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Gender categorisation in representational market practice

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ABSTRACT

This paper explores gender categorisation in representational market practice. Drawing on the conceptual tools of constructivist market studies, combined with ethnomethodological theories of gender, this paper shifts attention from advertising representations to representational practice in markets. Based on an in-depth study of the development and marketing of a menstrual cycle tracking app, the paper analyses gender categorisation in different practices and over time. The category of women initially appears as a useful, straightforward category that becomes increasingly problematic for the company over time. Studying gender as a category that draws boundaries around entities highlights the rhetorical and practical work done by categories of gender.

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Introduction

Categories of gender – man and woman, male and female, masculine and feminine – are woven into market practice. The idea that there are fundamental differences between female and male consumers – their needs, wants, and behaviours – organises many facets of market practice. In retail, many clothing stores serve either men or women, or at least present women's and men's merchandise in separate floors or sections of the store. Likewise, toy stores commonly dedicate separate sections to girls' and boys' toys. Men's and women's electric shavers developed into distinct product lines in the 1950s (Van Oost, 2003). In market segmentation, gender figures heavily as a base for segmentation and organises market research activities (Sunderland & Denny, 2011). Gender-based classifications are vital when buying and selling advertising audiences (Cronin, 2008).

Schroeder and Zwick (2004, pp. 21–22) write:

Almost all products are gendered in a practice of normative sexual dualism reinforced and maintained within the interlocking cultural institutions of marketing communication and market segmentation. As an engine of consumption, advertising plays a strong role in promulgating dualistic gender roles and prescribing sexual identities. Most ad campaigns invoke gender identity, drawing their imagery primarily from the stereotyped iconography of masculinity and femininity.

The above quote highlights the role of advertising in reproducing a binary gender system. Gender research in the fields of marketing and consumer behaviour provides ample

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support for Schroeder and Zwick (2004) assertion. There is a rich body of research focused on exploring the reproduction of gender ideals in advertising (Atkinson, 2014; Gentry & Harrison, 2010; Gurrieri, Previte, & Brace-Govan, 2012; Ostberg, 2010; Ourahmoune, Binninger, & Robert, 2014; Schroeder & Borgerson, 1998; Schroeder & Zwick, 2004). Cultural representations pertaining to both gendered body ideals (Gurrieri et al., 2012; Ostberg, 2010; Patterson & Elliott, 2002) and gender roles (Atkinson, 2014; Gentry & Harrison, 2010) have been studied. Research on the representation of women and men in advertising suggests that advertising representations reinforce traditional distinctions between the sexes (Ourahmoune et al., 2014; Schroeder & Borgerson, 1998). For example, Gurrieri et al.'s (2012) visual analysis of three social marketing campaigns shows 'how the simple, doable healthy lifestyle practices promoted to women actually reproduce idealized understandings of femininity and normalized body projects for women that perpetuate stereotypes' (p. 131).

Schroeder and Zwick (2004) point the finger at 'the interlocking cultural institutions of marketing communication and market segmentation' (p. 21). Still, market segmentation hasn't received the same attention as marketing communication. Methodologically, research on gender representations has analysed finished representations, such as published or broadcast ads. These studies seek to expose the patterns of representations in a specific field, or the evolution of such patterns over time. Few studies have looked at market segmentation, or other practices that work behind advertising, or 'inside marketing' (Zwick & Cayla, 2011).

This paper proposes to extend the interpretive gaze of gender research from advertising representations of gender, to gender categorisation in representational market practice. Representational practices in markets have been defined as 'activities that contribute to depict markets and/or how they work' (Kjellberg & Helgesson, 2007, p. 143). The market practice approach extends attention from finished representations to the production and use of representations, described as chains of translations (Kjellberg & Helgesson, 2007). I define gender categorisation as using references to gender to place boundaries around objects. Practices of categorisation, by placing boundaries around objects (Azimont & Araujo, 2010), represent the members of a category as similar with each other in some respect, and dissimilar with non-members. An example of gender categorisation in representational market practice is gender-based segmentation. Other examples include practices such as the division of employment statistics 'by sex' and the labelling of a market or a product category as 'feminine hygiene products'. Drawing on a long line of feminist scholarship (Butler, 1990; Fausto-Sterling, 2000; Kessler & McKenna, 1978; Martin, 2001; Roberts, 2007) that understands the construction of gender as deeply interlinked with the construction of sex, I include in my definition of gender categorisation both instances of referring to labels traditionally understood as socio-cultural (e.g. housewife) and instances of referring to labels traditionally understood as bio-medical (e.g. female).

Gender categorisation involves ideas of both sex and gender. Practical and academic theories of sex difference are characterised by essentialist notions of sex differences based on biology. The notion of gender, however, provides a socio-cultural explanation for sex differences, emphasising factors such as learned gender roles and socialisation. Sex categorisation has long roots, while notions of gender have largely gained ground as a result of feminist interventions, starting in the 1960s and 1970s (Bettany, Dobscha, O'Malley, & Prothero, 2010). There has been a general move in society and marketing from

strictly biological understandings to a more social and cultural definition of gender. In marketing, for example, the practice of single-sex focus groups might be justified, not with essential differences between men and women, but with reference to shared experiences and a sphere of trust between women. At the same time, developments such as neuromarketing make it evident that not everyone has abandoned biology-based explanations for differences in how men and women respond to marketing.

The aim of this paper is to explore gender categorisation in representational market practice. The empirical study focuses on the development and marketing of a menstrual cycle tracking app, Clue. Clue is the product of a start-up company based in Berlin, Germany. The basic concept of using a mobile app to collect and analyse menstrual cycle data can be – and is being – put to different uses by the apps that Clue considers as its competitors. Knowing when to expect your next period, conceiving, and avoiding pregnancy are some of the uses suggested by the different apps marketed as period, ovulation, or fertility trackers. When Clue was launched, many apps in the category were stereotypically girly in their design, whereas Clue was launched as a non-pink alternative to the period tracker apps that, in the words of the founders, had taken their design cues from My Little Pony. Gender is a highly salient category at Clue: there is a reflexive awareness of gender stereotypes and an understanding that cultural ideas about gender are changing in a way that questions biology as determining gender. At the same time, the app is focused on a biological process that only certain kinds of bodies experience. This forces the company to relate to notions of biological sex. In other words, sex and gender are categories the company has to deal with – making it an illuminative context for studying gender categorisation in representational market practice. My exploration focuses on the ways in which the company represents the potential and actual users of the app. Specifically, I focus on two sets of representational practices: user research and external communication.

The findings of the study contribute to gender research in marketing and consumer behaviour in three fronts. First, the paper shifts attention from advertising representations to representational market practices, advocating a process perspective that highlights the multiple influences shaping marketing representations of gender. Second, the paper extends attention from the content of gender categories to the categories themselves. Finally, the paper highlights the functions of gender representation in market practice.

The next section reviews previous research on the role of marketing in reproducing a binary gender system. The section after this conceptualises representational practice and gender categorisation. This is followed by a discussion of methods. I then present my account of the trajectories of gender categorisation in Clue's representational market practices. A discussion draws together the findings and a concluding section suggests directions for future research.

Literature review

Advertising representations of men and women, rather than merely reflect cultural understandings of masculinities and femininities, help shape conceptions of masculinity and femininity (Schroeder & Zwick, 2004). This conceptual starting point has inspired a body of research that focuses on representations of gender in advertising (Atkinson, 2014; Brace-Govan, 2010; Gentry & Harrison, 2010; Gurrieri et al., 2012; Malefy & McCabe,

2016; Ostberg, 2010; Ourahmoune et al., 2014; Patterson & Elliott, 2002; Schroeder & Borgerson, 1998; Schroeder & Zwick, 2004; Sobande, Mimoun, & Trujillo Torres, 2019; Takhar & Pemberton, 2019). For example, research has explored how green advertising in pregnancy magazines constructs a highly demanding green mothering identity (Atkinson, 2014) and how advertising, along with popular culture, constructs the norm that real men have a big enough penis (Ostberg, 2010). This research has convincingly made the point that advertising takes part in the social construction of masculinities and femininities and relies heavily on gender stereotypes. This research has paid less attention to networks of representational practices, gender categorisation, and the functions of gender representations in market practice.

Research on advertising representations of gender is limited to the analysis of finished representations, such as published or broadcast ads. These studies have largely ignored the networks of practices where advertising is produced. Notable exceptions include the studies by Malefyt and McCabe (2016) and Zayer and Coleman (2015). Malefyt and McCabe (2016) draw on their own involvement researching the cultural underpinnings of menstruation for a manufacturer of feminine hygiene products. The research they conduct discovers a change in women's discourses of menstruation but this change is not fully reflected in the ad campaign resulting from their research. Unfortunately, Malefyt and McCabe do not cover the chain of events leading from research to ad campaign. Instead, the authors explain this disconnect as an effect of 'an ideology divided by gender roles' (p. 568). Zayer and Coleman (2015), on the other hand, seek to understand the creative and strategic choices of advertising professionals. Largely based on interviews, they present a typology of advertising professionals' perspectives on the ethics of gender representation. They argue that advertising professionals vary (1) in the extent to which they perceive that advertising representations of gender can negatively impact audiences, (2) in terms of the ethical lenses they apply, and (3) in terms of their behavioural responses in the workplace. The authors further suggest that the perceptions, ethical lenses and responses of advertising professionals are shaped by societal discourses and advertising institutions, including dynamics within agencies as well as relationships to clients, media and regulatory bodies. Specifically, Zayer and Coleman find that many advertising professionals reiterate and reinforce perspectives that serve to stifle progress in ethical decision-making.

Masculinity and femininity, as categories of gender, can be understood as boxes. In focusing on representations of masculinities and/or femininities, previous research has explored how advertising contributes to fill these boxes with content such as bodily ideals (e.g. Ostberg, 2010), gender roles (e.g. Gentry & Harrison, 2010), and stereotypes. However, this research has paid little attention to the boxes themselves – categories of gender. Certainly, the boxes and their content are closely related. The stability of the contents helps to maintain the stability of the categories themselves. Gender norms 'serve to reproduce a particular political system in which the categories of "men" and "women" are stable and unproblematic' (Ostberg, 2010, p. 47). However, research has not explored the categories themselves: What categories are used in market practice? How strong are the categories? How are categories questioned? What do they do?

Finally, the focus on the role of advertising in constructing masculinities and femininities has meant sidelining questions on the functions of gender representations in market practice. Advertising has been seen as shaping the gender identities of consumers and

constructing segments (Schroeder & Zwick, 2004), but other functions of gender representations have not been studied. While some recent research has started to explore the functions of stereotypical representations in markets (Sobande et al., 2019; Takhar & Pemberton, 2019), these questions remain largely unexplored.

Theoretical framework

My study of gender categorisation relies on the conceptual tools of constructivist market studies. To complement the vocabulary of market practice, I draw on ethnomethodological theories of gender. While ethnomethodology differs from the market practice approach in several key assumptions, the approaches are unified by their relentless interest in the practical accomplishment of what appear to be naturalised objects. The first sub-section discusses representational practice in markets, while the second focuses on ethnomethodological theories of gender. A final sub-section summarises the key takeaways.

Representational practice in markets

Market studies' practice ontology stresses the emergent and plastic character of reality. In this view, properties of the world are neither natural facts nor social constructions imposed on shapeless matter. Rather, they are seen as outcomes of a continuous recursive process involving materially heterogeneous entities (Kjellberg & Helgesson, 2007). Entities such as buyers, sellers and objects of exchange – and categories and categorisation systems – are seen as practical outcomes. In this view, 'social categories are not natural or self-sustaining but enacted by a variety of performances and artifacts' (Azimont & Araujo, 2007, p. 849).

Representational practices have been suggested as one of three types of practices that contribute to constitute markets (Kjellberg & Helgesson, 2007). Kjellberg and Helgesson (2007, p. 141) define market practices as 'all activities that contribute to constitute markets' and propose a threefold conceptualisation of market practice as exchange practices, representational practices, and normalising practices. They define exchange practices as 'the concrete activities related to the consummation of individual economic exchanges' (p. 142). Representational practices are defined as 'activities that contribute to depict markets and/or how they work' (p. 143). Finally, normalising practices refer to 'activities that contribute to establish guidelines for how a market should be (re)shaped or work according to some (group of) actor(s)' (p. 143). This perspective further suggests that the different practices feed into each other. For example, representations of markets are frequently used as parts of efforts to alter norms in markets and feed into exchange practices as results that influence decisions (Kjellberg & Helgesson, 2007).

Empirical studies in this tradition have explored, for example, market research (Jacobi, Freund, & Araujo, 2015), industrial market segmentation (Harrison & Kjellberg, 2010), price representation practices in retail markets (Hagberg & Kjellberg, 2014), and the shaping of fashion trends by fabric companies taking part in a powerful trade fair (Rinallo & Golfetto, 2006). A central tenet of these studies is that representations do not merely describe but also contribute to shape markets in important ways. For example, Harrison and Kjellberg (2010) emphasise the productive role of market segmentation activities in creating rather

than discovering segments. Classification and categorisation have been frequent themes in studies of representational practice. For example, Azimont and Araujo (2007) highlight category review meetings as instances where manufacturers seek to represent the market and define and segment the category in ways serving their interests.

Categorisation is performative in the sense that it helps to bring into being the categories it means to describe. Categorisation has been theorised as a process of translation. Translation, in this view, refers to the basic social process by which things travel, often changing in non-trivial ways as they travel (Kjellberg & Helgesson, 2007; Latour, 1986, 2005). Translation involves heterogeneous entities (Latour, 2005). Both the reclassification of a naturalised category (Azimont & Araujo, 2010) and the emergence of a new category (Blanchet, 2016) have been theorised as a process of translation depending on the enrolment of heterogeneous allies such as market research, managers, and objects. Categories are emergent, and categorisation contributes to shape other entities, such as markets and organisations (Azimont & Araujo, 2007, 2010; Sjögren & Helgesson, 2007).

A key takeaway from this research is the focus on categorisation conflicts. Azimont and Araujo (2007) study category review meetings, where a retailer and its suppliers, manufacturers of non-alcoholic beverages, discuss past performance and future prospects. The suppliers, in their presentations for the retailer, proposed different ways of defining and segmenting the market. Depending on their stakes in the market, they either relied on established category definitions or sought to redefine the category of non-alcoholic beverages or some of its sub-categories. Blanchet (2016) describes the emergence of the category of ethical fashion as building on a critique of existing categories. Sjögren and Helgesson (2007) describe the various ways in which pharmaceuticals are categorised. In biomedicine, various schemes exist for classifying pharmaceuticals according to therapeutic characteristics and chemical composition. These are different from the categorisation of pharmaceuticals in clinical practice, where doctors, in close relation with individual patients, enact delineations of similarity and difference. Health economics provides yet another way of categorising pharmaceuticals. Using quality-adjusted life years as the unit of measurement, treatments for different illnesses can be categorised based on their cost-effectiveness. The work of the organisation deciding on the subsidisation of pharmaceuticals depends on coordinating these competing logics of categorisation. Azimont and Araujo (2010) study of the reclassification of a petrol station network shows a confrontation between the logics of productivity and market segmentation. The authors conclude, 'a categorization process that started as a technical exercise turned into a political debate about the current and future shape of the company's network' (p. 1017).

Empirical studies of representational practices have rarely touched on gender categorisation. Sunderland and Denny's (2011) ethnographic account of consumer segmentation, while not explicitly focused on gender, supports the idea that gender is an important organising category. Sunderland and Denny were tasked with conducting qualitative research to better understand a retailer client's customer segments. The client had defined segments based on transaction data and produced a list of 'best fit' members for each segment to facilitate the recruitment of research participants. When recruiters discovered men on the 'Executive Manager Moms' list, a company representative quickly resolved to 'go with females on the list who are truly moms' (p. 146). Gender categorisation has been in focus in ethnomethodological theories on gender, to which I now turn.

Ethnomethodological theories of gender

Ethnomethodological research on sex and gender has its origins in Garfinkel's (1967) classic study of 'Agnes'. Through the case of Agnes, whom he describes as an intersexed person, Garfinkel illustrates the management of sex status and proposes 'the normally sexed person as a contingent, practical accomplishment' (p. 181). He describes the practices that allowed Agnes to, despite having a penis, to pass as a woman. Importantly, he argues that Agnes' practices of passing are not unique to her but rather make observable how 'normals', too, accomplish sex status. At the same time, Agnes, according to Garfinkel, shared with persons who are able to take their own normally sexed status for granted an acceptance of the naturalness of dichotomous sex. He argues that people, in general, achieve their status as men or women but believe this to simply be the natural state of things.

Garfinkel's (1967) discussion of Agnes does not explicitly separate the analytical concepts of sex and gender. Kessler and McKenna (1978) acknowledge the traditional definition of gender as designating the psychological, social and cultural, and sex as the biological components of maleness and femaleness. To emphasise their position that 'the element of social construction is primary in all aspects of being female or male' (p. 7), they elect to use the term gender even when referring to those aspects that have traditionally been understood as biological. Kessler and McKenna's (1978, p. 3) central question is, 'How is a social reality where there are two, and only two, genders constructed?' Their answer is to emphasise the primacy of gender attribution. The gender attribution process is an interaction between a displayer and attributor who share a knowledge of the socially constructed signs of gender. To aid gender attribution, the displayer can accentuate relevant cues, while the attributor contributes to their accentuation by selective perception. Once a gender attribution has been made, the attributor filters signs through the gender attribution that was made. West and Zimmerman (1987), in their re-reading of the case of Agnes, distinguish between sex, sex category, and gender. They define sex as 'a determination made through the application of socially agreed upon biological criteria for classifying persons as females or males' (p. 127). In everyday life, membership in a sex category is established and sustained by 'socially required identificatory displays' (p. 127) rather than genitals. Agnes did not possess the socially agreed upon biological criteria for classification 'as a member of the female sex' (West & Zimmerman, 1987, p. 131, italics in original). In everyday life, however, common-sense categorisation helped her preserve her categorisation as a female. As also pointed out by Garfinkel (1967) and Kessler and McKenna (1978), there is a basic trust that people are what they appear to be. Finally, West and Zimmerman (1987, p. 127) define gender as 'the activity of managing situated conduct in light of normative conceptions of attitudes and activities appropriate for one's sex category'. Agnes, in addition to preserving her sex categorisation, faced the challenge of behaving in ways that would be seen by others as 'normative gender behavior' (p. 134). Taken together, Garfinkel's (1967), Kessler and McKenna (1978), and West and Zimmerman (1987) works suggest that both sex and gender, as traditionally understood, are socially constructed categories and interactional achievements. Furthermore, these works suggest that people are assumed to have the essential sex characteristics that match their gender attribution. There exist different bases for sex/gender categorisation but they are all expected to coincide.

Westbrook and Schilt (2014) expand ethnomethodological theories of gender beyond face-to-face interactions. They propose ‘determining gender’ as an umbrella term for ‘social practices of placing others in gender categories’ (p. 32). They argue that, in addition to everyday interaction, gender determination occurs at the level of legal cases and policy decisions, where criteria for who counts as a man or a woman is devised, and at the level of imaginary, in discussions concerning hypothetical interactions with trans-people. Westbrook and Schilt compare three cases where trans-people’s access to gender-segregated locations is at stake: a proposal allowing people to change sex markers on their birth certificates without requiring genital surgery, so called bathroom bills, and controversies over trans-people in sports. They find the criteria for determining gender to vary across social spaces. According to them, there is a slow shift away from pure biological determinism, and identity-based, rather than biology-based, criteria can be used to determine gender in nonsexual gender-integrated spaces. However, when it comes to admitting actual and imagined trans-people in gender-segregated spaces, such as public restrooms, gender panics are provoked and people react to disruptions to the biology-based categorisation system by ‘frantically reasserting’ the naturalness of binary sex. Westbrook and Schilt (2014) work provides important direction to my work in that it suggests that different ways of determining gender do not necessarily align as nicely as suggested by earlier ethnomethodological studies of gender.

Gender categorisation in representational practice

The key takeaways from the ethnomethodological tradition are as follows: Gender is understood as a practical achievement. It is understood that there are competing bases of gender categorisation, such as anatomy and identity, that are not necessarily aligned. Biology-based categorisations are understood as no less social than categorisations based on, for example, appearance. The distinction between sex and gender is itself seen as a practical achievement. While this work gives important direction to my study, my definition of gender categorisation, informed by the market studies vocabulary, differs in significant ways from the concepts proposed by Kessler & McKenna, (1978), West and Zimmerman (1987) and Westbrook and Schilt (2014). Categorisation, in the market studies vocabulary, is understood as a continuous process enacted by a variety of performances and artefacts (Azimont & Araujo, 2007). This conceptualisation of gender categorisation differs from the ethnomethodological perspective on gender in that it moves focus from how individuals are placed in gender categories to how gender categorisation places boundaries around objects, not limited to human beings (e.g. women’s products). Also, the market studies conceptualisation of gender categorisation directs attention to a variety of performances and artefacts, not only interactions among individuals. Furthermore, the market studies perspective directs attention to the translations by which a category gains (or loses) strength and highlights the likelihood of conflicts between different ways of categorising.

Method

The empirical material for this paper comes from a case study of a start-up company developing and marketing a menstrual cycle tracking app, Clue. Clue is a free period and

health tracker available on iOS and Android. The app was launched, for iOS, in July 2013. Clue for Android followed in October 2014. While the app was presented as the first step towards developing a digital alternative to the contraceptive pill, the company did not and does not recommend relying on the app to prevent pregnancy. The app, initially, allowed the user to track bleeding, pain, sex, mood (including PMS), and cervical fluid, and provided predictions for the timing of periods, PMS, ovulation, and the 'fertile window', the days during the cycle when pregnancy is most likely to occur. In addition to its tracking features, the app contained information about the menstrual cycle, based on and referencing medical research. Over time, the functionality of the app has increased. While some additional tracking categories were introduced earlier, it was in connection to a redesign that a large number of new tracking categories were introduced in September 2015. The redesigned app includes 23 tracking categories, which include among others digestion, weight, motivation, and sleep. In addition to new tracking categories, the app's functionality has increased with the introduction of features such as analysis and the ability to share some of one's data with others.

I discuss the different practices of representing actual and potential Clue users as a case of gender categorisation. A single case study design is appropriate for exploring gender categorisation because it allows for following developments over time, in different practices, and using multiple sources of data. Choosing a case where gender categorisation is contested helps to make visible the different modes of categorisation, as discussed in the introduction. Sex and gender are categories the company has to deal with – making it an illuminative context for studying gender categorisation in representational practice.

The data comes from a study of the practices of representing the user at Clue. For the purposes of this wider project, the choice of the company was motivated by their focus on inclusivity, revealed in presentations available online. The purpose was formulated as exploring the practices of user representation that enable inclusive marketing and product development. This is also how I negotiated access with my key informant, Mike, who at that time was a co-founder and Chief Product Officer at the company. As he explained in his response to my initial email, inclusive marketing and product development is a topic he is passionate about, so he was happy to invite me to study what they are doing. Mike acted as a gatekeeper in introducing me to others in the organisation, negotiating access to meetings and materials, and granting me permissions to reproduce materials and observations. During meetings and interviews, I received consent from meeting participants and interviewees. While Mike (CPO) and Ida (CEO) agreed to be named, I have omitted the names and job titles of employees with less public roles.

The focus of my data collection was on how the user is represented at Clue and how these representations are used in product development and marketing. My data covers the time period from January 2013 to February 2017. January 2013 was chosen as the entry point, as the earliest materials available to me date to this time, half a year before the launch of the app. During the period of study, the strategic focus of the company was building the product and growing the user base. A key metric for the company was the number of active users. Based on the nature of the app as a tracker for a monthly cycle, the company defines an active user as a user that has used the app within the past month. In June 2015, two years after the launch of the app, the company had just passed the milestone of 1 million active users. In June 2016, the company celebrated 5 million active users. During the study period, Clue was venture capital financed and did not earn any revenue. The company has raised USD 30 million. I end my study

soon after the announcement of the company's Series B funding round in November 2016. With this funding round, the company entered a new phase and its strategic priorities shifted. Beyond the study period, the company has started working on experiments to monetise the app, including launching Clue Plus, a paid version of the app.

To study representational market practices, I rely on multiple methods of data collection. Interviews, ethnographic observations, documents, and online materials together provide a rich account with multiple voices. I collected the majority of the data between March 2015 and June 2016. During this period, I undertook three field trips to Clue headquarters in Berlin, Germany (3 days in June 2015, 2 weeks in November 2015, and 1.5 weeks in April/May 2016). I continued collecting online material beyond June 2016.

Personal interviews provided insider accounts of events. I conducted a total of 17 interviews with 8 individuals. The interviewees represented a broad range of different areas of expertise, including design, product development, user research, project management, engineering, and marketing. I interviewed two of the company's co-founders, Ida (CEO) and Mike (CPO). Most of my other interviewees had joined the company early but a couple had only joined the company a couple of months before I interviewed them. I conducted 6 interviews with my key informant (Mike), and interviewed the remaining interviewees either once or twice. In addition, I had several informal discussions with these and other individuals. The interviews and discussions covered past and on-going product development processes, the general process for product development, tools for project management, market research practices, marketing, branding, fundraising, and inclusivity work. Special attention was paid to the ways in which user representations were produced and used. I recorded and transcribed the interviews in full.

Ethnographic observations allowed for following the production and circulation of user representations in action. Observing meetings served as an important strategy for fieldwork (Sandler & Thedvall, 2017). During my three field trips, I was able to see most of the major meeting types at the company. These included both meetings related to specific product development processes (including user research sessions and user research debriefing) and meetings related to general company business, such as the prioritisation among possible projects. During most meetings, I engaged in non-participant observation, sat in a corner and made notes. When introducing me to outsiders, people repeatedly referred to me as a fly on the wall. Sometimes I became a peripheral participant. For example, I took part in some user research sessions as the note taker, and then participated in the discussion during debriefing. In addition to observations during field trips, I observed the CEO of Clue giving a talk at an event in Stockholm in March 2015 and attended a user event the company organised in Stockholm in February 2016.

In addition to interviews and observations, I collected documents and online materials. During fieldwork, I collected documents that were referred to me in interviews or meetings and that the company deemed shareable. This included three project briefs, a branding document, and materials either outlining future user research efforts or documenting past research. These provide examples of internal user representations. To capture how Clue, at various times, represented itself towards outside audiences, I collected various online materials (see Table 1). These included video material of public appearances by the founders, press releases, content from Clue's website and social media channels (Facebook, Twitter, YouTube, company blog, Medium), job postings, and media articles written about Clue. I begun online data collection with Clue's website and social media channels. Links in these channels led me

Table 1. Online data sources.

Online data source	Notes
Clue <i>Social media feeds:</i> Twitter: https://twitter.com/clue Facebook page: https://www.facebook.com/Helloclue/ Company website: https://helloclue.com/ Job postings: http://clue.workable.com/	I systematically collected Clue's posts on Facebook and Twitter. I did not include comments or replies. I captured the contents of the company website in May 2016. I collected 25 job postings published between December 2014 and November 2016. I used The Wayback Machine (https://archive.org/web/) to collect job openings posted before I started data collection.
<i>Blogs:</i> Hello from Clue: https://hello-clue.tumblr.com/ Clued In: https://medium.com/clued-in	I collected a selection of blog posts from Clue's two blogs. On 'Hello from Clue', I collected posts announcing new features or company news as well as posts that in some way dealt with Clue's relationship with scientific research. On 'Clued In', I collected articles on Clue's user research, design, and marketing practices.
<i>YouTube:</i> https://www.youtube.com/channel/UCIb965Ks_anLhXiFNKBRPDg	I collected and transcribed videos where Clue CEO discusses her vision for the company and/or industry.
<i>Other sources</i> <i>Videos</i>	I collected and transcribed 10 videos where Clue's CEO and/or CPO present the app and/or the company in events such as tech conferences and meetups. I made notes on other videos.
<i>Articles on Clue</i>	I collected a selection of articles mentioning Clue from websites such as TechCrunch, Fast Company, Medium, and New York Times. I also collected two op-eds written by Clue's CEO and CPO, respectively.
<i>Articles on femtech</i>	I used the search term 'femtech' on Google to trace the usage of the term and collected a selection of the resulting articles.

to videos published in other channels as well as to online articles about the company. I also used the CEO's name as a search term to locate more videos of her participation in different events and used the search term 'femtech' on Google to trace the usage of the term. In particular, my analysis of online materials has focused on two types of materials: texts and videos representing the app and the vision (e.g. launch presentation, press releases, videos and texts on female health and femtech), and texts and videos that more directly talk about users (e.g. presentations and texts on user research and product development, texts on inclusivity).

For the purposes of this paper, data was analysed with the help of NVivo and, occasionally, paper printouts of key pieces of data. While my original focus was on how different methods of user representation perform inclusivity, the explicit negotiation of ideas of gender caught my attention during the initial rounds of analysis. This led me to focus on instances of, as part of representational practices, invoking a gender category label, to, for example, categorise an individual or say something about a group of people, as well as instances of negotiating the meaning and boundaries of a gender category. I also paid attention to how other entities, in different representational practices, were linked to or cut off from these categories. I ventured to trace the changes in categories of gender in movements between practices (e.g. from user research to external representations) and in time.

Findings

The findings are presented in three sections. I start by discussing the communications around and following the launch of the Clue app. I then move on to discuss the representation of users through user research. Finally, I move back to external communications, at a later point in time.

Representing women's needs

Early representations of the Clue app, its potential users and the market opportunities for the company rely heavily on the essentialist category of women. Before and after the launch, the category of women does important work in representing a large market opportunity and an important mission. The app was launched as – self-evidently – an app for women, and this link was further strengthened in representations that sought to create a connection between all women and the fertility cycle. Likewise, the company enrolled the category of women to position the app as the period tracking app that is not pink.

The origin story of Clue, as recounted by founder and CEO Ida Tin in presentations, interviews, and marketing materials, starts with Ida's frustration with existing methods of family planning and the perceived lack of innovation in the field. She ventures to create a data-driven alternative to the birth control pill. In a presentation in January 2013, half a year before the launch of the Clue app, Ida summarised her vision:

Life with access to family planning is fundamentally different from a life with no access to it. The pill was a huge step forward but now, 62 years later, innovation is still all about putting hormones into the body. So with all the courage that I have built up, I state my vision: I wanna enable women to know if they can get pregnant on any given day by looking at her phone. Imagine that a woman could take her phone up and see if she could get pregnant or not that day. ... The first step on this important journey is our cycle tracking app called Clue. The first step. Think quantified self for fertility. (Ida, presentation, January 2013)

Ida envisions a future, digital alternative to the contraceptive pill, and represents Clue, introduced as a cycle tracking app, as the first step towards fulfilling this vision. While Ida simply describes the intended users of the future product as 'women', connecting the menstrual cycle with fertility and the risk of pregnancy implicitly enacts the user as a heterosexual woman.

As the launch of the app neared, the narrative of revolutionising family planning was weaved into a second narrative suggesting that 'fertility is a constant theme for forty years of every woman's life' (Clue, press release, July 2013). As the company launched the Clue app, the menstrual cycle emerged as something that matters for women throughout their lives ('for years and years and decades and decades'), and throughout the monthly cycle ('every day'). The following quotes exemplify this tightening of the connections between the menstrual cycle and the category of women.

So first of all I maybe wanted to say that fertility is actually much more than getting pregnant. It really starts when a young woman have [sic] her first period and then it goes into years of maybe not wanting to get pregnant, then motherhood perhaps, the other years of not getting pregnant, another child, and then all the way to menopause. So it's really this life journey. And what we're doing is we have built an app, so it's a cycle tracking app to help women keep track of this important part of their lives that goes on for years and years and decades and decades. (Ida, presentation, June 2013)

Fertility is much more than periods and pregnancy. The hormonal changes that occur throughout the female cycle affect women in substantial ways every day. Sex drive, mood, pains, and skin problems are just a few of the physical reminders of a woman's reproductive cycle, which fluctuates from month to month. (Clue, press release, July 2013)

The first quote comes from an event shortly before the launch of the Clue app. The male host introduces Ida as an entrepreneur dealing with the issue of pregnancy. When she is asked to explain what she does, Ida seeks to sever the exclusive connection of fertility with pregnancy, connecting the fertility cycle to other life stages, such as first period and menopause. Still, the life journey that she describes, punctuated by the births of two children, largely complies with normative representations of being a woman. The second quote, from the press release announcing the launch of the app in the Apple App Store, represents the menstrual cycle as a hormonal cycle that makes itself known everyday via effects such as sex drives, mood, pains, and skin problems. Together these representations establish a strong link between the menstrual cycle and the category of women. Indeed, Ida describes the (fertility) cycle as ‘this important part of their [women’s] lives’. The Clue app was offered as a tool that enables ‘women to collect the data that will give them a personalized understanding of their own body’, be it for purposes of ‘planning’ or ‘being healthy’ (Clue, press release, July 2013). At the same time, the company’s pitch included working towards ‘technology that aspires to be an alternative to the birth control pill’ (Clue, press release, July 2013).

Beyond the launch, the company continued to add strength to the definition of the Clue app as a product for all women. This became clear when Ida, in a presentation in June 2014, described the menstrual cycle as ‘this fantastic biological process, which half of the planet is experiencing for 40 years of their lives’. This represents the framing of women as an essential category going back to the biology of menstruation. The decoupling of the cycle from pregnancy was cemented over time as the company switched from defining the app as meant for tracking the fertility cycle to defining it as a menstrual cycle tracking app. The popularity of the app globally provided another resource for strengthening the link between all women and the menstrual cycle, in this case by playing down the role of cultural differences:

We already have downloads from 180 countries, and we’ve been ... happily surprised to see that our app seems to translate culturally well across the globe, and women really need the same tool whether they come from Saudi Arabia, Colombia, Russia. It is a true global need, it really is. And women are more alike than different. (Ida, presentation, June 2014)

Much of Clue’s early communications focused on establishing the need for the product. When I interviewed Ida on the topic of fundraising, she told me that in the beginning, before period tracking apps were ‘a big category’, explaining the need for the product was a big part of explaining the market. This need played a central role in representing an important mission, and the founders suggested the mission was a key attraction in fundraising. Likewise, several employees talked about the company mission and addressing ‘a real need’ as key reasons for joining the company. The trope of ‘half of the planet’ and representations of women as a large, homogeneous category were frequently mobilised in contrast to ideas that the company operates in a niche market. My data includes instances that represent as a problem this attitude among investors and media.

In early communications, Clue is positioned as the period tracking app that is not pink. In presentations, the founders often included a slide filled with screen caps from some of their competitors, other period tracking apps. The screen caps included in these slides were filled with pink, purple, butterflies and flowers. This representation was contrasted with the finding that ‘women don’t want pink’ (Clue, press release, July 2013). In

a presentation in June 2013, Mike followed the screen cap slide with a slide quoting a beta user: 'Finally a tracking app that doesn't look like My Little Pony is having her period.' He explained:

And we decided that we really wanted to do something different because women weren't at all happy with the design treatment that they were getting from these apps. (Mike, presentation, June 2013)

Here, gender categorisation serves a different purpose. The finding that 'women don't want pink' – it is presented as a finding from the interviews and beta testing that informed the design of the app – is used to position Clue in relation to the competition, understood as other period tracking apps. While questioning the affinity of women with pink, this statement still makes a categorical statement about women.

Representing a diverse user base

In user research, the representation of all women as potential users of the Clue app was translated into a user research approach that aimed to capture the views of a diverse set of women. The company contrasted this approach with 'design(ing) for an abstract persona of a "woman"' or relying on stereotypes. The following quotes showcase Mike's focus on variability and diversity.

Not only are stereotypes overly simplified, but they're also harmful. They are based on assumptions that make design easy, but also make it easy to be a lazy designer. It's time we designers stop pandering to cultural norms, start disassembling our stereotypes, and get in touch with how people – who have a huge amount of variability – actually feel about themselves. (LaVigne, 2014)

We took a very different approach where we went broad, as broad as possible, because there are 51% of the people on the planet are women, and we wanted to reach out to as many as possible. So that meant age range, so everything from first period to last period, that meant all different countries, different socio-economic backgrounds, and really understanding them and developing a very deep understanding of what's going on with that breadth of people, and then designing a service for them. (Mike, presentation, November 2014)

The first quote comes from an online article, published in Fast Company, where Mike argues against gender stereotypes because they, according to him, do not accurately describe women. Stereotypes are 'overly simplified' and 'very few women relate to' them. In addition, he has moral objections. Gender stereotypes are 'offensive' and 'harmful'. By questioning the accuracy and morality of gender stereotypes, Mike questions the ability of the category of women to inform good design and instead advocates 'get(ting) in touch with how people ... actually feel about themselves'. In the second quote, Mike describes seeking to understand women representing different age groups, countries and socio-economic backgrounds.

Before the launch of the Clue app, Mike conducted extensive user research that resulted in a number of insights informing design. One of the patterns that Mike suggested had been discovered through user research was diversity. In a presentation in June 2014, Mike remarked that diversity was a 'normal outcome' of the research, given that they 'actually created the diversity' by interviewing a diverse group of women.

User research, before the launch of the app, focused on potential users, defined as women. Following the launch of the app, focus shifted from potential to actual users of the app, as customer support became the main avenue for user research. Effectively, the category of women was sidelined in user research practice. Instead, users of the app became the relevant category that was to also speak for potential users of the app, and users effectively self-selected by contacting Clue's customer support or user feedback channel. In the early days, Mike was the person taking care of most customer support emails and these often turned into long email exchanges. These conversations provided further evidence on the diversity of Clue users and Mike collected and sorted this feedback to generate ideas for improving the app.

Among other things, Mike came to the realisation that not everyone using Clue to track their menstrual cycle identified as a woman. By the time I started my fieldwork, Mike had come to define inclusivity as a guiding principle for designing Clue. Mike attributed the realisation that inclusivity would be an issue for Clue to customer support tickets from transgender and lesbian users. According to him, these support tickets, while generally appreciative of the app's design, highlighted aspects of the app that were problematic to users not identifying as women and not in heterosexual relationships. These discussions, according to Mike, helped to pry open the black-boxed assumption that the menstrual cycle is fundamentally linked to the category of women. This outcome is in stark contrast with the chain of events described in Sunderland and Denny's (2011) ethnographic account of customer segmentation, where the gendered categories of female and mom trumped patterns in transaction data, and men that supposedly were among the most representative members of the 'Executive Manager Moms' segment were disqualified. At Clue, a small number of emotional messages from actual users were enough to broaden the conceptualisation of Clue users.

By spring 2014, Mike had come to understand transgender men as part of the diversity of Clue's user base. In a presentation, Mike made the argument that women are such a diverse group that there is no point segmenting the users of Clue:

The first question that, of course, comes up is, what do we mean by woman? And it's a highly loaded topic, ah, I think that there's all these different stereotypes out there, which are problematic, they're not really helping us. ... What do we mean by woman? And it's actually a huge variety of things that you might not expect, including people who are presenting themselves as women, and identify as women but who may not consider themselves women biologically, and all of these different varieties. So it didn't, it wasn't really helpful, to think about things in terms of male and female, for example, because then you start talking about sexual orientations, something like that, and then you start talking about gender expression or gender identity, and it gets really complicated, right away. Um, so how do you actually segment this? And so in thinking about it, it became a problem, really to segment. And then you think about, all these people are actually moving and changing through life in different life stages and then it just became a big problem. (Mike, presentation, June 2014)

The above quote continues to problematise the usefulness of the category of women. Mike describes the definition of woman as a highly loaded topic, highlighting the political nature of gender categorisation. One of the slides shown on the background of the presentation read: 'Lesbian, transgender, straight, female-bodied, male gender expressed, monogamous, polyamorous, pregnant, trying to conceive, trying to not conceive, men ...' The above quote and the text on the slide further problematise the link between women

and the menstrual cycle by opening the black-boxed assumption that gender identity and biological sex overlap. At the same time as the cultural category of women (as opposed to men) was de-linked from the product development process, gender categorisations multiplied. The above quote and the text on the slide go from gender categorisation as distinguishing between men and women to categorising based on factors such as gender expression, gender identity, biology, being transgender. Mike contrasts the socio-cultural bases of categorisation, identity and expression, with biology. Furthermore, the above quote and the text on the slide de-emphasise the cultural category of women by highlighting other categories as relevant for the user research they conduct. Sex and gender identity are only two among many variables of difference.

Rather than rely on the composite category of women, Mike came to define Clue's target users as 'all people who are biologically female-bodied' (LaVigne, 2015). In my first interview with Mike, he described his goal as creating a 'female-bodied health utility' (Mike, interview, June 2015). He elaborated:

And so what we're really trying to do is say, like, let's be the first to really do a comprehensive approach on this. And the way that we do it is we look at ah, a huge variety of usage, not just in terms of gender but also life stage, I'm young, I'm old, I'm pregnant, I'm avoiding pregnancy, I have a health condition, ah, I'm taking medications, right. Add all these people together as diverse as possible, as edge-case-y as possible, and then look at how we can connect everybody, and what are those fundamental pieces. (Mike, interview, June 2015)

In user research practices, defining the outer boundaries of who are seen as potential users does not appear to be much of a concern. The stability of the category of female seems to have solved this issue, aided by the focus on Clue users. A more pressing concern is drawing boundaries within this large group in ways that enable capturing its diversity. While the future of the Clue app is represented as a female-bodied health utility, the company, in relation to user research and product development, represents the app as not yet serving everyone. For example: 'right now we only handle people who have relatively regular cycles' (Mike, interview, June 2015). The app does not yet serve every need.

Different forms of representational practices seek to remedy this. First, research among existing users is important. This involved categorising customer support and feedback messages but also reaching out to people who had previously contacted customer support. For many projects, the researchers contacted users that had previously been in contact with the company and either invited them to the office or scheduled online interviews with them or sent a survey to them. For example, when a team was working on making the app more useful to people with irregular cycles, they interviewed users who had earlier been in contact with customer support regarding irregular cycles. Here, categorisation happens based on the user's ability to talk about the issue in focus and other categories are more important than gender categorisation.

Second, the company relies on medical research to inform the development of the app. Clue represents itself as a company 'deeply rooted in science' (Hello from Clue, 10 May 2016). The company describes the app as 'accurate' and 'scientific', publicises its scientific collaborations, and, in October 2016, appointed a medical board of 'leading specialists in the field of menstrual health' (Hello from Clue, 20 October 2016). According to the company, 'Clue cuts through pervasive misinformation by building upon the most current peer-reviewed biomedical research on the menstrual health and fertility.' (Clued In, 12 October 2015) According

to the company, user research and bio-medical research jointly inform the design of the app. In a presentation in June 2014, Mike showcased the depth of their research by citing the number of women he had spoken to but also the number of doctors and academics, and the number of research papers and books. Science, at Clue, is cast off as the counterbalance to misinformation, taboo, and stereotypes. The translation of scientific research into app design is represented as straightforward. For example, in June 2015, the company was working on adding more tracking categories based on 'a literature review that a scientist they are working with [had] made' (fieldnotes). However, feminist research on medical research suggests that medical research is far from being a neutral describer of female reproductive health. Rather, cultural ideas about women have been shown to greatly influence scientific understandings of menstruation and the female body (Fausto-Sterling, 2000; Martin, 2001; Roberts, 2007, 2013). The picture of Clue as uncritically accepting medical representations of the female body as neutral representations is countered by the company's handling of the issue of PMS. While medical research and pharmaceutical companies have pathologised PMS (Kissling, 2006), as criticised by feminist scholars, Clue represent PMS as something that not everyone experiences and that can be associated with negative as well as positive symptoms. The app only includes PMS in the predictions if the user has tracked PMS symptoms.

Finally, the company occasionally has dedicated research projects focusing on groups that are not yet users, such as doctors or low-income communities.

Inclusivity is central to how Mike described his design philosophy. In an effort to formalise his approach, he created two different tools. In June 2015, Mike explained to me how he was trying to formalise his approach of representing the users. He had started creating a spreadsheet listing physiological states or states of the body, such as first period, pregnancy, breastfeeding, PCOS, pre-menopausal. This was an attempt to represent users based on the body. Representations of the body were offered as a supposedly neutral alternative to gender categories, constructed as problematic. Mike later told me that this document had not ended up being used much.

What appeared as a more prevalent mode of categorisation was what Mike at first described as 'edge case research' or 'outlier research', later as 'spectrum of diversity research'. A project for improving the app's sex-tracking feature is an example of this. The project brief emphasised the need to recruit 'a diversity-oriented set of users' as research subjects. This requirement was translated into a document entitled 'Full Spectrum of Diversity of people having sex'. Rather than a supposedly pure bio-medical categorisation of users, this tool imposed a variety of categorisation criteria. No one criterion was seen as once and for all dividing the users in neat groups. The factors included physical and mental health conditions but also sexual orientation, relationship situations and life experiences. The list included gender, further specified as 'Gender (identity [cis, trans], expression [eg femme vs butch], gender dysphoria)'.

The two tools, the spreadsheet listing states of the body and the spectrum of diversity listings, enact the needs of transgender users in significantly different ways. Of the first list, Mike said: 'On that list would never be transgender. On that list might be hormone therapy. But then hormone therapy applies to a lot of situations, which is great, right?' (Mike, interview, June 2015) The other list and Mike's discussion of it highlight the experience of gender dysphoria as a potentially relevant aspect of the experience of transgender users and overall explicitly seek to understand the needs of these users, not just as part of a larger group.

In addition to research planned with the help of customer support or the spectrum of diversity, project teams often conducted spontaneous interviews and testing in a café/co-working space within a short walk from the office. I have no evidence of people not identifying as women being selected for these interviews. On two occasions, I accompanied team members on these visits.

I ask him how he chooses whom to approach. He says that he tries to get a mix of different ages and ethnicities but that it also plays a big role what people are doing, how focused they are. (Fieldnotes, April 2016)

We get to the café and start looking for interviewees. She describes this as the awkward step, trying to find people who are likely to have a cycle, meaning feminine looking and not too old. Also, they should be alone. (Fieldnotes, April 2016)

On both occasions, I categorised all the interviewees as women. Both team members cited practical considerations in their choice of research subjects. They didn't want to disturb people, so interviewees that were alone and didn't look too focused on something were preferred. The first team member also emphasised diversity, trying to 'get a mix of different ages and ethnicities'. He made no mention of gender identity or expression. It seems likely that it was self-evident that he would only talk to people presenting as women. The second team member made this more explicit, saying that she approached feminine looking people because they are more likely to have a cycle. Assuming that women are the group having cycles comes off as the most practical strategy likely to produce relevant research subjects. Here an awareness of the diversity of gender is combined with the practical linking of menstruation and femininity. Here, gender categorisation is enacted in a way that forges a temporary link between the biological and cultural categories of woman, and the otherwise discounted cultural category of women gains relevance as a feminine appearance is used as categorisation criteria.

Representing a new category of business

During my first field trip in June 2015, the question of representing users without reference to women was something with which the company was coming to terms. Mike told me that while inclusivity first had become an issue for him, in product development, he expected it to develop into a communication and marketing issue. The topic was being discussed internally and Mike was hoping to hire an inclusivity editor to, among other things, help the company with communication, marketing and social media. At the same time, Mike seemed optimistic on being able to solve the issue. In an internal discussion on the inclusivity editor position, Mike suggested that they could avoid gendered language in PR: 'they can just say Clue users or the users of Clue instead, and it will be clear' (fieldnotes, June 2015). Another strategy that he imagined was talking about body parts instead of women or people:

Like do we ever have to reference a they or them, or do we, like one approach that I follow is that we don't talk about the person, we only talk about the parts. And then we don't have a they or them. It's like there's a uterus and fallopian tubes, and you know. And they're unrelated you know, to a gender. Or even to a person for that matter. (Mike, interview, June 2015)

At the same time, the process of learning to represent Clue users with gender-neutral language came off as a minefield of sorts:

I'm about to give an interview for something later this week, and we have to be proper with our language usage. And we won't be for a while. I talked last week at an event. Did good. But I was able to avoid the conversation, the topic, on purpose, cause I thought I might screw it up. But if I have to talk about the users a lot, I slip (snaps fingers), it's easy to slip. Especially in an interview situation, it's easy, cause you just, flowing, right. (Interview with Mike, June 2015)

The above quote showcases the black-boxed nature of gender categorisations. Mike has started to understand gendered language as problematic for some users. He intends to avoid representing Clue users in gendered terms but says 'it's easy to slip'. This shows that, despite conscious efforts to change one's use of language, black-boxed categorisation are tightly linked to the menstrual cycle.

Clue was launched as an app for women. Their communications following the launch frequently spoke of women. Over time, their communication internally, with users, and with other external audiences increasingly refers to Clue users in gender-neutral terms. While the press release announcing the launch of Clue referred to the potential users of the app as women, and with feminine pronouns (Clue, press release, July 2013), the press release announcing the company's Series A funding talks about a vision of 'empowering people to be in charge of their reproductive lives', describes the app as calculating and predicting 'the users' periods, fertile windows and premenstrual syndrome' (Clue, press release, October 2015).

Over time, 'female health' becomes the label Clue uses to describe their domain. The company starts referring to the Clue app as a female health tracking app. The choice of this term reflects two developments. First, the company's vision had evolved over time. Developing a digital contraceptive became less central, as the app itself came to be understood as a product of value. Second, the menstrual cycle was, more and more, understood as not relating to only fertility or just periods. Indeed, Mike said that the app was often described as a fertility tracker but was really more than that. Clue's broadened definition of the menstrual cycle is exemplified in a blog post by Ida:

I am a woman, and I have a uterus. That biological detail has formed my life. I have lived with periods, cramps and mood swings since I was 13, have gone through four pregnancies which have resulted in two children, one miscarriage and one abortion. I have taken hormones which wrecked my sex drive. I have had my fair share of pap smears (the check at the OB/GYN to catch cervical cancer early), pregnancy scares, annoying condoms, birth scars and everything that comes with having that pretty incredible uterus – where children are born from. In short, I have had a perfectly normal life for being 37 years old, fertile and sexually active. So, this life experience is shared with half of the world's population. (Hello from Clue, 15 September 2016)

The above quote highlights the biological base, via the uterus, of the link between women and the menstrual cycle: 'I am a woman, and I have a uterus. That biological detail has formed my life.' Ida provides an extensive list of her personal experiences related to menstruation, fertility, and pregnancy, and describes them as 'a perfectly normal life for being 37 years old, fertile and sexually active' and as 'life experience shared with half of the world's population'. While the quote above includes the label woman, the relationship between women, or those who have a uterus, and the menstrual cycle is different from earlier representations that emphasised periods of trying to avoid and trying to achieve pregnancy. In addition to fertility and contraception, Ida talks about miscarriage and abortion as normal life experiences for a woman. In addition, she mentions aspects such

as cyclical symptoms and pap smears. Finally, she qualifies her experience as normal for someone who is '37 years old, fertile and sexually active'.

The choice of female health as the focus was formalised in the work the company did on their brand proposition in early 2016. A member of the marketing team ran me through a presentation summarising the outcomes of the project:

Um, and in terms of our area of focus, and this one we talked about a lot, like, is it like your entire health, is it about, you know, obviously it's not just about pregnancy, like, but is it like your whole body health and so we really, we decided that it's like something related to the female cycle, for lack of a better term, um, and everything that comes from that but like that's the focus. (Interview, marketing team member, May 2016)

Female health is not a term that I think everyone is a 100% happy with because again it's not as gender neutral as we want it to be. It's also a little bit vague, you know? ... Is it just like, I'm a woman and this is my health? You know? But it's, like, female health sort of connotes, you know, reproductively something. It's really hard to come up with terminology for this, and that's something we also are trying to figure out, like, how can we really communicate in a way that's inclusive and also descriptive. (Interview, marketing team member, May 2016)

The above quotes highlight the tenuous relationship between representing the diversity of Clue users and the term 'female health', used to describe the focus of the app. The first quote relates to a slide that summarised the outcomes of a 'brand workshop' for the founders. One of the lines read: 'We agreed Clue is broader than fertility, but focused on the female cycle' (Clue, presentation slides, April 2016). Female cycle appears as a term defining the focus of the company as broader than just pregnancy or fertility but narrower than 'your entire health'. There was still a fair amount of ambiguity in that my interviewee described the focus as '*something related to the female cycle ... and everything that comes from that*'. The second quote explains the word choices of Clue's mission, 'to help people all around the world benefit from insights into female health'. My interviewee pointed out that 'this is people, it's not just women, it's people'. As for the term female health, she acknowledged that the term was not as gender-neutral as they wanted it to be. Certainly, being 'inclusive and also descriptive' appeared much more complicated than Mike had imagined a year earlier.

In June 2016, the company published a blog post entitled 'Accessibility and gendered language at Clue', defending their use of the term female health. After stating the ambition of the company to 'address the needs shared by an extremely diverse set of people for a specific domain of health', the post acknowledged that the term female health 'is not always completely compatible with the bodies, identities and ways of being of all our users'. The post suggested that while the app itself doesn't refer to gender, there are marketing and communication challenges. The blog post discussed the problems associated with the terms 'female', 'female-bodied', 'uterus-havers', 'people who menstruate', 'reproductive health', 'cycle health', and 'women's health'. These problems included, for example, being offensive or too gendered, inaccurate, too vague, 'too much about fertility and babies', or too clinical. They concluded:

After considering all the various options, we have chosen to call the area that Clue serves "female health." We feel it best captures the area of health that Clue is currently designed to support, while being the least exclusive of all the ways to describe that biology. ... This term is of course open to change – and we expect it to! As the discourse surrounding "female health" changes, the way we define this area of health also changes. (Clued In, 22 June 2016)

The above quote highlights the tenuous relationship between representing the full diversity of Clue users and having a clear term to represent the domain. Least exclusive takes on a double meaning. While Clue seeks not to make users feel excluded, the term also has a role in enabling an expansive strategy that keeps the future of the app open.

While the term female health appears contested, it gets entangled in other representations that add to its veracity. In 2016, Ida launched 'femtech' as a label for describing Clue's category of business. Modelled after 'fintech, new technology within finance', Ida defined femtech as the category 'addressing female health needs through technology' (Hello from Clue, 15 September 2016). Femtech quickly gained popularity as a label for this emerging category in media and among industry analysts.

Discussion

This paper has explored gender categorisation in representational market practice. Drawing on multiple types of qualitative data, I have described Clue's internal and external representational practices and their evolution from January 2013 to December 2016. In 2013, Clue was launched as 'the app for women'. In 2016, the company described their focus as 'female health' and pushed the label 'femtech'. What happens in this shift from 'women' to 'female'? The findings of the study contribute to gender research in marketing and consumer behaviour on three different fronts. First, by moving from advertising representations to networks of representational practices, the study highlights the variety of gender performances and tracks chains of translation. Second, by moving from the content of gender categories to gender categorisation, the study highlights the processual and organising aspects of gender and discusses the stabilising and questioning of gender categories. Finally, as the study moves from exploring the social construction of masculinities and femininities to highlighting the functions of gender representations in markets, it highlights the dual existence of categories of gender as useful tools and sources of trouble. I will discuss each of these frontiers in turn.

Previous research on gender and marketing has focused on advertising representations (Atkinson, 2014; Brace-Govan, 2010; Gentry & Harrison, 2010; Gurrieri et al., 2012; Malefy & McCabe, 2016; Ostberg, 2010; Ourahmoune et al., 2014; Patterson & Elliott, 2002; Schroeder & Borgerson, 1998; Schroeder & Zwick, 2004; Sobande et al., 2019; Takhar & Pemberton, 2019). In exploring gender categorisation in representational practice, my study examines a broader range of marketing performances of gender, including textual and visual representations in presentation slides, online and face-to-face interactions with users, spreadsheets and boards, and user research insights discussed in meetings.

More importantly, the concept of representational practice advances a process perspective that goes beyond the perspectives of individual marketing professionals, acknowledges the contribution of heterogeneous elements, and captures change. As a result, the findings further probe Zayer and Coleman (2015) assertion that the creative and strategic decisions of marketing professionals, related to gender representation, are shaped by their societal and institutional environments. The market practice approach reconceptualises these influences as elements participating in the practices. Representations of changing and contradictory societal understandings of gender are mobilised. For example, there's an awareness of the many cultural ideas, taboos and stereotypes linked to the category of women, and an awareness that ideas of gender are in flux. Similar to Entwistle & Slater (2014), I observe

culture to play a role in the accounts given by actors. The period taboo and gender stereotypes are performed as real cultural entities. Zayer and Coleman (2015) conceptualise the institutional influences as agencies, clients, media and regulatory bodies. My findings highlight a different set of inter- and intra-organisational relationships as actors in the networks of representational practices. For example, my informants, working at a start-up company dependent on venture capital, mobilise representations of women as a large, homogeneous category in contrast to ideas, supposedly common among investors and media, of the company operating in a niche market. The set up of user research works to implicitly replace the category of woman with the category of user, which again allows user feedback to usher in the category of female. While Zayer and Coleman (2015) argue that the essential categories of men and women are used to legitimate not seeing offensive representations of men as problematic, I trace the evolution of the categories performed at Clue. The move from the category of women to the category of female involves ethical considerations, user feedback, and strategic considerations. In paying attention to networks of representational practices, the study highlights the chains of translations in practical marketing work.

Previous research on advertising representations of gender has focused on how marketing fills the categories of masculinity and femininity with content. My study of gender categorisation in representational practice directs attention to the categories themselves, and asks what are the categories used to create order in market practice and how different categories gain strength or weaken. The categories that are used in market practice, if they are strong enough, have consequences. Segmentation, for example, has been seen as creating rather than revealing segments (Harrison & Kjellberg, 2010; Schroeder & Zwick, 2004). As the categories performed in representational market practices are translated into other market practices, categories come to organise markets. This, for example, has consequences to transgender consumers, such as the users that provided feedback to Clue, or transgender consumers that feel unwelcome and uncomfortable in gendered retail spaces (McKeage, Crosby, & Rittenburg, 2018). My findings describe how the category of women loses strength and how other categories struggle to take its place. Especially, two shifts take place in Clue's representational practices. First, the category of women weakens as the category of Clue user takes its place as the main category guiding user research. Second, the category of female, embedded in (biologically) female-bodied, female health and femtech, replaces the category of women as the key category for representing Clue's line of business.

The category of women, as used by Clue around the launch of the app in the summer of 2013, is naturalised. It was represented as a self-evident fact that women were the category of people for whom the product, a period tracking app, was useful. This use of the category weaves in bio-medical categorisations and identity. Clue's representational practices further strengthened the connection between menstruation and the category of women. At the same time, the company tempered the claims they made about women as a homogeneous group. While the category of women was represented as different from men, the company maintained that women are a diverse group. During initial user research, this trouble dissolved when the category of women was disassociated from stereotypes and reinterpreted via research on a diverse group of women. In these instances of gender trouble, the category of women was reworked but it remained the central category. However, the category of women, in internal practices, remained

a relatively weak category in that it did not get built into segments or personas, for example. In other words, the category of women had strength in that it is entangled in many everyday practices and discourses of menstruation. However, the new organisation had not built in very many connections between the category of women and its user research practices.

After the launch, the category of Clue user replaced the category of women as the central category performing the boundary of who is to be included in user research. As the focus of user research moved from potential users, defined as women, to actual users contacting Clue via customer support, feedback from transgender men put in question the definition of Clue users as women, and only women. In addition, a plurality of categorisations pertaining to, for example, life stages, sexual orientation, health conditions and life experiences were represented as important for user research. These categorisations were framed as making visible experiences that might otherwise have been ignored. Gender categorisations, too, multiplied, as cisgender and transgender, in some situations, became relevant categories. Categorisations, in Clue's user research practices, are situational. These categorisations erect temporary boundaries around a group of users but, rather than enact this group as different from the rest, serve to bring in the group into the bigger whole. At the same time, the category of (young, feminine) women continues to perform boundaries in impromptu user research.

Over time, in practices of product development, the product vision became to build a female-bodied health utility. In user research, categorisation appears highly situational and this appears not to be a problem. When it comes to communication, replacing the category of women was not as straightforward but female health stabilised as the label of choice.

The concept of gender categorisation, rendering the making of distinctions between gender and sex an empirical question, brings to the fore the relationship of biological and cultural categorisations of gender. The category of women, as performed during the launch of the app, performs an alignment between identity and biology. The category of woman, used in this way, enacts a naturalised connection between sex and gender, in terms of the biological and social categories perfectly overlapping. The representation of women as a homogeneous group bears a similarity to how early feminism, in its fight against women's oppression, 'constructed woman as a black-boxed, unified actor' (Singleton, 1995, p. 151). When feedback from transgender users put in question the category of women, the company turned to the biological body to define the product. Bobel (2010), similarly, shows menstrual activists struggling with the category of women. The group of activists she calls feminist-spiritualists relies on the category of women as a basis for political action. Radical menstruation activists, on the other hand, reject the category of women. Replacing the category of women with the category of menstruators includes transgender individuals and challenges an essentialist gender binary, making gender trouble. Clue experimented with categorisations based on states of the body but the spreadsheet ultimately got little use. Likewise, the company dismissed solutions such as 'uterus-havers' and 'people who menstruate'. The winning solution, the category of female, differs from uterus-havers and menstruators (Bobel, 2010) in that it accepts the aggregate category of female and hence naturalises the division of people in two groups based on biology. This is of course only one possible way of categorising human biology, as highlighted by alternative conceptualisations such as Fausto-Sterling's (2000) five-sex system.

Finally, advertising representations have been mainly theorised as powerful instances of visual culture that contribute to the social construction of masculinities and femininities and especially consumers' gender identities. My market studies inspired theorisation of gender categorisation sheds light to the functions of gender representations in market practice. Categories of gender, when black-boxed, can be enlisted to do rhetorical or practical work that places well-defined boundaries around objects, thus creating order in an otherwise chaotic world. Gender categorisation, in the case studied, contributes to place boundaries around potential and actual users of the app (women) but also around the product (focused on female health) and the category of business the company is invested in building (femtech). Over time and across contexts, gender categorisations take part in redefining the Clue app, its markets, its users and uses, and the menstrual cycle, as well as contribute to reconfigure the relationships among these.

The naturalised category of women is enrolled in representations of a large market and an important mission. In addition, the categorical statement that women don't like pink positions the Clue app as different from the competition. In user research, the category of women does practical work in the recruitment of research participants and beta testers. They recruit women as research participants and beta testers. Later, the category of female, emphasising the biological body, takes over some but not all of the work previously carried by the category of women. Female health and femtech, like the category of women earlier, takes part in representing an important mission. In addition, they help connect the company with a larger movement beyond period trackers. In product development, as well, the category of female serves to define whom the product is for and performs the inclusion of assigned-female-at-birth transgender individuals.

The function of gender in market practice also connects this study to the agenda of constructivist market studies focused on the practical work of performing markets. Already in 2008, Cronin lamented that the early studies in this tradition had overlooked the significance of gender in the performance of markets and market relationships. While later studies have broadened the agenda of constructivist market studies in many ways, the field has yet to address questions of gender. Cronin's (2008) study argues that gendered typologies of consumers are centrally important to making and maintaining commercial relationships between media owners, media agencies, and clients. This study adds to Cronin's work in highlighting other market relationships in which gender categorisation plays a productive role. Practices of gender categorisation organise various interactions between Clue and (potential and actual) users. In addition, gender categorisation, as it plays a central role in representations of Clue's vision and strategy, contributes to configure relationships with investors, media, and potential employees, as well as internal relationships within the company.

Conclusion

This paper makes three contributions to gender research in marketing and consumer behaviour. First, the paper conceptualises marketing's role in performing gender as broader than just the visual and cultural representation of masculinities and femininities in advertising, and advocates a process perspective that highlights the multiple influences shaping marketing representations of gender. Second, the paper extends attention from the content of gender categories to the categories themselves. Finally, the paper highlights the functions of gender representation in market practice. The study contributes to

constructivist market studies by returning to the agenda the question of how gender takes part in performing markets.

There's a need for gender research to look 'inside marketing' (Zwick & Cayla, 2011). This paper points the direction to future studies that could explore gender categorisation in a broad range of representational practices ranging from market segmentation to policy discussions to the discourses and practices of academic consumer research. While my case, due to the nature of the product, is an especially poignant case, future research should also explore gender categorisation in contexts where gender is less central.

Beyond gender research, this study points to future research directions in constructivist market studies. Constructivist market studies have, so far, rarely touched on themes of gender. This study points to representational practice as a fruitful avenue of research for exploring the role of markets and marketing in reproducing ideas of gender. Likewise, the study of representational practice, if it incorporates a gender perspective, provides a way of understanding how gender categorisation contributes to constitute markets and market entities, such as market segments, product categories, and objects of exchange. A focus on gender categorisation in representational market practice opens new questions in exploring the function of gender in organising markets and marketing around the polar categories of men and women. While the construction of masculinities and femininities in advertising is one important facet of this, the role of gender in organising markets and marketing goes well beyond this. A focus on gender categorisation draws attention to new questions: How are gender categories used? How are gender categories naturalised and challenged? What are the similarities and differences serving as the basis for gender categorisation? What are the consequences of different modes of gender categorisation?

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Riikka Murto is a postdoctoral researcher at the Center for Market Studies, Stockholm School of Economics, Sweden. Her dissertation research explored the performance of gender and diversity in market practice and proposed a broadened agenda for marketing and consumer research on gender.

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