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Price and the person: markets, discrimination and personhood

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For Peer Review Only

Abstract

The paper explores how pricing has historically been involved in the making up of persons (Hacking 1986; Carrier 1994), and how the ability to 'personalize' price is reconfiguring the ability of markets to discriminate persons. We discuss a variety of contemporary pricing practices, and three types of personhood they produce: generic, protected, and transcontextual. While some contemporary developments in pricing draw on understandings of the person that are quite familiar, others are novel and likely to be contested. We argue that many newer pricing techniques make it harder for consumers to identify themselves as part of a recognized group. We conclude that contemporary price personalization should be understood in terms of the intensification of individualization in combination with dividualization (Strathern 1988), and as such, contributes to what Fourcade and Healy (2013) describe as 'classification situations that shape life-chances'.

Key words: price; pricing; personhood; data; marketing; transcontextual.

Introduction

Consumer market pricing practices are currently undergoing change: they are becoming more dynamic. Systems of ‘personalized’ pricing, ‘fluctuating’ pricing, ‘dynamic’ or ‘surge’ pricing are on the increase, and some claim that fixed prices in supermarkets will be obsolete within five years, as retailers take advantage of electronic systems allowing them to adjust prices to reflect demand (Morley 2017). Amazon, the world’s largest online retailer, varies the prices of the goods it sells almost continuously; for example, on a single day in 2017, the price of a Samsung Galaxy S7 phone went down 14% from £510.29 to £439, and a pack of six 300g jars of Ovaltine went down 33% from £17.94 to £12 (Walker, 2017). In this paper, we consider the implications of these developments. Specifically, by bringing together sociological perspectives on the performativity of marketing, and anthropological understandings of personhood, we suggest that as well as being the outcome of social and economic actions, price is also a productive force, organizing and shaping the relation between markets and persons so as to transform the potential for discrimination and configure new forms of personhood.

While the relationship between price and personhood has been acknowledged before (e.g. Carrier 1994), the claim in this paper is that it is changing. We argue that the ability of companies to gather fine-grained, high frequency data about individuals and groups without incurring significant costs means that we are witnessing a very particular kind of ‘re-personalization’ (c.f. Hart 2001) of price after a long period of de-personalization. Price’s entanglement with personhood, we suggest, puts it at the intersection of technical, legal, economic and moral debates. At the same time, the fact that companies have not yet fully exploited the potential of ubiquitous data collection to engage in wide-scale price discrimination (Nesta 2014), and that consumers appear to dislike price discrimination even when they benefit from it (OFT 2013), indicates that it is an area of controversy, which may require substantial moral work to be accepted as legitimate.

We frame our analysis by situating price in relation not only to the traditional concerns of economic sociology, but also to histories of marketing (e.g. Cochoy 1998, Arvidsson 2005), and in particular, to analyses of the performativity of marketing. We draw on these analyses to consider the role of price as one of the ‘Four Ps’ of the marketing mix. To these ‘Four Ps’, we add a fifth: persons. In doing this, we acknowledge a trend towards personalization across a range of fields¹. However, our concern is with the ways that personhood is coming to be configured in relation to changing pricing practices.² While acknowledging the differences between dynamic and personalized pricing, our argument is that the changes we describe now simultaneously produce and combine the indivisible ‘individual’ of liberal economic and political

theory and sub-divided 'dividuals' (Strathern 2004)3. In short, our argument is that contemporary pricing practices bring together individualizing and dividualizing practices in ways that have significant implications for processes of discrimination, identification and collective action.

The paper begins by briefly reviewing perspectives on price in economic sociology, and then contrasts these perspectives with ideas about price and pricing generated within marketing theory, where price is given a more active role in market formation than it is in either neoclassical economics or economic sociology. We show that in the marketing context, price – along with the other elements of the marketing mix: product, place and promotion – has always been involved in the 'making up' of persons in relation to markets (Hacking 1986; Carrier 1994), mainly through the operation of techniques of classification and segmentation. We then describe some of the ideal types of 'market personhood' produced in contemporary marketing practices. We show that as pricing strategies increasingly produce data-fied prices, and dynamic market subjects alongside more conventional socio-demographic ones (that is, as they mix 'individuals' with 'dividuals'), the ability of consumers to recognize themselves as part of an identified social group decreases. At the same time, new pricing strategies often reconfigure the nature of the information available about possible prices paid by other people – that is, while price is widely understood to be a signal, the possibilities of understanding that signal in meaningful ways are changing. Both these factors, we argue, enhance the potential for price discrimination in markets, with discrimination being understood both in the sense of being able to see, or make, distinctions and in the sense of singling out a person or group for unfair treatment. The paper concludes by considering the implications for consumers of encountering markets that make up persons in terms of different but overlapping and constantly changing systems of classification.

Economic, sociological and anthropological theories of price

In market economies prices are usually seen as the outcome of supply and demand. Price is central to marginalist concerns with general exchange equilibrium and market clearance, as for example in the *prix crié* described by Walras (Velthuis 2005: p.219; Preda 2009), and for many authors a market essentially 'is' price insofar as the former is characterized as 'that set of suppliers and demanders whose trading establishes the price of a good' (Stigler and Sherwin, cited in Christophers 2014: p.756). In a related perspective, price is understood to be a signal, that is, a specific form of information, where it is central to a view of markets as dynamic (Hayek 1945; see also Preda 2009: p.111). That price signals operate at the 'lower thresholds of the semiotic spectrum' (Tkacz 2018) and do not *tell* the consumer what to do, is

one of their attractions for economists. Nevertheless, in this view price dispersion – which as we will see is exploited in personalized pricing strategies – is recognized to be ‘a measure of the actors’ ignorance’ (Preda, *ibid.*), since it reflects situations in which actors are not all able to observe prices in the same way, do not all get the same information, and do not know what other actors are observing.

In addition to understanding price to be the outcome of supply and demand, economic sociologists see prices as at least partly resulting from factors such as social networks, institutional regulations, cultural meanings, market devices and other sociological phenomena that ‘structure the market field’ (Beckert 2011: p.1). Of interest to our argument, sociological work on prices notes their emergence out of power struggles and conflicts of interest (e.g. Weber 1978, Muniesa 2007), their dependence on relationships of various kinds including those based on trust, status or inequality, their connection to information asymmetries, the influence of institutional regulations, and various calculative tools, normative preconditions and expectations that allow something to be priced in the first place. As we shall indicate below, all these factors have a bearing on the possible emergence of ‘fluctuating’ prices and the ability of companies to use information about consumers to discriminate between them through price.

A final relevant body of literature is the recent anthropological discussion drawing attention to the changing environments and infrastructures of price formation. There is an emphasis in this literature on price as a *composite*, that is, as the outcome of distinct but converging processes. As Jane Guyer observes, ‘this is a departure from concepts that take price “as a whole,” such as “worth” in a religious register, and the intersection of supply and demand (scarcity and desire) in the marginalist neoclassical register’ (2016: p.201). This emphasis on composition allows us to highlight the expanded role of data technologies in the composition of price and to draw attention to prices and persons as co-varying elements of a moral economy which extends beyond the market.

Price in marketing theory and practice

While economic sociologists typically have distinct concerns regarding price formation compared to economists, their accounts of price still tend to see it as the outcome of other (‘social’) processes, rather than as an agent with its own effects. By contrast, marketing theorists have developed distinctive ways of thinking about pricing, which attribute to price the capacity to shape markets and behaviours. It is this approach, we suggest, that is being put to work in the practices of personalized pricing. In the argument we make here then, we are

concerned both to describe the different perspective adopted by marketing theorists and to see how marketers deploy this perspective to shape the market. In doing so, we draw on the work of Cochoy (1998) who describes a historical shift in the profession of marketing from describing the existing ways in which products were brought to markets to the adoption of a more active, interventionist role:

Firstly, marketing pioneers tried to train themselves in the empirical study of markets and to educate similar specialists... marketers reached that first objective by inventing special human and conceptual frames for market knowledge and practice ... From that point onwards, the adepts of the discipline of marketing played the game of managers and management, of economist and the economy ... Eventually, they reshaped [not only] their own activity, but also the market and the economy altogether. (1998: 195).

Just as economic theory can be treated as a body of ideas and descriptions with a potentially performative effect on the world (e.g. Callon 2006) and case-based teaching methods in business schools have been shown to inform how business decisions are made (e.g. Lezaun and Muniesa 2017), so too does marketing theory teach practitioners about (among other things) the ways prices can and should be set. In this respect, it is especially significant that while marketers are frequently concerned with the way information about competitors' prices influences pricing decisions, and emphasize the role of knowledge (or assumptions) about competitor activity as a key external influence on pricing, they also emphasize the strategic value of varying price in combination with other elements of the marketing mix (product, place and promotion) to shape the market.

In their foundational textbook (Kotler and Armstrong 2014), marketing theorists Kotler and Armstrong outline multiple types of pricing strategy, all of which are in some way oriented to (re)shaping the market or market actors. Among others, these include 'price skimming', 'market penetration pricing', 'product line pricing', and 'segmented pricing'. The latter is a strategy to sell the same product or service at two or more prices, 'even though the difference in prices is not based on differences in costs' (p.340). Kotler and Armstrong advise this segmentation can be done according to location (in the US, tuition for in-state versus out-of-state students), according to time (for example by 'the season, the month, the day, and even the hour') and according to attributes or qualities of the customer (e.g. different prices for OAPs and students). Psychological pricing – the fact that 'price says something' about products – is a strategy to act on the consumer, according to their level of knowledge and awareness. Kotler and Armstrong note consumers typically assume higher-priced products to

be of higher quality, especially when they lack personal experience with, or information about, the product (2014: p. 341). 'Reference prices' – 'prices that buyers carry in their minds and refer to when looking at a given product' (ibid.) – have many sources; they may be based on consumers' own information or searches but can also be shaped by sellers, as brand owners have long been aware.

The question of what information is signaled by price, how and to whom, is central to these marketing practices. Transactional and other data archives have an increasingly important role here (Maurer n.d.; [Kitchin 2014](#)), insofar as they profoundly transform the nature and availability of the data that can contribute to the setting of price. As Kotler and Armstrong observe (2014: pp.345-46), mining such databases allows sellers to customize offers and prices, enabling companies to increase revenues based on information about which consumers appear to be willing or able to pay, as well as their demonstrated past preferences. Although it may seem legally questionable, Kotler and Armstrong say this practice is not illegal, 'as long as companies do not discriminate based on age, sex, location, or other similar characteristics'.

From their point of view, companies' power to exploit privately held information to maximize revenue is acceptable partly because they assume it is met with a counter-action from consumers, who may be able to benefit from 'a return to haggling, auctions, or 'naming their price'', and who can use price comparison sites to choose the cheapest products. This assumption conforms to the Weberian view that prices are at least partly the outcome of conflicts of interests and struggles between market actors (Beckert 2011: p.3), who may in fact start from unequal positions. However, as we will explore in more detail below, contemporary price personalization techniques mean that the capacity to engage in 'counter-actions' to price discrimination is unevenly spread. In many ways, it is becoming harder; indeed, our proposal is that pricing strategies may now vary forms of personhood in ways that impinge on the 'market freedom' of consumers (Weber cited in Beckert 2011: p.4), contributing to the production of forms of classification that impact upon life chances (Fourcade and Healy 2013).

Price and personhood

To consider how the link between price and personhood may be changing, it is useful to trace the form this link took for much of the twentieth century. This section begins by outlining the two key formations of personhood – the generic and the protected – that characterized markets in an era of fixed, open pricing. These forms of pricing, we argue, both depend on and contribute to the making of persons as *individuals*, that is, as persons with an assumed (subjective) unity, sometimes linked to the kinds of continuity of identity assumed in socio-

demographic classifications. We show how some of the assumptions underpinning this formation of personhood, including the context independence of attributes or personal characteristics, temporal continuity and subjective unity, have become less dominant, and are now being supplemented – and to some degree displaced – by an additional form of market personhood. We understand this form to be the outcome of the interaction of processes of individualization *and* dividualization.

Generic persons

The introduction of fixed rather than inter-personally negotiated prices is often attributed to the Quakers, where it has been seen (by Weber 1978, for example) as part of a more general influence of religion on the economy. Specifically, the Quakers' 'insistence on selling an item at the same price to all customers, regardless of social class' reflected their belief that 'the seed of God' existed in all people, including the nonbelieving (Kent 1990: 141). There was, in other words, a moral imperative at the heart of the economic activity of the Quakers, which was also directed at other merchants of their time, whose practices they saw as unfair and in need of reform. Yet as fixed price practices of various kinds developed, they took on a much wider role in ordering economic life. Carrier (1994) argues, for example, that the emergence of fixed pricing, along with open ticketing, single pricing and other such devices, was part of a broader 'orientation towards the impersonal' (p.373) that defined shifting trade practices in the period around 1800, and contributed to the differentiation of economic relations from other types of more personalized social relationship. In the terms we are developing here, fixed pricing contributed to the emergence of a generic kind of market person – 'the consumer' – distinguished, in principle at least, only by the ability to pay.

The gradual depersonalization of exchange relations through the nineteenth and twentieth centuries led to a greater emphasis on certain forms of 'sign value' in establishing the meaningfulness of goods, so Carrier argues, as for example in the greater role of packaging and branding. Significantly, from our point of view, this sign value was typically symbolic, rather than informational, or data-driven. While some brands made use of personification or pseudo-personalization in their promotional materials, such developments helped facilitate the impersonality and anonymity of urban mass-market society celebrated by many theorists⁴, and both fixed pricing and the rise of branded goods have been argued to benefit those who may historically have been discriminated against in the 'embedded' economy of face-to-face encounters and personal ties. Thus, Berlant (1993) argues that brand names sometimes work as a kind of prosthetic or 'second skin' for the hyper-embodied or hyper-visible subject, while one of the arguments for fixed and publically displayed prices is

that they are a mechanism for the equal treatment of all consumers and reduce the ability of individual retailers to discriminate. In this respect, fixed prices can be seen to have contributed to the establishment of a specific form of market personhood, that is, the 'generic' individual.

One important caveat to this story of depersonalization, which also points ahead to the configurations of price and personhood we describe below, is that both insurance and credit scoring were exceptions to the 'generic' forms of personhood found in most retail contexts. Life insurance was an early example of the use of data processing for pricing purposes (Fourcade and Healy 2017; Bouk 2015), while credit scoring, as well as being intended to replace the acknowledged 'biases and whims' of mortgage officers and others with 'expert, neutral and consistent allocations of credit' (Pasquale 2015: 102), was also a way of specifying consumers more precisely by placing them within ordinal ranking systems (Fourcade 2016). Indeed, as these examples suggest, the 'generic' market person was always something of a convenient fiction, undercut by attempts to capture the consumer with greater precision.

Protected persons

The extent to which the generic market individual was a normative ideal rather than an empirical reality is evidenced by widespread examples of marketplace discrimination against particular groups. There is evidence of discrimination against people of colour in the used car market (Ayres and Siegelman 1995), in retail environments (Bay and Fabian 2015), and online (BBC 2016b), and more recently there has been renewed interest in the phenomenon of gender price discrimination in both the US (Gold 2014; De Blasio and Menin 2015) and the UK (Ellson 2016; Smithers 2016). The mechanisms by which such discrimination takes place are various: as Ayres and Siegelman point out, while some discrimination may be directly attributed to bigotry on the part of the seller, it can also operate more indirectly via seller assumptions about different groups' reservation prices. Similarly, while there are some contexts (e.g. the used car market, but also contemporary online commerce) in which discrimination is possible because buyers lack information about prices paid by others, in other cases (such as gender price discrimination in areas services such as haircuts or goods such as razors) such differences in price may have been 'hiding in plain sight' for some time, and only recently become the object of scrutiny.

While these examples of price discrimination indicate that generic market citizenship is far from a reality, they also make visible the implicit understanding of consumers as individuals, that is, as members of categories of person defined by socio-demographic and

other attributes that can be subjectively unified and persist across contexts. It is as members of such categories that persons are liable for legal protection. So, for example, it is illegal to engage in forms of price discrimination in the US and the UK in relation to gender, race, nationality, age, and disability among other things (see e.g. Citizens' Advice, n.d.) since these are established, stable categories of individual personhood recognized in law by the state (a 'protected class' in the US or 'protected characteristics' of the person in the UK). As we shall suggest below, however, other categories of legally protected person – that is, corporations – have been able, over time, to disrupt this unified and protected subject to produce novel configurations of relations between the personal, persons and personhood based on the predictive analytics of behavioural marketing.

Such forms of protection are not uncontroversial. While campaigns in the US and the UK challenge the 'tax' on women associated with higher costs for everyday goods, a European Court of Justice ruling in 2011, that insurers could no longer discriminate on the grounds of gender (and could not, therefore, offer lower premiums to safer groups such as young women), was criticized by some on the basis that insurers already offered different premiums depending on factors such as whether one has a burglar alarm installed or used one's car for dangerous jobs (Economist 2011). Such arguments entail a subtly shifted notion of personhood as something that emerges from, or is correlated with, context-specific behaviour (that is, individuals who behave in particular ways in particular places at particular times), rather than some more essential identity (an individual as a member of a socio-demographic category of persons with persistent attributes and ways of behaving across contexts). At the same time, the kinds of collective risk pooling and market segmentation that produces lower insurance prices for such categories, such as women or the over-50s, produce persons as 'average types' – as examples of a reference group – rather than as unique individuals. As we shall see below, however, new pricing technologies, within insurance and elsewhere, are breaking down this 'on average' sort of classification, making use of behavioural indicators and altering what (market) personhood entails in the process.

Transcontextual persons

To explore these changes, we now describe some novel forms of pricing and consider how they intersect with behaviour and forms of individual and collective identity. The ability to employ these different strategies varies significantly, both by industry and across on- and off-line retail environments, but we explore them here in terms of how they configure personhood and the potential they have for discrimination.

A first example is the way in which, in many countries, and recently in the UK, there have been experiments with 'live' and fluctuating prices for energy (e.g. Pallesen and Jenle 2015; BBC 2016a). Such experiments typically aim to even out demand by rewarding energy use during non-peak times (since peak time energy demand is costly to meet), or, in the case of renewable energy, by offering lower prices for using energy at the times it is being produced (i.e. when it is windy/sunny) to avoid the costs of storage. As such, they use price incentives to try to change behaviour, and to make consumers more price elastic and price sensitive than they would be if they were governed solely by their own routines. Since this is usually done by providing a smart meter that provides information not only about use, but also about 'live', fluctuating prices to which consumers are able – indeed encouraged – to respond, the variation in price is not specific to particular kinds of person.

The relationship between price, person and behaviour here is unusual, since it is not the case – as in many other contemporary examples – that a person's behaviour, past or present, drives price. Instead, price is supposed to drive behaviour. As a consequence, this kind of pricing does not appear 'personal' at all. And yet the capacity to make use of lower prices is unavoidably shaped by aspects of the self that are entirely 'personal' – it may, for example, be limited by type of employment, family arrangements, access to networked timer-based devices, among many other factors. However, because these factors are so diverse, and do not cohere around a singular, unified, context-independent 'identity', it is hard to argue that different prices paid by different people constitutes a form of discrimination. Someone who is at home during the day, for example, may be unemployed, or a student, or a full-time carer, or a freelancer, or a well-paid professional. It is thus harder to understand the collective implications of action, and harder to act – individually or collectively – against the potentially variable welfare and environmental outcomes that such pricing systems produce.

The more common contemporary example of the link between behavioural data and pricing is the use of behavioural data of various kinds – including transactional and social media data, typically collected and stored in vast, continually updated and often proprietary databases (Fourcade and Healy 2017) – to drive prices. New sources of data include, for example, fitness and activity data for health insurance (e.g. Meirian 2015) and the use of telematic 'black boxes' in car insurance (e.g. Stott 2016). Here, the ability to track driving habits (including speed, forcefulness of braking, and how one takes corners) is seen to provide more useful information for underwriters in pricing risk than the 'crude demographic [information] traditionally used by insurance companies' (Stott 2016). As one of the major technology providers in this area argues, 'when you have the full contextual picture, telematics allows for more forensic and accurate pricing. The insurance companies can treat their

customers as individuals and not as a number' (our emphasis, Octo Telematics cited in Stott 2016).

In the case of driving insurance, re-personalizing pricing practices entail a dynamic disciplining function, in which the connection of price to behaviour is used to incentivize less risky driving and therefore lower premiums. Indeed, this is part of its appeal to both sides. In other personalized pricing strategies, however, the connections between price and person are rendered more complex and opaque as more and different data is available for use. In some other practices, for example, the informational basis on which sites engage in price discrimination or price steering may be part of (or a side effect of) randomized A/B testing (Hannak et al. 2014). Indeed, in very few cases is there the kind of transparency about the linking of price to personhood that is present (at least to some degree) in 'black box' insurance policies for young drivers.

Consider as another example of personalized pricing the case of loyalty cards and other corporate accounts or memberships (such as Apple IDs or Spotify accounts), and the kind of predictive analytics with which they are increasingly associated. The case of loyalty cards returns us to the discussion of the marketing mix at the start of this paper, since it is hard to separate the sense in which the benefits they offer are a form of promotion from the sense in which they are a form of pricing; price and promotion, in turn, are strategically mixed up with products (they typically are the source of offers in relation to some products but not others) and, in some cases, time and place ('in store today only!').⁶ In addition to the co-variation associated with the 4Ps however, these cards are now typically personalized in the sense that they draw on a unique purchase history (as well as more global factors such as season) in making offers. The Boots Advantage card, for example, collects data about purchases continuously and provides updated, tailored offers and promotions to members every three months.

In this respect, loyalty cards, while differing in their design and affordances, effectively give price discounts (through the medium of points⁷) for purchasing certain kinds of products, and for spending a certain amount of money on a repeat basis. Significantly for the argument we are making, in the case of at least some of these loyalty cards, what marketers would call promotional pricing is in fact a form of price discrimination, since it provides the largest rewards (that is, discounts) to the cardholders who spend the most money the most often. Without necessarily knowing anything about individual consumer or household income, these systems reward those persons able to spend large amounts in a single transaction to

maximize their return on available offers. By the same logic as ‘the poor pay more’ (Caplovitz 1967), existing advantage is rewarded and thus to some degree extended.

In fact, we suggest, what such technologies facilitate is a profound shift in the relationship between price and person, in which previously generic or socio-demographically constituted persons are disaggregated into data points relating to constantly changing, highly context-specific behaviours. This data is then subject to complex forms of calculation in which persons are reconstituted in relations of likeness or similarity to others whose behaviour in multiple contexts is also being recorded and analysed to produce a multi-dimensional flow of algorithmically linked data points, designed to capture and quantify context as well as the person (Lury and Day forthcoming; Thatcher, Sullivan and Mahmoudi 2016). In these increasingly prevalent pricing practices, we suggest, the person emerges as an (in)dividual, that is, both an indivisible individual able to pay the price offered to them, and a dividual, that is a person whose divisibility (as behaviours across contexts recorded in select data points) is the very basis of a more precise – personalised – specification.

To specify this form of personhood more precisely, we draw on Nick Seaver’s (2015) analysis of recommendation systems – in particular, his proposal that what is at issue in such systems is the selective recording and analysis of behavioural data to identify and make connections across contexts, that is, in our terms, to make up persons in dividualizing connections. Seaver argues – in contradistinction to the claim that big data has no context – that at least two modes of ‘doing’ context (or ‘contexting’) are present in contemporary data practices. In one, the ‘representational’ mode, context is considered a ‘stable container for activity: one’s context can be described as an accumulation of data points such as location, weather, the people nearby, or the time of day’ (2015: p.1105). Such a perspective also correlates with ideas of the subjectively unified person as individual: the ‘context’ for a person or a person’s life consists of properties that are assumed to be knowable, relatively stable and external to the person who persists independently of context. In the other ‘interactional’ mode, contexts are not containers but rather ‘relational properties occasioned through activity... a localized achievement, irreducible to a collection of sensor data’. Significantly, as Seaver points out, when data mining corporations – and their clients – turn their attention to context, they have the power to normalize, and in fact to impose, ‘certain modes of contextualization at the expense of others’ (ibid. p.1106).

Our proposal is that the emerging strategies of personalized pricing described above employ both container and interactional techniques of contexting to make up persons as (in)dividuals. As a number of studies have documented (e.g. Hannak et al. 2014; Valentino-

Devries et al. 2012) and as we outline above, online retailers and e-commerce sites now routinely engage in forms of price discrimination and price steering on the basis of data that range from the loosely behavioural (e.g. being logged in to a site or not) to those – such as accessing a site from an iPhone – that appear to be a proxy for demographic or socio-economic information and can be used to infer ability or willingness to pay, to yet others in which data relating to current behaviour is added to a longer history of data collection – or interactive contexting - that allows prediction. More specifically, we suggest that some strategies of personalized pricing do not simply involve the identification of (in)dividuals in calculative relations across multiple (container) contexts, but also involve the making of connections across interactive contexts. That is, while many pricing strategies draw on fixed, 'container'-type notions of context, many are now designed both to continually adjust prices in the light of interaction (a behaviour adjusted in the light of a new incentive, or a promotional offer not taken up) and to construct new or revised contexts for further interaction, all as part of the marketing mix.

We use the term 'transcontextual' to describe the specific kind of (in)dividual that emerges in such practices. The term comes from the work of Bateson ([1969] 2000), who uses it to describe a 'genus of syndromes' or cognitive tangles, of which the most notable is double bind. Transcontextual processes, in his account, refer to processes by which persons learn – or fail to learn – how to deal with changes in context. At the heart of this is the cognitive capacity to deal with the 'weaving of contexts and of messages which propose context – but which, like all messages, whatsoever, have "meaning" only by virtue of context' (2000, pp. 275-6). Contexts may set the stage for a 'certain class of response', but learning what changes and what stays the same as one moves between contexts is challenging, and 'breaches in the weave of contextual structure' are common. The transcontextual person, we suggest by extension, is the person to whom personalized prices – and other datafied messages – are addressed, an individual whose existence is repeatedly dividualised in practices of interactive contexting, that is, in practices in which prices, persons and contexts are continually made anew in constantly changing relations to each other.

Issues to do with lack of transparency, and the complex relation between behaviour, data, data analytics and personhood are thus likely to be at the heart of controversies about price discrimination in the coming years. Already much public debate has focused on the existence of third degree price discrimination (e.g. Vafa et al. 2015) – that is, cases where different groups are charged different prices – and the role of pricing algorithms in intentionally or incidentally discriminating against specific socio-demographic groups, including groups of 'protected persons'. While efforts to identify and counter such forms of discrimination are

obviously important, ongoing experimentation with price personalization and other flexible pricing techniques means that different prices for different groups are likely to become more common and, over time, normalized. However, in many cases the groups affected by such techniques will not map onto existing socio-demographic classifications, while the lack of transparency about how prices are connected to persons, or what others pay, means that it is likely to be harder for consumers to identify themselves as part of a group in the first place.

Reviewing these examples, it is clear that with multiple organizations and companies engaging in such practices, while using slightly different forms of classification, measurement and incentives, consumers are now being produced as different types of person in different places and different times. Indeed, this multiplicity – and the short-livedness of some of these emergent classifications – are one of the reasons it is hard for consumers to recognize themselves or to know how to act on the information provided by price either on their own or as part of a collective. Nevertheless, so we suggest, the increasing use of these different kinds of personalized pricing are coming to provide the basis for new forms of market personhood. Moreover, we further suggest that the identification of (in)dividuals, and of transcontextual persons in particular, is of considerable and growing commercial interest. Indeed, as the use of proprietary devices such as loyalty cards, or even the iPhone, develop, it is possible to see how corporations may be able to secure proprietary forms of access to these (in)dividuals by insisting on the use of certain kinds of identifiers to access personalized prices and services of other sorts. In this regard, transcontextual persons may come to be *incorporated* (in)dividuals.

Conclusion: price, the person and the marketing mix

Our suggestion in this paper has been that contemporary developments in pricing need to be understood in relation to the role of marketing in making markets and, specifically, to the contemporary inclusion of ‘the person’ as part of the marketing mix. Approaching pricing in this way shows that contemporary pricing techniques and experiments are productive of, rather than simply consequential for, persons, and that price can be an organizing force in its own right rather than simply the outcome of other processes (whether these are understood as ‘social’ or ‘economic’). While the capacity to engage in forms of price steering or price discrimination is not always, or consistently, used (Nesta 2014), we nevertheless suggest that the increasingly data-fied composition of price, along with the other 4Ps, is increasingly being employed to segment markets and persons.

To explore the implications of these developments, the paper built on earlier work examining the link between price and personhood (Carrier 1994) to suggest that we are currently witnessing a re-personalization of price. We argued that contemporary pricing strategies produce multiple versions of personhood, both sustaining established forms of generic and 'protected' persons, and introducing 'transcontextual' persons. We showed that the interaction of pricing strategies produces multiple understandings of, and possibilities for, personhood. So, for example, in our analysis 'dynamic pricing' may mean that 'generic' market persons experience prices that vary in time, but also that, through looping effects (Hacking 1995) persons may be incorporated as transcontextual persons, that is, dynamic and distributed (in)dividuals, not necessarily confined by a presumption of subjective unity.

It is clear that the technology that facilitates personalized pricing is currently somewhat ahead of its use. Yet evidence suggests we are nonetheless witnessing a period of experimentation with different kinds of price personalization techniques, with some kinds of price fluctuation and discrimination being implicitly accepted as they spread quite rapidly through the market. Our suggestion has been that in many of these practices, it is not just that price is personalized, but also that price is attached to persons in new ways; persons are being put into multiple and changing relations with prices, but also with other persons, places, products and promotions. At the same time, more longstanding associations between persons and price (for example, those that either directly or indirectly offer different prices according to gender or ethnicity) are being newly identified as matters of concern and action, in both online and offline contexts, implying the need for further moral work, tests of legitimacy, and public debate. While the implications of these overlapping systems of de- and re-personalization are still unclear, it seems likely that they will contribute not only to new forms of discrimination and the erosion of established social identities, but also the emergence of transcontextual persons. Indeed, because the identification of such persons is typically a product of commercially driven forms of data analysis, we may be witnessing the incorporation of (in)dividuals. While pricing techniques have always been bound up with the classification, composition and decomposition of persons, new forms of price personalization and discrimination do not merely 'act on' generic market persons, but rather reconfigure understandings of, and possibilities for, personhood in the market.

Indeed, our argument is that the inclusion of price as an element of the marketing mix in which contexts are produced interactively gives contemporary practices of personalization a sharp edge, such that their effects extend beyond contributing to a 'filter bubble' (Pariser 2011) of personal taste. Indeed, we see the consequences of personalized pricing in Fourcade and Healy's (2013) terms as of one of a range of contemporary

‘classification situations’ that have implications for life chances. The mechanisms of personalization operate slightly differently in each of the pricing scenarios we describe, but in each case the simultaneous production of prices and persons has implications for wealth or material welfare.

In the case of the more recent behavioural and dynamic pricing strategies, this production does not map – or maps only unevenly and indirectly – onto recognizable categories of social identification and collective action. As Geoffrey Bowker (2014) notes, while the ‘correlationism’ of much contemporary data science has the advantage of bypassing unhelpful stereotypes and essentialisms, it also has no need for the explanatory categories that have historically been used to make sense of structural disadvantage – and, we would add, enable people to act against it. Indeed, our argument is that the transcontextual forms of personhood produced through contemporary versions of the marketing mix make it increasingly difficult to see one’s own context, in the sense of the reference groups or socio-political categories with whom one might feasibly act in concert. Here the information and communications infrastructures of personalized pricing (and contemporary marketing in general) are central. The changing nature of information about prices and recommendations made to others not only diminishes trust (Turow 2006; Nesta 2014), and removes a key element of normal market functioning (the availability of meaningful information with which to make calculations), but also provides both the potential for new forms of discrimination and removes the basis for forms of collective identification and action.

Notes

1. For example in medicine, the ‘4Ps’ are said to be Predictive, Preventive, Personalized, and Participatory (Distler, 2008). This culture of personalization (Lury and Day, forthcoming) has also been observed in the music industry (Hoffman quoted in Seaver 2015), in online news and advertising (Turow 2011) and in internet search (Pariser 2011).
2. We use the term ‘personhood’ to acknowledge that what counts as person is historically and culturally variable (Carrithers, Collins and Lukes 2008) and to acknowledge that what constitutes a person emerges as a complex interplay of self, subjectivity, behavior, and individual and collective identity
3. Englund and Leach (2000: 229) observe that it has become ‘current anthropological wisdom’ that ‘all persons are both dividuals and individuals’. In what follows we suggest personalized pricing strategies bring together individualizing and dividualizing practices to produce what we call a specific kind of (in)dividual, namely, transcontextual persons.

3. This lack of transparency or information about variation in prices and pricing techniques, and consequent isolation of consumers from others with whom they might act collectively, is underscored by the fact that much of the literature exploring price discrimination in particular, and data mining in general, recommends strategies of resistance that depend almost entirely on individual acts of disruption (Nissenbaum and Brunton 2015) including experimentation with different platforms in order to get the 'best price' (Hannak et al. 2014).

4. Although here too there was variation of persons according to contexts. In the case of UK nationalization, for example, there were different 'moral economies' associated with the train service, which was differentiated by price (first and second class, later first and 'standard' class), compared with the NHS, where the direct cost was not charged to patient, and service was the same for everyone.

5. Of course, these 'individual' members may themselves be composite, both in the sense of making purchases for more than themselves, and cards being able to be used by more than one person. In many cases, more than one card is provided so that different people's behaviour is distinguished within a single identifying account. In this way, membership defines an individuated identity that is not necessarily tied to household or family but may be more than one and less than many.

6. As this example suggests, how price is varied in relation to person and the other 'P's seems to depend on a variety of factors. The CEO of a software firm combining data analysis with 'smart' supermarket shelving says, "I don't see dynamic pricing happening in major retailers. ... Supermarkets have huge, complicated logistics systems. They can't react in real time to what's going in their stores the way Amazon can. [Physical retailers] want to discount, to have more relevant deals, fewer promotions, better value and more customer loyalty. That's not about changing the price of individual products, it's more about changing deals" quoted in Walker 2017).

7. Although it is not the primary concern of this paper, we note that in such cases 'points' are able to function as a currency, the exchange value of which is determined by the card provider. In this perhaps minimal sense, such cards provide the basis for both new forms of money and forms of consumer citizenship.

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