From Pilsner Desert to Specialty Beer Oasis: The Rise of Microbrewing in the Netherlands

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1 Introduction

In 1980, the Dutch beer brewing industry could be described as a ‘Pilsner desert’. At that time there were only a handful of independent beer producers and their designated products were so homogenous that even connoisseurs and professional tasters could not distinguish between them in blind taste tests (Jansen, 1987). Today, the picture is strikingly different. The number of beer breweries has skyrocketed and continues to increase exponentially. The variety of available beers produced in the Netherlands approximates the variety in both historic and current beer styles that have ever been available worldwide. Due to the emergence of an eclectic set of fundamentally different types of breweries, often referred to as specialty or microbreweries, the Dutch beer brewing industry has transformed from being one of the most stagnant industries to being one of the most innovative industries in the Netherlands. This phenomenon of renewal does not uniquely apply to the Dutch beer brewing industry. The U.S beer brewing industry went through a similar process in the 1990s (Carroll and Swaminathan, 2000) and a similar rise in microbreweries is simultaneous taking place in many other European countries [see other chapters]. This suggests that both country specific and wider societal factors that operate across borders are important drivers of renewal in the Dutch brewing sector.

The main aim of the paper is to explain the recent emergence and proliferation of microbreweries in the Netherlands. How can we explain this revival? How were founders able to successfully establish new organizations in an intensely competitive mature industry? To answer these questions we provide a detailed historical account of the evolution of the Dutch beer brewing industry since its emergence in the middle ages to the present. Four periods are distinguished that each represent distinct phases in the development of the sector. We show data on the number of (micro)breweries between the beginning of the 19th century to 2015, which underscore the dramatic rise of microbreweries which already began in around 1980 but surged since the mid-2000s. The analysis is based on information from historical records, popular literature almost 100 interviews with (micro)brewers, industry experts and suppliers.

The paper has the following structure. After an introduction, section 2 briefly summarizes the theories that have been proposed to explain the phenomenon of industry renewal—a process through which a mature industry that is characterised by a decreasing number of producers and increase in scale experiences a period of rapid entry of new entrants. Section 3 describes the methodology and data. Section 4 provides a historical narrative of the recent evolution of the Dutch beer brewing sector and presents descriptive data on Dutch microbreweries. Section 5 provides explanations for the observed phenomenon of industry renewal. Finally, Section 6 presents a discussion of the findings linking possible theoretical explanations with the observed evolution in the Dutch beer sector and conclusions.

2 Theoretical perspectives on the renewal of mature industries

We define industry renewal as the process through which a mature industry experiences a sudden flux of entrepreneurial activity through the entry of organizations of a new form. From traditional perspectives in industrial organisation this may seem to be a puzzling phenomenon, as mature industries have seemingly steep barriers to entry due to the dominance of a small set of powerful players. However, there are two bodies of prior work that provide relevant explanations for the renewal of mature industries. The first is research on resource partitioning that explains why small specialist firms may thrive alongside dominant incumbents by observing the structural features of the industry. The second is research on social movements that explains how individuals may become mobilized to challenge and change dominant organizational practices in mature industries.

The leading theory to explain industry renewal is resource partitioning theory (Carroll, 1985; Carroll et al., 2002), which falls under the broader branch of organizational ecology (Carroll and Hannan, 2000). Resource partitioning theory challenges the conventional industry life cycle model, which states that industry evolution can be described by three stages: discovery, mass entry, and shakeout induced by competition on scale and cost. This eventually results in a concentrated market that exists of a few large companies, which produce relatively homogenous products (Klepper, 1997). Resource partitioning suggests that there may be a fourth stage: renewal, which logically follows a shakeout (Carroll et al. 2002). In particular, the theory explains why small specialist firms may surge and thrive alongside dominant incumbents by highlighting several mechanisms that lead to a partitioning of the resource space into generalist and specialist segments. The core of the theory states that as market concentration increases, the total amount of resource space – reflected by the total number of potential consumers – that is open to specialist organisations will expand. Large companies that dominate the market focus on the 'centre' of the resource space by producing mass products, which opens up space for specialist companies to exploit the smaller niches of the resource space. Resource partitioning theory is empirically supported by the finding of a positive (negative) relationship between market concentration and founding (mortality) rate of specialist organisations for a large number of sectors (see Carroll et al. 2002 for an overview).

Apart from market concentration, three other mechanisms for resource partitioning have been proposed in the literature. First, in a study of Dutch auditing firms, Boone et al. (2000) highlighted the role of customization in the resource partitioning process. They found that the higher flexibility and personal approach of small auditing forms offered a competitive advantage over large auditing firms in catering for small clients. Second, Carroll and Swaminathan (2000) concluded that anti-mass-production cultural sentiment was an important determinant of resource partitioning in the U.S. beer brewing sector. Their conclusion was based on the finding that even after large beer brewers started to produce specialty beers of similar or even higher quality, the demand for similar beers from microbrewers kept increasing. Finally, although empirical support is limited, Caroll et al. (2002) argue that the status of a product (e.g. an expensive or luxurious brand) or organisation (e.g. a prestigious service provider) leads to resource partitioning as a small set of customers wants to be associated with them.

A second branch of research that is relevant for the understanding of industry renewal is social movement theory (McCarthy and Zald, 1977). Research in this strand focuses on understanding when and how organisational and individual actors may shape the structure of industries and other societal systems. Social movement theory looks at how collective organizational action may emerge in society and may shape industries and other social systems. An important insight from this research is that marginalized actors may be likely to engage in entrepreneurial behaviour when provided with the opportunity to organize (McCarthy and Zald, 1977; McAdam et al., 1996). Several studies have shown how social movements are often the motor behind processes of industry renewal. Carroll and Swaminathan (2000) argue that social movement-like character of microbrewing in the U.S. has played an important role in differentiating specialty beer brewers from the established producers. Other examples of sectors where social movements have led to industry renewal are radio broadcasting (Greve et al., 2006) and gastronomy (Rao et al., 2003).

According to social movement theory, the success of a social movement depends on at least three factors. First, a successful social movement requires a beneficial political opportunity structure that allows marginalized actors to self-organize, provide them with the opportunity to voice their ideas and allow them to attract support from other actors (McAdam et al., 1996; Meyer, 2004). Second, a successful social movement requires effective mobilization of resources such as material capital to establish an organization, socio-organizational and human capital (to effectively run the organization) as well as moral and cultural capital (to effectively attract support) (Edwards and McCarthy, 2004). Third and finally, social movement success depends on the emergence of an effective 'frame' that resonates with a sufficiently large audience (Benford and Snow, 2000). Without an effective frame of an issue that the social movement is trying to address, the movement will struggle to gain sufficient support to generate any form of change.

3 Methodology and data

This paper relies on both qualitative and quantitative data related to the emergence of microbreweries in the Netherlands. Qualitative data primarily consisted of semi-structured interviews with 99 brewery founders and industry experts that were collected during the period 2004-2015.[1] This data was supplemented by extensive evaluation of existing literature, such as Unger (2001), and archival materials, such as breweries' websites and news articles in the Dutch quarterly beer magazine PINT. Quantitative data was compiled in the form of a database that included information on all new breweries in the Netherlands since the establishment of the first new microbrewery in 1981, currently known as *Hertog Jan* and owned by AB-Inbev since 1995. Our primary source for this data was Cambrinus (www.cambrinus.nl), an online database containing information on Dutch beer breweries. The database reports information on contemporary and historical breweries, listing the brewery name, address, year of founding, year of closure if applicable, and current owners. It also provides a description of the founding story and products for many of its entries. The Cambrinus website was also used to obtain insights on the number of breweries before 1981 complemented by information from Unger (2001) for the period before 1900. We define a microbrewery as an independent brewing organization established after 1980 that produces beer according to its own recipes, which typically rely on top-fermenting yeast rather than the bottom-fermenting yeast that is used to produce lager, and at a relatively small scale (<25,000 hl per year). This definition includes both organizations that have their own brewing capacity as well as organizations that rent brewing capacity elsewhere, so-called contract breweries.[2]

4 Evolution of the beer sector in the Netherlands

Organized beer brewing in the Netherlands emerged in the early Middle Ages (8th and 9th century) when monasteries, associated with Carolingian authority, began to brew beer for their communities (Unger, 2001; Hornsey, 2003; Unger, 2004). Until then, beer brewing had been a cottage industry occurring exclusively in rural households. The Carolingian monasteries developed new equipment and employed improved techniques compared to 'home brewers' and had artisans with special skills to produce the drink. At that time, beer was not typically produced with hops, but with a mixture of dried herbs referred to as *gruit*. With growing urbanization during the 13th and 14th century, beer brewing

[1] A large share of the interview data is taken from Kroezen (2014), who conducted 76 interviews between 2004 and 2011. Four additional interviews were conducted in 2015 to collect information that captures the recent dynamics in the sector.

[2] Note that for the purposes of our paper we collapse the distinction that Carroll & Swaminathan (2001) make between microbreweries, brew pubs and contract brewers into one category. We decided to do this as we found the boundaries between the three subcategories were considerably fuzzy. We observed that contract brewers often acquired their own brewing capacity over time and that the majority of breweries had tasting rooms and thus had at least some resemblance to a pub. In addition, it should be noted that setting a clear size limit for our definition of microbrewery is somewhat arbitrary. However, our data shows that by the end of our observation window (2015) the yearly production of the largest microbrewery (Jopen at 20,000 hl) was still only a very small fraction (0.15%) of the yearly production of the largest industrial brewery (Heineken at 12,800,000 hl).

was increasingly organized as a commercial activity independent of church connections. Subsequently, beer brewing rapidly developed into one of the most important industries in the Netherlands (Unger, 2001). Following the initial emergence, the Dutch beer sector went through four subsequent phases of development that resulted in the structure that can be observed today.

4.1 Prehistory (1450-1970)

4.1.1 1450-1650: Golden age of Dutch beer brewing

The 1450-1650 period can be described as 'the Golden Age' of Dutch beer brewing (Unger, 2001), as exemplified by the rise of large clusters of beer breweries in several Dutch towns—most commonly in densely populated Western locales like Haarlem, Gouda, Delft, and Amersfoort, but also in more remote towns like Groningen and Nijmegen. Many of these clusters soon established a national and occasionally even international presence in the Western European beer trade (Unger, 2001). Historical sources report that some towns had over 100 breweries, with more than 50 percent of their production intended for export (Dekken, 2010; Lintsen et al., 1992; Unger, 2001).

Towns with significant historical beer brewing activity typically had their own unique beer styles. For example, Gouda was known for its *koyt* beer that was brewed with a mixture of bitter herbs instead of hops, while Groningen was known for its *kluin* beer, a heady brew high in alcohol (Karst, 1980). However, an important innovation that contributed to the prosperity of the Dutch beer brewing industry was the adoption of hops as an important ingredient. Hops provided increased durability—and thus transportability—of beer and their use was popularized by German beer breweries (in particular those based in Hamburg). German hopped beer reached the Netherlands during the Late Middle Ages (1350-1450) through the trade network of northern European cities known as the Hanseatic League (Alberts, 1969; Van Uytven, 2007).

4.1.2 1650-1850: Decline

This period of prosperity was followed by one of substantial decline. Historians have ascribed the decline to a variety of factors including (a) a loss of foreign export markets due to the development of brewing industries in other countries, such as England, (b) increased (price) competition from wine, distilled beverages and 'colonial' drinks (coffee, tea, and cocoa), (c) increased grain prices and (d) rising taxes (Unger, 2001). The declining market for Dutch beer led to a reduction in overall beer production and a substantial number of breweries in the Netherlands went out of business. Towns like Haarlem, Gouda, and Delft lost their leading roles in the beer trade, and the focus of the industry shifted to larger port cities like Amsterdam and Rotterdam, where large-scale breweries were able to survive due to thriving shipping industries and more populous local markets (Unger, 2001). An important client for beer breweries in these two towns was The Dutch East India Company (VOC), which had 'chambers' in both cities.

4.1.3 1850-1970: Modernisation, concentration and upscaling.

Technological innovations during the Industrial Revolution (1760-1840) set the stage for the first revival of Dutch beer brewing (Lintsen et al., 1992; Unger, 2001; Poelmans et al., 2011). Several scientific breakthroughs—such as the steam engine, mechanical refrigeration and electricity, combined with scientific discoveries related to food chemistry—allowed for increased control over the brewing process and provided opportunities for production and distribution on a larger scale. This process went hand in hand with the diffusion of pilsner beer across Europe. Pilsner is a lager, a beer style brewed with yeast that ferments at low temperatures, the production of which requires electrical refrigeration. Ale, in contrast, is brewed with yeast that ferments at ambient temperatures. A shift from ale to lager thus required significant investments in refrigerated fermentation tanks.

While Dutch brewers were initially slow in adopting these innovations, toward the end of the 19th century and in the beginning of the 20th century many new breweries were founded that made use of these more advanced technologies (Unger, 2001). Amsterdam was the centre of this transition, where three breweries (*Koninklijke Nederlandsche Beiersche Bierbrouwerij, Heineken's Bierbrouwerij Maatschappij*, and *Beiersch Bierbrouwerij De Amstel*) started producing pilsner between 1860 and 1870. A decade later, breweries in other towns such as Amersfoort (*Phoenix Brouwerij*) and Rotterdam (*Brouwerij d'Oranjeboom*) followed suit. This modernization process was driven by wealthy investors who entered the field during the last decade of the 19th century by acquiring existing breweries or starting new breweries while investing heavily in modern equipment (Unger, 2001). Some of these investors were owners of German breweries who saw the Netherlands as a potential market for the then increasingly popular beer-style – Bavarian Pilsner – such as in the case of *Brouwerij De Leeuw* in Valkenburg (Philips, 1999).

In the 20th century, the Dutch beer sector experienced an unprecedented degree of concentration. In conjunction with the economic outfall related to the two World Wars, tougher competition and expansionist practices of industrial breweries led to a substantial shakeout of local and family-owned breweries as predicted by the industry life cycle model. Breweries such as Heineken, Amstel, Oranjeboom and De Drie Hoefijzers rapidly expanded their capacity by means of the establishment of new brewing locations and the takeover of smaller competitors, in part facilitated by a growing export market. The number of independent producers quickly reduced from about 500 in 1900 (Simons, 1992; Unger, 2001) to about 100 in 1940 (Simons, 1992), and finally, to 13 independent producers in 1981 (see Figure 1). These breweries included all the large breweries that still dominate the Dutch pilsner market such as Heineken, Grolsch (now Asahi Group Holdings), Bavaria and Dommelsch (now AB-Inbev). The concentration wave went hand in hand with significant homogenization—characterized by the fact that by 1980 brewers almost exclusively produced pilsner beer.

4.2 Foundations for renewal (1970-1981)

4.2.1 Pioneering beer pubs.

While the concentration wave was still in full swing during the late 1960s and early 1970s, four specialty beer pubs were established that took on a pioneering role in creating a market for alternatives to pilsner. These were: De Beyerd in Breda, Jan Primus in Utrecht, Gollem in Amsterdam and 't Pumpke in Nijmegen.[3] In contrast to existing pubs, these beer pubs began to offer foreign ales, predominantly from Belgian origin, as an alternative to Dutch pilsner. The preference for Belgian ales, as compared to alternative beers from other 'neighbouring' countries such as Germany and the U.K., can be explained by the relatively short geographical distance, shared language, and wide variety of ales. The pubs had in common that they all emerged in student towns and that they appeared to appeal to the younger population. Piet De Jongh, owner of De Beyerd, said about this: *"I have benefitted significantly from the youth. Their presence made it easier for me to sell the beers that I brought back from Belgium… …I wanted to specialize the pub and distinguish myself from the traditional neighbourhood café. I saw that demand was changing. There was an increasing number of students that visited the pub and I was able to respond to that by offering specialty beers."* The establishment of the alternative beer pubs was quickly followed by the rise of professional importers and also led to considerable media attention that gradually made the wider public aware about alternatives to mainstream pilsner beer.

[3] De Beyerd in Breda was not a new pub, but ownership shifted to the next generation of the De Jong family in the 1960s which went hand-in-hand with a change in focus on specialty beer. The other three pubs mentioned here were established as new.

4.2.2 The Establishment of a consumer movement organization: PINT.

At the end of the 1970s, on the coattails of the growing attention for foreign ales that was fuelled by the alternative beer pubs, a small group of beer enthusiasts emerged that was dissatisfied by the state of the Dutch beer culture and started to advocate for change among Dutch beer producers. This led to the establishment of the Dutch beer consumer organisation PINT. This association had as its main aim *"to make beer culture important again in the Netherlands"* and encouraged breweries to produce, what they called, 'traditional beers' (PINT Nieuws 1, November 1980, pg. 12). One of the founders said: *"There are enough different beers with a whole bunch of different tastes, still most Dutch breweries offer only one kind of beer. The consumer doesn't have the opportunity to make a real choice between different kinds of beer and unknown is unloved. PINT was established to bring clarity to an environment of unclear consumer information. We try to bring lesser-known beers to the fore and to bring our half-dead beer culture back to life."* The founders of PINT did not have any ties with the established Dutch beer brewers. They were predominantly beer enthusiasts that had a variety of unrelated professional backgrounds, ranging from education to photography. However, initial members did include owners of some of the pioneering beer pubs, such as Paul van Oosterom (Gollem, Amsterdam) and Piet de Jongh (De Beyerd, Breda).

A very important source of motivation and inspiration for PINT was the British beer consumer association CAMRA. CAMRA was founded about a decade before PINT and had achieved substantial success in mobilizing individuals to join their 'campaign' for the revitalization of ale beer, which had contributed to the re-emergence of ale beer production and consumption in the U.K. In 1980, a small group of Dutch beer enthusiasts who regularly visited England wrote a letter to all Dutch members of CAMRA in which they called attention to the 'poor state' of the Dutch beer culture and asked to join them in taking action. This led to the formation of an initial group of 20 individuals, who laid the foundation of what later became PINT. One of the founders of PINT reflects on this: *"We went to England very often. In England we were introduced to good English beer and to the fact that there was a consumer association in existence there that dealt with beer (The Campaign for Real Ale). And we got to know London's pubs and met people there that were also interested in beer, that had tried different types of beer and thought: Shit, we don't have anything like this in the Netherlands. We then asked around in the Netherlands and talked to people in our network. Subsequently, in 1979, a small group began to emerge of individuals that all had a direct or indirect involvement with the English beer scene and that were interested in doing something similar in the Netherlands. We then asked CAMRA for all the addresses of the Dutch members and wrote them a letter. CAMRA ended up donating a small symbolic sum of 50£ to contribute to the launch of what ultimately became PINT."*

In contrast to CAMRA, which was actively engaged in campaigning and lobbying, PINT became a typical consumer organisation that represented the interests of beer consumers at the national level. Like CAMRA, PINT started to publish a bi-monthly magazine that aimed to inform beer enthusiasts about alternatives to mainstream Pilsner and update its membership on developments in the beer industries of the Netherlands and surrounding countries. PINT also mimicked CAMRA by actively engaging in the organization of specialty beer festivals such as the annual 'Bokbierfestival'.[4]

[4] 'Bok' or 'bock' beer is a fuzzy category of beers that are produced seasonally (in autumn and spring) and is commonly acknowledged to be of German origin. Bock beer can be either bottom-fermenting, resembling the production process of lager, or top-fermenting, resembling the production process of ale. During the early 1980s, the few alternatives to Pilsner that were produced on Dutch soil fell typically in the 'bock' category.

4.3 1981-2003: Emergence of microbreweries.

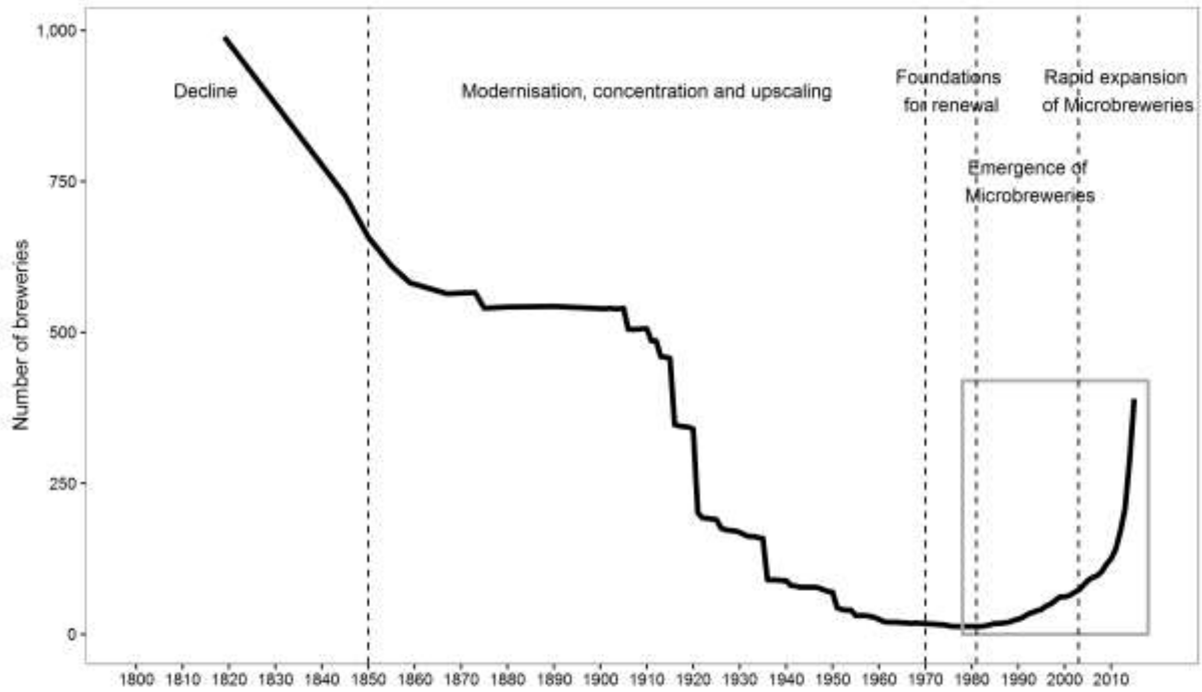
PINT's activities seemingly started to have a serious impact with the establishment of the first new brewery on Dutch soil since World War II in 1981, *De Arcense Stoombierbrouwerij* in *Arcen*. The founders of the brewery were former employees of the British brewing conglomerate *Allied Breweries* who saw an opportunity when their employer decided to close one of its production facilities in the Netherlands. Following the increased attention generated by the pioneering brewpubs and PINT, they decided to set-up a new brewery at the former location of *Allied Breweries* that focused exclusively on traditional top-fermenting beer. PINT played an important role in the founding process by bringing several parties together that could help make the brewery viable. For instance, through their extensive network PINT was able to establish a relationship between the new brewery and suitable distributors. PINT also paid extensive attention to the founding of *De Arcense Stoombierbourwerij* in their magazine.

The subsequent five years saw the establishment of another nine new microbreweries that focused exclusively on the production of traditional beer styles. These were predominantly traditional Belgian ales, such as *witbier*, *dubbel*, and *tripel*. The most successful of these new breweries were *Brouwerij Raaf* in Heumen, *De Friese Brouwerij* in Bolsward, *'t IJ* in Amsterdam and *Christoffel Brouwerij* in Roermond. Similar to *De Arcense Stoombierbrouwerij*, many of the founders of the these new breweries had ties with incumbent breweries. Herm Hegger, the founder of *Brouwerij Raaf* had worked in the same brewery as the founders of *De Arcense Stoombierbrouwerij* and Aart van der Linde (Friese) had worked in *Bierbrouwerij De Leeuw* in Valkenburg and in the new *Arcense Stoombierbrouwerij* before opening his own brewery. Leo Brand, the founder of *Christoffel Brouwerij* was a member of the famous Brand brewing family which owned a successful brewery in the South of Limburg. Breweries that were established by individuals without any prior brewing experience did not fare well during this time period. *De Alkmaarse Brouwerij* in Alkmaar and *Brouwerij De Noorderzon* in Groningen had struggled with infections and inconsistent quality, which led to their demise within three years after opening. *Brouwerij 't IJ* in Amsterdam is the only exception of a brewery with an inexperienced founder that was able to survive.

However, the fates of inexperienced founders were soon to change. Through their activities, PINT contributed not only to the emergence and proliferation of a community of enthusiastic consumers of alternative beer, they also fostered a growing community of hobby brewers. Although officially home brewing was illegal by Dutch law up until as late as 1992, the practice regained legitimacy as evident by the fact that it was largely tolerated throughout the 1980s and the eventual abolishment in the early 1990s. Starting with the establishment of hobby brewers' guild *De Roerstok* in Tilburg in 1984, a number of guilds emerged throughout the country that encourage hobby brewing and facilitated knowledge sharing. Although it is likely that at least some of these guilds would have emerged without the activities of PINT, they did actively encourage the growth and professionalization of this community as evident by the following statement in PINT Nieuws Nr. 7 (1981): *"The number of beer brewers in the hobby world is also growing. Those that have been brewing beer on their own have done the pioneering work required to get their hands on the necessary equipment and ingredients… … It appears that a few enthusiastic hobby beer brewers have found a way in and have built up quite a bit of brewing experience. We'd love to get in touch with these individuals. The main goal would be to exchange experiences. We were also thinking of making joint purchases and holding tastings of each others' beer."*

PINT's activities and the growing hobby brewing community contributed to increasing entrepreneurial activity leading to the entry of an additional 60 breweries between 1986 and 2003 (See Figure 1). Founding rates gradually increased from a couple per year around 1986 to around 7 per year by 2003 and new brewery viability increased as evident by the fact that up until 1996 40% of new entrants would fail within 5 years of establishment whereas this applied to only 25% of breweries established in the period between 1996 and 2003. Increasingly, new breweries were successfully established by founders that had learned the tricks of the trade through home brewing without any prior professional brewing experience.

Figure 1: Number of breweries in the Netherlands: 1819-2015



Source: Unger (2001) and Cambrinus.
Note: Rectangle demarcates Figure 2.

4.4 2003-present: Rapid expansion of microbreweries.

4.4.1 Establishment of a Collective Trade Association: KBC.

The initial growth of the microbrewing sector was followed by a landmark event in 2003 when a collective association was established that was exclusively dedicated to the interests of microbreweries; the Small Brewery Collective (KBC). The acronym deliberately mirrored the acronym of the trade association of the incumbent brewers, which at the time was called the Central Brewery Office (CBK). The association initially consisted of 32 microbreweries, about half of the total population of microbreweries at the time. The association was founded by a prominent beer enthusiast, Arjan ten Hoonte who was the chairman of the Beer and Collectors Association BAV and four prominent brew masters with substantial microbrewing experience. Whereas PINT had succeeded in mobilizing beer enthusiasts, the KBC provided another essential platform that allowed for increased professionalization of microbreweries through discussion of collective issues, such as quality control, and exchange of information and knowledge. The press statement at the time of founding stated that the aims of the KBC were threefold: *"To ensure that the voices of the small beer breweries were heard within the various agencies that affect the fates of the small beer breweries, such as the CBK (Central Brewers Office) and the various branches of the government that deal with beer, to promote Dutch specialty beers through the organization of beer festivals and creating awareness, and to* *encourage collaboration and mutual initiatives."* Since its establishment, the KBC has grown to count 155 members.

4.4.2 The Proliferation of Contract Brewers.

From 2003 to 2015, the number of microbreweries increased exponentially to 382 (390 breweries in total, including the eight established pilsner brewers). The population of microbreweries can be divided into two groups: 202 breweries that own and operate equipment (e.g. kilns, kettles and bottling machinery) and 188 'contract' brewers, which do not own equipment but outsource the brewing process to 'host' brewers, which are often microbreweries that rent out a share their capacity. Figure 1 shows that the rapid increase in the number of microbreweries, in particular after 2010, has mainly been caused by the entry of contract brewers.

The explosion in contract brewers can be explained by three factors. First, it simply reflects increased entrepreneurial activity in the industry as the expectation is that many of the contract brewers will transition to full-blown breweries if sufficiently viable in the eyes of the founders. Second, brewery founders are likely mimicking the successful examples of other breweries that began as contract brewers. Third, there is an increasing availability of production capacity among Dutch breweries. Whereas in earlier stages finding production capacity elsewhere could be challenging due to lack of availability and scepticism toward the practice, today most aspiring brewery entrepreneurs will be able to find brewing capacity in their direct vicinity.

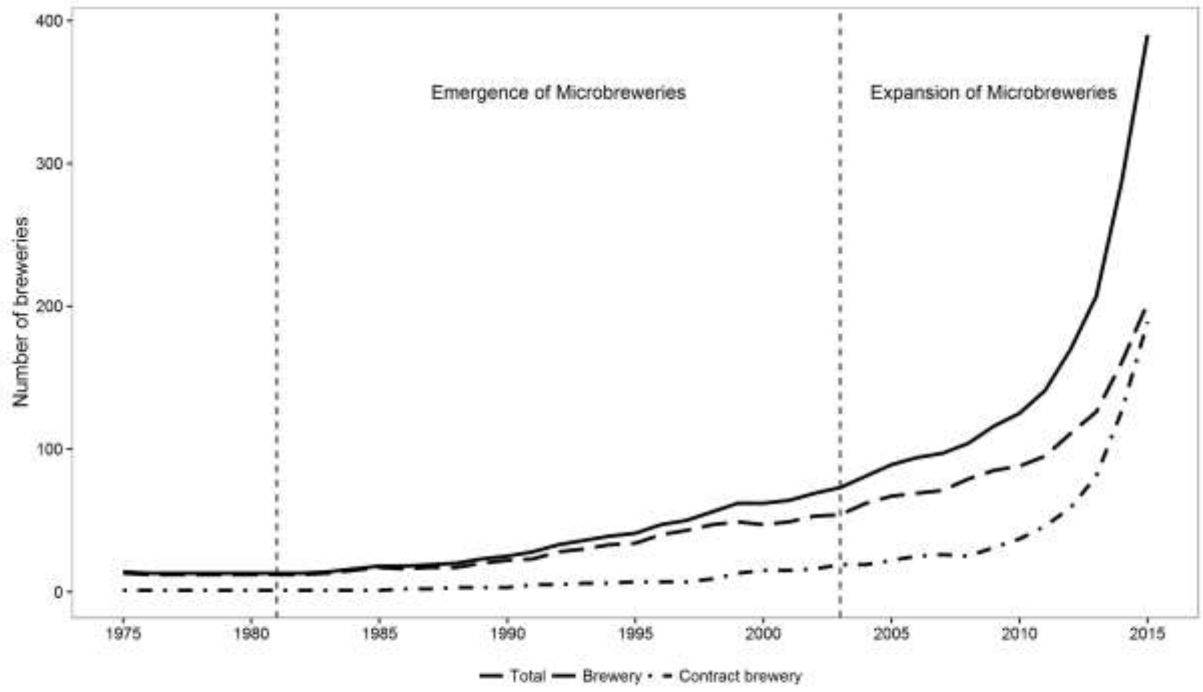
The contract brewer form emerged and proliferated despite initial contestation. Owners of breweries that *did* have their own equipment often strongly opposed the form. For example, Han Clijssen (owner of Moerenburg in Tilburg) said about a particular contract brewer: *"He has never brewed his own beer. So he lets others produce his beer by his command. That is actually a point that is a very hot issue for us at the moment. They let others produce their beers. If it is not good, they won't take it. What kind of risk do they have? Nothing, nothing at all. So I think you cannot call that a brewery."* In their study of the American microbrewery movement, Carroll & Swaminathan (2000) found similar negative sentiments toward contract brewing as a practice that ran counter to the 'authenticity' typically attributed to microbrewing.

However, when taking a closer look at what the Dutch contract brewer actually does, this criticism is only partially justified. The majority of contract brewers see contract brewing as a start-up phase that ultimately leads to the establishment of their own brewery. They typically use this phase for two reasons. First, contract brewing provides an opportunity for learning. Unlike what the quote above suggests, most contract brewers are actually involved in the brewing process that takes place at other breweries in order for them to work on their brewing skills. Second, contract brewing lowers the barriers to entry associated with the need for capital for starting a brewery. Through contract brewing, a brewer can establish a brand and generate initial revenue before investing in brewing equipment. There are many examples of successful Dutch microbreweries that started out as a contract brewer of which *Jopen* is probably the most successful. As such, the distinction between regular breweries and contract breweries should not be seen as set in stone.[5]

[5] Nonetheless, prominent organizations in the Dutch microbrewery movement have drawn sharp distinctions between these organizations. PINT for instance distinguishes between a *bierbrouwerij* (beer brewery), which owns its own production equipment, a *brouwerijhuurder* (brewery renter), which uses another brewery's equipment to produce its own beers, and a *bierhandelaar* (beer merchant), which commercializes someone else's beer.

Although the total production of microbreweries has grown substantially, the total market share remains relatively small in comparison to the large industrial brewers. All Dutch brewers together produced approximately 11.5 million hectoliters of beer in 2015 (www.nederlandsebrouwers.nl). Around 5% percent of the total beer production was carried out at the eight largest Dutch beer breweries who in numbers only make-up 2% of the entire population of beer brewers.

Figure 2: Number of microbreweries by type, 1975-2015



Source: Cambrinus

Note: The brewery type represent breweries that own and operate equipment.

4.4.3 Variation in styles and geographic distribution

The rapid increase in the number of breweries has also led to a significant increase in the variety of beers that are produced in the Netherlands. Although initially most microbreweries focused on the production of Belgian style ales and many continue to do so, newer entrants are increasingly finding inspiration in American-style ales (such as India Pale Ale). Yet other brewers have adopted a more experimental approach as evident by the use of unique strains of yeast or the addition of non-traditional herbs, spices and fruits. However, significant inspiration continues to be found in traditional beer styles and brewing practices. For example, Oersoep Brewery founded in 2012 in Nijmegen is described as *"…a brewery that makes clear choices and is not afraid to experiment. We brew a wide variety of beers and take into account the changing seasons, the rotation of yeasts and wooden casks. As a young brewery it is very important to seek out experiments and continue to maintain a high learning curve. For example, in 2013 we were the first Dutch brewery to use wild yeast (Brettanomyces) at a serious scale and complete the yeasting process in wooden casks."* The *Campagne Nederlandse Bierstijlen* (Campaign Dutch Beer-Styles) which was established in 2012 plays an important role in encouraging the rediscovery and reproduction of traditional Dutch beer styles. One example of such a style is *kuit*, which was a style that was popular during the Dutch Golden Age when Dutch breweries dominated the European brewing market. By publishing detailed recipes, the Campaign encourages Dutch brewers to reincarnate such traditional beer styles.

Variation is also found in the geographic distribution of microbreweries. Whereas the early cohorts of microbreweries were typically found in large cities (such as Amsterdam) and in the southern provinces, which have a richer local beer culture, more recently, specialty beer has also gained popularity in smaller cities and villages throughout other parts of the country. Even in the North of the Netherlands in the provinces of Groningen, Friesland, Overijssel and Drenthe, which traditionally focus more on the production of local spirits ('bitter') than beer, microbreweries have been emerging in the last couple of years. Nonetheless, the highest concentration of breweries continues to be found in the large cities. Amsterdam is the 'capital' of microbrewing with 39 breweries in 2015, followed by Rotterdam with 11 and Utrecht with 8.

5 What explains the emergence and proliferation of microbreweries in the Netherlands?

From our historical analysis and the interviews we conducted with brewery founders we concluded that the revival of the Dutch beer sector could not be attributed to a single cause. Instead, the explanation has to be sought in a combination of multiple drivers that interacted and operated in different ways across the three stages during which the foundations for microbrewing in the Netherlands were laid, emergence and proliferation. Below we distinguish between demand-related factors that could explain why there was a shift to alternative beer styles and supply-related factors that could explain why this new demand was exploited through the establishment of new breweries on Dutch soil.

5.1 Increasing demand for alternative beers

Our historical narrative shows how there were active and visible efforts to change the demand for beer in the Netherlands which contributed to the successful emergence of microbreweries. During the first stage, the consumer movement organization PINT played an important role in changing demand, supported by a number of pioneering beer pubs. During subsequent stages, demand for alternatives evolved due to increased exposure to the American craft beer scene and related experimental work by newly established Dutch microbreweries. If we take the founders of these organizations as opinion leaders for the broader group of consumers interested in alternative beer we can use our interviews and archival material on these actors to make inferences about the drivers behind the shift in demand away from industrial lager.

Here we discuss two demand-side drivers that we identified in our research that seemingly have contributed to the emergence and proliferation of microbreweries in the Netherlands: (1) consumer resistance and (2) a society-wide change in consumer preferences for food. Although, arguably, these drivers are not completely independent from one another, there is some evidence that allows us to say something about which demand-side drivers contributed to the initial emergence and which drivers contributed to subsequent expansion. Our qualitative data suggests that, initially, change in demand was predominantly fuelled by consumer resistance of while a broader change in consumer demand drove further expansion.

Table 1: Evolution of the Dutch beer-brewing sector: 1450-present

	1450-1650: Golden Age of Dutch Beer Brewing	1650-1970: Decline followed by concentration	1970-1981: Foundations for renewal	1981-2003: Emergence of microbreweries	2003-present: Rapid expansion of microbreweries
Characterisation	After initial emergence, concentration in a few brewing towns with access to international trade routes	Decline followed by modernization, rapid growth in scale and shakeout	Initiatives and activities to create a market for specialty beers	Entry of first cohort of new microbreweries	Rapid expansion of microbreweries
Number of breweries	>1000	>500→18	18→13	13→73	73→390
Main type of beers	Traditional ales with local variation (e.g. *kuit, gruit, luijks, mol, kluin*)	Modern lagers (pilsner)	pilsner	+ Belgian style ales and German bock predominantly	+ Increasingly American style ales, traditional Dutch styles and experimental styles
Type of breweries	Family/village or city with modest international market	Large established multinationals	Large established multinationals	+ few small independent breweries	+ independent breweries and contract breweries
Equipment	Traditional/artisanal, manual	Shift toward large-scale industrial	Large-scale industrial	Increasingly second-hand or self-assembled	Increasingly small-scale industrial or contracted in
Representative breweries	Those located in the traditional Dutch brewing towns of Haarlem, Delft and Gouda	*Heineken, Amstel, Phoenix Brouwerij, Oranjeboom, Bavaria, Grolsch Bierbrouwerij, Bierbrouwerij De Kroon, De Drie Hoefijzers*	*Heineken, Grolsch, Bavaria, Dommelsch (Artois), Oranjeboom (Allied Breweries)*	*De Arcense Stoombrouwerij, De Koningshoeven (La Trappe), Brouwerij Raaf, Brouwerij 't IJ, De Friese Brouwerij, Christoffel Brouwerij. Jopen Bier, Texelse Bierbrouwerij*	*Brouwerij De Molen, Bierbrouwerij Emelisse, Ramses Bier, Brouwerij Maximus, Kaapse Brouwers, Butcher's Tears, Wijchense Schone*
Key events	• Shift from production in rural households and monasteries toward production in newly emerging urban centres • Introduction of hopped beer • Emergence of the Hanseatic League (trade network of Northern European towns)	• Introduction of first steam engine in *Brouwerij Het Hert* in Haarlem (1841) • Acquisition of *Hooiberg Brouwerij in Amsterdam* by family Heineken (1863) • Establishment of first brewing corporation, *Koninklijke Nederlandsche Beijersch Bierbrouwerij* in Amsterdam, with shares of one million Dutch guilders (1864)	• Establishment of four pioneering alternative beer pubs (*Gollem* in Amsterdam, *Jan Primus* in Utrecht, *De Beyerd* in Breda, '*t Pumpke* in Nijmegen) • Appearance of beer importers specializing in (predominantly) Belgian ales (*De Kikvorsch, Bier & Co*).	• Founding of *De Arcense Stoombierbrouwerij* (1981), the first new Dutch beer brewery since WOII. • Reintroduction of ale beer brewed in the Netherlands.	• Founding of Small Brewery Collective/KBC (2003). • Number of beer breweries in the Netherlands exceeds that of Belgium. • Duvel Moortgat acquires stake in brewery '*t IJ*.

Source: Unger (2001) and authors' research.

5.1.1 Consumer resistance

Demand for alternative beers changed in the first place due to consumer resistance, which we define as contestation by consumers of an increasingly dominant organizational product or form. Our historical analysis shows that the reason for why early consumer activists started to look for alternatives to the dominant pilsner beer was that they contested the practices of the incumbent brewing corporations as they were dissatisfied with the beer culture that had emerged. In our interviews, we found that there were two triggers for resistance. One was a general dissatisfaction with what was experienced as an impoverishment of the brewing landscape due to the strategies of incumbent brewing corporations. Upon the discovery of alternatives to Pilsner in foreign countries, initially predominantly the United Kingdom and Belgium, some of these consumers began to engage in active contestation through vocalization of their demand for alternatives. This is most clearly reflected in the founding story of the consumer movement association PINT that we detailed above.

Another trigger of consumer resistance that we encountered was direct experience with the demise of a traditional beer brewery due to the strategies of the incumbent brewing corporations. Over the course of the 20th century many beer breweries had disappeared in the Netherlands. Often incumbent brewing corporations were directly responsible for their disappearance as they pursued aggressive growth strategies that involved the acquisition and annihilation of smaller breweries. Consumers that had witnessed the disappearance of a small brewery due to the growth strategies of the incumbent breweries often expressed negative sentiments toward Pilsner, the signature product of the incumbent brewers and, as such, had a greater interest in alternative beers. This is reflected in some of the statements made by the founders of PINT but was also encountered in our interviews with brewery founders. One of the founders for instance said: *"Well, I would dare to say that the big guys – Heineken, for example – are just crooks. They are just mafia. They buy something just to close it. They bought De Ridder, for example, and it is now closed. Heineken acquired it and closed it. Brand, for example, they brew a very good Pilsner and as well as craft beers. But in spite of this, it won't exist in 10 years time. It is Heineken that acquired Brand. The brewery has a good name and people from Limburg are proud of it, but Heineken would rather do away with all things Brand and replace it all with Heineken. That's how they are."*

The idea of consumer resistance has been described before. For example, in a study of the U.S. banking industry, Marquis and Lounsbury (2007) found that the acquisition of community banks by national banks was frequently quickly followed by the establishment of an alternative community bank. They attributed this effect to resistance of banking professionals to the dominance of national banks. We have found clear qualitative evidence that, for our case, corroborates Marquis and Lounsbury's assertions of target consumer resistance that is generated by historic within-industry events. Our findings suggest that, through their growth strategies, large generalist organizations may fuel resistance which may ultimately threaten their own existence.

The notion of consumer resistance can also be related to the concept of anti-mass production cultural sentiment as described by Carroll et al. (2001) and discussed above. The negative sentiment toward mass producers can be a trigger of resistance activities as evident in our example above. However, whereas anti-mass production cultural sentiment could be used to describe a more general sentiment in society that does not necessarily have to lead to any entrepreneurial action, consumer resistance relates to specific within-industry dynamics that do produce entrepreneurial activities.

5.1.2 Society-wide change in consumer preferences for food

Several studies point out that food consumption habits and preferences in North America and European countries have changed considerably over the past two decades as a consequence of various factors, such as changing demographics, health concerns, better education, income growth and customization in food marketing (Lappo et al., 2013; Martinez et al., 2010; McCluskey, 2015). Broadly four intertwined trends in consumer preferences for food can be identified. First, consumers have become more concerned with sustainability and environmental issues (e.g. climate change) and, as a result, have increasingly developed an interest in food that is produced with a lower environmental footprint. Second, there is a shift in consumer preferences towards safer and healthier food, for instance reflected by an increasing demand for transparency regarding ingredients, production processes and suppliers throughout the production chain and an increasing demand for organic food. Third, consumers are showing a distrust of modern food technologies, in particular GMOs, and instead prefer local foods to which they feel connected. Motivations for this trend are that consumers want to support the local economy and are interested to know where their food is coming from. A final but related trend is that consumers are seeking alternatives for mass-production goods and the business-oriented ("fast") way of living. Examples are the global Slow Food Movement, which encourages traditional ways of growing, producing, and preparing food, and the growing interest in craft and artisanal production.

Out of these four trends, the growing demand for local and non-mass produced products most likely have been the main drivers of the increase in the number of microbreweries after 2003. Apart from a few microbreweries such as *De Leckere* in Utrecht, which present themselves as the first organic and climate-neutral producer of beer, sustainability hardly ever used to market beers. Similarly, there seems to be little demand for organic beers in the Netherlands. A recent survey among a representative Dutch beer drinkers showed that only 17% valued organic beers, while 37% did not consider this of importance, the remainder being neutral (Nationaal Bier Onderzoek, 2014).

The same survey demonstrated that a relative larger share of beer consumers favoured local beers. 23% of the sample answered yes to the question if they preferred locally brewed beer over other beers if they had a choice, while 29% disagreed and 48% was neutral. Many microbreweries cater to the demand for local beers by involving local names, imagery and dialect to market their products. An example of this is Brewery *Wijchense Schone*, based in the village of Wijchen, which uses local expressions as names for all of their beers (also see below).

Growing consumer interest in local and craft products in the Netherlands is also demonstrated by the rapidly increasing number of festivals and activities around these themes, such as the Kimchi festival in Amsterdam and the *Dag van het Ambacht (national craft day)*. Specialty beers have turned into one of the items that is most associated with the local and craft movement, underscored by the strong presence of microbreweries at these festivals. Another, indicator for the growing interest in craft and specialty beers is that they are now also sold by the large supermarket chains that have outlets throughout the Netherlands, This contrasts with the 1980s and 1990s, during which one only could buy craft beers almost exclusively in dedicated beers shops and liquor stores.

5.2 Increasing supply of brewery entrepreneurs and resources

Demand-side factors alone are not sufficient to explain the emergence and proliferation of alternative organizational forms in a mature industry. Apart from the existence of latent demand opportunities, the rise of a new market also requires supply of entrepreneurs and organizational resources to transform latent opportunities into manifest businesses. From our in-depth qualitative research we distinguish between four different supply-side drivers that lowered barriers to entry for microbreweries in the Dutch brewing industry: (1) Hobby brewing associations; (2) Growing network ties and access to information; (3) new forms of financing; and (4) Remnants from old breweries.

5.2.1 Hobby brewing associations

A major factor that contributed to the increased 'production' of potential brewery entrepreneurs was the growing number of hobby brewing associations in the Netherlands that developed in conjunction with PINT. The budding hobby brewing scene allowed individuals to experiment with brewing and share knowledge about the brewing process. Brewing beer at home was strictly forbidden by law in the Netherlands up until as late as 1992. However, PINT was able to get the Ministry of Finance to confirm in 1983 that although "The brewing of beer outside of an approved brewery was illegal, the government would seek no prosecution in such cases where the beer is exclusively consumed in the family circle." Subsequently, the first official Dutch hobby brewers association, *De Roerstok* in Tilburg, was established in 1984. This was followed by others, such as *De Deltabrouwers* in 1987 and *'t Wort Wat* in 1991. These hobby association would not only encourage the practice of home brewing and facilitate knowledge sharing but also organize competitions. A significant number of brewery founders that we interviewed reportedly learned the tricks of the trade through participation in these hobby brewing associations before "going professional".

5.2.2 Growing network ties and access to information

While the first generations of Dutch brewery entrepreneurs in the 1980s and 1990s struggled to solve technical challenges, more recent generations of brewery entrepreneurs had a considerably easier time in solving these challenges. Experts and founders indicate that information on the brewing process and the availability of equipment are much less of a constraint in the most recent period of microbrewery growth. Mastering the brewing process and experimenting with different recipes has become much easier due to the availability of numerous information sources on the internet and the emergence of fora and networks of home-brewers that exchange experience. Similarly, the increasing popularity of home brewing as well as the increase in microbreweries has led to the entry of specialised suppliers of (home)brew equipment and engineering companies that can assist with the design and construction of a new brewery. An example is *Brouwtechniek Nederland,* which has supported the design and expansion of a number of microbreweries such as *'t IJ* in Amsterdam, *Maximus* in Leidsche Rijn and *Graaf van Heumen* in Heumen. Finally, another source of information for new brewers is the small brewery initiative (KBC). Several brewers indicated the usefulness of the hygiene guidelines for microbreweries that was drafted by KBC.

5.2.3 New Forms of Financing

The first microbreweries in the 1980s started with very limited resources and as such had to be creative in constructing their breweries as outlined above. Small breweries of the first cohort, such as *De Noorderbierbrouwerij* in Alkmaar and *De Noorderzon* in Groningen struggled to finance their modest start-up costs of around 100,000 Dutch Guilders at the time. For example, Colin Brown, of *De Noorderbierbrouwerij* was required to seek support from a governmental institutions for small and medium sized business (CIMK) before a loan would be approved. He said about this: *"We received the advice from CIMK to produce beer that was tailored to the Dutch taste. And yes, that meant we also had to produce Pilsner. However, that is impossible, I told them: then we may as well shut everything down. I would never be able to compete with big brewers like Grolsch."* In the more recent period, new ways of funding and in particular crowd funding, have reduced the entry barriers for starting up a microbrewery. A large number of breweries, such as for example *Oedipus* in Amsterdam and *Oersoep* in Nijmegen, have used crowd funding to finance the construction or expansion of the brewery. Also due to the popularity of local beers, microbreweries are regarded as an interesting investment by private funders and financial institutions. Several founders indicated that banks are now familiar with the concept and therefore willing to provide start-up capital.

5.2.4 Remnants from old breweries

For the first generations of brewery entrepreneurs in the Netherlands, there was hardly any publically available information on the brewing process and the operation of a (micro) brewery, let alone a network of equipment suppliers and specialised engineers that could support the foundation of a brewery. Founders often resorted to a process of tinkering to set up their breweries, using second-hand equipment from disbanded or renovated breweries in Belgium and Germany or from dairy and soda producers in the Netherlands. Examples of this are breweries *Raaf* and *'t IJ*, which were founded in 1984 and 1985 respectively, but also brewery *De Molen* and *Butchers Tears*, which were established after 2003 and are part of what we see as the second wave of microbreweries.

One additional important source of organizational resources we found was in the form of remnants from ancestral breweries—dissolved breweries from previous generations. Resembling a biological process, we found that many founders benefited from the recycling of organizational 'detritus' pertaining to such ancestral breweries in the form of technical and symbolic organizational resources (Kroezen, 2014). For example, several founders benefitted from using discarded equipment and production sites of failed ancestral breweries in the Netherlands, which substantially reduced start-up costs. We also found that a large number of founders used names, labels, logos and recipes of local historic breweries as a basis for their brewery and beers. This practice increased the legitimacy of the microbreweries who engaged in it by allowing them to authentically strengthen their link with the local community. An example is *Jopen* in Haarlem, which first beer was based on an authentic recipe to celebrate the 750th anniversary of Haarlem. At present assortment of *Jopen* exists of a wide range of beers that all have some reference to local beer brewing history. The active, conscious creation and maintenance of attachment to place is referred to as neolocalism. Several authors have pointed out that this also played an important role in the expansion and geography of U.S. microbreweries (Flack, 1997; Schnell and Reese, 2014).

Our archival data on all microbreweries that were established between 1981-2012 reveals that at least 35% made use of some form of detritus. However, the use of detritus became less prevalent over time. Whereas at least 46% of microbreweries established before 1994 made us of some form of organizational detritus this applied to only about 30% of breweries established after 1994. This suggests that as the microbrewery sector grew it became easier to amass technical and symbolic organizational resources without making use of remnants from ancestral organizations.

6 Discussion and conclusions

Since the entry of the first new brewery since World War II in 1981, the Dutch beer sector has experienced an unprecedented phase of structural transformation and renewal. The number of breweries increased from 13, mostly established breweries that produced lager to 390 organisations of which the majority are microbreweries that produce a wide variety of types, including Belgian and German style ales, American Ales as well as traditional Dutch styles.

In this paper, we have sought explanations for this remarkable phenomenon. Our findings provide deeper insights into the emergence of microbrewing and extends previous research on the renewal of mature industries. First, although our findings are overall in line with resource partitioning theory (Carroll, 1985) they also provide additional evidence for alternative mechanisms that can lead to resource partitioning (Carroll & Swaminathan 2000; Carroll et al., 2002). We find that, similar to the U.S. industry, microbreweries emerged after there was significant concentration and homogenization when established producers began to focus exclusively on the centre of the market through the exclusive production of pilsner at the expense of traditional beer styles. This did appear to lead to 'resource release' in the form of latent demand for alternatives as consumers at the periphery of the market were no longer served. However, a complete understanding of renewal also requires an answer to the question of how latent demand becomes manifest, something which is not addressed in resource partitioning theory.

Making latent demand manifest requires two things: ideas about alternative products and the production of entrepreneurs that are motivated to market such products (see Weber et al., 2008). In other words, we can look at demand factors and at supply factors when unpacking the mechanisms of resource partitioning and industry renewal. In terms of demand factors, we find that social movements played a crucial role in the renewal of the Dutch beer sector. The establishment of the first microbreweries emerged out of the dissatisfaction with the dominance of established breweries and the related offer of a very homogeneous product selection (i.e. pilsner). This spurred the resistance of beer enthusiasts, which resulted in the foundation of the first specialty beer pubs and a national consumer movement organisation out of which the first microbreweries emerged. After a period of steady increase, the Dutch beer sector entered a new phase during which the growth in the number of microbreweries accelerated dramatically after 2003. The rapid expansion of microbreweries has been spurred by the a society-wide change in consumer preferences for food, induced by several social movements of which the movements for local and anti-mass produced food have been most important.

In terms of supply factors, we found, in the first place, that again consumer resistance and related anti-mass production sentiment was an important mechanism that motivated consumers not just to resist through the development of alternative demand, but also through actual organizational founding. Many breweries were founded because consumers transitioned from resisting mass-produced beer, to active hobby brewers to actual brewing entrepreneurs. The deterioration of the Dutch beer culture and the common attribution of this to the activities of the large pilsner breweries was one of the primary motivations for early founders to establish new breweries. We also found that several broader structural forces, operating at different phases and intensity during industry renewal, facilitated the entry of microbreweries. The combination of growing network ties, increasing access to and availability of information, alternative forms of finance and building on the remnants of ancestral breweries have considerably lowered the start-up costs of entrepreneurs in the beer sector over the past three decades.

The year 2015 was a landmark in the history of the Dutch beer sector. For the first time in 100 years, the number of breweries in the Netherlands was higher than that in Belgium, which beer culture has inspired many of the Dutch microbrewers.[6] A relevant question is whether the beer sector in Netherlands can sustain its rapid expansion and renewal in the future or if it is in fact entering a new phase of mass entry that defines a second industry life cycle, which soon will be followed by shakeout and consolidation. There are indications for the latter as on September 1, 2015, it was announced that *Duvel Moortgat*, obtained a substantial share of brewery *'t IJ*, one of the largest microbreweries in the Netherlands – to the best of our knowledge the first time a Dutch microbrewery attracted investment from a foreign competitor.[7]

[6] http://nos.nl/artikel/2042938-nederland-streeft-belgie-voorbij-qua-aantal-bierbrouwers.html [accessed 25-04-2016].
[7] http://www.brouwerijhetij.nl/samenwerking-t-ij-duvel-moortgat [accessed 25-04-2016].

References

Alberts, W.J., 1969. De Nederlandse Hanzesteden. Fibula-Van Dishoeck.

Benford, R.D., Snow, D.A., 2000. Framing Processes and Social Movements: An Overview and Assessment. Annu. Rev. Sociol. 26, 611–639.

Boone, C., Brdcheler, V., Carroll, G.R., 2000. Custom Service: Application and Tests of Resource-Partitioning Theory among Dutch Auditing Firms from 1896 to 1992. Organ. Stud. 21, 355–381. doi:10.1177/0170840600212003

Carroll, G.R., 1985. Concentration and Specialization: Dynamics of Niche Width in Populations of Organizations. Am. J. Sociol. 90, 1262–1283.

Carroll, G.R., Dobrev, S.D., Swaminathan, A., 2002. Organizational processes of resource partitioning. Res. Organ. Behav. 24, 1–40. doi:10.1016/S0191-3085(02)24002-2

Carroll, G.R., Hannan, M.T., 2000. The Demography of Corporations and Industries. Princeton University Press.

Carroll, G.R., Swaminathan, A., 2000. Why the Microbrewery Movement? Organizational Dynamics of Resource Partitioning in the U.S. Brewing Industry. Am. J. Sociol. 106, 715–762. doi:10.1086/318962

Dekken, M. van, 2010. Brouwen, branden en bedienen: productie en verkoop van drank door vrouwen in de Noordelijke Nederlanden, circa 1500-1800. Amsterdam University Press.

Edwards, B., McCarthy, J.D., 2004. Resources and social movement mobilization. Blackwell Companion Soc. Mov. 116–152.

Flack, W., 1997. American Microbreweries and Neolocalism: “Ale-ing” for a Sense of Place. J. Cult. Geogr. 16, 37–53. doi:10.1080/08873639709478336

Greve, H.R., Pozner, J., Rao, H., 2006. Vox Populi: Resource Partitioning, Organizational Proliferation, and the Cultural Impact of the Insurgent Microradio Movement. Am. J. Sociol. 112, 802–837. doi:10.1086/507853

Hornsey, I.S., 2003. A History of Beer and Brewing. Royal Society of Chemistry.

Jansen, A.C.M., 1987. Bier in Nederland en België: een geografie van de smaak. Koninklijk Nederlands Aardrijkskundig Genootschap, Utrecht.

Karst, T., 1980. Bierbrouwen in Groningen. Ebel Noorman, Groningen.

Klepper, S., 1997. Industry Life Cycles. Ind. Corp. Change 6, 145–182. doi:10.1093/icc/6.1.145

Kroezen, J.J., 2014. The renewal of mature industries: An examination of the revival of the Dutch beer brewing industry, ERIM PhD Series in Research in Management. Erasmus Research Institute of Management – ERIM, Rotterdam.

Lappo, A., Bjørndal, T., Fernandez-Polanco, J., Lem, A., 2013. Consumer trends and prefences in the demand for food (Working paper No. 51/13). Institute for Research in Economics and Business Administration, Bergen.

Lintsen, H.W., Bakker, M.S.C., Lente, D. van, 1992. Dl. 1: Techniek en modernisering, landbouw en voeding, Geschiedenis van de techniek in Nederland : de wording van een moderne samenleving 1800-1890. Stichting Historie der Techniek, ’s-Gravenhage.

Marquis, C., Lounsbury, M., 2007. Vive La Résistance: Competing Logics and the Consolidation of U.S. Community Banking. Acad. Manage. J. 50, 799–820. doi:10.5465/AMJ.2007.26279172

Martinez, S., Hand, M.S., Da Pra, M., Pollack, S., Ralston, K., Smith, T., Vogel, S., Clark, S., Lohr, L., Low, S.A., Newman, C., 2010. Local Food Systems; Concepts, Impacts, and Issues (No. ERR 97). U.S. Department of Agriculture, Economic Research Service,U.S. Department of Agriculture, Economic Research Service,.

McAdam, D., McCarthy, J.D., Zald, M.N., 1996. Comparative Perspectives on Social Movements: Political Opportunities, Mobilizing Structures, and Cultural Framings. Cambridge University Press.

McCarthy, J.D., Zald, M.N., 1977. Resource Mobilization and Social Movements: A Partial Theory. Am. J. Sociol. 82, 1212–1241.

McCluskey, J.J., 2015. Changing food demand and consumer preferences, in: Paper Prepared for Agricultural Symposium Federal Reserve Bank of Kansas City July 14-15, 2015.

Meyer, D.S., 2004. Protest and Political Opportunities. Annu. Rev. Sociol. 30, 125–145.

Philips, R., 1999. Limburgse brouwerijen en bierdrinkers: Vier opstellen over bierbrouwerijen en bierconsumptie, voornamelijk in Nederlands Limburg. Sociaal Historisch Centrum voor Limburg, Maastricht.

Poelmans, E., Swinnen, J.F.M., Swinnen, J.F.M., 2011. From Monasteries to Multinationals (and Back): A Historical Review of the Beer Economy, in: The Economics of Beer. OUP Oxford.

Rao, H., Monin, P., Durand, R., 2003. Institutional Change in Toque Ville: Nouvelle Cuisine as an Identity Movement in French Gastronomy. Am. J. Sociol. 108, 795–843. doi:10.1086/367917

Schnell, S.M., Reese, J.F., 2014. Microbreweries, Place, and Identity in the United States, in: Patterson, M., Hoalst-Pullen, N. (Eds.), The Geography of Beer. Springer Netherlands, pp. 167–187.

Simons, J.F.L.M., 1992. De Limburgse brouwwereld en de opkomst van de ondergisting, in: Jaarboek Voor de Geschiedenis van Bedrijf En Techniek. Stichting Jaarboek GBT, Utrecht, pp. 124–158.

Unger, R.W., 2004. Beer in the Middle Ages and the Renaissance. University of Pennsylvania Press.

Unger, R.W., 2001. A History of Brewing in Holland 900-1900: Economy, Technology and the State. Brill Academic Pub, Leiden ; Boston.

Van Uytven, R., 2007. Geschiedenis van de dorst: twintig eeuwen drinken in de Lage Landen. Davidsfonds, Leuven.

Weber, K., Heinze, K.L., DeSoucey, M., 2008. Forage for Thought: Mobilizing Codes in the Movement for Grass-fed Meat and Dairy Products. Adm. Sci. Q. 53, 529–567. doi:10.2189/asqu.53.3.529