRR) we looked at the studies underlying the meta-analyses. We found that a lot of the studies offer clues to improve the interventions in such a way that they may become (more) effective.

For example. In the field of unemployment a frequently used intervention is a training to learn people to find a job. Often the training is mandatory. The effects of these trainings are little (or there are no effects at all). The mandatory training resembles the budgettraining which is often used to improve financial literacy. In Manitoba (Canada) researchers and other stakeholders redesigned the mandatory training. They start the training with a session in which the participants are invited to think about the reasons why it would be useful for them to follow the training. The result of this pre-session was:

"25% increase in participants remaining active in programs

34% increase in participants finding first time employment

48% increase in participants maintaining employment for six months or longer"

In our paper we will work out some ideas how interventions with low impact can be improved so future meta-analyses will show more effect on improving financial literacy.

## **Labor Market Returns to Mathematics Studies: The Case of Israel**

*Horovitz, Arik*

This paper examines the effect of the level of mathematics studies on labor market outcomes in Israel, including hourly wages and the probability of being employed 11 years after high school. I find that the level of mathematics studies has no direct effect on employment rates. However, I find gaps in hourly wages, mainly in favor of students who studied five units of mathematics. Most of the differences I find are due to the indirect effect of those studying mathematics at a high level also being enrolled in more prestigious degrees, which then leads to higher hourly wages. In addition to this indirect effect, I find a positive relationship between 5-unit mathematics studies and hourly wages, in particular for women. When analyzing different hypothetical scenarios, I find that moving pupils from 4-unit mathematics studies to 5-unit mathematics studies is expected to

increase their wages by 10 percent, on average. Sixty percent of this increase is direct, and the rest indirect, resulting from the higher incomes associated with the degrees that 5-unit mathematics students choose (e.g. computer science). I also find that the effect of higher level mathematics studies on choice of degree is greater for females, and their salaries are affected more as a result. In order to encourage higher level mathematics studies among pupils, an increase in the quality of education should be combined with raising awareness among pupils, parents, and teachers about the importance of mathematics studies, and incentivizing schools to work towards this goal.

## **Environmental Attitudes and Beef Cattle Producer Stated Preferences for Cattle Traits: Evidence from a Discrete Choice Experiment in Canada**

*Boaitey, Albert; Goddard, Ellen*

In the beef industry cow calf producers must select bulls based on their expectations on a number of key traits such as expected birth weight of calves etc. A bull with superior genetics impacts herd performance as the genes are passed on to its offspring, affecting the quality of calves produced for sale, for fattening and for retention in the breeding herd. For most producers, this decision is driven by price or the expected value that will be received for calves sired by the bull. For example, a producer may pay higher prices for a bull with superior merit for marbling of beef with the expectation of feedlots may prefer calves that will result in higher marbled beef after steers are slaughter. Other potential genetic characteristics of interest might relate to expected birth and weaning rate, and feed efficiency of animals, traits which might have impacts on profitability and on greenhouse gas (GHG) emission. In this case, the environmental attitudes of producers might encourage them to value traits related to feed efficiency higher than meat quality or vice versa if they have lower concerns about the environment. For beef cattle producers, understanding how environmental attitudes might affect breeding decisions is particularly important for a number of reasons. First, beef cattle production is a significant contributor to global agricultural methane emissions -40% (2.9 Gigatons CO<sub>2</sub> eq.) of the overall 7.1 Gigatons CO<sub>2</sub> eq. per annum (Gerber et al. 2013). Second, changing the genetics of the herd through breeding for traits such as feed efficiency can result in significant reductions in production related methane emissions from cattle. If there indeed exists a significant systematic relationship between environmental attitudes and the preferences for specific traits, such as feed efficiency, these linkages can be explored to change behavior. This can be significant in cases where the pure financial incentive to select for specific traits is low or non-existent.

While several studies (e.g. Jones et al. 2008; McDonald et al. 2010) have addressed the valuation of breeding animal attributes by cattle producers, little is known about the effect of producers' environmental attitudes on their preferences for different cattle traits. The purpose of this paper is to analyze the extent to which the environmental attitudes of cattle producers affect their stated preferences for feed efficiency, an outcome which could reduce GHG emissions. Specifically, we examine whether there is a systematic difference in willingness to pay (WTP) for the feed efficiency expected progeny differences (EPD) of individual bulls by environmental attitudes amongst a sample of cow-calf producers in Canada. These EPDs are a measure of the genetic merit of a given bull as a parent.

Amongst the class of environmental attitude scales, the New Ecological Paradigm (NEP) scale (Dunlap 2000) and the New Human Interdependence Paradigm (Corrallo-Verdugo et al. 2008) have been used to elicit environmental attitudes in this study. The NEP scale comprises 15 statements each rated on the basis of a 5-point-Likert type scale ranging from (1) strongly disagree to (5) strongly agree. The NEP is pro-ecocentric-reinforces the notion that nature should be conserved for its intrinsic value. In contrast to the NEP, the NHIP scale addresses the interdependence of

humans' use of nature (anthropogenic view) and nature's intrinsic value (ecocentric view). In other words, the NHIP construct assumes that human development and conservation of nature are not mutually exclusive. The 5 Likert-type NHIP measures beliefs about the usefulness of nature and the intergenerational effects of the current utilization of natural endowments. Although these attitudinal scales have been used to measure attitudes in a wide variety of applications (e.g. water conservation policy, species non-use value assessments), they have not been used in context of evaluating cow-calf producer breeding decisions. By implementing both the NEP and the NHIP scales in the same study we are able to capture both ecocentric and anthropogenic dimensions of environmental behavior.

Another relevant attitudinal variable is environmental risk perception. An individual's environmental risk perception is linked to his preferences for specific risk management strategies (Pootinga et al. 2002). These perceptions are associated with views on nature described by the "myths of nature": nature benign, nature ephemeral, nature tolerant, and nature capricious. The myths of nature are linked to the following worldviews: i.) egalitarianism (nature ephemeral); ii.) hierarchism (nature tolerant); iii.) individualism (nature benign); and iv.) fatalism (nature capricious).

Individuals with nature benign views hold the belief that nature is resilient-lower risk perceptions about the environment. In contrast, the nature ephemeral myth is characterised by high environmental concerns based on the notion that environmental resources are highly depleted. Proponents of this viewpoint ascribe to behavioral change as the means to conserve natural resources. Between these two are the capricious and nature tolerant myths. Individuals in the latter category have an intermediate view of environmental risk and believe that nature is robust up to a certain threshold; not infinitely as in the case of the nature benign myth. The nature capricious view is less systematic and considers natural outcomes as random. Individuals with this viewpoint prefer stringent control mechanisms.

In this study, environmental attitudes and stated preferences for different bull traits were elicited in a survey of cow-calf producers in Canada in 2014. The survey began with a series of questions about cow-calf producer demographics and farm characteristics. This also included questions regarding attitudes towards technology, biodiversity and risk. The second section of the survey was the choice experiment. In addition to the feed efficiency EPD, traits included in the choice sets were weaning weight EPD, birthweight EPD, the presence of genomic information on feed efficiency and the accuracy of the feed efficiency EPD. The respondents selected from one of two bulls or neither of the bulls for six pairs of bulls. The final section of the survey consisted of questions on environmental attitudes and trust in a number of organizations (veterinarians, breed societies, research organizations and government authorities) was also addressed.

Given the multi-item nature of the three environmental attitude scales above, cluster analysis is used to segment the respondents within each scale. Environment attitude clusters in the present study are derived based on a hierarchical clustering approach specifically a Ward's method applying Euclidean distance as the distance (or similarity) measure (Alrich et al. 2007; Ares et al. 2010). The Ward's method (Ward 1963), is an agglomerative clustering procedure by minimizing the sum of squared deviations from a given cluster mean. The NHIP and NEP scales are clustered using this approach; each environmental risk category is given a unique identifier.

We generate dummy variables for clusters (NEP, NHIP) and environmental risk perceptions and include these variables in the stated preference conditional and random parameters logit models, as one way of determining whether the attitudes influence choices. Additionally, we estimate separate models for the different clusters (of different risk parameter selection) to see if estimated parameters differ. We report both multinomial (MNL) and random (RPL) parameter logit results and derive WTPs for the feed efficiency EPD for each of the models. We also estimate a latent class model and assess whether class membership is influenced by these attitudes. The results of our study provides useful insights into the role of environmental attitudes in the producer decision making.

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## **Fertility Regulation Behaviour: Sequential Decisions in Tunisia**

*frini, Olfa, Muller, Christophe*

Research on fertility is now a well-established field, with some emphasis, as far as individual female decisions are concerned, on investigating the factors explaining the number of desired or realised progeny. On the other hand, in this literature less attention has been devoted to the precise fertility regulation decisions. Moreover, these decisions are generally treated separately, for example through the analysis of using or not some given contraceptive method.

In this paper, we show that insight can be gained by considering various regulation decisions by a woman in a sequential framework that interacts with qualitative distinct motivations that also often take place sequentially over her reproductive span. We revisits the fertility regulation analysis by focussing on regulation instruments instead of the number of births or the number of children alive, as usual in the economic demography literature.

Our focus is on Muslim countries, in which marriage is the exclusive context for sexual intercourse and childbearing. There is a very low incidence of out of wedlock pregnancies (at most 0.5 percent in the Tunisian data). In that way, women may be seen as starting their fertility regulation spell with her age at marriage decision. In this manner, the primary reason for getting married is to have children. Thus, the woman may control the exposure to unwanted birth by delaying marriage. However, the motivations for delay marriage may be multiple.

In a second stage, choosing to start using some contraceptive technique after marriage is obviously important. It may occur just after marriage if children are not wished, at least not wished immediately. It may also take place episodically all along the reproductive span. However, the first use of contraceptive techniques looks like a major landmark in family fertility strategy, which justifies isolating it. Thus, the duration between the wedding date and the first birth control, may be the object of anticipated or unanticipated decision making.

Then, she decides the actual use contraceptive use. The sequence of contraceptive uses over the reproductive span is of interest, although it can generally not be observed. However, what can often be observed is whether the woman is currently using contraception, or if she has used some

in the past. Obviously, this information about regulation behaviour must take place after (or at the time of) the first use of contraceptive techniques.

Finally, married woman chooses the precise contraception method. It seems reasonable to think that once a decision to use contraception has been made; it remains to decide what will be the birth control method that will be chosen. Although, such sequential perspective is not mandatory, it may often be relevant and will help organising the data analysis.

What is noticeable in this list of regulation decisions is that it can often be arranged sequentially in an almost logical fashion allowing or not for fertility. First, comes marriage which generates the fertility risk, then the time of first use of contraception after marriage, then diverse decisions to apply contraceptive techniques, and each one possibly associated or followed by choosing a given control method. Obviously, such setting is only approximate. For example, nothing prevents the woman to choose different control method over time, or to start thinking about them even before marriage. Of course, there are other exceptions to this sequential picture, such as childbirth occurring out of wedlock. However, we believe that this schematic sequential view of the decision process will help us in organising and analysing data. This may be because the somewhat logical succession of decisions dominates the few exceptions contradicting it.

In view of that, the previous works had restricted the fertility regulation behaviour analysis considering only the last two decisions. Very few papers study together these decisions. In this paper, we look into how a woman's contraceptive strategy can be seen as an outcome of the above four successive birth control decision. We devote attention for the Muslim society case; with distinct familial, social, and religious settings, which may help researchers to elicit others determinants that have been relatively overlooked so far. This is interesting because empirical studies on regulation have often left aside social structure and cultural variables. In this respect, the Tunisian case is interesting in that it is the Muslim country with the most developed family planning system.

Our empirical application is based on diverse econometric models of the exhibited successive decisions (duration model, probit model and multinomial logit) that are estimated using the 2001 Tunisian PAP-FAM survey data. These data are exceptional in that they inform on the role of the family and social network in affecting women fertility behaviour, a rare information opportunity. We show how fertility regulation can be interpreted as an outcome of sequential decisions. Accordingly, the significant effect of our explanatory variables gradually arise and vanish as women advance in her fertility regulation process, which is mainly determined by the first two decisions. The two first decisions are crucial in designing the fertility regulation motivation while the two last decisions are just required for the making of such motivation. Our findings reveal that familial network and socio-cultural environment much shape preferences for large family size.

## **Public views on policies involving nudges.**

*Hagman, Olle William , Andersson, David ; Västfjäll, Daniel ; Tinghög, Gustav*

Background:

When should nudging be deemed as permissible and when should it be deemed as intrusive to individuals' freedom of choice? Should all types of nudges be judged the same? To date the debate concerning these issues has largely proceeded without much input from the general public. Behavioral measures that do not have public support are less likely to be successful. Hence it is important to understand when and why policies involving choice architecture are viewed as acceptable and when they are not. The main objective of this study is to elicit public views on the use of nudges in policy. In particular we investigate attitudes toward two broad categories of nudges that we label pro-self (i.e. focusing on private welfare) and pro-social (i.e. focusing on social welfare) nudges.

Pro-self nudges is the traditional cases of nudging they involve choice architecture (i.e. the way in which choices are presented) that is supposed to help individuals steer away from irrational behavior (or bounded rationality) which decreases their long-term wellbeing. Pro-self nudges fit nicely into the paradigm of libertarian paternalism, which aims to nudge individuals to act in accordance with their best interests but still allows individuals to disregard the nudge at minimal or no cost. Consequently pro-self nudges seek to counterbalance irrational behavior in order to maximize the overall good for an individual.

In the endeavor of bringing ideas about nudges into public policy there has been a shifted focus toward using nudges to increase prosocial behavior, thus primarily serving society at large as opposed to the individual. Thus, with regards to prosocial nudges, rational behavior will lead to a scenario where no one contributes to the overall good. Consequently prosocial nudges aim to counterbalance rational profit maximizing behavior in order to avoid overuse or under-provision to Public Goods. This category of nudges is epistemologically different from pro-self nudges since they aim to nudge individuals away from what according to neoclassical economic theory would be labeled rational behavior in order to avoid Tragedy of the Commons. We call this pro-social nudges. These pro-social nudges, however, do not fit into the paradigm of libertarian paternalism since it always is in the individuals' best interest not to contribute to the common good. Thus this category does not nudge individuals to act in accordance to their best interest, assuming that this is to maximize private welfare.

In addition we explore how individual differences in thinking and feeling influence attitudes toward nudges.

#### Method:

We carried out two separate data collections: in Sweden and in the United States. In total, 952 subjects participated in the study which was conducted as a websurvey. In particular 514 subjects were recruited in Sweden (52.5 % Females; Mean age 51.3) and 438 subjects in USA (55.5 % Females; Mean age 44.3).

General population samples in Sweden and the United States were presented with the same eight vignettes, but in random order. Each vignette presented a common case of nudging (e.g. opt in/opt out, affective images) in a specific policy area. The nudge scenarios were chosen to represent key policy areas and to include common types of nudge interventions presented in the nudge literature.

Following each scenario respondents were asked:

"Do you find the described policy acceptable?"

"To what extent do you think that the described policy restricts the individual's freedom of choice?"

"Do you think, in general, that the described policy has positive effects for the individual?"

"Do you think, in general, that the described policy has positive effects for the society at large?"

Responses on all four questions were given on a four-point Likert scale ranging from 1 (not at all) to 4 (very much). To test for individual differences, measures on cultural cognition and analytical thinking were included.

#### Results:

The level of acceptance toward nudge-policies was generally high in both countries, ranging from 54.0 % (of respondents) for the least supported nudge-policy to 85.5 % for the most supported. The rate of acceptance was generally higher in Sweden (72.7 %) compared to the United States (66.1 %) ( $t(930)=4.03$ ,  $p<.0001$ ). The nudge-policy deemed as acceptable by the smallest fraction in the Swedish sample was the use of financial incentives to increase motivation to stop smoking. Still a majority of the respondents (58.4 %) judged this as an acceptable nudge-policy. In the US

sample the least supported nudge-policy was the use of an Opt-Out intervention in order to increase the number of organ donors, which was deemed acceptable by 42.9 % of the respondents.

Somewhat paradoxically a majority of the respondents also perceived the presented nudge-policies as intrusive to freedom of choice. Respondents from the United States were significantly more prone to judge nudge-policies as intrusive compared to Swedish respondents.

The higher rate of general acceptance seen in Sweden compared to the United States remains when taking individual differences (i.e. analytical thinking and individualistic worldview) and characteristics (i.e. gender, age, education) into account. Further, US subjects are more prone to judge nudge-policies as intrusive also when taking individual differences between samples into account.

When comparing mean difference in perceived societal gain and perceived individual gain for nudge-policies labeled as pro-social or pro-self, this difference was significantly higher for pro-social nudges in both countries. (Sweden, paired ttest difference = 0.5161,  $t(511)=20.64$ ,  $p<.0001$ ; the United States, paired t-test difference = 0.3744,  $t(419)=15.35$ ,  $p<.0001$ ). Thus, the normative classification of nudge-policies as pro-social or pro-self corresponded roughly to respondents' perception of where benefits from particular nudges mostly accrue. The ranking based on societal vs. individual benefits were also very similar across Sweden and the United States.

Nudge policies classified as pro-social had a significantly lower acceptance rate compared to pro-self nudges ( $p<.0001$ ). Individuals with a more individualistic worldview were less likely to perceive nudges as acceptable, while individuals more prone to analytical thinking were less likely to perceive nudges as intrusive to freedom of choice.

To conclude, our findings suggest that the notion of "one-nudge-fits-all" is not tenable. Recognizing this is an important aspect both for successfully implementing nudges as well as nuancing nudge theory.

## **Does framing affect the relationship between feelings, risk perceptions and economic expectations?**

*Shahrabani, Shosh; Garyn-Tal, Sharon*

### Introduction

Framing theory is based upon the assumption that an issue can be understood from "a variety of perspectives, and be construed as having implications for multiple values or considerations" (Chong and Druckman, 2007, p. 104). Framing studies employ either equivalency or emphasis frames (Druckman, 2004). Equivalency effects occur when "different, but logically equivalent, phrases cause individuals to alter their preferences" (Tversky and Kahneman, 1987).

Various studies have shown that the way risky events are presented to people affects their risk perceptions and judgments (e.g., Peters et al., 2011). In addition, various studies showed that people in good moods would make optimistic judgments, and people in bad moods would make pessimistic judgments (for review, see Han et al. 2007).

The current study objectives were to examine: a. how the framing effect has an impact not only on risk perceptions but also on the individual's economic expectations, b. to examine whether and how framing affect the relationship between various types of feelings (both negative and positive feelings) and risk perceptions and economic expectations. We are not aware of previous studies that examined the impact of the framing effect on this type of relationship. The results of the study

are important for deeper understanding of the factors that shape the individual's risk perceptions and economic expectations, which in turn may affect decision making process.

## Methods

The sample contains 511 respondents. Research assistants randomly distributed the questionnaire survey in train stations as well as central bus stations in various places in Israel (while participants waited for the train/bus) and collected it after about 15 minutes. The research tool included questions regarding risk perceptions and economic expectations which were presented in two versions (positive and negative) to two groups of participants (between-subject analysis). The average age of the sample is 24.15 years old.

The questionnaire included the following parts:

a. Risk perception: This measurement was based on the risky events self-questionnaire (Lerner et al. 2003). The respondents were asked to estimate the likelihood that they would experience (or not experience) each of four risky events within the next 12 months. The risk perceptions were posited to different groups in negative or positive versions. b. Economic expectations: The respondents were asked to estimate how likely it was that they would experience (or not experience) each of two events (which has an impact on their economic status) within the next ten years. c. Feelings: Levels of feelings were measured based on the PANAS scales questionnaire (Watson et al. 1988) and included: nervous, worried, enthusiastic, irritable, decisive, anxious, afraid, comfortable. D. Socio-demographic details.

## Results

Our results show that the framing of the risk perceptions questions has an impact on the individuals' reported risk perceptions. Respondents were more optimistic in their perceived risks in the negative version in comparison to the reported risk perceptions in the positive version. It is possible that the negative version of the risky event evoked negative affective which influenced the perceived risk. Actually, when individual considers whether a future event is likely to occur, evidence suggests that they generate a mental simulation of the event and have affective and emotional reactions during the simulation that influence perceived risk (Lench & Darbor, 2014). Indeed, negative affective reactions are theorized to reduce the perceived likelihood of negative events because people can fulfill their motivation to avoid the event by judging it as unlikely to occur (Lench and Darbor, 2014, p. 571).

As for the positive versus the negative phrasing of the economic expectations the results show that the chance of finding a successful job is significantly more optimistic for individuals in the positive version than in the negative version. However, no significant differences between the positive and the negative versions were found in the mean level of the economic expectations index possibly because in this context negative phrasing did not evoke the "avoidance motivation" as it did in the risk perception context.

The results also show that higher levels of each one of the negative feelings are correlated with pessimistic risk perceptions and pessimistic economic expectations in the negative (but not the positive) version of the questionnaire. The results with respect to the positive feelings show that in general for both versions of the questionnaire no significant correlations between positive feelings and risk perceptions were found. Yet, in the positive version those who have higher levels of each of the positive feelings perceived higher chances of economic expectations (e.g., finding a successful job in the next ten years).

## Conclusion

Our results suggest that the framing effect has an impact not only on risk perceptions but also on economic expectations. In addition, the results suggest that the correlations between various types of feelings and judgment of future events may depend on the way the questions with respect to the

future events are framed. Yet, more research is needed to reveal the impact of framing effect on various risk perceptions and economic expectations and to examine its impact on decision making process.

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## **Salience of Law Enforcement: A Field Experiment**

*Vollaard, Ben ; Dur, Robert*

We conduct a field experiment to examine whether the deterrent effect of law enforcement can be strengthened by making law enforcement activities more salient. Our focus is on illegal disposal of household garbage in residential areas. At a random subset of 56 locations in a city in the Netherlands law enforcement officers supplemented their regular enforcement activities by putting bright warning labels on illegally disposed garbage bags saying that the item was “Found by law enforcement and punishable to a fine of 90 euros”. Illegal disposal went down by more than 50 percent as a result of the treatment. Our findings suggest that in order to fight illegal behavior, one need not always intensify enforcement. Making existing enforcement activities more salient can be very effective, at virtually no cost.

## **Valuation of service - field experiment in Tipping**

*Malcman, Merav ; Azar, Ofer ; shavit, Tal ; Rosenboim, Mosi*

Many service workers' incomes are derived from tips. Therefore, knowledge about factors that affect customers' tipping behavior is important for both servers and managers. The purpose of this study is estimating the Valuation of Service for tipping, as a factor of the treatment patrons experienced.

valuation of service=f(treatment)

In order to evaluate the service provided, we will study the tips that restaurant patrons leave for servers.

Restaurant tipping is a significant part of the U.S. economy, amounting to roughly \$47 billion per year (Azar, 2011). From the standpoint of neoclassical economic theory, at least, it is also puzzling.

Why do people voluntarily give money to their server after the service has been rendered? This suggests that social norms and other non-economic factors are at play. Azar (2007) discusses a variety of other factors that affect tips, including service quality, size of the bill, service quantity, group size, food quality, and the degree of interpersonal connection between the server and the customer.

The researchers have access to several restaurants in Israel where they can conduct a field study of tipping behavior in restaurants.

In order to take advantage of the natural conditions of a field experiment in which the subjects are unaware that they are part of an experiment, we will ask servers in restaurant in central Israel to report data about each table they serve to the author, over a period of several months. This will enable us to examine how tipping is influenced by the specific situations created by different manipulations in each experimental treatment.

The experiment is divided into control and experimental groups. The control groups will be assessed in the absence of manipulation, whereas the experimental groups will be manipulated using a variety of treatments. In one treatment, diners will be served a random dish or beverage, on the house, either at the beginning or end of the meal. They will not select the complimentary dish.

Based on previous studies and relevant theories, my first hypotheses is:

H1: When a complimentary dish/beverage is served, the tip will be a higher percentage of the bill.

The recency effect occurs when more recent experiences are better remembered or have greater influence on judgments in present situations (Jones & Sieck, 2003). Therefore, the second hypothesis is:

H2: If the complimentary beverage is served at the end (beginning) of the meal, the tip amount will be greater (lower) for the same beverage.

However, serving the complimentary dish/beverage at the beginning of the meal might have a greater effect due to the possibility of having more time to enjoy it. If complimentary the dish/beverage is a dessert, there is less time. The difference in the tip amount between an appetizer and dessert, could be a result of the difference in the timing of the dish, the opposite of hypothesis H2. Therefore, there are two additional hypotheses:

H3: If the complimentary dish/beverage is an appetizer, the tip amount will be greater.

H4: If the complimentary dish/beverage is a dessert, the tip amount will be lower.

The data will be collected from a restaurant situated in Petah Tikvah, over a period of several months, in different seasons, and on different days of the week. All data will be for dinners served from 17:00 to 21:00, to parties of 1-2 adults and/or 2 adults with no more than 3 children. The data entered in the database will include: table number, day of the week, date, weather, time of entrance, payment hour, party size (number, gender, and children including number, gender and approximate age), bill amount, tip amount (cash/credit), treatment applied (yes/no; if yes, aperitif/appetizer, dessert, beverage, alcoholic beverage or children's pack), last 6 digits of credit card number, credit card type, whether the order included any specials/business meal and comments. Details of the waiter (name and gender) will also be collected. Recording the last 6 digits of the credit card number is intended to insure that patrons are not included in the experiment more than once.

This research contributes to the literature on tipping for services by evaluating tip amounts under various conditions (treatments). This knowledge could assist managers in forecasting wages in the company's budget, in addition to helping them understand the parameters that influence their servers' wages.

## **How do Adult Consumers Use PMI's Tobacco Heating System (THS): Analysis of Whole Offer Test Data from Five Countries**

*Roulet, Steve ; Magnani, Pierpaolo ; Kallischnigg, Gerd ; Badoglio, Stefano ; Ackermann, Kurt; Veit, Marcus ; Ramazzotti, Antonio*

Background: Cigarette smoking causes pulmonary, cardiovascular and other serious diseases (U.S. Department of Health and Human Services, 2014). Although smoking prevalence has declined over the past four decades, many adult smokers continue to smoke. For these adult smokers, Philip Morris International (PMI) is developing potential Reduced Risk Products (RRPs) which have the potential to reduce the risks of tobacco-related diseases compared to smoking cigarettes. The challenge is to develop tobacco products that reduce health risk and are acceptable to adult smokers as substitutes for conventional cigarettes (CC). One of PMI's candidate MRTP, the Tobacco Heating System (THS), heats tobacco to significantly lower temperatures (approximately 300°C) than CC, which significantly reduces the levels of harmful and potentially harmful constituents (HPHCs) compared to cigarette smoke. THS is comprised of a device and THS Tobacco Sticks designed to be exclusively used with the THS device.

In 2012, the US Food and Drug Administration (FDA) released its Draft Guidance for MRTP Application (FDA, 2012). One of the "key areas of investigation" highlighted in the MRTPA Draft Guidance concerns the "effect the tobacco product and its marketing may have on tobacco use behavior among current tobacco users". The MRTPA Draft Guidance further proposes the conduct of Actual Use Studies that "allow consumers to interact freely with the product in Stefanoreal-world conditions".

PMI has conducted 'Whole Offer Test' (WOT) consumer studies in five countries for THS allowing for the observation of a wide range of potential usage patterns across a broad geographic spectrum and providing premarket information on how consumers actually use THS in a close to real-life environment. These WOTs studies have been conducted in Japan, Italy, Germany, Switzerland, and South Korea between June 2013 and June 2015.

Methods: The WOT consumer study consists of a single group, descriptive actual use study of THS, involving an assessment of participants' self-reported, stick-by-stick consumption of THS Tobacco Sticks and of CC.

The study population included a quota sample of adult smokers aged between one year above the national minimum legal age for smoking and 64 years old. The sample was frequency matching the adult smoker population on age, gender, social status, and main CC brand. Participants were recruited using market research databases.

The sample size in Japan (Nagoya, Osaka, Tokyo) was 868, in Italy (Bari, Milan, Rome) was 800, in Germany (Dresden, Hannover, Munich) was 605, in Switzerland (Basel, Berne, Geneva, Lausanne, Zurich) was 581 and in South Korea (Busan, Seoul) was 1068.

During the observational period, participants were free to consume both THS Tobacco Sticks and CC ad libitum. They had access to THS Tobacco Sticks at no expense, while they had to purchase CC at their own expense. The duration of the observational period was four weeks. The analysis was based on participants' self-reported, stick-by-stick consumption of THS Tobacco Sticks and of CC on a weekly basis.

Results: By the end of the observational period, the proportion of participants who consumed at least 100 THS Tobacco Sticks ((i.e. start using THS Tobacco Sticks based on an analogous definition of smokers of CC in WHO, 2008)) ranged from between 36.1% (Italy) to 76.3% (South Korea).

Among those who consumed at least 100 THS Tobacco Sticks, between 18.0% (Switzerland) and 47.4% (South Korea) switched to THS Tobacco Sticks (consumption constituted 70% or more of total tobacco consumption in any given week). The proportion of participants, amongst those who switched to THS Tobacco Sticks, who switched back to CC was very low in all countries, ranging between 0.0% (Japan) and 3.3% (South Korea).

During the last week of the observational period, between 3.9% (Switzerland) and 15.3% (South Korea), of those who consumed at least 100 THS Tobacco Sticks, have substituted CC completely or almost completely with THS Tobacco Sticks (consumption constituted more than 95% of total tobacco consumption).

The daily average total tobacco consumption (i.e. the number of THS Tobacco Sticks and CC consumed) measured during the observational period was lower, by approximately two sticks, than the self-reported consumption of CC before the observational period across countries.

Switchers (i.e. subsample of participants who switched to THS Tobacco Sticks) and Non-Switchers (i.e. subsample of participants who did not switch to THS Tobacco Sticks) are similar in terms of gender distribution across countries. In Japan, Italy, Switzerland and South Korea, the proportion of Switchers aged one year above the national legal smoking age and 24 is lower compared to Non-Switchers.

Conclusion: Across countries, a proportion of participants adopted a usage behavior involving exclusive use of THS Tobacco Sticks, suggesting that THS is a completely or almost completely suitable alternative to CC. Study data also indicates that when adult smokers switch to THS Tobacco Sticks, the likelihood of relapsing to CC is limited.

Furthermore, study data shows that there is no evidence that would suggest that the availability of THS Tobacco Sticks would lead to an increase in daily average total tobacco product consumption, while there is evidence to suggest that THS Tobacco Sticks may be more attractive to adult smokers aged above 25 years old than young adult smokers.

## **Present-Hedonistic time perspective predicts risk propensity by influencing benefits perception.**

*Markiewicz, Łukasz ; Jochemczyk, Łukasz*

We investigate "Time perspectives" influence on risk taking propensity within the risk-return framework.

Weber and colleagues (E. U. Weber, 2001; E. U. Weber, Blais, & Betz, 2002) point out that risk taking depends on a decision maker's perception of riskiness, perception of payoff associated with risky action and perceived risk and benefit attitudes. Therefore individual differences in risk taking can result either from different risk or benefit perceptions, or from different attitudes towards perceived risk or benefits. In the original Domain-Specific Risk-Taking (DoSpeRT) scale, besides risk preference (willingness to engage, WTE), Weber and colleagues (E. U. Weber et al., 2002) also collected data related to the perceived risk (R) and benefits (B) associated with each risky action considered by subjects. In this way, Weber conceptualized risk attitude within the risk-return framework derived from finance portfolio theory (Markowitz, 1952, 1959). This assumes that willingness to invest is a compromise between investment risk (R) and value (B). Thus, regressing willingness to invest (WTI) on expected benefits (B) and perceived risk (R):

Willingness to Engage (WTE) in risky action =  $x(\text{Expected Benefit}(B)) + y(\text{Perceived Risk}(R)) + z$

... one can estimate both "x" & "y" coefficients, proportional to the degree to which individuals find perceived risk (benefits) attractive, all other things being equal" (E. U. Weber, 2001, p. 11275).

This assumes that benefits perception could influence risk taking by the two ways:

1) Perceiving higher benefits of risky action encourages risk taking

2) Perceived benefits attitude (the  $x$  coefficient) makes decision makers more sensitive for perceived benefits. Thus benefits receive relatively more weight in the decision process or risk taking.

Time Perspective Theory (Zimbardo & Boyd, 1999) emphasizes the role of stronger or weaker habitual focus on a given time horizon (i.e., past, present, and future) in determining one's thoughts, emotions, and behavior—including the weighting of immediate vs. delayed benefits. We suggest that in particular focus on hedonic aspects of "present" explains risk taking. Thus we hypothesized that:

H1. The habitual focus on the hedonic aspects of the present (PH) would lead people to greater risk-taking (WTI)

H2a. Present hedonic (PH) habitual focus and Risk taking (WTE) relation has been mediated by benefits perception

H2b. The habitual focus on the hedonic aspects of the present (PH) relates to perceived benefits attitude (the  $x$  coefficient)

Thus we expect that the Present-Hedonistic TP encourages risk taking by influencing perceptions of benefits as closer, almost at one's fingertips, making risky activity more appealing.

In a field study with 350 participants, we positively verified this hypothesis. We observed that a Present-Hedonistic time perspective (as measured by Zimbardo Time Perspective Inventory) was strongly (positively) linked to risk-taking propensity (as measured by Domain Specific Risk Taking scale, DoSpeRT). On average, individuals who are focused on the hedonistic aspects of the present appear to be more interested in risk-taking than are those whose do not focus on this perspective.

Additionally Present-Hedonistic focus score correlates positively with perceived benefits attitude (the  $x$  coefficient). Also, as hypothesized, benefits perception is a valid mediator of Present-Hedonistic focus and risk taking.

Thus Present-Hedonistic focus encourages risk taking by two paths: by influencing benefits perception of risky activity and influencing the  $x$  coefficient, that makes the benefits to weigh more within the risk-return framework

## **Intention to Use, Perceived Health Risk and Addiction Risk for the Tobacco Heating System (THS)**

*Beacher, Felix ; Colman, Sam ; Alfieri, Thomas ; Magnani, Pierpaolo ; Kallischnigg, Gerd ; Ramazzotti, Antonio*

This study is part of a research program on perception and behavior related to a new tobacco product developed by Philip Morris International (PMI), the Tobacco Heating System (THS). The aim was to assess responses to five different "Messages", to support the development of THS marketing material, ensuring that these were accurately understood by all groups and did not encourage never or former smokers to use the product. Messages were evaluated in terms of:

- Intent to Use
- Change in Intention to Quit

- Perception of Health Risk
- Perception of Addiction Risk

This was a five-arm parallel group experiment in 1,713 adults from the US population, with the five arms corresponding to the five Messages. Messages 1 to 4 contained claims that THS reduces exposure to harmful and potentially harmful constituents, but reduction in disease risk is not established. Message 5 contained a claim that THS can reduce risk of tobacco-related disease, but is not risk free. Data analysis was descriptive. The main sample had four groups:

1. Smokers with no Intention to Quit Conventional Cigarettes (CC; S-NITQ)
2. Smokers with the Intention to Quit CC (S-ITQ)
3. Former Smokers (FS)
4. Never Smokers (NS)

Also, an oversample of 358 Never Smokers from the legal age of smoking to 25 (LA-25 NS) was included. "Intent to Use" was comprised of items for "Intention to Try" and "Intention to Use". Change in Intention to Quit was measured by comparing Intention to Quit pre- and post-exposure to the Messages. Risk Perception was assessed with PMI's Perceived Health Risk and Addiction Risk scales.

Across all Messages, "Intention to Try THS" was 38% to 57% within S-NITQ, 36% to 54% within S-ITQ and <4% within FS, NS and LA-25 NS. Results on Intention to Use THS were broadly consistent with Intention to Try. Between 83% and 97% S-ITQ still intended to quit after exposure to the Message.

For all Messages and groups, CC was rated as carrying the highest Perceived Health Risk, then THS, then E-cigarettes and Nicotine Replacement Therapies/Cessation were rated lowest. A similar overall pattern of results was present for Perceived Addiction Risk.

The reduced risk message (Message 5) and one reduced exposure message (Message 3) had satisfactory profiles for the main outcome measures and may be suitable for development into THS marketing material.

## **Wage earners, home makers, and gender identity in couples.**

### **Experimental findings on labour division**

*Görges, Luise*

This paper investigates couples' specialisation decisions to examine the influence of social norms for the gender-specific patterns in labour division in families. Put simply, the main question asked is why, within a couple, men are more likely to specialise in market work while women are more likely to specialise in home production. According to standard family economic theory we observe this pattern due to systematic, gender-related productivity differences in wage income and home production. If men on average expect higher wages than their wives, or women are more productive in the home than their husbands, an income-maximising household will choose a traditional labour division because this specialisation generates efficiency. This fundamental insight dates back to the Becker (1965) model of time allocation. In 2015, however, the fact that gender gaps in education have closed, and partly reversed, seemingly contradicts the assumption of systematic, gender-related productivity differences, and yet, the gender specific specialisation patterns are remarkably tenacious.

The notion that social norms regarding the “appropriate” roles of the male and female partner influence the labour division in a couple play is intuitive. Recently, Bertrand et al. (2015) investigated a peculiar pattern in the distribution of American couples over the wife’s contribution to overall household wage income, that seems to confirm this intuition: The authors identify a sharp drop to the right of 1/2 and argue that this is likely an effect of social norms. Couples seek to avoid a situation where wives earn a higher income than their husbands. Empirically, it is extremely challenging to identify what causes the gender bias in couples’ specialisation decisions, since the effects of complementary sorting into marriage and social norms are often not easily distinguishable. In most cases, consumption and survey data do simply not allow to determine whether women with relatively low labour market productivity sort into marriages with highly productive men because they aim to specialise in home production – or whether identically productive partners practise traditional specialisation as prescribed by social norms, and thus evolve, over time, differences in relative productivity. It is for this reason that I propose a laboratory experiment to identify the effect of gender and couple identity on specialisation decisions.

Thus far, experimental tests of family economic theory that utilise real couples as subjects focus mainly on the degree of cooperativeness in couples and the consequences for intra couple income distribution when couples are provided with an exogenous income endowment (see, for example, Peters et al., 2004; Ashraf, 2009; Iversen et al., 2011; Cochard et al., 2014; Beblo et al., 2015). The first study that examines specialisation decisions and finds a gender-bias in couple’s labour division in the lab is provided by (Görges, 2014). The precise mechanisms that account for this bias, however, are not yet entirely understood. One potential explanation, that women simply have a higher preference for contributing to the household public good, seems to be ruled out by the findings of Cochard et al. (2015).

In the first part of the paper, following Akerlof and Kranton (2000), I introduce an identity component into a simple formal model of time-allocation in a cooperative household decision making framework. Spouses maximise their joint utility, which is an increasing function of household income and public goods consumption, and their compliance to social norms (i.e.,

identity). They decide how to optimally allocate each partner’s total time either to wage income production or to the production of a household public good. This theoretical model allows me to derive several testable predictions regarding (i) the impact of gender identity on couples’ specialisation decision, (ii) the effect of couple identity on the probability of using a contract to ensure the “home maker” against moral hazard of the wage earner and (iii) the influence of couple and gender identity on sharing rules specified in contracts.

I will test these predictions using data from a laboratory experiment: 140 real heterosexual couples play a two-stage game, where each individual is randomly assigned to play with their partner or a stranger of the opposite sex. In the first stage, partners make a joint decision on how to play the game: They can independently complete a task that pays them individually according to performance (task A), i.e. engage in wage income production. Alternatively, they can select one partner to perform an unpaid task (task B), thereby doubling the pay-rate for the other partner playing task A, i.e. engage household public good production. Partners’ productivity in each of the two tasks is measured in preceding practise rounds and is common knowledge. After completing their tasks, participants are informed about their pay offs in private and allowed to transfer a share of their earnings to their partner. In a subsequent round, an optional contract is introduced, which allows participants to ex-ante specify a sharing rule for the generated income. Additionally, I collect an extensive set of variables, including socio-demographic characteristics, personality traits, relationship-specific information, e.g. on trust and satisfaction. Most importantly, I elicit partners’ beliefs about relative productivities that allow me to rule out an alternative explanation for inefficient choices of traditional labour division not related to identity: men’s overconfidence coupled with lack of confidence in their female partners.

Based on the theoretical predictions and pre-tests, the main findings of the paper will be: In romantic couples, but not strangers, there is a significant willingness to pay for gender identity. Specifically, they are more likely to forgo efficiency gains from a non-traditional specialisation, which arise whenever women are more productive in the paid task than their partners. Pure income-maximisation requires more productive women to act as wage earners (task A), and their male partners as “home-makers” (B). Moreover, in romantic couples, because of the social norm that “true love does not need contracts”, the unpaid task B-players are more likely to waive the opportunity to set binding contracts that obligate their wage-earning partners to a monetary compensation. Finally, when strangers specify contracts, the compensation for the B-players increases in his task A ability, whereas couples choose compensations that are unrelated to outside options.

## **Do procrastinators also fail to delay gratification? Examining the role of loss aversion in time preference experiments**

*Swart, Lisette*

Researchers in the realms of both economics and psychology have designed a large number of methods to test how patient people are. Virtually all economic models take into account that people discount future utility by a certain factor. For a long time, discounting behavior was assumed to be exponential, so that the marginal rate of substitution across periods was constant. However, over the past decades, researchers in the realm of behavioral economics and economic psychology have found empirical evidence that violates exponential discounting. People often discount time in the near future differently from time in the more distant future, a notion labelled as hyperbolic discounting. Hyperbolic discounting can cause people to revise their earlier choices: when deciding on dietary choices for the next week, for example, people tend to choose the healthy option, while when time has passed and they have to decide on their diet now, they revise their initial plan and opt for the unhealthy option.

Psychologists have designed numerous methods to elicit people’s patience. One of the most well-known examples is the ‘Marshmallow Test’ by Mischel and Underwood (1974), which tests self-control among young children by promising them another marshmallow if they can resist the temptation of eating the one in front of them long enough. As the Marshmallow test is less applicable for older children or adults, psychologists have developed other –mostly survey-based– methods to measure concepts related to patience, self-control and temptation (e.g. Duckworth et al. 2007; Mezo 2009).

Economists, on the other hand, strongly believe that in order to credibly elicit preferences, choices have to be incentivized. Economic methods to elicit time preferences have therefore mostly relied on experiments with monetary rewards, and typically ask participants to choose between a smaller sooner payment and a larger later payment for different points in time. Increasingly, however, researchers have become aware of possible confounds that may limit conclusions drawn from time preference experiments. Chabris, Laibson and Schuldt (2008) discussed eight such possible confounds in detail and noted that many of these confounds arise particularly in studies that use monetary rewards.

In a recent paper, Augenblick, Niederle, and Sprenger (2015) are among the first in the field of economics to measure time preferences using effort allocation: students were asked to allocate working on a boring task now or they could decide to delay working on it, although doing so would increase the time they were required to work on it. The authors conclude that, while they don’t find evidence for hyperbolic discounting when using monetary rewards, when allocating effort over time people do show significant present-bias (i.e. people tend to procrastinate).

This study raises two important questions that I address in my paper using the results from a laboratory experiment which was conducted at the Vrije Universiteit Amsterdam at the end of 2015. Firstly, Augenblick et al.'s method of measuring time preferences using effort allocation blurs the distinction between economics and psychology (even further), as the experiment in fact measures psychological concepts, such as self-control, grit and temptation. In my paper, I will test how the results from Augenblick et al.'s method relate to (other) psychological measures of self-control, grit and temptation, as well as how it relates to the 'traditional' economic results from experiments using monetary rewards. Furthermore, in order for this new measurement of time preferences to be a relevant addition in economic models, it needs to be correlated with real-life behavior. The second research question of this paper is therefore how well this experimental measure of time preferences relates to various real-life forms of behavior.

## **Nudging to increase participation in the cervical cancer early detection program**

*Silkane, Vineta*

Oncologic diseases are the second most common cause of mortality in Latvia. Early diagnostics together with continuous developments in medicine increase treatment opportunities of oncological disease. It is therefore essential to ensure that oncologic diseases are detected as soon as possible. Recommendations of the European Commission foresee introduction of screening programs and in many countries these are already put in place (Camillon, Ferron, Cendal et al., of 2013). Such screening programs allow early diagnostics of oncological diseases, even before symptoms appear and reduce population mortality from malignant tumours (Wardl, Robb, Vernon & Waller, 2015).

In Latvia since 2009 national breast, cervical and colorectal cancer early detection program provides state-funded examinations. However it suffers from low participation rates. For a program to be effective it requires at least 75% of the target audience to respond. In case of breast and cervical cancer the National Health Centre sends out invitation letters to women in the age of risk and the response ranges between 30-35%, while family doctor recommendation is needed to perform colorectal cancer screening and there the response rate is around 10%.

Lately policy makers, employers, insurance and health care providers are increasingly interested in behavioural economists and psychologists' studies of judgement and decision making as well as opportunities provided to improve people's lifestyle, habits and health behaviour. Better understanding of decision-making and human behaviour can help policy makers to propose more effective and preventative solution. Nudging is considered to be an innovative policy instrument. Also in Latvia nudging could facilitate policy implementation, in particular to increase participation in the cancer early detection program.

Nudge is "any aspect of the choice architecture that alters people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives" (Thaler & Sunstein, 2008). An alternative definition suggests that "A nudge is ... any attempt at influencing people's judgment, choice or behaviour in a predictable way (1) made possible because of cognitive biases in individual and social decision-making posing barriers for people to perform rationally in their own interest, and (2) working by making use of those biases as an integral part of such attempts." (Hansen, 2014).

There might be different reasons for low response to the breast, cervical and colorectal cancer screening, such as gender, age, health awareness, availability, etc. therefore only cervical cancer screening related data will be further analysed. The aim of this study is to explore nudging to encourage women participation in the cervical cancer early detection program. Situational analysis was carried out to identify incentives that encourage invited persons to attend the medical

examination. The next stage of the research will be carried out to test nudges (developed incentives) using an experimental design.

Firstly, the possible reasons of low response to the cancer screening invitation was examined. This included studying (1) other countries' experience; (2) publicly available data of National Health Service and The Centre for Disease Prevention and Control Centre; (3) influencing factors of cervical cancer early detection program attendance identified in previous research (n=548) (Stupele, 2012); (4) an interview with the National Health Service outpatient department manager; (5) ten interviews with women who participated in cervical cancer early detection program (2015).

One of the most frequently mentioned influencing factors is fear, both from possible discomfort during the examination and possibly negative results (Wall, Rocha, Salinas-Martinez et al., 2010; Oscarsson, Benzein & Wijma, 2008). As one could have expected, women who are not afraid from the examination, attend cervical cancer screening more frequently (Stupele, 2012).

Another important factor is lack of time (Park, Park, Choi et al., 2011). Women, who believed they had no time rarely attended the screening (Stupele, 2012). Also in interviews busyness has been mentioned as an explanation not to attend preventative screening. However besides real lack of time postponement may also be due to procrastination, poor time management skills, and future discounting.

Several suggestions refer to the letter, which is sent to women inviting for the preventative screening. Although 76.4% of women participating in the survey confirmed having understood the letter, they considered it formal (Stupele, 2012). Further interviews suggested to highlight that this examination is paid by the state. References to the nearest health service have been appreciated. In the survey 66.4% of women stated that letter containing invitation on a specific time and place would encourage them to attend the cervical cancer screening tests (Stupele, 2012).

Although there are several ways to address issues related to preventative screening attendance (e.g. awareness raising campaigns, information availability and access to health care), in the next stage of the research a number of nudging solutions will be experimentally tested: (1) reminders, (2) social norms, (3) defaults, (4) authority of the general practitioner, (5) emotions (fear), and (6) discounting of future benefits.

The National Research Program SUSTINNO has supported this research.

## **Impact of Incentives and Motivation on Attention Allocation**

*Rafai, Ismael; Toumi, Mira*

In this study, we investigate experimentally the effect of incentives and motivations on the allocation of the attention targeted to micro-behavior.

It is commonly accepted that incentives have a direct positive effect on behavior, but sometimes can also have a negative indirect effect through alteration of intrinsic motivation (i.e. crowding-out effect); especially for prosocial behaviors. Depending on the type, the design, and the strength of the incentives, their overall effect can be positive or negative.

Public Good Game (PGG) is often used to study prosocial behaviors, where players are free to choose their level of investment or effort. In this case, prosocial behavior is the result of an optimal cost/benefit trade-off. The possibility of a crowding-out could result from an 'unexpected' interference between preferences and incentives (e.g. reputational or self-regarding effect). Therefore, intrinsic and extrinsic motivations have separate effects on behaviors, but they also affect each other.

In PGG experiment, subjects choose an investment of money instead of real effort (induced effort cost) in order to ensure the saliency of the incentives and the effort cost, and also to let aside the performance and heterogeneity of capability among participants.

However, various micro-prosocial behaviors consume attention (e.g. paying attention to turn off the light, paying attention to put waste in the right dustbin, etc.) rather than “salient effort cost”. We argue that the allocation of the attention is not strictly equivalent to an allocation of effort and does not perfectly fit an optimal trade-off between cost of thinking/benefit to think (due to an infinite regress problem, optimal allocation of attention should consume itself attention). Therefore, actual PGG experiments are not perfectly adapted to grasp the attention allocation problem induced by prosocial micro-behavior.

As the effect of incentives and intrinsic motivation on attention allocation has not been studied yet in economics, we propose an original experimental design able to do it. In the experiment we suggest, participants are faced to a repeated task of a hundred levels which only consume attention. This task, which consists in classing each of the hundred items in one of two boxes, allows us to measure attention through two dimensions: the “effective attention” (the probability to put an item in the corresponding box) and the “attentional resources” (the time allocated in the task).

Depending on the treatment, subjects have: (0) no incentive; (1) a self-interest monetary incentive; (2) a prosocial monetary incentive; to put the item in the corresponding box.

The participants are given 45 minutes to complete the task, but as soon a participant finishes the hundred levels, he has the possibility to navigate freely on internet during the remaining time. So, the subject can allocate his time between the task and the free-time.

As in our experiment, subjects have another alternative than spending their attention to the task, so the attention allocated in the baseline (0) reveal how much they like to pay attention to the task compare to free-time. We measure intrinsic motivation (using Intrinsic Motivation Inventory, Ryan (1985)) and are able to estimate the ‘pure-effect’ of intrinsic motivation on attention.

Then we compare the attention and the motivation in baseline and in the incentivized treatments 1 and 2. Using Structural Equation Modeling, we are able to discriminate from the global effect of each incentive, both the direct effect on attention and the indirect effect on intrinsic motivation.

Moreover, we control for risk-aversion (Holt and Laury, 2002), social preferences (SVO ring Test) and time preference.

Preliminary results (pilot experiment) show that if prosocial and self-interest incentives have nearly the same positive effect on the amount of attentional resources allocated (time allocated in the task), the self-interest incentives have a greater effect on the effective attention (precision in the task) than prosocial incentives. Attention seems to decrease across the levels with different speed depending of treatments (e.g. attention decrease more quickly in the baseline).

The full experiment will be conduct on z-Tree (Fischbacher 2007), in March 2016 with around 200 subjects. We are also planning to run the experiment on internet using Amazon Mechanical Turk.

## **Are worst students really more overconfident? – A preliminary test of different measures**

*Lotito, Gianna ; Maffioletti, Anna ; Novarese, Marco*

The idea that overconfidence is a common problem among students – particularly the less able – is widely spread in the literature on educational economics, despite many contributions seem to

suggest that the relation between metacognitive abilities and overconfidence needs further investigation.

With this work we aim at giving a contribution to this discussion through an empirical analysis about the link that may exist between metacognitive abilities and overconfidence. In particular we want to empirically discuss the existence of the above relation and the sign of its direction, showing some preliminary evidence of how different ways of measuring overconfidence might lead to results which are at least partially different from the ones in the literature. In the work we therefore elicit forecast evaluation on a set of single one-by-one questions; we introduce as an incentive a negative evaluation for incorrect forecasts and we propose four different measures of overconfidence and predictive ability. Our results show that (1) there is significant evidence of a good ability of self-evaluation on the side of the best students; but (2) worse metacognition does not seem to explain overconfidence. This suggests that different methods of investigating overconfidence might lead to results which are at least partially different from the ones discussed in the existing literature.

## **The Psychology of Social Safety Nets: Scarcity, Incentives, and Role of Moral Hazard**

*Swain, Bradley*

**Abstract:** To what extent should institutions, particularly governments, intervene when a decision is made by an individual or institution that results in negative outcomes for society? Social Safety Nets (SSNs) are increasingly popular programs that attempt to prevent those most vulnerable to negative shocks from falling below a dangerous or unacceptable threshold. Economic research on the costs and benefits of SSNs is extensive, but the topic remains extremely controversial among the public and within the political arena. Curiously, the field of psychology has largely overlooked the topic of SSNs.

New research on the psychology of scarcity provides an excellent lens through which we can examine the effects of SSNs on decision-making.<sup>3,4</sup> It is becoming increasingly clear that scarcity causes a focusing effect that can both enhance value based decision making, while at the same time inhibiting cognitive function on unrelated tasks.<sup>3,4</sup> By inducing the scarcity mentality and getting participants to play different investment games,<sup>1,2</sup> my research extends the scarcity framework into the realm of risk aversion and investigates how providing individuals with safety nets can alter their risk preferences and learning strategies. Early results suggest that scarcity can decrease risk-seeking behavior among the poor and may also increase adherence to rational decision strategies.

In order to test this hypothesis, the general framework laid out in Shah et al. (2013) was replicated in an M-truk study. Participants were placed in one of two conditions. In each condition participants are primed with scenarios that get them thinking about their current financial situation creating our first independent variable: Difficulty. The “difficult” condition asks the participant to consider large financial problems. The “easy” condition asks participants to consider the same scenario with a smaller financial problem.

“Imagine that an unforeseen event requires of you an immediate \$2,000 (\$200) expense. Are there ways in which you may be able to come up with that amount of money on a very short notice? How would you go about it? Would it cause you long-lasting financial hardship? Would it require you to make sacrifices that have long-term consequences? If so, what kind of sacrifices?”

Participants are then be asked to evaluate a number of gambles where the payouts vary in expected value. These gambles are a well-established metric for measuring risk preferences developed by Holt and Laury (2002) and can be easily completed on M-Turk.

Please Choose One:

Option A Option B

1/10 of \$2.00, 9/10 of \$1.60 1/10 of \$3.85, 9/10 of \$0.10

Participants who calculated the expected payout (the optimal or “rational” strategy) are expected to choose Gamble A for the first four pairs and switch to Gamble B for the next six. Expected payout for anyone who adheres to this strategy is \$25.08. Once all 10 gambles have been evaluated, participants are asked to provide demographic information, including current annual household income. Income data is used to create our second independent variable: Wealth

Once analyzed, it is clear that when primed to think about their difficult financial situation, individuals who are poor are less risk seeking. In this task, individuals in Rich/Hard, Rich/Easy, and Poor/Easy condition earned an average expected payout of \$22.25. Participants in the Hard/Poor conditions earned an average expected payout of \$22.96, or an average of 3% more than participants in any other condition, and up to 5% more than participants in the Rich/Easy condition.

This research has two extremely important implications. The first suggests that context effects may play less of a roll in the decision making of the poor. Policy makers and behavioral scientists increasingly look to “Nudges” that might provide a cheap and efficient solutions when addressing different societal issues. This work suggests that those solutions may not always be effective among on of the most important groups: the poor.

The second is that scarcity may be a Nudge that can help policy makers in it self. If we know that the poor ignore unrelated information when scarcity is salient, might we be able to time safety nets more strategically? Possibly timing unemployment benefits to coincide with bills, rent, and other expenses would be more effective than the normal biweekly payout just before the weekend.

The experiments outlined above are the first in a series of proposed experiments that will help establish the psychological effects of SSNs. An interesting feature inherent in the debate about safety nets is that regardless of whether safety nets increase or decrease risky decision-making, policy makers can use the results to design better programs to help the poor.

Future work will use simulated safety nets to see if they improve cognitive bandwidth or diminish rational decision making. They will also take these tasks out of the laboratory and into the “real world”. Such experiments will involve participants performing similar tasks before and after they enroll in welfare programs as well as comparing performance across states that offer different levels of government-based assistance

## **Bailouts and Buyouts: Baselines and Beliefs**

*Treuer, Galen ; Swain, Bradley ; Handgraaf, Michel*

Abstract: Governments regularly provide monetary support for homeowners to help them recover from natural disasters like hurricanes, floods, and landslides. These bailouts are a sort of safety net or social contract. They may also create a moral hazard that encourages people to build and rebuild in high risk areas - areas that have a relatively high chance of repeat disasters. One solution is for governments to buyout high risk properties and prevent future redevelopment. Due to their cost and different assumptions about human nature, such policies are a source of major disagreement among policy makers and individuals alike.

The cost of disasters has increased in recent decades along with their frequency and size. As costs increase, we do not know if the public will continue to support bailouts for homeowners living in

risky places. Buyouts have the potential to significantly decrease a community's exposure to future hazards, but they are not always popular.

In a U.S. national survey over 80% of respondents support compensating natural disaster victims but only 37% support compensating victims living in "high risk areas". This general finding raises questions about intent and context. Would respondents support buyouts over bailouts or do they dislike giving any assistance to people living in high risk areas? Does it matter if the respondent themselves lives in a high risk area? Does it matter if the risk of future disasters is constant or predicted to increase dramatically in the future (e.g. due to sea level rise)?

We have designed a series of studies to unpack these problems. Our first study established baselines for various attitudes towards bailouts and buyouts in the United States. We show that beliefs about how much individuals should receive from a bailout are dramatically different from the amount they believe they ought to receive.

Perhaps not surprisingly our results suggest that, when asked "What percentage of the financial damage done by a natural disaster should be covered by disaster relief?" conservatives believed less should be covered (29% by disaster relief, 71% by the individual) while liberals believed more should be covered (53% by disaster relief 47% by the individual). However, when asked how much will be covered, conservatives think more will be covered (37% by disaster relief vs 63% by the individual), while liberals think less will be covered (47% by disaster relief vs 53% by the individual).

We also show that beliefs about where this money ought to come from, and where it will come from differ dramatically, depending on political orientation. The most surprising finding was that the large majority of our participants, both conservative and liberal believed that state and local governments ought to provide approximately 30% of the funding for disaster relief. They also believed that a similar amount of disaster relief would come from state and local governments. In reality, state and local governments provide almost no disaster relief.

With baselines established, our current study moves beyond baselines and investigates how framing can be used to influence these beliefs. We are particularly interested in investigating how varying degrees of risk, as well as the proximity of a person to the event, can effect political support for buyouts and bailouts. We are currently collecting data, but preliminary results suggest an interaction between risk, proximity, and support for disaster relief.

We hypothesize that people are "rational" about levels of risk, but also self interested. More specifically we hypothesize that individuals believe they are more capable of dealing with risk than others. They will therefore believe that they deserve more disaster relief than "others" who are exposed to the the same level of risk. Our preliminary data suggests that this is the case. We find that individuals are the most likely to support high levels of disaster relief when it is their own home exposed to high levels of risk (68% should be covered by disaster relief), while at the same time feeling that others under the same high level of risk should have the least (56%). They also reported that a similar amount of disaster relief should be provided for people in low risk places (62% for their own homes and 60% for others).

Future work will investigate additional framing effects and attempt to nudge participants in to thinking "more rationally" about disaster relief. At the same time baseline support for buyouts will also be established. Finally, different scales will be used to elicit preferences in order to overcome potential problems caused by diversification bias.

As the threat of climate change looms larger every year, creating effective policy to deal with natural disasters will be increasingly important. Both generating support for, and effective implementation of, social safety nets will define how our country respond to these threats. This research seeks to lay the ground work for policy makers interested in creating safety nets that are sustainable, efficient, and provide help to those who need it most.

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