

Inferring quality from price: the effect of stereotype threat on price–quality judgments

Lei Song

The Pennsylvania State University Abington, Abington, Pennsylvania, USA

Rajneesh Suri

Drexel University, Philadelphia, Pennsylvania, USA, and

Yanliu Huang

Department of Marketing, Drexel University, Philadelphia, Pennsylvania, USA

Abstract

Purpose – This paper aims to examine how a stereotype threat, which entails being aware of a negative stereotype about one's social group (e.g. gender), affects consumers' price perceptions.

Design/methodology/approach – The authors conducted four studies to examine the effect of a stereotype threat on consumers' perceptions of a product's price–quality relationship.

Findings – This study found that being aware of a negative stereotype about one's social group (i.e. gender here) led consumers to use price more as a quality indicator. This study also determined that reappraisal – an alternative way of coping with stereotype threats – reduced the impact of a stereotype threat and, subsequently, decreased reliance on price to infer quality.

Research limitations/implications – This research contributes to the consumer decision-making literature by examining stereotype threat effect in in-store product purchasing contexts; provides theoretical contributions to the processing of price information by exploring the role of a stereotype threat in price perceptions and revealing that impairment of consumers' working memory resources affects price perceptions; adds to the existing stereotype threat literature by investigating the effect of a stereotype threat on systematic versus heuristic information processing; and advances the stress and coping literature by suggesting that consumers adopting a reappraisal strategy cope better with a stereotype threat than when opting for a suppression strategy.

Practical implications – This research provides important implications for consumers. For example, the findings suggest that consumers who would like to avoid paying more for stereotype-associated products may adopt reappraisal to cope with a stereotype threat. Reappraisal may allow consumers to use fewer cognitive resources when coping with stereotype threats, thus minimizing the possibility that they might overpay for high-priced products.

Originality/value – This research uniquely examines the effect of a stereotype threat on consumers' price perceptions and the role of reappraisal in this effect.

Keywords Gender, Retailing, Quality, Pricing, Information processing, Stereotypes, Social groups

Paper type Research paper



1. Introduction

Retailers often assume that consumers belonging to different segments or social groups possess product knowledge that is consistent with widely held beliefs (i.e. stereotypes) about their social groups (e.g. women's putative insufficient knowledge of car mechanics; Lee *et al.*, 2011). When consumers become aware of such *negative* stereotypes in certain shopping scenarios (e.g. women in a car repair shop; Lee, *et al.*, 2011), they are likely to worry that their behaviors will confirm the

alleged stereotype, resulting in retailers taking advantage of them (Busse *et al.*, 2017). In the foregoing situation, the consumer might experience a *stereotype threat*, which often arises from consumers' interaction with a retail environment where they are concerned about confirming negative stereotypes about their social group (Steele and Aronson, 1995).

A stereotype threat is a situational predicament caused by the belief that one is at risk of confirming negative stereotypes about his/her social groups (Steele and Aronson, 1995). Previous stereotype threat research has mainly focused on its effects on academic performance. For example, a stereotype threat has been discerned to cause performance impairments in cognitive tasks such as those involving math (Smith and White, 2002), verbal skill (Steele and Aronson, 1995), mental rotation (Wraga *et al.*, 2006), memory (Hess *et al.*, 2003) and academic learning (Boucher *et al.*, 2012; Rydell *et al.*, 2010; Taylor and Walton, 2011).

Although research explored consumers' emotional responses (e.g. anxiety; Lee *et al.*, 2011) and coping strategies (El Hazzouri *et al.*, 2020) when experiencing a stereotype threat, it has provided little insight about how stereotype threats may influence consumer product evaluations. This research question is important and remains a significant gap in the literature, especially because consumers often experience stereotype threats that may well impact their decision making. For example, when a female consumer purchases a car or an elderly consumer buys a high-tech product, she/he very likely experiences a stereotype threat with concomitant concern that she/he may confirm negative stereotypes about his/her group.

In specific, stereotype threats might influence how consumers rely on product information, such as *price* to infer quality, and ultimately form product preferences (Kardes *et al.*, 2004; Kardes *et al.*, 2004). We propose that a stereotype threat triggered by the shopping environment will constrain consumers' cognitive resources, thus increasing their reliance on price to infer quality (Ingenbleek and Van der Lans, 2013; Rao and Monroe, 1989; Suri and Monroe, 2003). Accordingly, we predict that such reliance on price–quality associations is due to consumers' spontaneously adopting a *suppression coping strategy* to attend to the stereotype threat (Johns *et al.*, 2008). Because understanding *when and how* consumers use product price to infer quality is fundamental to both researchers and practitioners who want to influence consumer quality perceptions (Lalwani and Shavitt, 2013; Park *et al.*, 2020), investigating the influence of stereotype threats on consumers' price perception and its subsequent impact on product preferences is important and thus merits empirical attention.

Prior research has found that stereotype threats impair working memory resources through suppression that depletes working memory resources. Moreover, scholars have shown that less resource-demanding coping strategies (e.g. reappraisal) mitigate the effect of stereotype threats on subsequent task performance (Johns *et al.*, 2008). Extant work, though, has not yet examined how different coping strategies for addressing stereotype threats affect postliminary consumer behavior. Therefore, apprehending how consumers' coping strategies affect the impact of stereotype threats on their shopping behavior may offer them with appropriate approaches that maximize their well-being.

In the current undertaking, we uniquely examine the role of reappraisal in the effect of a stereotype threat on consumers' price perceptions. As an adaptive coping strategy (i.e. it decreases stress levels), reappraisal (i.e. a way to think objectively, analytically and unemotionally) leads individuals to reinterpret emotionally relevant cues as unrelated terms. This coping approach does not demand the same magnitude of online cognitive activity for monitoring feelings and behaviors as suppression. Thus, we suggest that, when consumers

use reappraisal to cope with a stereotype threat, the effect of that threat on cognitive resources and subsequent price perceptions should be mitigated.

This research adds to the consumer decision-making literature. Prior research in social psychology and consumer behavior has not investigated the effect of stereotype threat on consumers' product purchasing decisions. By examining stereotype threat effects on in-store product purchasing contexts, we found that stereotype threat affects consumers' product evaluation and purchase intention depending on the price level. We also found that the predicted decrement in working memory resources is the mechanism through which stereotype threat affected product purchasing decisions and product quality inferences.

Our research provides theoretical contributions to the pricing literature. Prior work has shown that cognitive resources affect price–quality judgments (Monroe, 2003). For example, Suri and Monroe (2003) found that, when time is limited, cognitive processing in price–quality assessments is impaired. We extended this literature by demonstrating that consumers relied more on price to judge quality when working memory resources are limited. Furthermore, different from extant empiricism that has only considered the effect of stereotype threats on working memory resources (Beilock *et al.*, 2007; Johns *et al.*, 2008; Schmader and Johns, 2003), we enhance understanding of how stereotype threats influence price perceptions through a declined working memory capacity.

The current research adds to the stereotype threat literature by examining the effect of a stereotype threat on information processing. Prior stereotype threat research examined the effect of stereotype threat on working memory resources (Johns *et al.*, 2008; Logel *et al.*, 2009a; Miller *et al.*, 1960). We move one step further and find that stereotype threat increases heuristic processing, resulting in consumers' increased tendency to adopt price as a heuristic cue to process product information.

This research also contributes to stress and coping literature. Although prior research found that reappraisal reduces the effect of stereotype threat on tasks that depend on the same pool of executive resources (Bruyneel *et al.*, 2006; Schmeichel, 2007; Vohs *et al.*, 2008; Xiao and Lee, 2014), no research thus far has examined how reappraisal affects stereotype threats' effects on price perceptions. We found that reappraisal mitigates the effect of stereotype threat on price perceptions, while suppression does not.

This research provides several important practical implications. First, stereotype threat may distort consumers' product judgment by inducing them to focus more on salient cues (e.g. price) to make product judgments. Such distortion may cause them to overemphasize on these cues, thus misjudge product quality. Second, because stereotype threats increase consumers' quality perceptions for high-priced products, consumers may overpay for these products when experiencing a stereotype threat. Third, a stereotype threat is more detrimental to consumers who adopt response-focused coping when experiencing stereotype threat. Since stereotype threat negatively affects self-control in nonstereotyped domains such as eating and risky decision making (Inzlicht and Kang, 2010), consumers who adopt response-focused coping when experiencing stereotype threat are less likely to achieve their goals (e.g. purchasing healthy and reasonably priced food). Fourth, we propose that since reappraisal reduces the effect of stereotype threat on price perceptions, consumers who would like to avoid overpaying for stereotype-associated products may adopt reappraisal to cope with stereotype threat.

2. Theoretical framework and hypotheses

2.1 *Stereotype threat and coping through suppression*

Consumers are often concerned that retailers might view them through the lens of negative stereotypes (Lee *et al.*, 2011; Pittman, 2017). Such concern induces a stereotype threat, which is a source of stress that threatens an individual's perception of oneself as a valued entity

(Steele and Aronson, 1995). A stereotype threat is a stressor that induces physiological manifestations of stress, interpretative processes and cognitive monitoring – all which subsequently lead to affective responses, as well as spontaneous efforts to cope with the threat (Major and O'Brien, 2005). Scholars have identified two major causes of stereotype threats: explicit and subtle. The *explicit* way of triggering stereotype threats involves blatant signals – such as being told that group differences in performance exist (Aronson *et al.*, 1999; Beilock *et al.*, 2007) or hearing others make a biased comment about a group (Adams *et al.*, 2006). Alternatively, stereotype threats could be triggered through more *subtle* ways in which targets of stereotype threats are less likely to be consciously primed of expectations for underperformance (Inzlicht and Ben-Zeev, 2000; Smith and White, 2002; Stone and McWhinnie, 2008).

Research has shown that coping with negative thoughts and emotions elicited from a stereotype threat temporarily reduces individuals' working memory resources responsible for processing information (Johns *et al.*, 2008; Logel *et al.*, 2009a; Miller *et al.*, 1960). Working memory resources refer to the central executive processor of working memory that focuses attention on temporarily activated information of interest (Engle, 2002). Working memory has limited capacity, which can be depleted by self-control (Muraven *et al.*, 1998; Vohs *et al.*, 2008), emotional regulation (Muraven and Baumeister, 2000; Tice *et al.*, 2001) and information processing (Schmeichel *et al.*, 2003). As such, stereotype threats that induce emotional regulation can exhaust working memory resources, and such exhaustion negatively affects performance on cognitive tasks reliant on those resources (e.g. math tests; Logel *et al.*, 2009a; Logel *et al.*, 2009b; Schmader and Johns, 2003). For example, Carr and Steele (2010) demonstrated that suppressing negative thoughts triggered by stereotype threats leads to ego diminution which diminishes working memory resources – and thus consequently influencing consumers' decision-making.

2.2 Influence of reduced working memory resources on price–quality relationship

As noted above, experiencing stereotype threats results in temporary reduction of working memory resources, thus impeding individuals' information processing. Chaiken (1980) proposed a heuristic-systematic model to describe systematic and heuristic processing as two routes through which people process information. Systematic processing involves analytic, comprehensive and cognitive processing of information (Chaiken and Trope, 1999; Jamal and Anastasiadou, 2009). It requires people to invest considerable cognitive effort to examine messages and arguments carefully. Accordingly, systematic processing of information requires working memory resources (De Neys, 2006). Schmeichel *et al.* (2003) have indicated that temporary depletion of working memory resources decreases consumers' tendency to engage in systematic information processing, but concurrently encourages heuristic processing (De Neys, 2006; Schmeichel *et al.*, 2003) that requires less cognitive effort or attention to the information processed.

The extent to which individuals engage in heuristic (systematic) information processing determines their propensity to use extrinsic (intrinsic) cues to make price–quality judgments (Alba *et al.*, 1999; Miyazaki *et al.*, 2005). Cue utilization theory suggests that products consist of intrinsic and extrinsic cues that serve as quality indicators (Cox, 1967; Olson and Jacoby, 1972). *Intrinsic* cues refer to product-related attributes (e.g. ingredients) that cannot be changed without altering the physical composition of the product. Conversely, *extrinsic* cues are product-related attributes (e.g. price, brand name, packaging) that are not part of the physical product. Because intrinsic cues (e.g. attribute information) are perceived as more useful than extrinsic cues (e.g. price), the former dominates the latter when forming product evaluations (Suri and Monroe, 2003). When there is a paucity of cognitive resources with which to process intrinsic

attributes, however, consumers will refer to extrinsic cues to infer product quality (Monroe, 2003; Suri *et al.*, 2012).

We propose that the experience of a stereotype threat creates a stronger price–quality relationship for targeted individuals. As mentioned before, individuals experiencing stereotype threats spontaneously adopt suppression as a coping strategy; doing so temporarily reduces working memory resources. This evanescent decline in working memory resources should increase individuals' tendency to engage in heuristic processing that will lead to reliance on price (i.e. an extrinsic cue) when making product quality judgments. Their doing so should lead to higher perceived quality for high-priced products and lower perceived quality for low-priced products. The foregoing discussion leads to the following hypothesis:

- H1. Consumers experiencing a stereotype threat will rate the quality of a high- (low-) priced product as higher (lower) than those not experiencing a stereotype threat.

2.3 Moderating role of coping strategies

Gross's (1998) process model of emotion regulation suggests two primary ways of coping with negative emotions. *Response-focused coping* refers to attempts to reduce the experience of negatively-induced emotions. Scholars have found that, when experiencing a stereotype threat, individuals spontaneously adopt response-focused coping – suppression – to deal with negative thoughts and emotions (Inzlicht and Kang, 2010; Johns *et al.*, 2008).

Suppression is generally deemed as a maladaptive (i.e. increases stress level) emotional regulation strategy, which requires mobilization of substantial cognitive resources (Richards, 2004). Johns *et al.* (2008) suggested that individuals' attempts to suppress thought or anxiety expression deplete executive resources that could be later used to engage in high-order cognitive functioning. Further studies have demonstrated similar thought suppression effects in information processing (Fischer *et al.*, 2008) and self-control tasks (Muraven and Slessareva, 2003; Muraven *et al.*, 2008).

An alternative approach for regulating negative emotions is *antecedent-focused coping*. This entails cognitively reinterpreting the situation in neutral terms to minimize the impact of the inimical emotions. Compared to response-focused coping, antecedent-focused coping does not demand the same magnitude of cognitive activity for monitoring feelings and behaviors; as such, it does not deter psychological functioning (Gross, 2002). As an adaptive antecedent-focused coping strategy, reappraisal (i.e. a way to think objectively, analytically and unemotionally) affords individuals to reinterpret emotional relevant cues as unrelated terms – which is less resource demanding than suppression and thus minimizes emotions' effects on cognitive functions (Speisman *et al.*, 1964). Extant work has shown that cognitive reappraisal of a stereotype threat can alleviate the effect of stereotype threats on outcome variables. For example, Schmader *et al.* (2009) found that poorer test performance occurred only to women not intending to reappraise negative emotions induced by a stereotype threat.

Owing to the above discussion, we hypothesize that, if consumers experiencing a stereotype threat are instructed to adopt reappraisal as a coping strategy, they are more likely to opt for systematic processing, thus becoming less likely to rely on price to make quality inferences. As a result, consumers using a reappraisal coping strategy will rate the quality of a high- (low-) priced product as lower (higher) compared to people also experiencing a stereotype threat but not adopting reappraisal as a coping strategy. The preceding exposition leads to the following hypothesis:

H2a. Stereotype-threatened consumers who adopt a reappraisal coping strategy will rate the quality of a high- (low-) priced product as lower (higher) compared to those experiencing a stereotype threat but not explicitly asked to adopt a coping strategy.

We also hypothesize that because individuals experiencing stereotype threats spontaneously adopt suppression as a coping strategy – which impairs working memory resources (Inzlicht and Kang, 2010; Johns *et al.*, 2008), they will subsequently become more (vs less) inclined to rely on price to make quality inferences. Therefore, they will exhibit no difference in their quality ratings of high- (low-) priced products compared to consumers experiencing stereotype threats and are asked to adopt a suppression strategy. Thus, we offer the following hypothesis:

H2b. Stereotype-threatened consumers who adopt a suppression coping strategy will rate the quality of a high- (low-) priced product similarly as those experiencing a stereotype threat but are not explicitly asked to adopt a coping strategy.

2.4 Overview of studies

We conducted four studies to test our hypotheses. Study 1a tested *H1* by examining whether individuals relied more on a price–quality relationship when experiencing a stereotype threat. Study 1b also tested *H1* but by using a novel way to increase/decrease the experience of a stereotype threat – namely, through buying a car from a salesperson. Study 2 explored the moderating role of different coping strategies (*H2a* and *H2b*) – suppression and reappraisal – in the effect of a stereotype threat on price–quality judgments. It also ruled out the alternative explanation that effects observed were because consumers felt less competent in the stereotype domain. Study 3 used another reappraisal manipulation to provide converging evidence that reappraisal could alleviate the impact of a stereotype threat on price perceptions. To provide support for our argument, that reappraisal mitigated the effect of a stereotype threat on working memory; we measured working memory to determine if it was indeed assuaged by reappraisal.

As discussed earlier, previous literature has shown that stereotype threats can be triggered not only by explicitly stating the negative stereotype related to stigmatized individuals (Spencer *et al.*, 1999), but also through more subtle manipulations in which targets of stereotype threats are less likely to be consciously primed of expectations for underperformance (Inzlicht and Ben-Zeev, 2000; Smith and White, 2002; Stone and McWhinnie, 2008). Therefore, in this research, we adopted both explicit and subtle ways to manipulate stereotype threats.

3. Study 1a: Stereotype threat effects on the price–quality relationship

The objective of Study 1a was to test *H1* by examining whether individuals experiencing a stereotype threat relied on price–quality inferences. Although stereotype threats occur for consumers with different backgrounds (Lee *et al.*, 2011), we focused on *gender-related* stereotype threats. We did so because females are particularly likely to encounter stereotype threats (Betz *et al.*, 2013). Thus, following Lee *et al.*'s (2011) approach that used female stereotypes to demonstrate the effect of stereotype threats, we centered solely on female stereotypes. Specifically, consistent with previous gender stereotype threat studies that adopted negative female stereotypes (Lee *et al.*, 2011; Marx *et al.*, 2005; McFarland *et al.*, 2003; Schmader, 2002), we considered a prevalent female stereotype: knowledge of tools. The gender-STEM stereotype was relevant, as tools are related to females' engineering skills. Lee *et al.* (2011) suggested that women experience a stereotype threat when purchasing stereotype-related products. Hence, we proposed that, when being reminded of the negative

stereotype about tools, female participants would be more likely to feel a stereotype threat and subsequently use price to infer product quality. We also expected that males, after being exposed to a stereotype threat, would not exhibit significant differences in their price-quality perceptions.

3.1 Method

3.1.1 Participants and design. We first conducted a pretest to examine whether a stereotype threat could be induced by our manipulation. Sixty-one participants (33% male, average age = 37.2) on MTurk participated in the study. We were consistent with previous research (Aronson *et al.*, 1999) that primed a stereotype threat by telling participants that the study was to examine a topic relevant to certain stereotypes (e.g. “why Asians are superior to other groups in mathematics”). Accordingly, we informed participants in the stereotype threat condition that the purpose of our study was to investigate why men were better than women at using tools and asked them to recall an experience concordant with this stereotype and record their feelings. Individuals in the control condition were asked to report what they did during a typical day.

Then, participants were asked to rate gender differences in knowledge about tools (“Who do you believe knows more about tools?”) on a seven-point scale (1 = “females know more,” 4 = “no gender difference” and 7 = “males know more”). We adapted this question from Brown and Harkins’ (2016) manipulation check question – “Who do you believe performs better on this task?” – to measure whether our stereotype threat manipulation successfully led participants to believe that gender difference in tool knowledge exists. An independent samples *t*-test demonstrated that participants rated males as knowing more about tools in the stereotype threat than in the control condition [$M_{\text{stereotype threat}} = 5.69$ vs $M_{\text{control}} = 4.90$; $F(1, 59) = 8.56, p < 0.01$]; thus, a stereotype threat was successfully induced.

In total, 261 Mturkers participated in Study 1a. It used a 2 (participant gender: male vs female) \times 2 (price: high vs low) \times 2 (stereotype threat manipulation: stereotype threat vs control) between-subjects design.

3.1.2 Procedures. Participants were randomly assigned to either a stereotype threat or control condition. As in the pretest, following previous studies (Aronson *et al.*, 1999; Smith and White, 2002; Spencer *et al.*, 1999; Yeung and von Hippel, 2008), we informed participants in the stereotype threat condition that the purpose of the study was to investigate why men were better than women at using tools and asked them to recall an experience consistent with this stereotype and record their feelings. Participants in the control condition were asked to write about what they did during a typical day (to control for the amount of time spent on writing without priming stereotype threat-related thoughts). Participants in both conditions were then provided with a scenario (Howard and Kerin, 2006) in which they were repairing a faucet and were planning to buy wrenches to do so. One-half of the participants in each condition saw a high-priced (\$69.99) wrench set, and the other half saw a low-priced (\$19.99) wrench set (see Appendices 1 and 2 for details). Because prior research has found that brand names are likely to be used to infer product quality (Miyazaki *et al.*, 2005; Rao and Monroe, 1989), we used hypothetical brand names for the products.

Next, participants in both the stereotype threat and control conditions completed measures assessing perceptions of quality. The statements were as follows (Suri *et al.*, 2012): “The quality of this wrench set appears to be high,” “The wrench set will likely function well” and “The wrench set seems durable.” All responses were made using seven-point scales – 1 = strongly disagree, 7 = strongly agree. Participants were then debriefed and thanked.

3.2 Results

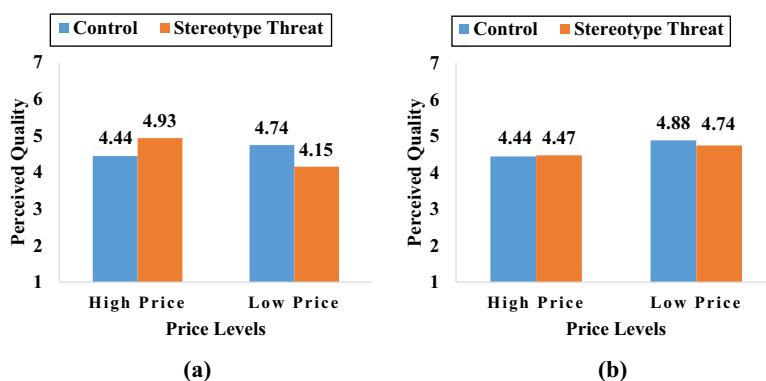
The three quality ratings were averaged to form a composite measure for perceptions of quality (Cronbach's $\alpha = 0.85$). A 2 (participant gender: male vs female) \times 2 (price: high vs low) \times 2 (stereotype threat manipulation: stereotype threat vs control) ANOVA revealed the predicted three-way interaction effect on perceived quality [$F(1, 253) = 12.57, p < 0.01$]. No other main or interaction effects were significant ($F < 2.16, p > 0.12$). In support of *H1*, in the stereotype threat condition, female participants were more likely to infer quality from price and judged a high-priced product to be of higher quality than that of low-priced product [$M_{\text{high price}} = 4.93$; $SD = 1.02$; vs $M_{\text{low price}} = 4.15$; $SD = 0.69$; $F(1, 253) = 15.90, p < 0.01$]. For male participants, though, there were no differences in quality between the products at the two prices [$M_{\text{high price}} = 4.47$; $SD = 0.72$; vs $M_{\text{low price}} = 4.74$; $SD = 1.00$; $F(1, 253) = 2.01, p > 0.15$].

When conducting simple contrasts to use another perspective, among participants in the high-priced wrench set condition, female participants reported higher perceptions of quality when experiencing a stereotype threat [$M_{\text{stereotype threat}} = 4.93$; $SD = 1.02$; vs $M_{\text{control}} = 4.47$; $SD = 0.72$; $F(1, 253) = 5.99, p < 0.05$]. Male participants' perceived quality perceptions, however, did not differ as a function of the stereotype threat ($F < 1$). Similarly, among those purchasing the low-priced wrench set, female participants reported lower perceived quality when experiencing a stereotype threat [$M_{\text{stereotype threat}} = 4.15$; $SD = 0.69$; vs $M_{\text{control}} = 4.74$; $SD = 1.00$; $F(1, 253) = 8.85, p < 0.01$]. Again, though, male participants' perceived quality did not differ as a function of the stereotype threat ($F < 1$). The foregoing results thus collectively supported *H1* (see Figure 1).

3.3 Discussion

In Study 1a, we used a marketplace context (i.e. purchasing a wrench set) to test stereotype threat effects. The results supported *H1* and suggested that female consumers' perceptions of product quality differed as a function of a stereotype threat and price level. Specifically, female consumers' perceived quality under the stereotype threat tended to be more positively related to price. When the stereotype threat was not activated, though, no such pattern was found. The findings supported the proposed interaction effects of price and stereotype threat on consumers' price-quality perceptions.

Because we asked participants to recall a stereotype-related experience in our manipulation, we reviewed what participants had recorded about that experience. We did so



Notes: (a) Female Participants; (b) Male Participants

Source: Authors' own work

Figure 1.
Study 1a: Perceived
quality as a function
of stereotype threat
and price levels

to ensure that they were able to recall specific experiences, even with time having elapsed since the experience. Most participants described a specific experience in which they had felt negatively stereotyped about their tool knowledge in detail, with many describing the situations, the reasons why they felt stereotyped and their feelings at that moment. Thus, seemingly memory lapse since the experience was not an issue in Study 1a.

4. Study 1b: the effect of stereotype threat induced through the product buying process

Study 1a demonstrated stereotype threat effects by asking participants to imagine purchasing a certain product. Study 1b adopted an alternative approach to induce a stereotype threat. Specifically, it explored whether enacting a product-shopping process could engender the stereotype threat and subsequently influence price–quality perceptions.

Study 1b used a novel way to increase/decrease the experience of a stereotype threat – namely, through buying a car from a salesperson. Ayres and Siegelman (1995) demonstrated that discrimination against female consumers is prevalent in car purchases. Moreover, Lee *et al.* (2011) ascertained that, when buying second-hand cars, women were less willing to transact business with a male than with a female salesperson when the stereotype about female's knowledge in STEM was salient. We expected that, if the stereotype threat was indeed the mechanism through which female participants' perceived quality was affected, experiencing a stronger threat (i.e. going through the buying process with a male salesperson in this study) would influence perceived quality more strongly than a weaker threat (i.e. going through the buying process with a female salesperson).

4.1 Method

4.1.1 Pretests. A pretest was conducted to examine whether the process of buying cars from a male rather than a female salesperson would induce a stronger experience of a stereotype threat among female consumers. Seventy-two female participants (average age = 36.8) on MTurk participated in the pretest. Participants were given a scenario in which they imagined that they were visiting a car dealership because they needed to purchase a second-hand car soon. Participants in the male salesperson condition were told that they had met a male salesperson, Aaron Cooper; those in the female salesperson condition were told that they were greeted by a female salesperson, Erin Cooper (Lee *et al.*, 2011). Participants then were asked to imagine that they were going through the second-hand car-purchasing process with the salesperson and frequently interacted with him (her). They were asked to record all of their thoughts and feelings during this buying process.

They were also asked to record the way in which they coped with possible negative second-hand car-purchasing experiences – both physical and emotional – which is a typical way to generate the stereotype threat (Inzlicht and Kang, 2010). Then they rated gender difference *vis-à-vis* knowledge of second-hand cars (i.e. “Who do you believe knows more about second-hand cars?” Brown and Harkins, 2016), which indicated whether a stereotype threat was induced (1 = “females know more,” 4 = “no gender difference” and 7 = “males know more”). Participants perceived males to be more knowledgeable about second-hand cars when interacting with a male than with a female salesperson [$M_{\text{male salesperson}} = 5.38$ vs $M_{\text{female salesperson}} = 4.65$; $F(1, 70) = 7.6, p < 0.01$]. This result suggested that enacting the buying process with a male versus a female salesperson generated a stronger experience of the stereotype threat for female participants.

4.1.2 Participants and design. A total of 233 participants (average age = 35.2) from MTurk participated in Study 1b. It adopted a 2 (price: high vs low) \times 2 (salesperson gender: male vs female) between-subjects design.

4.1.3 Procedures. At the beginning of the study, participants were randomly assigned to either a male or a female salesperson condition. Following the stereotype activation manipulation (Lee *et al.*, 2011), participants in both conditions were asked to indicate their gender at the beginning of the study. The scenario and the rest of the procedure were similar to the pretest. Participants imagined that they were purchasing a second-hand car with the salesperson and frequently interacted with him (her); then they were asked to record all of their thoughts and feelings during this buying process (Inzlicht and Kang, 2010).

Participants in the high- (low-) priced condition were shown a second-hand car priced at \$10,999 (\$1,999) (see Appendices 3 and 4 for details). We measured perceived quality as in Study 1a but adapted the items to a car purchase setting: “The quality of this car appears to be high,” “The car will likely function well” and “The car seems durable” (1 = strongly disagree and 7 = strongly agree; Cronbach’s $\alpha = 0.89$). Participants were then debriefed and thanked.

4.2 Results

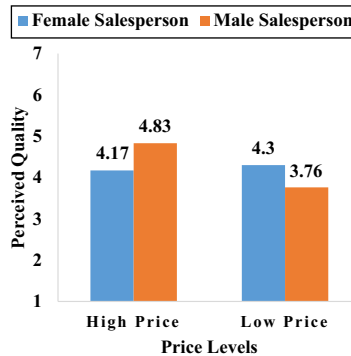
4.2.1 Perceived quality. A 2 (price: high vs low) \times 2 (salesperson gender: male vs female) ANOVA on perceived quality revealed that the main effect of price was significant [$F(1, 229) = 6.79$, $p < 0.05$]; participants in the high-priced condition showed higher perceived quality than those in the low-priced condition [$M_{\text{high price}} = 4.53$; SD = 1.35; vs $M_{\text{low price}} = 4.06$; SD = 1.44; $F(1, 229) = 6.66$, $p < 0.05$]. The main effect of salesperson gender was not significant ($F < 1$). Furthermore, there was an interaction effect between price and salesperson gender [$F(1, 229) = 11.26$, $p < 0.01$].

Planned contrasts showed that participants in the male salesperson condition inferred quality from price in that the high-priced offering was judged to be of higher quality than the low-priced one [$M_{\text{high price}} = 4.83$; SD = 1.22; vs $M_{\text{low price}} = 3.76$; SD = 1.44; $F(1, 229) = 18.84$, $p < 0.01$]. No difference in perceived quality between the high- and low-priced conditions was found in the female salesperson condition [$M_{\text{high price}} = 4.17$; SD = 1.41; vs $M_{\text{low price}} = 4.30$; SD = 1.41; $F(1, 229) < 1$]. Moreover, conducting simple contrasts from another perspective revealed that, when a high price was present, participants reported higher perceived quality when interacting with a male than with a female salesperson [$M_{\text{male salesperson}} = 4.83$; SD = 1.22; vs $M_{\text{female salesperson}} = 4.17$; SD = 1.41; $F(1, 229) = 7.68$, $p < 0.01$]. Similar to findings in Study 1a, among those in the low-priced condition, participants reported lower perceived quality when interacting with a male than with a female salesperson [$M_{\text{male salesperson}} = 3.76$; SD = 1.44; vs $M_{\text{female salesperson}} = 4.30$; SD = 1.41; $F(1, 229) = 4.04$, $p < 0.05$]. This result implied that perceptions of quality for a high- (low-) priced product was higher (lower) for individuals interacting with a male (i.e. experiencing a stereotype threat) than with a female salesperson (see Figure 2 for details).

4.3 Discussion

Study 1b revealed that female consumers experienced a stronger stereotype threat when going through the process of purchasing a second-hand car interacting with a male than with a female salesperson. Doing so subsequently led them to rely more on price to discern perceived quality. That is, they provided higher quality evaluations for a higher (vs lower) priced product. When participants imagined purchasing the second-hand car by interacting with a female salesperson, however, they experienced less stereotype threat and thus relied on price to make their quality judgment to a lesser extent. We next examine the moderating role of stereotype threat coping strategies in Study 2.

Figure 2.
Study 1b: Perceived
quality as a function
of salesperson gender
and price levels



Source: Authors' own work

5. Study 2: coping with a stereotype threat

The purpose of Study 2 was twofold. First, it examined the moderating role of different coping strategies – suppression and reappraisal – in the effect of a stereotype threat on price–quality judgments. Previous research has found that as an adaptive antecedent-focused coping strategy, reappraisal leads individuals to reinterpret emotionally relevant cues as emotionally unrelated terms (Speisman *et al.*, 1964). Thus, reappraisal is less resource demanding than suppression and hence minimizes emotions' effect on cognitive functions (Speisman *et al.*, 1964). Johns *et al.* (2008) ascertained that *reappraisal* could reduce the impact of a stereotype threat on executive resources, and subsequently improved intellectual test performance. So, reappraisal could potentially reduce the effect of a stereotype threat on quality perceptions. In contrast, *suppression* – as a spontaneous response to a stereotype threat (Major and O'Brien, 2005) – likely consumes working memory resources and therefore generates the stereotype threat effect, as we found earlier. Examining whether reappraisal coping strategies diminish the effect of a stereotype threat on quality perceptions might provide further evidence to support the mediating role of working memory resources.

Second, we wanted to rule out the alternative explanation that the effects found in the first two studies were because consumers felt less competent in the stereotype domain. We conceived that consumer competence should not affect the stereotype threat effect because the latter occurs only through the notion that one's social group may affect how one is treated (O'Brien and Crandall, 2003; Steele and Aronson, 1995). Therefore, following Lee *et al.* (2011), we measured consumer competence in the stereotyped domain and investigated whether it influenced perceived quality. Because a stereotype threat is derived from the awareness that one's group membership might lead to one's being negatively stereotyped by others, consumers' competence or belief in the stereotyped domain should not matter nor cause subsequent effects (O'Brien and Crandall, 2003; Steele and Aronson, 1995). Thus, we expected that consumers' competence would not moderate the observed stereotype threat effect on perceived quality.

5.1 Method

5.1.1 Participants and design. We first conducted a pretest as a check for the stereotype threat manipulation. We collected data from 59 female participants (average age = 38.9) on MTurk. Participants were first shown either the stereotype threat or control manipulation. As a manipulation for a stereotype threat, participants first indicated their gender on a

questionnaire framed as a “Survey about Purchasing a Car.” This was intended to activate the stereotype that women were less knowledgeable about cars, as indicating one’s group membership activates relevant stereotypes (Lee *et al.*, 2011; Steele and Aronson, 1995). Participants in the control condition indicated their gender at the end of the study (Steele and Aronson, 1995). Then, they were asked to rate gender knowledge difference of second-hand cars (“Who do you believe knows more about second-hand cars?” Brown and Harkins, 2016), which would indicate whether the stereotype threat was induced (1 = “females know more,” 4 = “no gender difference” and 7 = “males know more”). An independent samples *t*-test demonstrated that participants rated males as knowing more about second-hand cars in the stereotype threat than in the control condition [$M_{\text{stereotype threat}} = 5.45$ vs $M_{\text{control}} = 4.68$; $F(1, 57) = 9.67$, $p < 0.01$]. Therefore, the stereotype threat was successfully generated.

A total of 311 female participants (average age = 35.4) recruited from MTurk completed the study. This study adopted a 2 (price: high vs low) \times 3 (coping: reappraisal vs suppression vs threat-only) between-participants design. All participants were primed to experience a stereotype threat.

5.1.2 Procedures. At the beginning of the study, participants were given a scenario in which they imagined that they were visiting a car dealership because they needed to purchase a second-hand car soon. They were further told that they were going through a car-purchasing process with a male salesperson, Aaron Cooper, who showed them a picture of a second-hand car priced at either \$10,999 (high-priced condition) or \$1,999 (low-priced condition). The car picture and prices were the same as in Study 1b.

Then, participants were randomly assigned to a stereotype threat, a reappraisal, or a suppression condition. The reappraisal manipulation was created following Johns *et al.* (2008). Specifically, we asked participants to “think about the car buying process objectively and analytically rather than as personally, or in any way, emotionally relevant to you.” Also taken from Johns *et al.*’s (2008) suppression manipulation that told participants to “behave in such a way that a person watching you would not know you are feeling anything at all,” we created a suppression manipulation. Specifically, our participants were told to “behave in such a way that a car salesperson watching you would not know you are feeling anything at all.” Furthermore, as in Johns *et al.* (2008), we did not show participants either a suppression or reappraisal manipulation in the threat-only condition.

To check whether participants in the suppression and reappraisal conditions generated respective reappraisal/suppression, all participants answered a manipulation check question: “What kind of attitude will you adopt when buying cars? Will you adopt a neutral, objective attitude, or will you adopt the attitude of suppressing and hiding your feelings?” (1 = I will take a neutral attitude, 4 = I will take neither a neutral nor suppressing attitude, 7 = I will take a suppressing/hiding attitude; Johns *et al.*, 2008). Participants were then asked to complete two consumer competence items from Lee *et al.* (2011): “To what extent can you confidently evaluate car performance when you test drive?” and “To what extent do you understand the mechanics of cars?” (1 = not at all, 7 = very much). Participants next addressed measurements for perceived quality (Cronbach’s $\alpha = 0.81$) and were then debriefed and thanked.

5.2 Results

5.2.1 Coping approach manipulation check. Analysis of the manipulation check question suggested that the coping manipulations resulted in the intended effect [$F(2, 305) = 36.03$, $p < 0.01$]. Participants in the reappraisal condition were less likely to suppress negative thoughts and emotions than those in the suppression [$M_{\text{suppression}} = 5.44$; SD = 1.44; vs $M_{\text{reappraisal}} = 3.85$; SD = 1.64; $F(1, 305) = 56.60$, $p < 0.01$] or threat-only [$M_{\text{threat-only}} = 5.26$; SD = 1.36; vs $M_{\text{reappraisal}} = 3.85$; SD = 1.64; $F(1, 305) = 44.09$, $p < 0.01$] conditions. As predicted, no difference was found in

participants' suppression intention between the suppression and threat-only conditions [$M_{\text{suppression}} = 5.44$; $SD = 1.44$; vs $M_{\text{threat-only}} = 5.26$; $SD = 1.36$; $F(1, 305) < 1$]. The results thus indicated that reappraisal significantly reduced consumers' tendency to suppress their negative thoughts and emotions compared to those in the suppression and threat-only conditions.

5.2.2 Perceived quality. A 2 (price: high vs low) \times 3 (coping: reappraisal vs suppression vs threat-only) ANOVA on perceived quality revealed a main effect of price [$F(1, 305) = 24.09$, $p < 0.01$]. In particular, participants in the high-priced condition showed higher perceived quality than those in the low-priced condition [$M_{\text{high price}} = 4.78$; $SD = 1.45$; vs $M_{\text{low price}} = 4.01$; $SD = 1.41$; $F(1, 305) = 22.53$, $p < 0.01$]. The analysis also demonstrated an insignificant main effect of coping conditions [$F(2, 305) < 1$]. Moreover, as predicted, there was an interaction effect between price and coping strategy [$F(2, 305) = 7.86$, $p < 0.05$].

Planned contrasts showed that participants in the threat-only [$M_{\text{high price}} = 5.09$; $SD = 1.39$; vs $M_{\text{low price}} = 3.78$; $SD = 1.34$; $F(1, 305) = 22.23$, $p < 0.01$] and suppression [$M_{\text{high price}} = 4.94$; $SD = 1.45$; vs $M_{\text{low price}} = 3.79$; $SD = 1.51$; $F(1, 305) = 15.82$, $p < 0.01$] conditions inferred higher quality from a high-priced than from a low-priced product; no such difference, however, was found in the reappraisal condition [$M_{\text{high price}} = 4.31$; $SD = 1.39$; vs $M_{\text{low price}} = 4.41$; $SD = 1.34$; $F(1, 305) < 1$]. In addition, conducting simple contrasts using another perspective, we found that, when a high price was present, participants in the reappraisal condition reported lower perceived quality than those in the threat-only [$M_{\text{reappraisal}} = 4.31$; $SD = 1.39$; vs $M_{\text{threat-only}} = 5.09$; $SD = 1.39$; $F(1, 305) = 7.47$, $p < 0.01$] and suppression [$M_{\text{reappraisal}} = 4.31$; $SD = 1.39$; vs $M_{\text{suppression}} = 4.94$; $SD = 1.45$; $F(1, 305) = 5.73$, $p < 0.05$] conditions. No difference was found between the suppression and threat-only conditions [$M_{\text{threat-only}} = 5.09$; $SD = 1.39$; $M_{\text{suppression}} = 4.94$; $SD = 1.45$; $F(1, 305) < 1$]. When a low price was present, participants in the reappraisal condition reported higher perceived quality than those in the threat-only [$M_{\text{reappraisal}} = 4.41$; $SD = 1.34$; vs $M_{\text{threat-only}} = 3.78$; $SD = 1.34$; $F(1, 305) = 5.96$, $p < 0.05$] and suppression [$M_{\text{reappraisal}} = 4.41$; $SD = 1.34$; vs $M_{\text{suppression}} = 3.79$; $SD = 1.51$; $F(1, 305) = 4.56$, $p < 0.05$] conditions. No difference was found between the suppression and threat-only conditions [$M_{\text{threat-only}} = 3.78$; $SD = 1.34$; $M_{\text{suppression}} = 3.79$; $SD = 1.51$; $F(1, 305) < 1$] (see Figure 3 for details).

5.2.3 Consumer competence. We sought to ensure that the observed effects in our research were caused by the stereotype threat instead of competence. Therefore, we measured consumers' competence (Cronbach's $\alpha = 0.82$) in the stereotyped domain and tested whether it predicted perceived quality. Following Lee *et al.* (2011), we built a general

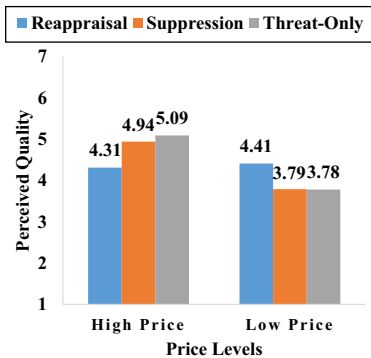


Figure 3.
Study 2: Perceived
quality as a function
of stereotype threat
and price levels

Source: Authors' own work

linear model with coping strategy, price, mean-centered consumer competence and all interactions to predict perceived quality. As expected, consumer competence was not a significant predictor of perceived quality [$F(1, 305) < 1$]. Consumer competence also did not interact with other predictors [$F(1, 305) < 1$], yet the original two-way interaction of price and coping remained significant [$F(1, 305) = 7.74, p < 0.01$]. These results provided initial support that the stereotype threat effect on perceived quality was not influenced by participants' perceived competence in the product domain.

5.3 Discussion

Results from Study 2 provided support for *H2a* and *H2b* regarding the moderating role of coping strategies – namely, suppression and reappraisal – in the effect of a stereotype threat on product quality judgments. We found that reappraisal mitigated the effect of the stereotype threat on product quality judgments. Specifically, perceived quality for a high-priced product tended to be lower for participants in the reappraisal than in the suppression or threat-only conditions. Perceived quality for a low-priced product, however, tended to be higher for participants in the reappraisal than in the suppression or threat-only conditions. Study 2 also provided evidence ruling out the possibility that consumer competence, rather than a stereotype threat, caused the observed effects.

6. Study 3: extending the effect of reappraisal

Study 3 had three purposes. First, it was designed to provide further support for *H2a* and *H2b*. It did so using a different reappraisal manipulation that focused *not* on reappraising the car buying situation in an *objective* way, but on reappraising the *emotional* reaction to the situation as being *irrelevant* to the car buying task. Lee *et al.* (2011) found that a stereotype threat induced transaction-related anxiety toward out-group (vs in-group) service providers. We argued that reappraisal would decrease anxiety and alleviate the effect of a stereotype threat on price–quality perceptions, but suppression will not.

Second, Study 3 sought further support for the process underlying the effect of stereotype threat coping strategy on price–quality relationship by measuring working memory to determine whether it was mitigated by reappraisal. Specifically, as noted earlier, reappraisal is less resource-demanding than suppression, so people experiencing a stereotype threat and adopting a reappraisal strategy will have more cognitive resources (i.e. working memory) available. As a result, these individuals will be more likely to opt for systematic processing, thus becoming less likely to rely on price to make quality inferences. We wanted to show in this study that reappraisal reduces the effect of stereotype threat on working memory.

Third, Study 3 replaced quality perception with willingness to buy as our dependent variable. It did so because the former had been examined in Studies 1a, 1b and 2, and the effect of a stereotype threat on this outcome had been demonstrated. Willingness to buy is an important and actionable variable that provides helpful practical implications. We argued that reappraisal should lessen the impact of the stereotype threat on consumers' willingness to buy.

6.1 Method

6.1.1 Participants and design. A total of 170 female participants (average age = 33.5) recruited from MTurk completed the study. The study adopted a 2 (price: high vs low) \times 2 (coping: reappraisal vs threat-only) between-participants design, where all participants received the stereotype threat manipulation. According to Lee *et al.* (2011) and findings from our Study 1b, imagining interacting with a male salesperson in the car-purchasing scenario

could generate stereotype threat for female consumers. Therefore, we used only a male salesperson in our stimuli.

6.1.2 Procedures. At the beginning of the study, participants were given a scenario in which they imagined that they were visiting a car dealership because they needed to purchase a second-hand car soon. All participants first indicated their gender on a questionnaire framed as a “Survey about Purchasing a Car.” This task sought to activate the stereotype that women were less knowledgeable about cars (Lee *et al.*, 2011; Steele and Aronson, 1995). Participants were further told that they were going through a car purchasing process with a male salesperson, Aaron Cooper, who had showed them a picture of a second-hand car priced at either \$10,999 (high-price condition) or \$1,999 (low-price condition). The car picture and prices were the same as in Study 1b. Participants in the threat-only condition did not receive any further information.

Following Johns *et al.* (2008), participants in the reappraisal condition were told that past research had established that anxiety from car purchasing did not impair, and may improve, their ability to evaluate cars. All participants then completed a manipulation check of anxiety reappraisal: “How do you think anxiety from interacting with a salesperson affects your ability to evaluate the car?” (1 = anxiety negatively impacts my ability, 4 = anxiety does not influence my ability, 7 = anxiety positively impacts my ability). Participants also completed a three-item measure of willingness to buy (Lee *et al.*, 2011): 1 = “unlikely,” “uncertain,” “definitely would not,” and 7 = “likely,” “certain,” “definitely would.”

Then, participants were asked to complete a “reading span task” that measured working memory (Daneman and Carpenter, 1980). This task aimed to measure simultaneously working memory storage and processing functions (Daneman and Carpenter, 1980). Participants in this task read sentences while remembering words, one for each presented sentence. After completion of two to six words/sentence combinations, participants were asked to recall all the words presented before those sentences. Participants were then debriefed and thanked.

6.2 Results

6.2.1 Manipulation check. Analysis of the manipulation check question suggested that the reappraisal manipulation successfully induced the intended effect. Participants in the reappraisal condition rather than in the threat-only condition were less likely to believe that anxiety from interacting with a salesperson affected their ability to evaluate the car [$M_{\text{threat-only}} = 4.12$; $SD = 1.43$; vs $M_{\text{reappraisal}} = 3.26$; $SD = 1.50$; $F(1, 167) = 14.73$, $p < 0.01$]. The results indicated that reappraisal significantly reduced a stereotype threat’s negative impact on participants’ perceived ability to evaluate cars.

6.2.2 Working memory resources. We tested the prediction that reappraisal would alleviate the effect of a stereotype threat on women’s working memory resources. Female participants’ working memory resources in the stereotype threat condition were anticipated to be lower than in the reappraisal condition. An independent samples *t*-test on absolute span score (Schmader and Johns, 2003) revealed that participants’ working memory resources were significantly reduced in the stereotype threat condition [$M_{\text{stereotype threat}} = 27.82$; $SD = 26.59$; vs $M_{\text{reappraisal}} = 40.00$; $SD = 28.01$; $F(1, 167) = 6.35$, $p < 0.05$]. This result suggested that reappraisal reduced the negative effect of the stereotype threat on participants’ working memory resources.

6.2.3 Willingness to buy. The three perceived quality ratings were averaged (Cronbach’s $\alpha = 0.79$) to form a composite willingness to buy score. Our results revealed that participants seeing a high-priced car reported greater willingness to buy in the stereotype threat condition than in the reappraisal condition [$M_{\text{threat-only}} = 3.16$; $SD = 0.89$; vs $M_{\text{reappraisal}} = 2.56$;

SD = 0.95; $F(1, 167) = 7.33, p < 0.01$]. Similarly, participants viewing a low-priced car reported less willingness to buy in the stereotype threat condition than in the reappraisal condition [$M_{\text{stereotype threat}} = 3.90$; SD = 1.03; vs $M_{\text{reappraisal}} = 4.61$; SD = 1.29; $F(1, 167) = 5.36, p < 0.05$]. The findings suggested that willingness to buy for a high- (low-) priced product tended to be higher (lower) for individuals experiencing a stereotype threat than those experiencing a stereotype threat but adopting a reappraisal coping strategy (see Figure 4 for details).

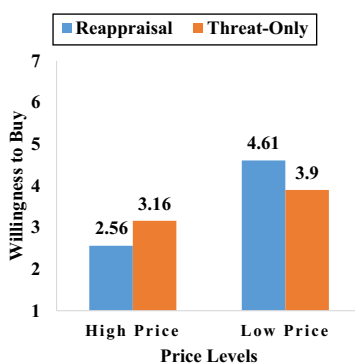
6.3 Discussion

Study 3 replicated and extended the effects found in Study 2. It used another reappraisal manipulation – namely, reappraising the emotional reaction to the situation as being irrelevant to the car buying task – to confirm that reappraisal mitigated the effect of a stereotype threat on willingness to buy. Findings demonstrated that people experiencing a stereotype threat and adopting a reappraisal coping strategy were less willing to buy a high-priced product and more willing to buy a low-priced product compared with stereotype threat-only consumers not opting for a reappraisal strategy. The study also found that a stereotype threat's impact on working memory was alleviated by reappraisal. Specifically, participants' working memory resources were significantly reduced in the stereotype threat-only condition compared with the reappraisal condition.

7. General discussion

7.1 Summary of results

Understanding when and how consumers use price to judge quality is fundamental to consumer researchers and to those interested in influencing quality perceptions (Lalwani and Shavitt, 2013). Nonetheless, little research has focused on how a stereotype threat affects the extent to which consumers use price to assess product quality. Our undertaking partially fills this gap through examining the effect of a stereotype threat on consumer *outcomes*. Our particular focus is different from previous stereotype threat empiricism that has mostly centered on consumers' *performance on cognitive tasks* and *coping strategies* in response to a stereotype threat (El Hazzouri *et al.*, 2020; Rydell *et al.*, 2010; Steele and Aronson, 1995; Wraga *et al.*, 2006). We proposed and found that a stereotype threat triggered by one's shopping experience in retail settings constrained consumers' cognitive resources, which then increased their reliance on price to make quality inferences.



Source: Authors' own work

Figure 4.
Study 3: Willingness
to buy as a function
of stereotype threat
and price levels

Four studies provided converging evidence regarding the effect of the stereotype threat on the price–quality relationship. Study 1a showed that the impact of a stereotype threat on consumers’ quality perceptions differed based on prices. Specifically, a stereotype threat increased (vs decreased) quality perceptions for high- (vs low-) priced products. Study 1b found that interaction with out-group service providers augmented the experience of a stereotype threat, which subsequently influenced participants’ price–quality perceptions. Study 2 revealed a boundary condition of coping strategies, thus suggesting that reappraisal – rather than suppression – alleviated the experience of a stereotype threat, which subsequently reduced its effects on price–quality perceptions. Study 3 used another way to manipulate reappraisal and ascertained that reappraisal mitigated the effect of a stereotype threat on consumers’ willingness to buy. It also discerned that reappraisal lowered the impact of the stereotype threat on participants’ working memory resources.

7.2 Theoretical contributions

This research contributes to the consumer decision-making literature by examining stereotype threat effects on in-store product purchasing contexts. Only limited work in social psychology and consumer behavior has investigated stereotype threat effects on consumers’ decisions. For example, Carr and Steele (2010) demonstrated the stereotype threat effect on financial decision-making and suggested that stereotype threat-induced risk aversion led consumers to undertake less risky financial decisions. Stereotype threat has also been shown to increase consumers’ preference for in-group service providers (Lee *et al.*, 2011). A stereotype threat has also been determined to affect consumers’ performance at tasks that require using products linked to dissociative groups adversely (El Hazzouri *et al.*, 2020). These studies, however, have neglected one of the most prevalent contexts for consumer decision making: product purchases in stores. Our findings suggested that product evaluation and purchase intention for stereotype threat-targeted individuals depended on the price level. Also, we found support for the predicted decrement in available working memory resources as a mechanism by which a stereotype threat influenced product purchasing decisions and product quality inferences.

The present research also provides theoretical contributions to the processing of price information in two ways. First, we provided evidence that impairment of working memory resources affected price perceptions. Scholars have identified that cognitive resource availability impacted use of price for quality judgments (Monroe, 2003; Suri and Monroe, 2003). Our efforts uniquely demonstrated that, when working memory resources are limited, individuals relied more on heuristic processing.

Second, we added to the pricing literature by examining the role of a stereotype threat in price perceptions. Our research unveiled the causal chain that a stereotype threat negatively impacted targeted individuals’ working memory resources, which then led to the consideration of price as a heuristic cue for assessing product quality. Whereas prior work has typically observed that a stereotype threat affected working memory resources (Beilock *et al.*, 2007; Johns *et al.*, 2008; Schmader and Johns, 2003), we moved one step further by investigating stereotype threat effects on price perceptions as a result of a decline in working memory capacity.

This research also added to the existing stereotype threat literature by investigating the effect of a stereotype threat on information processing. Scholars have found that coping with negative thoughts and emotions elicited due to a stereotype threat temporarily reduced individuals’ working memory resources (Johns *et al.*, 2008; Logel *et al.*, 2009a; Miller *et al.*, 1960) with a concomitant reduction in consumers’ tendency to engage in systematic processing or increasing their reliance on heuristic processing (De Neys, 2006; Schmeichel *et al.*, 2003). The

stereotype threat literature thus far, however, had not directly examined whether a stereotype threat influenced systematic/heuristic processing. Our findings revealed that a stereotype threat affected information processing, resulting in stereotype-threatened individuals to be more likely to rely on price as a heuristic cue to guide their processing of product information.

Our undertaking also adds to stress and coping literature by suggesting that consumers adopting a reappraisal strategy coped better with a stereotype threat than when opting for a suppression strategy. Coping – a simultaneous psychological process that accompanies stereotype threat – affects consumers' performance in subsequent tasks that draw on the same pool of executive resources, such as self-regulation, choice, and decision making (Bruyneel *et al.*, 2006; Schmeichel, 2007; Vohs *et al.*, 2008; Xiao and Lee, 2014). This process is especially detrimental to consumers who use response-focused coping. This is so because it markedly impairs working memory resources, compared to those opting for antecedent-focused coping. Although extant work has shown that reappraisal could improve test performance for threatened individuals (Johns *et al.*, 2008), our empiricism is the first to determine that reappraisal could also reduce the effect of a stereotype threat on consumers' dependence on price to assess product quality.

7.3 Practical implications

Our research provides important practical implications for consumers. From a consumer's perspective, a stereotype threat affects their product perceptions. A stereotype threat distorts consumers' product judgments, thus resulting in their focusing primarily on salient cues (i.e. price here) to judge product quality. Product quality judgment, however, is not only based on price but also on numerous other product attributes (e.g. size, color, ingredients, design, weight). This could cause consumers to overemphasize the importance of price in their judgments, hence causing them to misjudge product quality.

A stereotype threat also affects consumers' purchase behaviors through distorting their price perceptions. When consumers primarily rely on price to make product judgments, price could significantly affect their purchase decisions. Specifically, because they are more willing to purchase higher-priced products if they perceive an intricately linked price–quality association, they could spend more money on such products (e.g. a \$69.99 wrench set) and eschew purchasing a lower-priced products with fair, or even comparable, quality (e.g. a \$19.99 wrench set). This could result in consequential monetary and time costs incurred for consumers experiencing a stereotype threat.

A stereotype threat is especially harmful for consumers using response-focused coping (i.e. suppression). This is because doing so greatly impairs working memory resources relative to those adopting antecedent-focused coping (i.e. reappraisal). Previous research has already demonstrated that coping with a stereotype threat negatively impacts self-control in nonstereotyped domains, including aggressive behavior, eating and risky decision-making (Inzlicht and Kang, 2010). Because these contexts are related to one's success in life and career (Inzlicht and Kang, 2010), consumers frequently experiencing stereotype threats in a product purchasing setting will be less likely to achieve their buying goals (e.g. purchasing healthy and reasonably priced food).

We propose that consumers who seek to avoid paying more for stereotype-associated products may adopt reappraisal to cope with a stereotype threat. Reappraisal may allow consumers to employ fewer cognitive resources when coping with stereotype threat, thus minimizing the possibility that they might overpay for high-priced products (e.g. a \$69.99 vs a \$19.99 wrench set). In this way, consumers will not only focus less exclusively on price to judge product quality, but they will have more cognitive resources to process other

information (e.g. size, color, ingredients, product design, weight) related to product purchase. As such, their buying decisions may well be improved.

7.4 Limitations and directions for future research

The current research has several limitations that are suggestive of new areas for future work. First, we examined the effect of the stereotype threat on consumers' price perceptions in only a few product categories. Subsequent empiricism could test our hypotheses using other product categories. Second, we used limited product information other than price and designed the four studies in this way to ensure a valid examination of our theory. Consumers in real product purchasing situations, however, likely examine more product attributes than we listed. Therefore, postliminary efforts should explore such impacts and do so through field studies.

Third, following most gender stereotype threat research, our efforts only examined a female-oriented stereotype threat. The study of male-oriented stereotype threats in the marketplace remains to be scrutinized. Fourth, past studies have found that other factors, such as age and race, could also induce a stereotype threat (Inzlicht and Kang, 2010). Thus, scholars may consider investigating how these factors affect consumers' buying behavior. Fifth, our work focused on a limited number of shopping contexts – buying wrenches and cars. Subsequent empiricism may also consider the phenomenon of a stereotype threat in other in-store purchasing contexts.

References

- Adams, G., Garcia, D.M., Purdie-Vaughns, V. and Steele, C.M. (2006), "The detrimental effects of a suggestion of sexism in an instruction situation", *Journal of Experimental Social Psychology*, Vol. 42 No. 5, pp. 602-615.
- Alba, J.W., Mela, C.F., Shimp, T.A. and Urbany, J.E. (1999), "The effect of discount frequency and depth on consumer price judgments", *Journal of Consumer Research*, Vol. 26 No. 2, pp. 99-114.
- Aronson, J., Lustina, M.J., Good, C., Keough, K., Steele, C.M. and Brown, J. (1999), "When white men can't do math: necessary and sufficient factors in stereotype threat", *Journal of Experimental Social Psychology*, Vol. 35 No. 1, pp. 29-46.
- Ayres, I. and Siegelman, P. (1995), "Race and gender discrimination in bargaining for a new car", *The American Economic Review*, Vol. 85 No. 3, pp. 304-321.
- Beilock, S.L., Rydell, R.J. and McConnell, A.R. (2007), "Stereotype threat and working memory: mechanisms, alleviation, and spillover", *Journal of Experimental Psychology: General*, Vol. 136 No. 2, pp. 256-276.
- Betz, D.E., Laura, R.R. and Denise, S. (2013), "Gender stereotype threat among women and girls", *The SAGE Handbook of Gender and Psychology*, pp. 428-449.
- Boucher, K.L., Rydell, R.J., Van Loo, K.J. and Rydell, M.T. (2012), "Reducing stereotype threat in order to facilitate learning", *European Journal of Social Psychology*, Vol. 42 No. 2, pp. 174-179.
- Brown, A.J. and Harkins, S.G. (2016), "Threat does not make the mind wander: reconsidering the effect of stereotype threat on mind-wandering", *Motivation Science*, Vol. 2 No. 2, pp. 85-96.
- Bruyneel, S., Dewitte, S., Vohs, K.D. and Warlop, L. (2006), "Repeated choosing increases susceptibility to affective product features", *International Journal of Research in Marketing*, Vol. 23 No. 2, pp. 215-225.
- Busse, M.R., Israeli, A. and Zettelmeyer, F. (2017), "Repairing the damage: the effect of price knowledge and gender on auto-repair price quotes", *Journal of Marketing Research*, Vol. 54 No. 1, pp. 75-95.
- Carr, P.B. and Steele, C.M. (2010), "Stereotype threat affects financial decision making", *Psychological Science*, Vol. 21 No. 10, pp. 1411-1416.

-
- Chaiken, S. (1980), "Heuristic versus systematic information processing and the use of source versus message cues in persuasion", *Journal of Personality and Social Psychology*, Vol. 39 No. 5, pp. 752-766.
- Chaiken, S. and Trope, Y. (1999), *Dual-Process Theories in Social Psychology*, Guilford, New York, NY.
- Cox, D.F. (1967), "Risk handling in consumer behavior—an intensive study of two cases", *Risk Taking and Information Handling in Consumer Behavior*, Harvard University Press, Cambridge, MA, pp. 34-81.
- Daneman, M. and Carpenter, P.A. (1980), "Individual differences in working memory and reading", *Journal of Verbal Learning and Verbal Behavior*, Vol. 19 No. 4, pp. 450-466.
- De Neys, W. (2006), "Dual processing in reasoning two systems but one reasoner", *Psychological Science*, Vol. 17 No. 5, pp. 428-433.
- Ei Hazzouri, M., Carvalho, S.W. and Main, K. (2020), "Dissociative threat: underperforming to distance the self from undesirable groups", *European Journal of Marketing*, Vol. 55 No. 3, pp. 814-839.
- Engle, R.W. (2002), "Working memory capacity as executive attention", *Current Directions in Psychological Science*, Vol. 11 No. 1, pp. 19-23.
- Fischer, P., Greitemeyer, T. and Frey, D. (2008), "Self-regulation and selective exposure: the impact of depleted self-regulation resources on confirmatory information processing", *Journal of Personality and Social Psychology*, Vol. 94 No. 3, pp. 382-395.
- Gross, J.J. (1998), "The emerging field of emotion regulation: an integrative review", *Review of General Psychology*, Vol. 2 No. 3, pp. 271-299.
- Gross, J.J. (2002), "Emotion regulation: affective, cognitive, and social consequences", *Psychophysiology*, Vol. 39 No. 3, pp. 281-291.
- Hess, T.M., Auman, C., Colcombe, S.J. and Rahhal, T.A. (2003), "The impact of stereotype threat on age differences in memory performance", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 58 No. 1, pp. 3-11.
- Howard, D.J. and Kerin, R.A. (2006), "Broadening the scope of reference price advertising research: a field study of consumer shopping involvement", *Journal of Marketing*, Vol. 70 No. 4, pp. 185-204.
- Ingenbleek, P.T. and Van der Lans, I.A. (2013), "Relating price strategies and price-setting practices", *European Journal of Marketing*, Vol. 47 Nos 1/2, pp. 27-48.
- Inzlicht, M. and Ben-Zeev, T. (2000), "A threatening intellectual environment: why females are susceptible to experiencing problem-solving deficits in the presence of males", *Psychological Science*, Vol. 11 No. 5, pp. 365-371.
- Inzlicht, M. and Kang, S.K. (2010), "Stereotype threat spillover: how coping with threats to social identity affects aggression, eating, decision making, and attention", *Journal of Personality and Social Psychology*, Vol. 99 No. 3, pp. 467-481.
- Jamal, A. and Anastasiadou, K. (2009), "Investigating the effects of service quality dimensions and expertise on loyalty", *European Journal of Marketing*, Vol. 43 No. 3/4, pp. 398-420.
- Johns, M., Inzlicht, M. and Schmader, T. (2008), "Stereotype threat and executive resource depletion: examining the influence of emotion regulation", *Journal of Experimental Psychology: General*, Vol. 137 No. 4, pp. 691-705.
- Kardes, F.R., Cronley, M.L., Kellaris, J.J. and Posavac, S.S. (2004), "The role of selective information processing in price-quality inference", *Journal of Consumer Research*, Vol. 31 No. 2, pp. 368-374.
- Kardes, F.R., Posavac, S.S. and Cronley, M.L. (2004), "Consumer inference: a review of processes, bases, and judgment contexts", *Journal of Consumer Psychology*, Vol. 14 No. 3, pp. 230-256.
- Lalwani, A.K. and Shavitt, S. (2013), "You get what you pay for? Self-construal influences price-quality judgments", *Journal of Consumer Research*, Vol. 40 No. 2, pp. 255-267.
- Lee, K., Kim, H. and Vohs, K.D. (2011), "Stereotype threat in the marketplace: consumer anxiety and purchase intentions", *Journal of Consumer Research*, Vol. 38 No. 2, pp. 343-357.

- Logel, C., Iserman, E.C., Davies, P.G., Quinn, D.M. and Spencer, S.J. (2009a), "The perils of double consciousness: the role of thought suppression in stereotype threat", *Journal of Experimental Social Psychology*, Vol. 45 No. 2, pp. 299-312.
- Logel, C., Walton, G.M., Spencer, S.J., Iserman, E.C., von Hippel, W. and Bell, A.E. (2009b), "Interacting with sexist men triggers social identity threat among female engineers", *Journal of Personality and Social Psychology*, Vol. 96 No. 6, pp. 1089-1103.
- McFarland, L.A., Lev-Arey, D.M. and Ziegert, J.C. (2003), "An examination of stereotype threat in a motivational context", *Human Performance*, Vol. 16 No. 3, pp. 181-205.
- Major, B. and O'Brien, L.T. (2005), "The social psychology of stigma", *Annual Review of Psychology*, Vol. 56 No. 1, pp. 393-421.
- Marx, D.M., Stapel, D.A. and Muller, D. (2005), "We can do it: the interplay of construal orientation and social comparisons under threat", *Journal of Personality and Social Psychology*, Vol. 88 No. 3, pp. 432-446.
- Miller, G.A., Galanter, E. and Pribram, K.H. (1960), "The integration of plans", in Miller, G.A., Galanter, E. and Pribram, K.H. (Eds), *Plans and the Structure of Behavior*, Henry Holt and Co, pp. 95-102.
- Miyazaki, A.D., Grewal, D. and Goodstein, R.C. (2005), "The effect of multiple extrinsic cues on quality perceptions: a matter of consistency", *Journal of Consumer Research*, Vol. 32 No. 1, pp. 146-153.
- Monroe, K.B. (2003), *Pricing: Making Profitable Decisions*, 3rd ed., McGraw-Hill/Irwin, Burr Ridge, IL.
- Muraven, M. and Baumeister, R.F. (2000), "Self-regulation and depletion of limited resources: does self-control resemble a muscle?", *Psychological Bulletin*, Vol. 126 No. 2, pp. 247-259.
- Muraven, M., Gagné, M. and Rosman, H. (2008), "Helpful self-control: autonomy support, vitality, and depletion", *Journal of Experimental Social Psychology*, Vol. 44 No. 3, pp. 573-585.
- Muraven, M. and Slessareva, E. (2003), "Mechanisms of self-control failure: motivation and limited resources", *Personality and Social Psychology Bulletin*, Vol. 29 No. 7, pp. 894-906.
- Muraven, M., Tice, D.M. and Baumeister, R.F. (1998), "Self-control as a limited resource: regulatory depletion patterns", *Journal of Personality and Social Psychology*, Vol. 74 No. 3, pp. 774-789.
- O'Brien, L.T. and Crandall, C.S. (2003), "Stereotype threat and arousal: effects on women's math performance", *Personality and Social Psychology Bulletin*, Vol. 29 No. 6, pp. 782-789.
- Olson, J.C. and Jacoby, J. (1972), "Cue utilization in the quality perception process", in Venkatesan, M. (Eds), *SV - Proceedings of the Third Annual Conference of the Association for Consumer Research*, Association for Consumer Research, Chicago, IL, pp. 167-179.
- Park, H., Lalwani, A.K. and Silvera, D.H. (2020), "The impact of resource scarcity on price-quality judgments", *Journal of Consumer Research*, Vol. 46 No. 6, pp. 1110-1124.
- Pittman, C. (2017), "Shopping while black': black consumers' management of racial stigma and racial profiling in retail settings", *Journal of Consumer Culture*, Vol. 20 No. 1, pp. 3-22.
- Rao, A.R. and Monroe, K.B. (1989), "The effect of price, brand name, and store name on buyers' perceptions of product quality: an integrative review", *Journal of Marketing Research*, Vol. 26 No. 3, pp. 351-357.
- Richards, J.M. (2004), "The cognitive consequences of concealing feelings", *Current Directions in Psychological Science*, Vol. 13 No. 4, pp. 131-134.
- Rydell, R.J., Rydell, M.T. and Boucher, K.L. (2010), "The effect of negative performance stereotypes on learning", *Journal of Personality and Social Psychology*, Vol. 99 No. 6, pp. 883-896.
- Schmader, T. (2002), "Gender identification moderates stereotype threat effects on women's math performance", *Journal of Experimental Social Psychology*, Vol. 38 No. 2, pp. 194-201.
- Schmader, T., Forbes, C.E., Zhang, S. and Mendes, W.B. (2009), "A metacognitive perspective on the cognitive deficits experienced in intellectually threatening environments", *Personality and Social Psychology Bulletin*, Vol. 35 No. 5, pp. 584-596.
- Schmader, T. and Johns, M. (2003), "Converging evidence that stereotype threat reduces working memory resources", *Journal of Personality and Social Psychology*, Vol. 85 No. 3, pp. 440-452.

- Schmeichel, B.J. (2007), "Attention control, memory updating, and emotion regulation temporarily reduce the capacity for executive control", *Journal of Experimental Psychology: General*, Vol. 136 No. 2, pp. 241-255.
- Schmeichel, B.J., Vohs, K.D. and Baumeister, R.F. (2003), "Intellectual performance and ego depletion: role of the self in logical reasoning and other information processing", *Journal of Personality and Social Psychology*, Vol. 85 No. 1, pp. 33-46.
- Smith, J.L. and White, P.H. (2002), "An examination of implicitly activated, explicitly activated, and nullified stereotypes on mathematical performance: It's not just a woman's issue", *Sex Roles*, Vol. 47 Nos 3/4, pp. 179-191.
- Speisman, J.C., Lazarus, R.S., Mordkoff, A. and Davison, L. (1964), "Experimental reduction of stress based on ego-defense theory", *The Journal of Abnormal and Social Psychology*, Vol. 68 No. 4, pp. 367-380.
- Spencer, S.J., Steele, C.M. and Quinn, D.M. (1999), "Stereotype threat and women's math performance", *Journal of Experimental Social Psychology*, Vol. 35 No. 1, pp. 4-28.
- Steele, C.M. and Aronson, J. (1995), "Stereotype threat and the intellectual test performance of African Americans", *Journal of Personality and Social Psychology*, Vol. 69 No. 5, pp. 797-811.
- Stone, J. and McWhinnie, C. (2008), "Evidence that blatant versus subtle stereotype threat cues impact performance through dual processes", *Journal of Experimental Social Psychology*, Vol. 44 No. 2, pp. 445-452.
- Suri, R., Cai, J.Z., Monroe, K.B. and Thakor, M.V. (2012), "Retailers' merchandise organization and price perceptions", *Journal of Retailing*, Vol. 88 No. 1, pp. 168-179.
- Suri, R. and Monroe, K.B. (2003), "The effects of time constraints on consumers' judgments of prices and products", *Journal of Consumer Research*, Vol. 30 No. 1, pp. 92-104.
- Taylor, V.J. and Walton, G.M. (2011), "Stereotype threat undermines academic learning", *Personality and Social Psychology Bulletin*, Vol. 37 No. 8, pp. 1055-1067.
- Tice, D.M., Bratslavsky, E. and Baumeister, R.F. (2001), "Emotional distress regulation takes precedence over impulse control: if you feel bad, do it!", *Journal of Personality and Social Psychology*, Vol. 80 No. 1, pp. 53-67.
- Vohs, K.D., Baumeister, R.F., Schmeichel, B.J., Twenge, J.M., Nelson, N.M. and Tice, D.M. (2008), "Making choices impairs subsequent self-control: a limited-resource account of decision making, self-regulation, and active initiative", *Journal of Personality and Social Psychology*, Vol. 94 No. 5, pp. 883-898.
- Wraga, M., Duncan, L., Jacobs, E.C., Helt, M. and Church, J. (2006), "Stereotype susceptibility narrows the gender gap in imagined self-rotation performance", *Psychonomic Bulletin and Review*, Vol. 13 No. 5, pp. 813-819.
- Xiao, N. and Lee, S.H.M. (2014), "Brand identity fit in co-branding: the moderating role of CB identification and consumer coping", *European Journal of Marketing*, Vol. 48 No. 7/8, pp. 1239-1254.
- Yeung, N.C.J. and von Hippel, C. (2008), "Stereotype threat increases the likelihood that female drivers in a simulator run over jaywalkers", *Accident Analysis and Prevention*, Vol. 40 No. 2, pp. 667-674.

Further reading

- Brown, R.P. and Pinel, E.C. (2003), "Stigma on my mind: individual differences in the experience of stereotype threat", *Journal of Experimental Social Psychology*, Vol. 39 No. 6, pp. 626-633.
- Chaiken, S. and Maheswaran, D. (1994), "Heuristic processing can bias systematic processing: effects of source credibility, argument ambiguity, and task importance on attitude judgment", *Journal of Personality and Social Psychology*, Vol. 66 No. 3, pp. 460-473.
- Davies, P.G., Spencer, S.J., Quinn, D.M. and Gerhardstein, R. (2002), "Consuming images: how television commercials that elicit stereotype threat can restrain women academically and professionally", *Personality and Social Psychology Bulletin*, Vol. 28 No. 12, pp. 1615-1628.

-
- Engle, R.W., Tuholski, S.W., Laughlin, J.E. and Conway, A.R. (1999), "Working memory, short-term memory, and general fluid intelligence: a latent-variable approach", *Journal of Experimental Psychology: General*, Vol. 128 No. 3, pp. 309-331.
- Huguet, P. and Regner, I. (2007), "Stereotype threat among schoolgirls in quasi-ordinary classroom circumstances", *Journal of Educational Psychology*, Vol. 99 No. 3, pp. 545-560.
- Kray, L.J., Galinsky, A.D. and Thompson, L. (2002), "Reversing the gender gap in negotiations: an exploration of stereotype regeneration", *Organizational Behavior and Human Decision Processes*, Vol. 87 No. 2, pp. 386-410.
- Monroe, K.B. and Krishnan, R. (1985), "The effect of price on subjective product evaluations", *Perceived Quality: How Consumers View Stores and Merchandise*, pp. 209-232.
- Murphy, M.C., Steele, C.M. and Gross, J.J. (2007), "Signaling threat: how situational cues affect women in math, science, and engineering settings", *Psychological Science*, Vol. 18 No. 10, pp. 879-885.
- Olson, J.C. (1974), *Cue Properties of Price: Literature Review and Theoretical Considerations*, College of Business Administration, PA State University, State College, PA.
- Pennington, C.R., Heim, D., Levy, A.R. and Larkin, D.T. (2016), "Twenty years of stereotype threat research: a review of psychological mediators", *Plos One*, Vol. 11 No. 1, p. e0146487.
- Purohit, D. and Srivastava, J. (2001), "Effect of manufacturer reputation, retailer reputation, and product warranty on consumer judgments of product quality: a cue diagnosticity framework", *Journal of Consumer Psychology*, Vol. 10 No. 3, pp. 123-134.
- Richards, J.M. and Gross, J.J. (2000), "Emotion regulation and memory: the cognitive costs of keeping one's cool", *Journal of Personality and Social Psychology*, Vol. 79 No. 3, pp. 410-424.
- Stone, J., Lynch, C.I., Sjomeling, M. and Darley, J.M. (1999), "Stereotype threat effects on black and white athletic performance", *Journal of Personality and Social Psychology*, Vol. 77 No. 6, pp. 1213-1227.
- Westberg, K., Reid, M. and Kopanidis, F. (2020), "Age identity, stereotypes and older consumers' service experiences", *Journal of Services Marketing*, Vol. 35 No. 1, pp. 54-64.

Appendix 1



Construction: Forged
Type: Stubby Flex Head
Size: 3/8", 7/16", 1/2",
9/16", 5/8", 11/16", 3/4"
Overall Length (In.): 10.63

Only for: \$69.99

Source: Authors' own work

Appendix 2



Construction: Forged
Type: Stubby Flex Head
Size: 3/8", 7/16", 1/2",
9/16", 5/8", 11/16", 3/4"
Overall Length (In.): 10.63

Only for: \$19.99

Source: Authors' own work

Appendix 3



Used 2008 Toyota
Corolla LE

96,501 Miles
Clean Title
4 Cylinder Engine
Gasoline
Automatic Transmission
2 Wheel Drive - Front
Four Door Sedan

Only for \$10,999

Source: Authors' own work

Inferring
quality from
price

1465

Figure A1.
Stimuli for Study 1a
(high-price condition)

Figure A2.
Stimuli for Study 1a
(low-price condition)

Figure A3.
Stimuli for Studies
1b, 2 and 3 (high-price
condition)

Figure A4.
Stimuli for Studies
1b, 2 and 3 (low-price
condition)



Used 2008 Toyota
Corolla LE

96,501 Miles
Clean Title
4 Cylinder Engine
Gasoline
Automatic Transmission
2 Wheel Drive - Front
Four Door Sedan

Only for \$1,999

Source: Authors' own work

About the authors

Dr Lei Song is an Assistant Professor of Marketing at the Business Program of the Pennsylvania State University Abington. His research mainly integrates behavioral science and data analytics to help companies create innovative online (social media and e-commerce) and in-store strategies that are significantly important for improving customer satisfaction and corporate competitiveness. His research has been published or featured in journals such as *Harvard Business Review*, *Journal of Business Research* and *Journal of Retailing and Consumer Services*. He has won multiple research awards including Emerald Literati Awards for Excellence, and has served on multiple editorial review boards. Lei Song is the corresponding author and can be contacted at: LeiSong@psu.edu

Dr Rajneesh Suri is a Professor of Marketing at the LeBow College of Business at Drexel University. His past research has been published in journals including the *Journal of Consumer Research*, *Journal of the Academy of Marketing Science*, *Journal of Retailing*, *Journal of Service Research*, *Journal of Business Research* and *Psychology and Marketing*.

Dr Yanliu Huang is an Associate Professor of Marketing at Drexel University's LeBow College of Business. Her research interests are focused on shopper making and new technology. Dr Huang's research has been published in leading academic journals such as *Journal of Consumer Research*, *Journal of Marketing Research*, *Journal of Marketing* and *Organizational Behavior and Human Decision Processes*. She has won multiple research awards including *Journal of Marketing's* MSI/H. Paul Root Award. Dr Huang is an Associate Editor at *Service Science* and is on the editorial review board of *Journal of the Academy of Marketing Science* and *Journal of Retailing*.

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com