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Pricing practices: A critical review of their effects on consumer perceptions and behaviour

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ABSTRACT

With the present challenge to compete on price or product assortment, retailers and manufacturers are increasingly focusing on state-of-the-art pricing strategies which have their roots in behavioural economics and psychology. The current review is an empirical investigation on the relative effectiveness of various pricing practices on consumer perceptions and behaviour. Six pricing strategies were reviewed; drip pricing, reference pricing, the use of the word 'free', bait pricing, bundling and time-limited offers. The review shows that the former three have received a significant amount of attention and have a robust impact on consumer perceptions and behaviour. There is less research on the latter three; however, the available evidence does suggest that they, too, may be capable of influencing consumers' choices. Finally, it is also clear that the effects of pricing practices can be moderated by a variety of factors. Overall, the current review indicates that sellers are able to influence perceptions and purchase decisions of consumers based on the manner in which prices are displayed. The implications of these findings for retailers, policy makers and researchers are discussed.

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1. Introduction

Pricing practices used to advertise products and services to consumers – such as '3 for $5', '60% off' or 'sale – one week only' – are highly prevalent in today's society (Trinh et al., 2012). Furthermore, the design of price tags, rebates, sale adverts, cell phone plans, bundle offers, etc., are increasingly based on *psychological* variables rather than economic ones (Poundstone, 2009). This is perhaps not surprising as offering products which are not also available from competing retailers is becoming increasingly difficult (Sigurdsson et al., 2010). Certainly, products that prove popular are rapidly adopted by other retailers. Similarly, competitors can easily respond to price changes, in fact, more so than to most other tactics (Sigurdsson et al., 2010).

Achieving significant differentiation through breadth or depth of offered product lines or through price is likely to become even more challenging. For example, finding significant differences between retailers in their offers on, say, chocolate bars, or washing powder, is becoming increasingly unlikely (Simonson, 1999). Likewise, differences and similarities in price are not only becoming trivial, they are also now made salient to consumers, even when these are identical (or near identical) across retailers. Thus, as price (and assortment) becomes a less important differentiating factor, the 'design' of the price and the manner in which products are displayed and evaluated ought to increasingly become instrumental. In addition, marketers can tactically manipulate these designs to influence buyers' perceptions and purchase decisions (i.e. what and how much to buy), and this often does not have to involve any changes to the price. As such, pricing tactics have several very clear advantages.

On the other hand as the use of these practices is increasing, so is the attention from governments and regulators. Indeed, in recent years, government bodies have taken several steps to examine, understand, and monitor the use of these practices, and whether they are harmful to consumers (e.g. OFT, 2010). Taken together, this cross-disciplinary, cross-sector field of behavioural economics, marketing, and law also seems a fascinating area for prospective academic research.

Nevertheless, while pricing strategies are becoming an indispensable tool for retailers and manufacturers, and a focal point of recent government investigations, empirical research scrutinising their absolute (or relative) effects on consumers seems to be disjointed and, in many instances, scarce – even with the more common of the pricing practices used. Indeed, while pricing is a

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popular area of study, with almost 2000 articles on the topic (Leone et al., 2012), there has, to the authors' knowledge, not yet been an overarching review of the price psychology work. Accordingly, it is timely that a review of the literature on the impact of some of the more widespread price advertising practices on consumer perceptions and behaviour is carried out. Specifically, it is important to provide a state of the art evaluation of the evidence, outlining which practices work, the extent to which they affect consumers' decisions, and the mechanisms involved. No such review currently exists in the academic literature, so the authors have set out to address this gap, given the utility and timeliness of the information.

The review is laid out in the following way: first, we present a quick background as to *why* these practices may actually work (because from a rational economic point of view they *should not*) by reviewing the psychology of decision making. Next, we deal with each of the practices separately by explaining the psychological principle underlying the practice (i.e. why it works), and reviewing the literature on the effects of this practice on consumer behaviour (and judgements). Finally a general conclusion and a discussion on the implications for researchers and practitioners are both provided.

1.1. Psychology of consumer decision-making

Many economists maintain that the law of demand (consumers demanding more of a good the lower its price) is the most important empirical discovery in economics (e.g. Perloff, 2001). Consistent with classical economic theory, it has been assumed that consumers can assess the utilities or values of products based on their characteristics (e.g. price and product features) and that these values guide purchase decisions. For example, when faced with more than one product on offer (say, a digital camera), the consumer can simply determine the value of each alternative through its price, and information about other features (e.g. picture quality, memory size, of the camera) and then select the one with the highest overall value. Accordingly, people will have clear and stable preferences when they have complete information about the characteristics of the alternatives. However, this 'rational' view of the consumer is not supported by empirical findings.

A significant amount of recent research on consumer decision making has established that consumers are notoriously susceptible to the influence of environmental cues that are often irrelevant to the utility of the offer. For example, consumers have been shown to comply with signs that prompt them to buy higher quantities of a product even when there is no rational incentive to do so (Wansink et al., 1998). Studies have found that placing a sales sign on an item can lead to increased demand for that item even when the price remains the same (Inman et al., 1990). Recent research even shows that consumers' willingness to pay for a product can be influenced by manipulating the price of an adjacent and functionally unrelated product (Nunes and Boatwright, 2004).

These findings are consistent with the behavioural economics literature, dealing with the psychology of decision making. Behavioural economics is based on the science of judgemental heuristics (or mental shortcuts; rules of thumb) that most people rely on reflexively (Belsky and Golivich, 1999). Heuristics are characterised as an 'intuitive, rapid, and automatic system' (Shiloh et al., 2002, p. 417), which 'reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations' (Tversky and Kahneman, 1974, p. 1124). These heuristics are often based on cues or key features in the surroundings (colours, numbers, sounds, smells, etc.). When one or another of these cues is present, automatic and reflexive responses can occur (Cialdini, 2001). Although the use of rules of thumb reduces cognitive and time constraints, they sometimes lead to severe and systematic errors such as biases and fallacies in decision making (Tversky and Kahneman, 1974). As such, consumers are inevitably susceptible to environmental influences.

The idea that, in many situations, consumers use mental heuristics when faced with a specific purchase decision, rather than retrieve preformed evaluations of product price or features and alternatives, has highly significant marketing implications. Specifically, they suggest that external cues, or features in the environment, context, and the manner in which prices are presented, are all likely to have a significant impact on consumer judgements. This is a key feature of pricing strategies. It is therefore important to reiterate the value that an empirical investigation of the relative effectiveness of various pricing practices on consumer perceptions and behaviour will provide. In particular, it is important to determine a) which practices of interest – if any – have a significant impact on behaviour, b) what particular aspect of behaviour they affect (e.g. buy more, search less, etc.), c) the extent of this effect, and d) under what conditions the specific effect is present vs. absent.

It is, of course, beyond the scope of this article to review the literature on the entire spectrum of pricing practices used. Therefore, the available academic evidence will be reviewed as regards six pricing practices, which have been identified as highly prevalent in today's marketplace (cf. OFT, 2010), namely: drip pricing, reference pricing, the use of the word 'free', bait pricing, bundling, and time limited offers. Table 1 provides a simple explanation of, and the potential mechanisms behind each practice.

2. Effect of pricing practices on consumer decision making: evidence from literature

2.1. Drip pricing (partitioned pricing)

Drip pricing mainly refers to purchases where consumers see an element of only the price upfront, and where either optional or compulsory price increments are revealed as they 'drip' though the buying process (e.g. airline taxes or charges to pay using credit cards). That is, the total price is revealed (or can only be calculated) only later on in the purchasing process. When price is separated in this way, it is also called 'partitioned pricing'.

Sellers can separate either a surcharge, in which the charge represents an additional amount inherent to the purchase situation (e.g., shipping and handling for online or mail order purchases, airline taxes, processing fees, etc.), or a component of the product (e.g., refrigerator, ice-maker, and warranty) or a consolidated total price for the bundle. While the consumer can choose whether to purchase these options in the latter scenario, in the former consumers cannot opt out of them.

The most dominant theory for explaining the effects of drip and partitioned pricing on consumer purchasing is anchoring and adjustment theory (Tversky and Kahneman, 1974; see Table 1), which suggests that buyers anchor on the piece of information they consider most important (e.g., base price) and then adjust insufficiently for one or more items (e.g., the surcharge), thus underestimating the total price.

While there are very few studies specifically examining drip pricing (i.e. looking at temporal price separation), several studies have examined the effect of 'price partitioning' (price separation), on consumer decision making. In a now widely-quoted study, Morwitz et al. (1998) show that partitioning prices this way may lead to a bias in behaviour such that consumers end up paying more and searching less when price-parts are partitioned as opposed to presented as a total price. In their auction experiment the authors found that separating a buyer's premium, which is a surcharge of 15% of the buyer's bid price, significantly increased demand for the good as compared to the situation where the

Table 1
The six pricing practices, what they are, and the potential mechanisms involved in their effects

Pricing strategy	What it is	Why it should work (mechanisms)
Drip/ partitioned pricing	Purchases where consumers see an element of only the price upfront, and where either optional or compulsory price increments are revealed as they 'drip' though the buying process. That is, the total price is revealed (or can only be calculated) only later on in the purchasing process (e.g. airline taxes or charges to pay using credit cards)	*Anchoring and adjustment* (Tversky and Kahneman, 1974; see Table 1): This theory suggests that the buyer anchors on the piece of information he or she considers most important (e.g., base price) and then adjusts insufficiently for one or more items (e.g., the surcharge), thus underestimating the total price. It is well documented that during normal decision making (including estimating value), an initial value (an anchor) serves as a mental benchmark or starting point for estimating 'real' value
Reference pricing	A reference price is a price that is communicated to the consumer as being the 'normal', most commonly charged, or un-discounted price (e.g. was £199, now £169). There are three basic types of retail reference pricing practices: (1) comparing an advertised price to a price the retailer formerly charged for the product; (2) comparing an advertised price to a price presumably charged by other retailers in the same trade area; and (3) comparing an advertised price to a manufacturer's suggested retail price	*Anchoring*
Free offers	Offering a free product as a part of a deal or using the term 'free' is used in advertising, for example: 'buy one get one free'; 'free laptop' with a given broadband package; or 'kids go free'	*Eliminates buyer's regret*: A product offered as 'free' may affect consumer behaviour because it eliminates buyer's regret (e.g. 'the chocolate did not taste as good as I'd thought') as nothing was spent on the product, causing people to overvalue anything that is free. Another theory suggests that people choose the benefit which avoids trade-offs (including calculating discounts that require cognitive effort). Because free is an absolute price, we know exactly what it means; there is no relative thinking, and no calculation required, and no fear of loss
Bait pricing	Involves consumers being enticed with a discount, but subsequently ending up purchasing a more expensive product because there are very few, or indeed no, items available at the discounted price	*Commitment and consistency*: Consistency generally simplifies daily life; it affords a valuable shortcut through the complexity of modern existence, and it is highly valued by society. By being consistent with earlier decisions, one reduces the need to process all the relevant information in future similar situations (Cialdini, 2009)
Bundled offers	Bundling offers come in various forms, including *volume offers* ('3 for 2', 'buy one get one half price', '3 for £8', etc.) and comparative bundles where comparisons are made across a bundle or 'basket' of goods (e.g. pay-TV packages or supermarket baskets)	*Anchoring*: Also, such offers may be preferable because they signal a saving (even if there isn't one) simply because shoppers consider that bundles usually offer such savings (i.e. this inference may have become a shortcut in itself)
Time limits	Offers which last for only the immediate period of negotiation and the customer is advised that the price will not be available at a later date	*Scarcity*: People assign more value to opportunities/items when they are (or are becoming) less available. This is because things that are difficult to obtain are typically more valuable, and the availability of an item can serve as a short-cut cue to its quality. It could also be that people fear they will lose out on a deal (fear of loss)

buyer's premium was *included* in the buyer's bid price. In a second experiment, they tested the effect of price partitioning on the recall of prices. Participants were shown the price of telephones – either partitioned or not – and later asked to recall the total price of the different phones. Participants in the partitioned price group consistently recalled lower total prices as compared to those in the total price group.

Lee and Han (2002) replicated these results (using computers and stereo hi-fis as products) and discovered that a partitioned price with two components (base plus surcharge) led to underestimation of the total price. In their study, they found that consumers exposed to partitioned prices recall total costs that are approximately 8% lower than the actual amount.

In a comprehensive study, Xia and Monroe (2004) examined the effect of price partitioning on the internet (in a scenario where participants were asked to buy a PC). Their results showed that partitioning the price (base plus surcharge) significantly increased consumers' purchase intentions, satisfaction with price and perceived value, and reduced search intentions, as compared to the total price alone.

Several moderator variables have also been examined as regards the effectiveness of portioning prices. The first is the size of the surcharge. Research shows that compared to a single price, partitioning a small (6%) surcharge leads to higher purchase intentions, price satisfaction and perceived value, and lower search intentions. This difference is not observed when the surcharge is high (12%; Xia and Monroe, 2004). It is noteworthy however that while a *large* surcharge (12%) leads to lower perceived value and reduced acceptance of surcharge, it does not lower consumers' *intentions to buy* the product. Furthermore, partitioning increases value perceptions and willingness to pay when the surcharge is considered reasonable, but decreases them when it is considered unreasonable (Burman and Biswas, 2007).

Other moderator variables include the number of surcharges, seller trustworthiness, whether the total price is presented or not, and individual differences in consumers. The evidence indicates that one large surcharge leads to higher purchasing perceptions and behaviours than two surcharges of the same total value (Xia and Monroe, 2004). Furthermore, studies that have taken into account seller trustworthiness have shown that a *larger* number (9 vs. 2) of price components may lower perceived fairness and purchase intentions for less trustworthy sellers, when total price is not presented (Carlson and Weathers, 2008). Interestingly, when a total price *is* presented, a larger number of price components leads to higher perceptions of fairness, as well as a lower recalled total price, resulting in increased purchase intentions (regardless of seller trustworthiness). Similarly, presenting the total sale price and then the additional surcharge information results in higher purchase intentions, perceived value, and lower search intentions, compared to a total price alone (Xia and Monroe, 2004). Finally, studies examining individual differences show that partitioning has no effect on value perceptions or willingness to pay on consumers who have low need for cognition – i.e. those who do not engage in or enjoy effortful cognitive activities (Burman and Biswas, 2007).

Partitioning add-on products may also have a similar anchoring–adjustment effect, particularly in instances where the focal product in the bundle is priced lower than that of a comparison

bundle (even if the total price remains constant; e.g. Chakravarti et al., 2002). However, this effect may be contingent upon various features of the additional product or service (e.g. quality, value, relevance, etc.), and in some cases, these add-ons can lower perceptions of value (e.g. Bertini et al., 2009; Bertini and Wathieu, 2008). Thus, whilst partitioning surcharges benefits sellers fairly consistently, the effects of partitioning add-on products (optional or compulsory) seem to be more complex and depend on numerous features of the add-on(s), which may or may not be beneficial for sellers.

Taken together, the available evidence on drip pricing suggests that it does have a significant impact on consumer behaviour and attitudes. Specifically, studies show that partitioning prices into a base price and surcharge can significantly increase consumers' perceived value and purchase intentions for products, and can lower search intentions compared to combined pricing. This is because consumers may fail to adjust from the initial (lower) price of the base good and underestimate the total price of the partition-priced product. The literature also suggests that several variables may moderate this effect, including the size of the surcharge, number of surcharges, seller trustworthiness, whether the total price is presented or not, and individual differences in consumers perceptions (see Bertini et al., 2009; Bertini and Wathieu, 2008). These variables may be highly relevant for retailers choosing to employ this pricing strategy.

2.2. Reference pricing

A reference price, simply stated, is a price that is communicated to the consumer as being the 'normal', most commonly charged, or un-discounted price (e.g. was £199, now £169). There are three basic types of retail reference pricing practices: (1) comparing an advertised price to a price the retailer formerly charged for the product; (2) comparing an advertised price to a price presumably charged by other retailers in the same trade area; and (3) comparing an advertised price to a manufacturer's suggested retail price. As with drip pricing, the fundamental psychological principle (heuristic) underlying reference pricing is *anchoring*.

There is an abundance of evidence to show that advertised reference prices (ARPs) influence a range of consumer price-related responses, including increasing perceptions of the fair price, the normal price, the lowest available price in the market, the potential savings and the purchase value, and also that they decrease additional search effort (e.g., Ahmed and Gulas, 1982; Bearden et al., 1984; Berkowitz and Walton, 1980; Biswas and Blair, 1991; Blair and Landon, 1981; Burton et al., 1993; Darke et al., 1995; Della Bitta et al., 1981; Grewal et al., 1998; Lichtenstein and Bearden, 1988, 1989; Lichtenstein et al., 1991; Urbany et al., 1988).

In the 1980s, numerous studies were conducted in this area, some of which were field studies. For instance, Blair and Landon (1981) ran an experiment in a shopping centre. The experiment used presentation cards to obtain respondents' estimation of savings on electrical goods when exposed to an offer price with a reference price (shown as, for example, list price $69.95 – sale price $44.95) as compared to an offer price with no reference (shown as sale price $44.95). In this study the authors found that consumers who were exposed to a reference price estimated that they were receiving 75% higher savings than consumers who were not exposed to a reference price.[3]

Lichtenstein and Bearden (1988) examined the role of merchant-supplied reference prices in influencing consumer perceptions where the product studied was an automobile. Consumers were exposed to a test automobile advertisement and then asked to estimate the "normal price" that the advertising merchant charged for the automobile. The reference price treatment conditions they used were: "Was $8215, Now Only $7272" for the high condition, and "Was $7414, Now Only $7272" for the low condition. Their manipulation had a strong effect on consumers' valuations. Their results showed that the resulting mean scores were $8043 and $7382 for the high- and low-reference-price conditions, respectively. In addition, the reference price accounted for 27% of the variability in consumer behaviour (a relatively large effect).

These and other field and experimental studies indicated a significant and substantial impact of reference pricing on consumer value estimations. In 1993, Biswas, Wilson, and Licata conducted a meta-analysis of the available research on the effects of reference pricing on consumer behaviour and attitudes. They found that effects in the majority of the studies (72%) were statistically significant, and that the amount of variance explained in these studies was, on average, higher than that of consumer behaviour studies in general.

The effects of reference pricing on consumer deal evaluations and behaviour have been replicated fairly consistently since the Biswas et al. (1993) meta-analysis (Alford and Engelland, 2000; Ang et al., 1997; Blair et al., 2002; Chandrashekaran and Grewal, 2006; Chernev and Wheeler, 2003; Kopalle and Lindsey-Mullikin, 2003; Trifts and Häubl, 2003; Wolk and Spann, 2008). As Lichtenstein (2005, p. 358) notes: "*ARPs work, a lot of research shows they do, and retailer practice and returns show that they do. This is not new – it is widely known. If I advertise a sale price of, say* $29.95 *and accompany it with an ARP of, say* $39.95, *in most contexts, sales will increase relative to a no ARP present situation. Sales will increase as I increase my ARP to* $49.95, *to* 59.95, *to* 69.95."

A number of studies have since focused on the mechanisms through which reference pricing might work (see Furnham and Boo, 2011), as well as the conditions under which it has the most/least impact. Several moderator variables have been put forward; these include the size of the reference price (e.g. exaggerated or implausible reference prices), consumer scepticism, price knowledge, and consumers' familiarity with the brand/product.

Evidence shows that implausible or exaggerated reference prices often have similar effects on consumer behaviour as plausible reference prices. In some cases, these may even increase value perceptions significantly more than plausible reference prices (Biswas, 1992; Biswas and Blair, 1991; Burton et al., 1993; Lichtenstein et al., 1991; Wolk and Spann, 2008). Urbany et al. (1988) found that product valuations increased linearly as the reference price increased. Furthermore, reference prices may have their effects even when consumers are sceptical towards the offer (Blair and Landon, 1981; Urbany et al., 1988). Consumers may believe pricing claims even when they exceed their initial price expectations by 200% (Kopalle and Lindsey-Mullikin, 2003).

Research shows mixed results as regards price knowledge. So me studies find that shopping experience has no effect on consumers' acceptance of reference prices (Liefeld and Heslop, 1985), while others show that price knowledge of competitors reduces the effect of reference prices (e.g. Blair et al., 2002; Lichtenstein and Bearden, 1989). This may be due to different designs (e.g. remoteness of experience) and samples (e.g. amount of knowledge of participants) used in these studies. Finally, the effect of a reference price is lower with familiar brands (Biswas and Blair, 1991), and with inexpensive (and therefore more frequently encountered) products (Nottingham University Business School, 2005).

Taken together, a large body of evidence shows that the presence of a reference price increases consumers' deal valuations and purchase intentions and can lower their search intentions as compared to the case where a reference price is absent. Reference prices can, in some instances, influence consumers even when these are very large and consumers are sceptical of their truthfulness.

[3] This observation held across well-known brands as well as lesser known brands.

2.3. Use of the word 'free'

There are different ways in which the term 'free' is used in advertising, for example: 'buy one get one free'; 'free laptop' with a given broadband package; or 'kids go free'. Thus, the word free may be used as a priming mechanism, or to indicate that a free product is being offered as part of a deal. A product offered as 'free' may affect consumer behaviour because it eliminates buyer's regret (e.g. 'the chocolate did not taste as good as I'd thought') as nothing was spent on the product, causing people to overvalue anything that is free (Shampanier et al., 2007). Shampanier and colleagues demonstrated that consumers overvalue that which is free by showing that choice increases significantly for the cheaper option when the prices are, say, 0p and 1p rather than 1p and 2p. This has recently been replicated using in-store sales data where sales were higher for a promotion which offered a free bonus pack, compared to a promotion offering a price discount of equivalent value (Chen et al., 2012). After a series of tests Shampanier and colleagues proposed that emotion is the most likely reason, with free goods producing more positive affect than goods discounted to the same degree but which are not free. Another theory suggests that people choose the benefit which avoids trade-offs (including calculating discounts that require cognitive effort). Because free is an absolute price, we know exactly what it means. There is no relative thinking, no calculation required, and therefore no fear of loss.

No study – to the authors' knowledge – has specifically examined the 'priming' effect of the word free (as in 'kids go free') on consumer behaviour. However, a few studies have examined the effect of free gift offers. For instance, Raghubir (2004) shows that once a "free" product has been bundled together with another product and offered for one price, consumers are willing to pay less for the free product when it is sold alone. Similarly, in a recent field study Kamins et al. (2009) found that describing one of the products in a bundle as free decreased the price consumers were willing to pay for each product when these were sold individually.

However, other studies have shown positive valuations of the overall bundle when one of the items is described as free, at least relative to when it is offered at a price discount (Chandran and Morwitz, 2006; Darke and Chung, 2005; Nunes and Park, 2003).[4] Furthermore, Palmeira and Srivastava (2013) discover, in contrast to previous findings, that offering a product for free for a period and then selling it at its usual price does not generally devalue the product and devalues it less than a price discount. The authors' research suggests that giving the product away at a discount creates a low internal reference price, against which the product is later judged and perceived as expensive – while at no cost, a reference price is not generated.

This discrepancy creates a degree of uncertainty about the effect of a free designation and the underlying mechanism at work. Thus, free offers can have seemingly inconsistent effects, suggesting the presence of moderator variables. Considering the high prevalence of this pricing practice in the market (OFT, 2010) it is perhaps surprising to find this relative lack of evidence as regards its effectiveness. Clearly this is an area that warrants further research.

2.4. Bait pricing

Bait pricing covers a range of practices, but essentially involves consumers being enticed with a discount, but subsequently ending up purchasing a more expensive product because there are very few, or indeed no, items available at the discounted price. The mechanism behind bait pricing is likely to be the *commitment and consistency principle* (Cialdini, 2001). Psychologists have long recognised that once people have committed to an action (e.g. to buy a product), they are more likely to be consistent with that particular deed (i.e. buy rather than leave).

Only one study to our knowledge has directly addressed the effect of bait sales on consumer behaviour. There are, however, a number of studies that have examined the effect of the separate components of a bait sale, namely: a) the bait (i.e. the discounted offer), and b) the unavailability of the goods (the stock-out), on consumer behaviour. While the latter does not provide direct evidence of the impact of this practice it makes it possible to infer tentative conclusions.

The direct evidence in support of the supposition that bait pricing may be detrimental to consumers comes from Ellison and Ellison (2009) using data from an online price comparison site. The authors concluded that the practice of bait and switch – offering a low-quality product at a low price to attract consumers and subsequently trying to convince them to pay more for a superior product – has a strong effect on behaviour.

As regards the indirect evidence, a rich literature on sales promotions has shown that short-term sales are positively affected by offering promotions (e.g. Blattberg and Neslin, 1990; Inman et al., 1990, 1997; Raghubir, 1998). Furthermore, Darke and Freedman (1995) show that consumers use the size of a percentage discount as a heuristic cue to help decide whether a better price is likely to be available elsewhere. This line of research indicates that promotions can serve as baits such that they attract customers in the short term.

In a review of the literature on stock-out behaviours, Mijeong (2004) observed that the way in which consumers respond to stock-outs varies significantly (Andersen Consulting, 1996; Emmelhainz et al., 1991; Progressive Grocer, 1968a, 1968b; Schary and Christopher, 1979; Walter and Grabner, 1975; Zinn and Liu, 2001). Yet, across several empirical studies, he found that between 20% and 80% of consumers substitute for the out of stock item, between 5% and 25% delay the purchase, and between 15% and 50% leave the store without a purchase. Thus, while there is variability, substitutions seem to be the most dominant behavioural response to stock-outs. For instance, in the most recent of these studies, Zinn and Liu (2001) found that more than 60% of customers who experienced stock-outs substituted for the item by switching within the same store, whereas only about 20% were willing to go to another store, and 15% to delay the purchase until a next trip.

Of course, more direct evidence of the impact of bait pricing is required. Bait pricing is a common pricing practice (OFT, 2010) and, as seen, at least one study suggests that this practice may have a substantial impact on consumers. Evidence derived from examining the independent effects of discount offers (baits) and consumer behavioural patterns in stock-out situations (predominantly switching within store) make it possible to infer that bait and switch practices are likely to influence customers' purchase decisions in favour of the retailer employing this pricing strategy. Nonetheless, we concede that this is at present an assumption that requires further research.

2.5. Bundling

Bundling offers come in various forms, including *volume offers* ('3 for 2', 'buy one get one half price', '3 for £8', etc.) and comparative/mixed bundles where comparisons are made across a bundle or 'basket' of goods (e.g. pay-TV packages or supermarket baskets). Most of these practices will be based on the anchoring

[4] It may be that the use of the word 'free' attracts extra consumer attention and that this may lead to sales that might not have taken place had the extra attention not been provoked. However, this is likely to function in much the same way as bait pricing and discounting which are covered elsewhere in this document.

heuristic described in previous sections. In addition to numerical cues, however, bundle offers may be preferable because they signal a saving (even if there is not one) simply because shoppers consider that bundles usually offer such savings (i.e. this inference may have become a shortcut in itself).

There is a good amount of research investigating volume and bundled offers on consumer behaviour and attitudes. Multiple unit price promotions (such as '3 for 2') are popular among retailers of packaged goods. Evidence regarding the influence of multiple unit price promotions (volume offers) on sales was first provided by Blattberg and Neslin (1990) in a field study. Using an econometric approach to control for baseline sales and marketing variables, their results showed that multiple unit price promotions increased sales by 12% across seven brands in three categories as compared to single-unit promotions.

As part of a paper that developed and tested a generalised anchoring and adjustment model regarding purchase quantity decisions, Wansink et al. (1998, Study 1) conducted a field experiment to assess the impact of multiple-unit price promotions on the sales volume of 13 products across a grocery chain's 86 stores. The authors found that for 9 of the 13 items tested, multiple-unit price promotions (e.g. "4 units for £2") increased sales by a greater percentage than single-unit price promotions which employed the same percentage discounts (e.g. "50p per unit"). On average, the single-unit price promotions increased sales volume by 125%, while the multiple-unit price promotions increased sales by a significantly larger 165%.

In a more recent study, Manning and Sprott (2007) directly examined the conditions under which multiple-unit pricing is most effective. Their results are in line with previous studies in that they show that multiple units offered in the bundle increase quantity purchase intentions compared to a single-unit discount (even when the discount is the same). However, this effect was significant only for the largest unit bundles (8), and not the others (2 and 4). More importantly, the presence (vs. absence) of the single unit price in a bundle did not alter this effect. This latter finding is consistent with previous research which indicates that a large proportion of the population does not use unit prices (see Steven et al., 2003, for a review).

The substantial impact of multi-unit pricing is noticeably demonstrated by a comprehensive study by Foubert and Gijsbrechts (2007). The research used consumer panel data from a single product category, including 17 different brands, and a substantial sample size (1181 shoppers) across 8 different store chains. Their results showed that a bundle discount increases the probability of switching to the bundle, more so than per-unit discounts (again with an identical saving). More importantly, they found that even when the consumer did not purchase enough of the product to qualify for the discount, they would still switch to the promoted items. This reveals that the mere communication of a bundle discount is enough to attract consumers to the promoted items, even when they are not obtaining any savings, and potentially incurring a loss.

In a similar vein, a number of studies conducted in recent years show that mixed bundle promotions can have a significant effect on consumer choices. For instance, Johnson et al. (1999) conducted experiments in which respondents evaluated car offers that varied in bundling. They found that the respondents' positive evaluations of the offers increased as component price information was progressively bundled.

Similarly, Arora (2008) presented participants with a brochure of the products (in this case teeth-whitening products) with either individual prices or a bundle. They measured participants' attitudes (good idea, beneficial and desirable) and intentions (how likely they were to choose the product if they decided to whiten their teeth), and found that the bundle offer, but not individual pricing, increased purchase intentions. Two recent studies found (through open-ended questioning) that consumers indeed infer savings from bundles (even when no savings exist; Heeler et al., 2007; Nguyen et al., 2009).

However, bundling may also influence consumers simply because it decreases cognitive effort. For instance, in a recent study, Andrews et al. (2010) looked at the effect of *service* bundling in the domain of telecommunication services. Specifically, they examined the effects of bundle incentives (i.e. one-bill convenience, cost savings and service upgrades) on consumers' value perceptions, intentions to search for and compare alternative service providers and willingness to switch to a competitor. Their results showed that service bundling significantly improved perceived value and switching intentions (to the bundle), and reduced search intentions. This was found to be due to the convenience associated with consolidating charges into one bill. Importantly, they found that adding saving or free upgrade incentives had generally no effect on consumers' search and switching intentions beyond the convenience effect. This means that service providers may be able to convince consumers to stay or entice them to switch service providers, not by offering the best or cheapest option, but simply by promoting the convenience of having bundled services billed on a single statement.

Taken together, the evidence suggests that the presence of a multiple-unit price promotion (volume offer) can increase the quantity consumers buy to a greater degree than would be expected with single-unit promotions even when the discount does not differ (i.e. there is no incremental saving). This effect can be substantial. Importantly, bundle discounts can increase the probability of switching to the bundle items (relative to per unit discounts) even when consumers may not purchase enough of the product to qualify for the discount (and thus incur a loss).

2.6. Time-limited offers

Time-limited offers generally refer to offers which last for only the immediate period of negotiation and the customer is advised that the price will not be available at a later date. Time-limited offers are based on a psychological principle called scarcity (Cialdini, 2009). According to this principle, people assign more value to opportunities/items when they are (or are becoming) less available. This is because things that are difficult to obtain are typically more valuable (Lynn, 1989), and the availability of an item can serve as a short-cut cue to its quality. Furthermore, people are more motivated by the thought of losing something than by the thought of gaining something of equal value, and the threat of potential loss plays a powerful role in decision-making (Tversky and Kahneman, 1981).

While there is an abundance of evidence on the effect of scarcity (in general) on consumer behaviour, studies specifically examining time-limited offers are somewhat mixed and suggest the presence of moderator variables.

Early research found strong support for the impact of scarcity (though not restricted to time-limited offers) on consumer behaviour. For instance, Mazis et al. (1973) found that scarcity had a significant impact on consumer purchase behaviour in the face of a *product ban*. In a meta-analysis, Lynn (1991) found a strong and reliable (positive) relationship between scarcity and *value* perceptions. Lessne and Notarantonio (1988) found general support for the hypothesis that placing limits on the *amount* of a product that can be purchased increased the attractiveness of the offer. Simonson (1992) found that consumers were more likely to purchase an item available at a promotional sale price when asked to imagine how they would feel if they had waited until a later date to make their purchase and then missed out on the offer as a result. Various studies have also found that time pressure or time

constraints can increase consumer perceptions of value (Vermeir and Van Kenhove, 2005; Tan and Chua, 2004; Suri et al., 2003; Dahr and Nowlis, 1999; Kumar et al., 1998), as well as drive their choice to high quality/low risk brands (Nowlis, 1995). However, these studies are useful only in so far as they describe how people would react if they actually *felt* the time pressure in an advertised time-limited offer.

Inman et al. (1997) conducted a series of experiments and concluded that imposing a restriction (minimum purchase limit, *time limit*, and purchase precondition[5]) on a product[6] consistently increased the choice probability and the perceived deal value for the product. However, this was the case only when the discount was high (either 20% or 50%). When the discount was low (5%), restrictions were rated lower in value and produced lower purchase intentions than no restriction condition. Thus, *discount level* (whether high or low) seems to moderate the effect of restrictions. Importantly, Inman and colleagues used scanner data of *real sales* to demonstrate that promotion effectiveness is significantly improved by imposing restrictions.

In another study Swain et al., 2006 found that shorter time limits create a greater sense of urgency, thereby leading to higher purchase intentions. However they also found that *too* short a time limit can increase perceptions of inconvenience, leading to lower deal evaluations and ultimately lower purchase intent. Thus, in addition to discount level, *limit length*, or duration, seems to have an impact on consumer reactions to time-limited promotions.

One recent study that specifically examined time-limited promotions in the context of durables (TVs), however, did not find support for the scarcity hypothesis. Devlin et al. (2007) results showed that time-limited price offers do not impact upon consumers' perceptions of a good's value, nor do they have an impact on consumers' behaviour in terms of search and choice of purchase. The authors rightly observe that a time limit restriction would increase perceptions of scarcity only if consumers treat it as a genuine offer as opposed to a mere marketing ploy. If consumers do not expect time limits to be honoured, or they expect the offer to reappear quickly after expiry, then perceptions of unavailability will be limited. Their results are thus indicative of consumer cynicism towards time-limited advertising and an unwillingness to view such advertising and promotion as a genuine restriction (note, however, that they did not examine this explicitly).

Devlin et al. (2007) go on to argue that given the prevalence of time-limited advertising and promotion, consumers may quickly be desensitized to its impact, to a large extent discounting such information when processing offers, and as such, policy makers and regulators should not be concerned about this form of pricing.

While the logic of this argument is sound, the argument itself is speculative. Considering that previous studies have found a significant effect of time-limited offers on consumer behaviour it would be premature to conclude that no such effect exists, based on Devlin et al.'s (2007) study alone. It is, in addition, not clear whether their results generalise to other product categories (i.e. beyond TVs). Besides, desensitization to time limits on its own does not refute the scarcity principle.

Thus, while this makes it difficult to present a universal conclusion, the following inference can be made with a reasonable amount of confidence: under conditions in which time-limited offers *do* trigger feelings of scarcity, consumers are more likely to overestimate the product quality, or the value of the deal, lower their intentions to search, and have higher intentions to buy.

[5] For example, "Restricted Offer. Only Available with a Minimum Purchase of $25".

[6] Products included AA Kodak alkaline batteries, a Sony UX 90-min audiocassette, or an Oral B Indicator toothbrush.

3. General conclusion

As their ability to compete on price or assortment is decreasing, retailers are increasingly focusing on pricing strategies which have their roots in psychology. These practices function as an alternative means for increasing competitive advantage and, ultimately, revenue. Indeed, being able to change consumers' perceptions and behaviour by simple manipulations to design could prove an essential aspect of the competitive strategy. Many of these pricing tactics are also likely to influence consumers 'below the radar'; that is, consumers may not be aware that they are being influenced (Furnham and Boo, 2011). Unsurprisingly, this has also meant that regulators are now having a much closer look at what exactly is being practiced, in order to protect consumers from potentially misleading tactics. Thus, this cross-disciplinary area is not only interesting from a scientific perspective, but also has significant real-world implications. With this in mind, it is hoped that the current review of the literature will not only stimulate future research but also serve as a guideline to practitioners and governmental regulators. An outline of the effects of each pricing practice as well as the variables that moderate this effect is presented in Table 2.

3.1. Managerial implications

A number of important managerial implications can be drawn from this review. The most salient insight is the overwhelming evidence that consumer perceptions and behaviours can be significantly influenced by the *presentation* of a price (i.e. independent of the actual price). Retailers and brands typically spend a lot of money on price promotions which, in the long term, are often ineffectual at increasing sales (e.g. DelVecchio et al., 2006). This paper offers managers an alternative way to increase sales by simply altering the display of products and prices. This can allow brands to increase sales without reducing price; alternatively managers may potentially be able to increase prices without reducing sales.

The literature suggests that the anchoring principle is particularly effective in influencing consumer choice. Whilst one could argue that reference prices, partitioned prices, and bundled offers are old fashioned, or obvious pricing practices which may cause consumer scepticism, evidence show that their use has a strong impact on consumer choice, even in the presence of scepticism. Thus, managers avoiding the use of these practices could be losing sales and decreasing the value perceptions of their products and brands. The fact that the influences often occur without consumers being aware also suggests that such tactics may prove powerful as long-term competitive tools.

Of course, managers should consider situational factors when applying this paper's findings. For example it may be that insurance, compared to a soft drink, is a more considered purchase and thus less reliant on heuristic cues, making the six pricing practices less effective. Indeed it is often suggested that consumer decision-making is either heuristic (i.e. automatic, fast, and subconscious) or systematic (i.e. deliberate and evaluative) in nature depending on situational differences in, for instance, time, motivation, or available information (Petty and Cacioppo, 1986). Yet, empirical evidence suggests that heuristics may influence consumer choices even in high-consequence decisions – including buying a house (Northcraft and Neale, 1987), enroling in a pension scheme (Madrian and Shea, 2001), and taking out a high-interest loan (Bertrand et al., 2010). Consequently, these psychological principles may indeed still be effective, in highly consequential decisions.

The fact that pricing practices often influence consumers below the level of conscious awareness is no doubt an advantage for

Table 2
Main effects and moderator variables.

Pricing practice	Moderator variable	Effect
Drip pricing	Partitioned (vs. consolidated) price	Partitioning into a product and a surcharge (compared to a single price) leads to increased demand (Morwitz et al., 1998), higher purchase intentions, higher perceived value (Burman and Biswas, 2007), higher price satisfaction (Xia and Monroe, 2004), lower recalled price (Morwitz et al., 1998; Lee and Han, 2002), lower price estimation (Lee and Han, 2002), and lower search intentions (Xia and Monroe, 2004)
	Surcharge size	Compared to a single price, partitioning a small (6%) surcharge leads to higher purchase intentions, price satisfaction and perceived value, and lower search intentions. This difference is not observed when the surcharge is high (12%; Xia and Monroe, 2004)
	Reasonableness of surcharge	Partitioning increases value perceptions and willingness to pay when the surcharge is considered reasonable, but decreases them when the surcharge is unreasonable (Burman and Biswas, 2007)
	Number of surcharges	One large surcharge leads to higher purchasing perceptions and behaviours than do two surcharges of the same total value (Xia and Monroe, 2004). A larger number (9 vs. 2) of price components lowers perceived fairness and purchase intentions for less trustworthy sellers, *when total price is not presented* (Carlson and Weathers, 2008). However, when a total price *is* presented, a larger number of price components leads to higher perceptions of fairness, as well as a lower recalled total price, resulting in increased purchase intentions (regardless of seller trustworthiness)
	Presenting total price upfront	Presenting the total sale price and then the additional surcharge information results in higher purchase intentions, perceived value, and lower search intentions, compared to a total price alone (Xia and Monroe, 2004)
	Consumer's need for cognition	Partitioning has no effect on value perceptions or willingness to pay on consumers who have low need for cognition – i.e. those who do not engage in or enjoy effortful cognitive activities (Burman and Biswas, 2007)
	Partitioning add-on products (not surcharges)	Whilst partitioning surcharges benefits sellers fairly consistently (to the detriment of consumers), the effects of partitioning add-on products (optional or compulsory) seem to be more complex and depend on numerous features of the add-on(s), which may or may not be beneficial for sellers. Thus, there is no general answer to whether partitioning optional or compulsory products will be detrimental to consumers. Rather this will depend on the particular product(s) added/partitioned, as well as the context
	Default effect	People tend to stick with the default option; they do so because of preference for inaction and/or because they take the default option as the one best recommended (e.g. Johnson and Goldstein, 2003; Madrian and Shea, 2001)
Reference pricing	Presence (vs. absence) of an reference price	Presenting consumers with an external reference price (higher than the sale price) leads to higher purchase intentions, higher inferred savings and lower search intentions, compared to the case where no external reference price is provided (Alford and Engelland, 2000; Bearden et al., 1984; Biswas and Blair, 1991; Blair and Landon, 1981; Burton et al., 1993; Chandrashekaran and Grewal, 2006; Darke et al., 1995; Lichtenstein and Bearden, 1988, 1989; Lichtenstein et al., 1991; Urbany et al., 1988; Wolk and Spann, 2008)
	Size of reference price	Product valuations increase linearly as the reference price increases (Urbany et al., 1988)
	Plausibility of reference price	Implausible or exaggerated reference prices often have similar effects on consumer behaviour as those of plausible reference prices. In some cases, these may even increase value perceptions significantly more than plausible reference prices (Biswas, 1992; Biswas and Blair, 1991; Burton et al., 1993; Lichtenstein et al., 1991; Wolk and Spann, 2008)
	Consumer scepticism	Reference prices have their effects even when consumers are sceptical towards the offer (Blair and Landon, 1981; Urbany et al., 1988). Consumers may believe pricing claims even when they exceed their initial price expectations by 200% (Kopalle and Lindsey-Mullikin, 2003)
	Price knowledge	Research shows mixed results as regards price knowledge. Some studies find that shopping experience has no effect on consumers acceptance of reference prices (Liefeld and Heslop, 1985; Fry and McDougall, 1974), while others show that price knowledge of competitors reduces the effect of reference prices (e.g. Blair et al., 2002; Lichtenstein and Bearden, 1989). This may be due to different designs (e.g. remoteness of experience) and samples (e.g. amount of knowledge of participants) used in these studies
	Familiarity with product/brand	Effects or reference prices are reduced with familiar brands (Biswas and Blair, 1991), and with inexpensive (and therefore more frequently encountered) products (Nottingham University Business School, 2005)
Use of the word "free"	Describing a bundle product as "free"	There is a degree of uncertainty about the effects of free designation. Some studies show that a freebie promotion can have negative effects on consumers' valuations of the overall bundle and on the focal product compared to the case where the same type of promotion lacks a freebie designation (Kamins et al., 2009; Raghubir, 2004). However, other studies have shown positive valuations of the overall bundle when one of the items is described as free, at least relative to when it is offered at a price discount (Chandran and Morwitz, 2006; Darke and Chung, 2005; Nunes and Park, 2003). Thus freebies can have seemingly inconsistent effects, suggesting the presence of moderator variables
Bait sales	Bait and switch	There is very limited direct evidence, but the results from one large scale online study show that offering a low-quality product at a low price to attract consumers and then trying to convince them to pay more for a superior product – has a strong effect on consumer purchasing behaviour (Ellison and Ellison, 2009)
	Price promotions/baits	Price promotions increase sales in the short term (Blattberg and Neslin, 1990), indicating that consumers are attracted by 'baits'
	Stock-outs	Faced with an out-of-stock product, over 60% of consumers substitute it with a product from the same store. They are more likely to do this if in a hurry or brand-loyal, but more likely to shop elsewhere if surprised or the shop has high prices (Zinn and Liu, 2001)
Complex pricing	Multiple- (vs. single-) unit promotions	Multiple-unit discounts increase sales by up to 40% more than single-unit promotions of the same value (Blattberg and Neslin, 1990; Wansink et al., 1998). They also increase purchase intentions (Manning and Sprott, 2007) and switching to the bundled products, even when consumers are not buying enough of the product to qualify for the discount (Foubert and Gijsbrechts, 2007)
	Number of units	Compared to single-unit promotions, multiple-unit promotions may increase purchase intentions only for large bundles (8 items), but not for small (2 or 4 items) bundles (Manning and Sprott, 2007)
	Single-unit price information	The presence (vs. absence) of the single unit price in a bundle does not alter this effect (Manning and Sprott, 2007), suggesting that the effect is not due to consumers' inability to calculate the relative discount. Most consumers do not use single unit prices (Steven et al., 2003)
	Mixed bundle promotions	Compared to an individual (unbundled) pricing, a mixed bundle offer increases consumers' evaluations of the offer (Johnson et al., 1999), purchase intentions (Arora, 2008), and lowers their estimates of the cost of the bundle (Heeler et al., 2007). This is because consumers generally infer savings from bundled offers (Nguyen et al., 2009), and/or because of the convenience that the single bill provides (Andrews et al., 2010)
	Complexity of pricing	Within the utility sector, customers tend to remain with the supplier they have always had rather than switch to a more beneficial supplier. Consumers seem to find it hard to understand the differences in tariffs charged by different companies and are unwilling to spend the time making the necessary comparative calculations (FDS International,

Table 2 (*continued*)

Pricing practice	Moderator variable	Effect
		2001). Within the telecommunications industry customers are rarely very accurate in their estimate of call charges (Ovum, 1998)
Time-limited offers	Scarcity	Scarcity (not restricted time-limits) increases perceptions of value of the offer (Lessne and Notarantonio, 1988; Lynn, 1991), as well as purchase behaviour and willingness to buy (Mazis et al., 1973)
	Short-term time pressure	Time pressure or time constraints imposed on consumers can increase perceptions of offer value (Vermeir and Van Kenhove, 2005; Tan and Chua, 2004; Suri et al., 2003; Dhar and Nowlis, 1999; Kumar et al., 1998), as well as 'drive' their choice to high quality/low risk brands (Nowlis, 1995)
	Time-limited offer	There have been conflicting findings regarding the impact of time-limited offers on consumer behaviour. At least two studies have found that imposing a time-limit on an offer can increase purchase intentions, choice probability, and perceived deal value for the product (Inman et al., 1997; Swain et al., 2006). However, one study found this effect not to be true (Devlin et al., 2007). The discrepancies indicate the presence of moderator variables (hypothesised to be scepticism and product category)
	Discount size	Where the effect (of time limited offers) *has* been found it has been true only for high discount offers (20% or 50%), and not for low discount offers (5%) – where the effect actually reverses (Inman et al., 1997)
	Length of time limit	Shorter time limits increase urgency and, subsequently, purchase intentions; but *too* short a time limit increases inconvenience perceptions, decreasing deal evaluation and purchase intentions (Swain et al., 2006)

managers. Despite this, however, brands will need to be careful that consumers do not perceive them as "underhand", since perceptions of fairness have a significant influence on consumer decision-making (Xia et al., 2004). Furthermore, consumer protection bodies are becoming increasingly aware of such implicit persuasion tactics (e.g. OFT, 2010); consequently, there will likely be legislative changes which means managers will need to be up to date with legislation.

On a similar note, the efficacy of pricing practices may be limited by learning effects – that is, consumers will ultimately 'get wise' to them and will no longer be susceptible to their influence. For instance, through in-depth interviews, Mela and Urbany (1997) found that shoppers make inferences about seller behaviour when faced with price promotions, and that they learn from patterns of price promotions. Along these lines, consumers with a greater knowledge of persuasion tactics used by retailers are less likely to buy a product advertised using "Save *up to* 50% off" compared to "Save 50% off" (Hardesty et al., 2007). Therefore, from a managerial perspective it may be sagacious not to overuse pricing tactics or employ them in an unsubtle way.

A final point for managers to be aware of is that there are, as discussed below, a number of gaps in the literature. While the results discussed in this paper are empirical and the result of controlled experiments, they may not be replicable across all populations and situations. Similarly there are several moderators to their effects. Therefore it is important for those working in marketing, insight and so on to take the broader positivist approach advocated by this paper, and to do their own empirical testing of the principles.

3.2. Gaps in the literature

In addition to managerial implications the present review has identified a number of gaps in the literature, which may be considered limitations of a sort; those looking to apply this paper's recommendations should be aware that such gaps exist and that they may affect the replicability of the aforementioned studies' findings. These gaps also present a number of interesting areas for future research.

Firstly, it should be noted that previous research on various pricing strategies has often been disjointed and sporadic. Reference pricing, bundling, and drip pricing (in this order) have received the most amount of attention and the evidence is relatively consistent regarding their impact. However, there is relatively scarce research on 'free' offers, bait pricing, and time limited offers. There are several reasons to why such research should be particularly important also for sellers. For instance free offers may have inconsistent effects on consumer behaviour, suggesting that moderating variables may have strong effects in such practices. Given that these are ubiquitous practices, unawareness of such effects could cost brand owners great sums over the long run. Thus, it should certainly be relevant to examine further the effects of such pricing practices, and the conditions under which these 'work', in greater depth.

Secondly, there is a significant gap in the literature with respect to the effect of individual differences upon the susceptibility to pricing practices. This is perhaps not surprising as the main aim of this research is to establish pricing strategies that work universally, rather than for a subgroup of individuals. However, as has been discussed, there are indeed categories of people who are more likely than others to be influenced by some of the pricing practices discussed. For example, those who have a high need for cognition appear to be influenced more by drip pricing. Advances in technology increasingly enable retailers to readily profile and target consumers. Thus, the study of individual differences may provide a fruitful avenue for future research and may prove to be very relevant for retailers and manufacturers.

Thirdly, there is a notable absence of in-vivo studies. The vast majority of research has been conducted in the laboratory; such studies typically have significant methodological issues, including the use of student samples, experimental conditions with lower ecological validity and criterion variables (e.g. purchase intentions) that are not necessarily indicators of final purchasing behaviour. This potentially lowers the generalisability of the findings. For instance, while research looking specifically at the role of product category on the particular pricing tactics addressed in this paper is scarce, studies indicate that product category may moderate pricing effects (e.g. Bell and Lattin, 2000; Chang et al., 1999; Huber et al., 2011). Nevertheless methodological limitations have been counteracted by some large-scale, real world field studies (e.g. Wansink et al., 1998; Foubert and Gijsbrechts, 2007), which find similar and sometimes stronger effects. Future research should, however, aim to have more real world data with actual purchasing behaviour.

Finally, there is a notable research gap when it comes to the application of these findings to digital consumption behaviour. This is perhaps unsurprising, since cyberpsychology is a burgeoning field. Still purchase decisions increasingly occur online or via mobile, and it is therefore important to understand whether the same principles apply in these instances. Recent research has indeed suggested that pricing practices may be less effective in conditions where consumers have quick and easy access to price

information, such as in online environments (e.g. Jensen et al., 2003; Wolk and Spann, 2008). Nevertheless studies looking at pricing strategies online have found that these are still capable of influencing consumer behaviour (e.g. Ellison and Ellison, 2009; Xia and Monroe, 2004), indicating that easy access to information does not eliminate the impact of these practices. In fact, reference prices used online have been found to display anchoring effects very similar to those in bricks and mortar stores (e.g. Wu et al., 2009). Similarly, using a large data-set of real airline ticket sales, Spann and Tellis (2006) found that even with name-your-own-price tactics, consumers do not behave in a rational way. As the authors note, "*This finding indicates that the Internet does not eliminate or lower consumers' irrational decisions as many experts expected or hoped*" (p. 73). Finally, Gwebu et al. (2012) discovered that, even online where price comparisons are just a click away, reference prices have a significant impact on name-your-own-price purchases, despite being so high as to be viewed with scepticism.

Further, a number of services have emerged in recent years which move the burden of choice away from consumers and towards smart machines, which are better able to make the optimum decision (e.g. Nutmeg, ThinQ fridge). Given these and the 'big data' revolution, it is easy to imagine a future in which consumers leave the decision-making to machines free from cognitive biases. However, such a consumer utopia is ostensibly a long way off. Furthermore, research indicates that the efficacy of online recommendation systems may be reduced as consumers feel their free will is threatened (Lee and Lee, 2009), and may therefore ignore the decision aids and make their own (potentially biased) choices. Despite this, however, the impact of emerging technologies on the power of pricing practices is an interesting and important area for future research.

On a final note, considering the findings from the current review, ethical considerations are of paramount concern. At the very heart of it is the contention that such tactics maximise utility for retailers at the expense of consumers – that is to say that consumers are being manipulated into choices, which are not in their best interests. Consumers often believe they are getting a benefit which is actually non-existent. In the case of bait and switch schemes, for instance, consumers end up buying a product different from what they actually wanted originally.

The second salient ethical issue is deception. To wilfully deceive consumers in order to maximise profits at their cost is of course unethical. There is also a moral question mark around manipulating consumer choices beyond the level of awareness and control. Berns (2005) provides evidence that price promotions have a powerful, innate impact on the brain, releasing dopamine and conditioning consumer behaviour through reward mechanisms. It is therefore vital that price psychology strategies are understood not only by brands, but also by consumers and consumer protection bodies.

3.3. Conclusion

In sum, the current review demonstrates how the pure presentation of a price alone – that is, independent from an actual price change – can have a significant impact on consumer perceptions and behaviours. Given that retailers and brands spend a huge amount of money on price promotions, this finding has major managerial ramifications. Furthermore, because of the often very basic and experimental nature of these manipulations of display (e.g. the addition of a reference price or a time limit), it also indicates a potential for retailers to develop a very detailed and robust understanding of strategies that work and the conditions under which they work, strategies that can then be used in an increasingly systematised manner to 'modify' behaviour. This is perhaps also the piece of information that will increase the alertness of regulators, who will need to be up to date with the psychology behind these practices. Here, the aim would be to monitor the misuse of these practices (e.g. fake reference prices or time limits). Whatever the case may be, it certainly looks as though pricing practices will take a more central stage for practitioners and policy makers in the near future.

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