ATTENTION MODES IN CONSUMER DECISION MAKING: ATTENDING TO THE PHYSICAL ENVIRONMENT MAKES PRICE MORE IMPORTANT

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ABSTRACT

At every waking moment, one's attention is situated along a continuum from *experiencing*, where one focuses on their immediate environment, to *mind-wandering*, where one focuses on environment-independent thoughts, feelings, and daydreams. The framework developed and tested in this research predicts how this spectrum of attention affects the relative weight consumers place on price information in their judgments and decisions. Six studies provide empirical support for the framework, with the core finding being that people in an experiencing (mind-wandering) mode systematically attach more (less) weight to price information. This effect stems from the price attribute's characteristic of changeability, or capability for exhibiting temporal variation. People in an experiencing (versus mind-wandering) mode place a greater imporance on noticing change, and therefore subsequently estimate that a changeable stimulus (such as a price) is more likely to change. Such differences in beliefs of change likelihood lead to the observed differences in price weighting effects across the attention modes. These findings shed new light on the underlying psychology of attention as well as the role of price in judgment and decision making.

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INTRODUCTION

Imagine yourself taking a walk. As you stroll through your neighborhood, you focus on your physical surroundings such as the people you pass by, the cars parked along the curb, and the flowers planted along the sidewalk. You continue walking until you get to a park, all the while attending to the sights, smells, and sounds of your walking experience. This scenario characterizes an attention mode I refer to as *experiencing*, where attention is directed toward perceptions and cognitions related to the immediate physical environment. Now imagine taking an alternate walk. As you stroll through your neighborhood, you reminisce about an earlier chat you had with your friend, which quickly transitions into daydreaming about things you want to do on your next day off. All the while, you continue walking along the street, paying little if any attention, to the sights and sounds of your physical environment. This scenario characterizes an attention mode known as *mind-wandering* (Smallwood and Schooler 2006), where attention is focused on thoughts, feelings, and daydreams that are decoupled from the environment. Now imagine that both walks conclude as you see a refreshment truck selling chocolates. The question this research asks is: "In which walk would you be likely to give more weight the price of the chocolates in making your purchase decision?" Intuitively, one might predict that being in an experiencing (versus mind-wandering) mode would lead one to consider more product attributes, such as flavor, ingredients, and size, leading to a

decrease in the relative weight assigned to price. In contrast, this research proposes the precise opposite: that an experiencing (versus mind-wandering) mode leads one to more heavily weight prices in decision making.

The core effect of attention modes on price weighting arises from differences in the way individuals across the two modes treat stimuli that are changeable (i.e., capable of exhibiting exogenous temporal variation), of which price is one example. Specifically, the model presented here reasons that because individuals in an experiencing (versus mind-wandering) mode place a greater importance on noticing change, they subsequently believe that a changeable stimulus (such as price) is more likely to in fact change and therefore attach a greater weight to it.

Contribution

This research makes two notable contributions. First, it is important to note that at any given moment, a consumer's attention mode is situated at some point on a continuum ranging from experiencing to mind-wandering, and therefore has the potential to affect every judgment he or she makes. However, past research in the area of attention modes has been conducted using paradigms which limit their generalizability to consumer judgment contexts. Specifically, in these paradigms, participants' objective performance is assessed in tasks involving stimuli that need only be considered individually (Smallwood, McSpadden, and Schooler 2008; Smallwood, Obonsawin, and Heim 2003). In contrast, judgment and decision making contexts often involve sifting through multiple

pieces of information that necessitate some type of prioritization processes for ordering their consideration (e.g., attribute weighting models). To my knowledge, this is the first work to bridge this gap in the literature and study the downstream effects of attention modes in such contexts. Importantly, in contrast to past work, which suggests that processing effects of attention modes are largely independent of stimuli characteristics (Barron et al. 2011; Kam et al. 2010), this work uncovers a key stimuli characteristic (i.e., changeability) that moderates the impact of attention modes on stimuli prioritization. In sum, this work therefore not only identifies a novel stimuli characteristic that is important in both the domain of attention modes and judgments, but also highlights the theoretical utility of expanding the study of attention modes to the context of judgment and decision making.

Second, this research makes meaningful contributions to the literature on price weighting in judgments and decisions. Price weighting has been studied from two perspectives in past research (Bornemann and Homburg 2011; Lichtenstein, Bloch, and Black 1988), one dealing with the role of price as a financial sacrifice (Elrod and Winer 1982; Rossi and Allenby 1993) and the other focusing on price as a cue of product quality (Dawar and Parker, 1994; Rao and Monroe 1989). In both streams of literature, price assumes the function of a heuristic cue (of either quality or financial sacrifice), and the observed weighting effects have been consistent with what might be expected from this role. For instance, consumers who are low in product knowledge and therefore have lower ability to process information are more likely to weight price heavily in judging quality (Rao and Monroe 1988; 1989). In the domain of high-involvement products,

where consumers are motivated to consider many product attributes, consumers give less weight to prices (Lichtenstein et al. 1988). Similarly, price weights generally decrease when consumers are primed with broad (vs. narrow) response categories, which prompt consideration of more (vs. less) inputs in decision making (Chakravarti et al. 2013). In sum, price, which typically functions as a heuristic cue, is typically given more weight when consumers' ability or motivation to consider other attributes is relatively limited. This research diverges from this typical characterization of price and instead studies its inherent characteristic as a changeable attribute. Using this theoretical backdrop, a unique set of predictions is developed that diverge from those based on price's function as a heuristic.

Dissertation Organization

This dissertation is organized as follows. The remainder of Chapter I continues first with a discussion of the conceptual background and subsequently closes with the development of my framework. Chapter II then reports the findings from six experiments designed to test the various aspects of the framework. Collectively, the studies test the framework for price weighting and changeable stimuli prioritization across a variety of contexts, develop and use both a validated chronic measure of attention mode and attention mode manipulation, directly rule out several alternative explanations, and offer support for key propositions in the framework via both mediation and moderation. Chapter III then summarizes the empirical evidence, discusses the theoretical and

managerial implications of the findings, discusses some limitations of the research, and provides directions for future research.

CONCEPTUAL BACKGROUND

Experiencing and Mind-Wandering as Modes of Attention

The wealth of information available for processing at any given moment greatly exceeds the capacity of the human brain. Thus, attention mechanisms have evolved to direct processing capacity towards pieces of information that are most relevant to goals and behaviors (Pashler, Johnston, and Ruthruff 2001). Collectively, attention mechanisms not only select pieces of information (i.e., "targets") for heightened processing, but also determine the depth, length, and nature of processing for such targets (Chun, Golomb, and Turk-Browne 2011).

The targets of attention exist along a spectrum. At one end of the spectrum are targets that are encountered in the immediate environment through passive perceptions (e.g., sights, sounds, and smells; Chun et al. 2011) as well as active interactions (e.g., physical movements and tasks; Smallwood and Schooler 2006), that together, form experiences (Busse et al. 2005; Staresina and Davachi 2009). Such experiences may also be accompanied by experience-related cognitions such as mental computations during a math test (Mrazek et al. 2011), or inferences about events in a story (Smallwood et al. 2008). Attention directed towards such perceptions of and cognitions related to the

immediate environment encompass what is referred to here as the *experiencing* mode of attention. At the other end of the spectrum are targets that originate independent of the immediate environment, such as thoughts about what one might do the next day, feelings about an event that occurred a week prior, or daydreams of an alternative state of present reality. Attention directed primarily to such stimuli-independent thoughts, feelings, or daydreams encompass the mode of attention known as *mind-wandering* (Smallwood and Schooler 2006). Mind-wandering has also been studied under different monikers such as task-unrelated thought (Smallwood, Baracaia, Lowe, and Obonsawin 2003), task unrelated images and thoughts (Giambra 1995), stimulus-independent thought (Teasdale, Segal, and Williams 1995), zone outs (Schooler 2002), and mind pops (Kvavilashvili and Mandler 2004). As the above terms suggest, mind-wandering may occur both when in states of wakeful rest and when actively engaged in tasks (Greicius and Menon 2004). Together, these modes capture attention towards the full spectrum of targets, from those originating from the immediate environment to those entirely decoupled from the immediate physical world.

Consistent with the notion that attention targets exist along a spectrum, past work has demonstrated that higher levels of relative experiencing reduce mind-wandering, and vice-versa. For example, people often miss details in a story when their mind wanders (Smallwood et al. 2008). Conversely, mind-wandering tends to be reduced by engaging in environmental interactions that lead to intense focus (Csíkszentmihályi 1990), are novel (Mason et al. 2007), or require high degrees of perceptual processing (Forster and Lavie 2009). Importantly, such countervailing effects are not limited to task-relevant

stimuli, as several studies have shown that processing of task-irrelevant stimuli also reduces mind-wandering (Barron et al. 2011; Kam et al. 2010). Such findings therefore support a conceptualization of experiencing that is broader than mere task involvement, but rather inclusive of any target that originates from the immediate environment. Taken together, these works suggest that experiencing and mind-wandering represent opposite ends of a continuous spectrum of attention.

Studies of neurological systems also support this conceptualization of attention modes. Activity in the default mode network (DMN) – a network of brain regions that supports mind-wandering (Buckner, Andrews-Hanna, and Schacter 2008; Mason et al. 2007) – has been found to be negatively correlated with activity in the dorsal attention network (DAN) – a network of brain regions that supports engagement with the environment (Broyd et al. 2009; Fox et al. 2006). Further evidence is provided by Raichle and Mintun (2006) who calculated that total energy consumption increases by only 0.5% - 1% when one transitions from wakeful rest (which promotes mind-wandering) to responding to environmental stimuli. This suggests that the DMN and DAN share relatively fixed resources, and supports a bipolar conceptualization of experiencing and mind-wandering.

It is important to clarify here that an individual's attention mode is a combination of situational and chronic factors. Although past work has tended to focus on situational variation, measurement of attention mode as a chronic trait is also predictive of attention mode in a given moment (Mason et al., 2007). So, one who has a particularly active wandering mind will be more likely to daydream even when in the midst of goal-directed

activity (e.g., while reading a book), while a person with the opposite tendency may focus almost exclusively on online processing of the external world even in the absence of a goal-directed activity (e.g., attending to scenery while sitting on a bench outside). Thus, one's current attention mode is dictated by a combination of chronic tendencies and situational factors, and accordingly, the empirical methods in this research make use of both.

Relationships between Attention Modes and Other Constructs

Several other constructs in social and cognitive psychology have posited an "internal versus external" focus (Buss 1980; Duval and Wicklund, 1972; Carver, 1979; Rotter, 1954). For example, in the study of inference making and beliefs, Rotter's (1954) locus of control theory posits that people may believe personal outcomes are controlled by either the self or an external force. In the area of attention, Duval and Wicklund's (1972) theory of self-awareness suggests that people can direct attention to the external world or to the self, where self-focused attention involves thinking about oneself, scrutinizing one's own behavior, and paying attention to one's own features both from the perspective of the self and from the imagined perspective of others (Fenigstein, Scheier, and Buss 1975). An important characteristic that these theories share is the use of the self as a countervailing force against the external world. In contrast, mind-wandering may include but is not limited to thoughts concerning the self. In other words, although mind-wandering necessarily occurs within the self, the self is not constrained as

the content of one's mind-wandering. As examples, one's mind might wander to the current activities of close others (e.g., "I wonder what my best friend is doing right now") or the current state of other places (e.g., "I wonder what the weather is like in Australia"). In this regard, experiencing versus mind-wandering overlaps more so with the first conceptualization of the introversion-extraversion trait by Jung (1921) as an orientation towards and an interest in either the "external object" (i.e., external world) or "subjective psychic contents", so long as such one's "psychic contents" are unrelated to one's immediate environment.

Attention modes are perhaps more closely related to temporal focus, which refers to the extent a person thinks about the past, present, or future (Shipp, Edwards, and Lambert 2009; Bluedorn 2002). The mind-wandering mode is similar to past-focus and future-focus, as the mind may wander to memories of the past or conceptions of the future (Smallwood, Nind, and O'Connor 2009). However, mind-wandering here focuses on the amount of activity relative to experiencing rather than the specific contents of the wandering mind. That is, mind-wandering refers to attention directed to all types of internal targets that are independent of the current experience, irrespective of whether such targets are reconstructions or memories of the past, simulations of possible futures, alternative constructions of the present, or even daydreams comprised of mostly positive, fantasy-like thoughts. Mind-wandering, therefore, subsumes the lower-level constructs of past-focus and future-focus. Furthermore, although the experiencing mindset and present-focus both capture attention to aspects of one's current experience, present-focus also includes cognitions about current issues in one's life (e.g., "I focus on what is currently

happening in my life") and assessments of one's current standing in life (e.g., "I think about where I am today"). Such thoughts, although directed toward aspects of one's life that one may broadly regard as current or salient, are nonetheless detached from one's immediate physical experience in the external environment, and in fact reflect an aspect of mind-wandering, not experiencing.

Another construct that shares overlap with attention modes is task involvement. Indeed, task involvement is subsumed within the experiencing mode to the extent that one is currently engaging in a task. However, many human experiences of the environment exist outside of goal-directed activity, and one's attention to such experiences is also included within the experiencing mode (e.g., experiencing the beauty of nature while sitting on a beach or noticing the details of the airport lounge and the people in it while awaiting your flight). Furthermore, the experiencing mode also encapsulates attention to targets originating from the environment that are unrelated to a focal task one is engaging in at a given time (e.g., stimuli-induced task distraction), and while attention to this category of stimuli would be considered within the confines of experiencing, it would reflect a decrease in task involvement (e.g., experiencing the sights and sounds of a street on Times Square while crossing it or when dining at a restaurant, noticing the gait of the waiter, the genre of music playing, and the couple seated on the next table). Thus, attention modes capture a distinctly broader territory than task involvement.

The notion of attention modes is also related to other constructs in the realm of human consciousness. For example, the concept of flow is described by Csíkszentmihályi

(1990) as a mental state of operation in which a person is fully immersed in a feeling of energized focus, full involvement, and successful in an activity that matches one's skill level. Flow therefore represents a state of peak experiencing. Nevertheless, other states may also confer similar levels of experiencing including engagement in tasks that are time constrained or passive events that are highly consequential, suggesting that attention mode is broader than flow. Attention modes also relate to mindfulness, a state of consciousness characterized by attention that is open to whatever enters experience while remaining non-judgmental and non-reactive to what is encountered (Segal, Williams, and Teasdale 2002). The experiencing mode and mindfulness are similar in that both capture attention to the immediate experience. However, attention modes differ from mindfulness in that they are concerned with only the targets and not qualities of attention (i.e., non-judgmental and non-reactivity), which are integral to mindfulness. Furthermore, mindfulness also includes a metacognitive awareness and acceptance of current states, which may include states of mind-wandering. Attention modes are therefore related yet distinct from both flow and mindfulness.

Finally, attention modes also bear a superficial similarity to construal level, which distinguishes between concrete and abstract processing (Trope and Liberman 2010). Although the experiencing mode of attention includes attention directed towards perceivable stimuli in the environment that may tend to be processed concretely, experiencing also includes cognitions coupled with the physical environment that are abstract in nature, such as abstract cognitions that accompany the experience of a math lecture. Likewise, the mind-wandering mode of attention may include both concrete

cognitions (e.g., “how” one might present oneself at a meeting the next day) and abstract cognitions (“why” one might do something the next day). In these ways, construal level and attention modes represent orthogonal constructs.

Downstream Consequences of Attention Modes

It is now well established that mind-wandering during a task impairs performance (Smallwood and Schooler 2006). This effect has been demonstrated for a variety of tasks ranging from those involving only rudimentary processing such as word and font identification (Smallwood et al., 2004; McVay and Kane, 2009) to those involving higher levels of cognition such as reading (Smallwood, McSpadden, and Schooler 2008) and math problems (Mrazek et al., 2011). The prevailing explanation for these effects is that mind-wandering drains fixed working memory resources (Levinson, Smallwood, and Davidson, 2012; McVay and Kane, 2009; Kane et al., 2007), which are necessary to perceive and process external stimuli (Forster and Lavie, 2009; Smallwood et al., 2008). Framed in opposite terms, higher relative experiencing is associated with higher levels of task performance due to the increased availability of working memory resources to engage in processing task-relevant stimuli.

Recent work has expanded on these ideas by positing that the external stimuli processing enhancements associated with more relative experiencing are not limited to task-relevant stimuli (Barron et al., 2011; Kam et al., 2010). Evidence for this “decoupling” hypothesis is given by Barron et al (2011), who recorded event-related-

potentials (ERPs) of participants completing an oddball task in which a target stimulus (which requires a response) and a distractor stimulus (which requires no response) are presented equally rarely against a frequent background stimulus (which also requires no response). Importantly, both P3b amplitudes (in response to target stimuli) and P3a amplitudes (in response to distractors) were significantly higher for those reporting fewer (vs. many) instances of mind-wandering during the task, suggesting that an experiencing mode increased attention for all types of external stimuli, regardless of its relevance to current goals, tasks, or behaviors. A notable feature of paradigms which report these types of findings is that each external stimulus is to be considered independently of others. This type of setting, however, precludes a more fine grained assessment of the relative tradeoffs involved in integrating multiple external stimuli, as is likely in many real life contexts, including judgment and decision making (e.g., attribute weighting). That is, it is not clear whether some categories of stimuli are afforded more priority when multiple stimuli are to be integrated in some way. This research identifies and proposes one such characteristic of the external stimuli which is likely to determine the relative processing priority given to it in each attention mode - changeability. The following sections introduce the notion of change and develop the theoretical linkages that underlie the proposed relationship between attention modes and the processing of changeable stimuli.

The Spectrum of Change

This research studies how attention modes interface with notions of change. Consistent with past work on visual change detection, change is defined here as the transformation or modification of something over time and initiated exogenously of the perceiver (Rensink, 2002). Physical objects change in ways perceivable via the modalities: touch (e.g., change in temperature of ice as it melts), sight (e.g., change in activated light on a stoplight), smell (e.g., change in smell of rose as it blooms), taste (e.g., change in taste of a banana as it ripens), or hearing (e.g., change in the sound a dog makes as it barks). Changes to concepts may occur in their properties (e.g., change in what constitutes a price over time) or values (e.g., a change to a particular product's price over time), and are also initially perceived via the senses (e.g., seeing a product's price change).

There are two notable aspects of the change definition presented above. First, it explicitly includes movement as a form of change. It is important to specify this dimension of change because many objects in the environment such as cars, clocks, and escalators change almost exclusively in terms of movement. Second, the current definition explicitly includes concepts as capable of change. Although concepts do not in and of themselves have a presence in the external world as do physical objects, concepts and, therefore, changes to them are typically rooted in some aspect of the external environment. For example, perceiving a change in a product's price involves perceiving the change in its physical price tag. Likewise, perceiving change in another person's mood state involves perceiving physical changes in their verbal responses, behaviors, and

expressions. Together, these aspects of the change definition help to more clearly capture the range of temporal variation that people encounter in their environment.

At this point, it is also important to clarify the notion of "change" from that of "difference". Specifically, change requires a single object or concept to which temporal variation occurs. For example, the process of a single banana ripening as time passes reflects the concept of change, since a single object (one banana) has been modified (ripened) over time, and the original object (the banana at earlier stages of ripeness) no longer exists. Conversely, "difference" reflects the simultaneous presence of multiple objects that vary from one another at a single moment in time (Rensink 2002). For instance, the presence of two separate bananas (multiple objects) in the kitchen at different stages of ripeness (vary from one another) reflects the concept of difference. In sum, difference captures variation between two stimuli while change captures variation of a single stimulus over time.

To further understand change as a property of stimuli, it is helpful to think of stimuli as distributed along a spectrum of change. At one end of the spectrum are stimuli that are in the process of change while being perceived (i.e., are dynamically changing), such as a cellular phone that goes from an idle to ringing state. Generally speaking, such stimuli tend to be the most important for one to consider, since they are most likely to require immediate responses or modifications to planned behavior. At the other end of the spectrum are objects that are either incapable of change or highly unlikely to change. Included here are objects such as picture frames, rocks, fences, etc. Generally speaking,

such objects tend to be the least important to consider, since they are unlikely to require an immediate response or modification in planned behavior.

Between these two extremes are changeable stimuli, which are the primary focus of this research. Changeable stimuli are those that have a known capacity for, but are not currently in the process of change. An idle cellular phone is an example of a changeable stimulus, as it has the capacity to ring (i.e., change), but is not ringing in the present moment. A banana provides another example, as it has the capability to ripen over a relatively short span of time, but the process of ripening is not perceptible at any given moment. The extent to which a stimulus is changeable is of course a matter of degree, as a typically unchangeable stimulus (e.g., a rock) may change under a set of most unusual circumstances (e.g., being smashed by a falling boulder) or over a very long period of time (e.g., metamorphosis). Nevertheless, what is important for this research is not a discrete categorization of stimuli, but rather that stimuli are distributed along a continuum that represents relative differences in change likelihood between them.

Prices as Changeable Stimuli

A key piece of this research is that prices represent a rather unique example of changeable stimuli in consumer judgment contexts. For any given product, it is easily observable that stated price values change more than stated values for other attributes. As examples, clothing prices are reduced during sales, airline ticket prices often change as the departure nears, and gas prices may fluctuate daily. Such price changes occur while

stated values for non-price attributes remain relatively fixed, presumably because non-price attributes are often integral to the definition of the product item itself. Importantly, the ubiquity of both price changes and price as a product attribute more generally affords consumers substantial opportunity to learn about the changeable nature of prices. Such is generally not the case for other select attributes that either are only theoretically changeable (i.e., are not integral to the product), or exhibit change in only exceptional situations (e.g., warranty terms). Note that the notion of changeability in this context refers to the potential for a change in the value of the attribute by the marketer in a consequential manner after the consumer has made a judgment or decision relating to the product. Thus, the definition of attribute change excludes attributes where change relates to modifications of the product after the purchase (e.g., the temperature of a drink or adjustability of a car seat).

Conceptual Framework: Attention Modes, Change, and Price Weights

A well known finding in the attention literature is that both perceptive and cognitive processes are limited in capacity, hence, attention tends to be selective, prioritizing items and tasks that are important to adaptive behavior in the individual's current field of operation (Johnston and Dark 1986; Lavie 2006; Pashler et al. 2001; Swallow and Jiang 2013). All attention targets are encountered within two fields of human operations: the physical sensory environment or the mental world of thoughts, daydreams, memories, ruminations etc. Past research suggests that the importance of

detecting change in encountered targets tends to vary between these two fields of human operation. Specifically, change and its detection can become crucial to adaptive behavior and survival in the context of the environment, drawing attention involuntarily from both humans and non-human animals in this field of attention (Hagmann and Cook 2013; Rensink 2000). As such, it is adaptive to notice changes to evaluate and modify behaviors in the face of changing circumstances, such as emerging opportunities, threats and obstructions (Downar, Carwley, Mikulis, and Davis 2000). However, noticing change is less consequential in the realm of non-environment related mental processes, where the mental operations are simulated by one's own mind or are self-generated (Mason et al. 2007; Teasdale, Segal, and Williams 1995) and, hence, do not necessitate an immediate adaptive response from the individual. Being in such an attention mode is likely to lower the prioritization placed on detecting changes in encountered targets. In fact, consistent with this idea, past research on change detection has found the amount of attention that an observer allocates to the environment or the visual field (versus other processes) to be a critical factor in detecting changes in attention targets (Fernandez-Duque and Thornton 2000; Rensink 2000).

Interestingly, past research has consistently shown that people who perceive a particular stimulus state (e.g., change), interpersonal motive, or situational aspect to be of great importance are more likely to overestimate its likelihood or over-perceive it in their environment. For instance, recent work has shown that people who characterize themselves as highly vulnerable to disease tend to over-perceive cues of disease such as old age and foreign nationality in other individuals (Miller and Maner, 2012). Other work

in stereotyping has shown that those who believe the world to be a dangerous place are more likely to activate danger-related stereotypes when surrounded by ambient darkness (Schaller, Park, and Mueller 2003). Similarly, in the domain of mating, Garver-Apgar, Gangestad, and Simpson (2007) found that women in the high-fertility phase of their menstrual cycle (who would incur higher consequences from mating with an undesirable male), rated men seen in videotaped interactions as more sexually coercive than did women in other phases. And as a final example, Yamagishi et al (2007) demonstrated that people who were manipulated to believe the relationship with their partner in a prisoner's dilemma game was interdependent were more likely to over-estimate the degree to which their reputation could be communicated to other potential partners. As these examples demonstrate, such over perception or over-estimation effects have emerged in a variety of domains varying in both personal involvement and levels of conscious processing, ranging from disease perception (Miller and Manner 2012) to low stakes games involving endowments of only $3.50 or lower (Yamagishi et al 2007), to even contexts involving relatively unconscious processes (Garver-Apgar, Gangestad, and Simpson 2007).

The overarching rationale for these findings is simple – for individuals who perceive greater consequences or importance of a given stimulus state (e.g., change), the consequences of false positives (e.g., falsely assuming that change will happen and therefore preparing for it) are often outweighed by those of false negatives (falsely assuming that change will not occur and therefore being unprepared for it). Therefore, biasing errors in favor of false positives increases evolutionary fitness (Galperin and Haselton 2012; Haselton and Buss 2000). This research therefore adopts this logic for the

context of changeable stimuli, leading to the following proposition: an experiencing (versus mind-wandering) mode, which is likely to motivates one to notice change in their environment, leads one to believe that a changeable stimulus, such as price, is more likely to in fact change.

Building on this proposition, this research posits that a downstream consequence of believing that a stimulus is more likely to change is placing a greater priority on considering it. An increased likelihood of change signals to an individual that the stimulus's current consequences may no longer be available in the future, and as a result, the individual should consider whether any immediate action should be taken upon the stimulus. In the case of price, the more one believes a product's price will change, the more consideration (i.e., weight) it should garner, since a different future price signals that the consequences of the current price (i.e., a certain payment amount or level of quality) may not be available at a future time. For example, one may choose to buy now if they believe a price will increase or delay purchase if they believe a price will decrease. Furthermore, even beyond purchase deferral contexts, the mere belief that price will change should lead one to consider the current consequences of the price, leading to an increased weight attached to it. In sum, the prediction here is that individuals in the experiencing mode will believe that a changeable stimulus is more likely to change, and therefore assign greater weight to it in subsequent perceptions and judgments.

Since the spirit of the preceding proposition is that mechanisms designed for changeable physical objects are co-opted for a changeable attribute (price), it is important to delineate the features of the judgmental contexts that allow for such an overlap to

occur. Specifically, the focus here is on contexts in which consumers assume that stated price values accurately reflect payment prices, no pre- or post-judgment bargaining is available (cf., Brucks and Schurr 1990), and the consequences of future attribute values do not retroactively affect previous purchases (e.g., people do not believe that they will be refunded the difference if the price of a previously purchased product goes down in future periods). This work also focuses on contexts in which consumers do not have exhaustive information regarding price schedules, and some degree of uncertainty exists regarding what a given product's price will be at a future point in time. To summarize these features, consumers have neither control nor exhaustive knowledge of either current or future prices and the consequences of future prices are not accessible. Although the framework as applied to prices is limited to such contexts, such contextual features likely represent the vast majority of situations in which consumers make judgments involving price information.

With regards to unchangeable stimuli, the prediction here is that there will be no effect of attention mode. Recall that unchangeable stimuli are by definition incapable of change. Therefore, all individuals regardless of attention mode should recognize that such stimuli are incapable of change and consider them with similar priority. It is important to note here that although unchangeable stimuli in the physical objects domain are generally the least important to consider, unchangeable attributes may be both more and less important to consider depending their intrinsic diagnosticity for a judgment. Nevertheless, the framework predicts no effect for these stimuli in either domain.

With regards dynamically changing stimuli, the prediction here is that there will

again be no effect of attention mode. Although on the surface this may appear to contradict the previous assertion that increases in experiencing are accompanied by increases in the interest of noticing change, recall the proposition that the effect of attention mode effect for changeable stimuli is driven by differences in beliefs of regarding the likelihood of stimulus change, which necessarily entails some level of uncertainty about the change occurring. For dynamically changing objects, however, there should be no uncertainty as to whether change will occur, since change is by definition already occurring. Therefore, all individuals regardless of attention mode should consider dynamically changing physical objects with similarly high priority. In fact, this line of logic may underlie findings in the visual change detection literature, which demonstrate that dynamically changing objects draw people's consideration automatically (Rensink 2002; Klein, Kingstone, and Pontefract 1992). Empirically, the test of this hypothesis is limited to the domain of physical objects, since individuals can only engage in judgments involving attributes with static values. In sum, the prediction is that attention mode will have no effect on the consideration of either unchangeable or dynamically changing stimuli.

To summarize the framework, attention modes should exert differential effects on the prioritization of stimuli, depending on where such stimuli lie on the spectrum of change. There should be no effect of attention mode for either unchangeable stimuli or dynamically changing stimuli. However, attention mode should modulate the prioritization of changeable stimuli, with experiencing leading to greater prioritization of these stimuli as opposed to mind-wandering. This effect should hold for both physical

objects as well as concepts (e.g., prices). Furthermore, differential beliefs that the changeable stimulus will in fact change should underlie the effect. In the subsequent chapter, this framework is tested in a series of empirical studies.

CHAPTER II

In this chapter, the proposed framework is tested in a six studies. Collectively, the first three studies test the basic proposition that attention mode alters the prioritization of changeable objects as well as prices, which are unique examples of changeable stimuli in decision making. Following this, the fourth study then delves into the underlying mechanism by testing whether differences in beliefs about whether a changeable stimulus (i.e., a price) will in fact change drives the observed effects. In the final two studies, the effect is then extended to two different contexts (quality judgments and preference formation), and alternative explanations regarding price diagnosticity and task involvement are directly ruled out.

STUDY 1

The objective of this study is to provide a test of the framework in a basic context (object encoding) using stimuli that span the entire spectrum of change. In this study, participants were exposed to a collage comprised of unchangeable, changeable, and dynamically changing objects and tested on their recognition memory for the objects. The prediction is that people in an experiencing (versus mind-wandering) mode will attach more priority on encoding and therefore be more likely to correctly report having previously seen changeable objects. Moreover, there should be no effect of attention mode for either unchangeable objects or dynamically changing objects.

The inclusion of physical objects across the spectrum of change also implies a specific pattern of means predicted by the framework. That is, if people in an experiencing mode believe the changeable stimuli are more likely to in fact change, then they should encode changeable stimuli at a high level, similar to that of dynamically changing stimuli and higher than that of unchangeable stimuli. As well, if people in a mind-wandering mode believe the changeable stimuli are less likely to change, then they should encode changeable stimuli at a low level, similar to that of unchangeable stimuli and below that of dynamically changing stimuli. Put simply, the prediction is that people in an experiencing mode will treat changeable stimuli like dynamically changing stimuli, whereas people in a mind-wandering mode will treat changeable stimuli like unchangeable stimuli.

Method

Development of Stimuli. The first task was to identify objects that were suitable for the collage. For the dynamically changing stimuli, four animated pictures were chosen (walking man, moving car, flashing stoplight, and turning Ferris wheel). Several pretests of static pictures were then conducted to select four unchangeable objects and four changeable objects. One hundred twelve people were asked how capable each of several objects (depicted in pictures) were of change (1 = not at all capable of change; 7 = very capable of change). A bunch of bananas (M = 5.08), a cellular phone (M =4.86), a dog (M =5.91), and an alarm clock (M = 4.88) were selected as the changeable objects (all

means significantly above midpoint of scale, all *t*s(111) > 4.24, all *p*s < .001). A picture frame (2.11), a stack of saltine crackers (3.22), a stuffed teddy bear (1.97), and a notebook (2.54) were selected as the unchangeable objects (all means significantly below midpoint of scale, all *t*s(111) > 4.41, all *p*s < .001). Twenty eight participants in a second pretest then rated how familiar they were with each object (1 = not at all familiar, 7 = very familiar). No differences between the unchangeable and changeable objects emerged ($M_{\text{Unchangeable}}$ = 6.44, $M_{\text{Changeable}}$ = 6.50, $t(27) = .76$, $p > .45$).

Measure of Attention Mode. To avoid disruptions associated with thought reports administered in the moment, attention mode was measured as a dispositional variable (Mason et al. 2007). Measurement has been the predominant approach to studying mind-wandering (see Smallwood and Schooler 2006 for a review); the incumbent dispositional scale being the daydreaming frequency subscale (DFS) of the Imaginal Processes Inventory (Singer and Atrobus 1972). However, because the DFS was not originally developed with the current conceptualization of attention modes in mind, it is limited in that it captures only daydreaming (a generally positive subset of mind-wandering) and also does not explicitly assess higher degrees of experiencing. To address these concerns, the incumbent measure was refined and expanded upon by adding items adapted from measures of related constructs (e.g., the acting-with-awareness subscale of Baer et al.'s 2006 questionnaire) to more completely capture the full spectrum of attention.

The adapted measure, termed henceforth as the EvMW (items listed in Appendix A) was subsequently tested for its reliability and validity. In an administration of the scale to 223 participants recruited on Amazon mTurk, the EvMW showed high internal

consistency (α = .86), and all the items loaded onto a single factor. A subsequent pretest (n = 54, conducted in two sessions three weeks apart), assessed whether the EvMW was better able to capture experiencing and mind-wandering in the moment than the incumbent DFS. In the first session, participants completed both the EvMW and the DFS. In the second session, participants were asked to replicate a circle repeatedly for approximately 3-4 minutes to ostensibly measure their drawing accuracy. After the drawing task, state attention mode was measured using two 11-point items (how much did your mind wander away from the drawing task? (reverse coded); rate the extent to which your mind was focused entirely on the task), which were anchored by "not at all/ very much", r = -.80, p <.001. Finally, to assess the EvMW's test-retest reliability, participants completed the EvMW scale in time 2 as well. Correlation analyses between EvMW at time 1 (α = .83) and time 2 (α = .87) revealed high test-retest reliability (r = .84, p < .001). Importantly, the reported attention mode during the circle drawing task was significantly correlated with the EvMW assessed three weeks earlier (r = .35, p < .01) but not with the DFS measure assessed at the same time (r = -.18, p > .19). Indeed, when the state attention mode at time 2 was simultaneously regressed on both the EvMW and DFS, the coefficient for EvMW was significant (b = .37, t(51) = 2.33, p < .03), while that for the DFS was not (b = .05, t(51) =.28, p > .77).

A final pretest was conducted to confirm that the measure also captured attention to non-task related aspects of the physical environment. Seventy-four participants completed the EvMW scale (α = .92) followed by a five-minute filler survey. Afterwards, participants reported how much they attended to the border surrounding the survey

measures (1 = not at all, 7 = very much). As predicted, EvMW was significantly correlated with attention to the border ($r = .23$, $p < .05$), and notably, this occurred even in the presence of a salient focal task. Attention mode was assessed in the main study using this EvMW measure.

Main Study. Participants read that they would be doing a pictures task in which they would view a collage of pictures and answer questions about it. Each participant had seven seconds to view the 12-object collage. The collage (shown in Appendix B) was comprised of the four unchangeable objects, four changeable objects, and four dynamically changing objects that were chosen through the aforementioned pretests.

Participants were then presented with a series of 24 pictures and asked to indicate whether each picture was in the collage (yes/no). The 12 pictures in the collage were intermixed with 12 foils (four in each category of unchangeable objects, changeable objects, and dynamically changing objects). The dependent measure was the number of times the participant correctly answered "yes" to a picture that was in the collage. The logic here is that the more priority one places on encoding an object, the more likely one will be to correctly indicate that the picture was in the collage. At the end of the study, participants reported their age and gender, both of which are used as covariates in analyses for this and all other studies in this paper.

Results

To test the hypotheses, a mixed effects model was estimated with the number of correctly identified collage objects as the dependent measure, EvMW ($\alpha = .89$) as a continuous independent measure, and object type as a repeated measure. In addition to age and gender, the number of incorrect foil responses in each category was also included as a covariate in the model. Since the mixed effects model allows for the incorrect foil responses to be inserted as a category-specific covariate, this controls for the possibility that the results were driven by differences in false responses across categories. There was a significant effect of object type ($F(2, 203) = 3.70$, $p < .03$), but not EvMW ($F(1, 190) = .22$, $p > .63$). More importantly, there was a significant two-way interaction ($F(2, 203) = 3.23$, $p < .05$), as depicted in figure 1.

[insert figure 1 about here]

The interaction was decomposed by estimating the simple slopes of EvMW for each object type and conducting a spotlight analysis by comparing the simple effects of object type at +/- 1 standard deviation of the EvMW mean. As predicted, experiencers correctly identified more changeable objects from the collage than did mind-wanderers ($\beta = .12$, $t(206) = 2.08$, $p < .04$). This effect was not present for either unchangeable objects as ($\beta = -.05$, $t(206) = -.86$, $p > .39$), or dynamically changing objects ($\beta = -.02$, $t(206) = -.41$, $p > .68$). Further evidence for the framework is given by the spotlight analyses. Experiencers recalled more changeable objects than unchangeable objects ($M_{Changeable} = 3.47$ vs. $M_{Unchangeable} = 3.21$, $t(209) = 2.65$, $p < .01$), but there was no

difference in their recall between changeable objects and dynamically changing objects ($M_{Changeable}$ = 3.47 vs. $M_{Dynamic}$ = 3.55, $t(206) > .39$). Conversely, mind-wanderers showed no differences in their recall between changeable objects and unchangeable objects ($M_{Changeable}$ = 3.24 vs. $M_{Unchangeable}$ = 3.30, $t(205) < 1$, *ns*), but they did recall fewer changeable objects than dynamically changing objects ($M_{Changeable}$ = 3.24 vs. $M_{Dynamic}$ = 3.59, $t(207) = 3.56$, $p < .001$).

Discussion

This study confirms the predictions of the proposed framework in the domain of physical objects. Compared to mind-wanderers, experiencers correctly identified more changeable objects, as experiencers presumably placed a higher priority on encoding changeable objects. Importantly, the emergence of no difference in the recall of dynamically changing objects (which had the highest overall recall) between experiencers and mind-wanderers suggests that the effect is not driven by increased prioritization of the most important/diagnostic or salient stimuli encountered. Furthermore, there is also no effect for unchangeable objects, stimuli for which one would predict differences if the results were driven by mere differences in task involvement. Instead an effect emerged only for stimuli that are changeable, as the framework predicts.

The pattern of means is also consistent with the proposed mechanism. Specifically, experiencers treated changeable objects as if they were relatively more likely to change by encoding changeable objects at a high level and similar to that of

dynamically changing objects, which are in fact changing in the moment. Conversely, mind-wanderers treated changeable objects as if they were relatively less likely to change by encoding changeable objects at a low level and similar to that of unchangeable objects, which by definition are highly unlikely to change. The next study builds on these findings for changeable objects by extending them to the attribute weighting context that includes a changeable attribute – price.

STUDY 2

The objective of this study is to extend the effect to an attribute-weighting context involving price – a changeable attribute. The prediction is that people in an experiencing (versus mind-wandering) mode will attach more weight to prices in their purchase judgments.

Method

Ninety-six people participated in the study for course credit or as part of a larger research session for $6. This study was a 6 (attribute) x (attention mode) mixed design, with attribute as a within-subjects factor and attention mode as a measured trait variable. Participants read that they would be viewing advertisements and were asked to form an impression of the depicted products. Participants then viewed three ads for six seconds each. After viewing each ad, participants were asked to imagine that they were in the

market for a product in the corresponding category, and to rate whether they would consider buying the featured product (1 = definitely not consider buying; 5 = definitely consider buying). The second ad was for an ergonomic office chair and was the target ad. It included a picture of the chair and listed six attributes in the following order: (1) brand (Office Depot) (2) price ($249), (3) extended lumbar support, (4) mesh back and seat, (5) adjustable arm-rests, back, and seat, and (6) stainless steel wheels (copy of ad provided in Appendix C). In a pretest, 54 students who were shown the ad rated the price as highly changeable (1 = not at all likely to change; 7 = very likely to change; $M = 5.72$, $t(53) = 9.36$, $p < .001$); ratings for all other attributes were significantly lower (all p's < .05), and at least directionally below the midpoint of the scale (wheel materials, $M = 3.7$, $t(53) = -1.66$, $p < .11$; all others, ps < .005). After viewing the ads, participants completed the attribute weighting measures for only the target ad. The first measure asked participants to allocate 100 points across the six attributes, based on the weight they gave to each in their purchase consideration. The second asked them to rate how important each attribute was in their judgment (1 = not at all important; 7 = very important). Finally, participants completed the EvMW measure and reported their age and gender.

Results

A preliminary regression model showed that there was no effect of EvMW ($\alpha = .83$) on whether participants would consider buying the office chair ($b = -.07$, $t(92) = -.68$, $p > .49$). The weight and importance measures were highly correlated for each

attribute (all *r*s > .43, all *p*s < .001), and were therefore standardized and averaged within each attribute to form an attribute weight index for each attribute. A mixed effects model was estimated with attribute weight as the dependent measure, EvMW as a continuous independent measure, and attribute as a repeated measure. There was a significant main effect of attribute ($F(5, 173) = 4.68$, $p < .001$) but not of EvMW ($F(1, 572) = 2.67$, $p > .10$). The omnibus attribute-by-EvMW interaction was significant ($F(5, 173) = 4.91$, $p < .001$). Confirming the core prediction, the slope of EvMW when price was coded as the reference category was positive and significant ($\beta = .28$, $t(95) = 3.01$, $p < .01$), indicating that experiencers assigned more weight to the price attribute than did mind-wanderers. To counterbalance this effect, experiencers assigned less weight to the lumbar support ($\beta = -.26$, $t(95) = -2.67$, $p < .01$), seat and back materials ($\beta = -.19$, $t(95) = -2.01$, $p < .05$), and adjustability ($\beta = -.23$, $t(95) = -2.54$, $p < .02$) than did mind-wanderers. There were no significant effects of EvMW for either the wheel materials or brand name (both *t*s(95) < 1, *ns*). A graph of these effects computed at +/- 1 standard deviation of the mean of EvMW is depicted in figure 2.

[insert figure 2 about here]

Discussion

These findings extend the applicability of the framework from physical objects to attributes. This study found that experiencers attached more weight to the price attribute

in their product judgment than did mind-wanderers. It is posited that this effect occurs because prices are a changeable attribute, and experiencers, as compared to mind-wanderers, believed that the price was more likely to change. It is important to note that although this pattern of results is consistent with the proposed framework based on stimulus changeability, it is inconsistent with and in fact opposite of what might be expected on the basis of task involvement based explanations (i.e., if mind-wanderers were posited to have lower task involvement than experiencers). Specifically, a heuristic input like price would be expected to garner more weight in lower (corresponding to mind-wandering) versus higher task involvement (corresponding to experiencing) conditions, given the higher tendency of consumers to use salient cues such as price (Petty and Cacioppo 1986; Rao and Monore 1988) as well as decision strategies which overweight few important attributes (Hoyer 1984; Gensch and Javalgi 1987; Kardes et al., 2004) under these conditions.

Also of note is that the proposed framework is agnostic with respect to the direction of presumed price change. In this context for instance, the increased weighting of price based on the belief that the price will likely decrease in the future would dampen present purchase considerations, whereas expectations of future price increases would increase current purchase considerations. Thus, the critical factor is not the presumed direction, but rather the mere degree to which one believes the price will change. In the following study, the changeability of price is manipulated to directly test whether changeability is the underlying factor determining the specificity of the effect.

STUDY 3

This study extends the previous studies in two important ways. First, it manipulates attention mode to rule out any explanations local to the EvMW measure. Second, this study directly tests whether changeability is the underlying stimulus characteristic dictating the boundary of the effect. Specifically, if the effect of attention mode on price weights occurs because an experiencing (versus mind-wandering) mode causes one to believe that the value of a changeable attribute is more likely to in fact change, then the effect should be attenuated when prices are framed as incapable of change (i.e., when prices are said to be highly stable and fixed over time), since this should wipe out any opportunity for differences in beliefs regarding the likelihood of change (i.e., everybody should equally believe that price will not change). Furthermore, the core effect should replicate in a (baseline) condition where existing notions of price as capable of change are reinforced, since this information allows for beliefs to vary regarding whether any given price will in fact change.

Method

Attention Mode Manipulation. To manipulate attention mode, a priming methodology is used where participants are asked to read different stories ostensibly as part of a reading task. Four stories were developed using two different scenarios – a walk in the park and a meal in a restaurant (stories provided in Appendix D). One story in each

scenario was designed to elicit a mind-wandering attention mode, and the other was designed to elicit an experiencing attention mode. The stories in each scenario are the same length and describe the same basic sequence of events. The only difference is whether the main character is focused on their experience of the immediate environment or on stimuli-independent thoughts, feelings, and daydreams. After reading the story, participants are asked to put themselves in the frame of mind depicted in the scenario by imagining themselves back in the scenario they read and writing down a few sentences about what they recalled and visualized.

A series of pretests were conducted to test the validity of the manipulations. In the first pretest (n = 115), each participant completed one version of the prime followed by the same circle drawing task and state attention measures reported in the first EvMW scale pretest. As predicted, participants who read the experiencing stories reported more relative experiencing during the drawing task than those who read the mind-wandering stories for both the meal scenario ($M_{Experiencing} = 7.54$, $M_{Mind\text{-}Wandering} = 6.26$, $t(49) = 2.82$, $p < .03$), and the walk scenario ($M_{Experiencing} = 6.58$, $M_{Mind\text{-}Wandering} = 5.15$, $t(62) = 2.18$, $p < .04$). A second pretest then confirmed that the primes also elicited differential attention to task-unrelated stimuli using the same filler survey border task as in the second EvMW scale pretest (walk scenario: $M_{Experiencing} = 4.18$, $M_{Mind\text{-}Wandering} = 3.10$, $t(55) = 2.07$, $p < .05$; meal scenario: $M_{Experiencing} = 4.25$, $M_{Mind\text{-}Wandering} = 3.10$, $t(55) = 2.26$, $p < .03$). A third pretest (n = 180) confirmed that the primes did not elicit any differences in mood by presenting each participant read one of the four manipulation stories followed by the Brief Mood Introspection Scale (Mayer and Gaschke 1988), where higher scores indicate

a more pleasant mood. As expected, there were no differences in mood between those completing the experiencing and mind-wandering versions of either the walk scenario ($M_{Experiencing}$ = 2.95, $M_{Mind\text{-}Wandering}$ = 2.98, $t(86) = .34$, $p > .73$) or meal scenario ($M_{Experiencing}$ = 2.96, $M_{Mind\text{-}Wandering}$ = 2.87, $t(90) = .82$, $p > .41$). A final pretest (n = 103; all scales 1 = not at all; 5 = very much) confirmed that the stories did not differ in the degree to which the protagonist noticed change ($M_{Walk\text{-}Experiencing}$ = 3.56, $M_{Walk\text{-}Mind\text{-}Wandering}$ = 3.36, $t(48) = .87$, $p > .39$; $M_{Meal\text{-}Experiencing}$ = 3.04, $M_{Meal\text{-}Mind\text{-}Wandering}$ = 3.00, $t(51) = .13$, $p > .89$), references to the passage of time ($M_{Walk\text{-}Experiencing}$ = 3.76, $M_{Walk\text{-}Mind\text{-}Wandering}$ = 3.64, $t(48) = .48$, $p > .63$; $M_{Meal\text{-}Experiencing}$ = 3.52, $M_{Meal\text{-}Mind\text{-}Wandering}$ = 3.54, $t(51) = .05$, $p > .96$), or references to the self ($M_{Walk\text{-}Experiencing}$ = 3.92, $M_{Walk\text{-}Mind\text{-}Wandering}$ = 4.20, $t(48) = 1.04$, $p > .30$; $M_{Meal\text{-}Experiencing}$ = 4.24, $M_{Meal\text{-}Mind\text{-}Wandering}$ = 4.07, $t(51) = .60$, $p > .54$). In all studies using this manipulation, there were no effects of scenario type (i.e., walk versus meal) so the analyses always collapse the scenario type across the attention mode conditions.

Main study. This study was a 2 (attention mode: experiencing vs. mind-wandering) x 2 (price changeability: baseline vs. unchangeable) between-subjects design. Participants first provided demographic information (e.g., age and gender) and read that they would be completing several unrelated tasks. To manipulate price changeability, participants read an article excerpt ostensibly from Consumer Reports. In the baseline condition, participants read that products' prices may go up and down several times while on the market, thus reaffirming the existing notion that prices are capable of change. In the unchangeable condition, participants read that prices have been stabilizing recently

and that the prices of products now typically stay the same for as long as they are on the market, thus framing prices as relatively unchangeable. A copy of the two conditions is provided in Appendix E. Participants were then randomly assigned to one of the attention mode conditions, where they read the associated story and completed the writing task. Following the attention manipulation, participants viewed an advertisement for a desk lamp with six attributes in the following order: (1) brand (StudioDesigns), (2) soft white bulb, (3) spring-balanced arm, (4) anodized aluminum construction, (5) 7-inch circular base, and (6) price ($59) (copy of ad provided in Appendix F). Finally, using the same measures as in study 2, participants indicated whether they would consider buying the lamp, and the weight and importance they gave to the price attribute in their judgment. In this study, the weights and importance of only price were measured to further ensure that the effect was indeed due to an aspect of price and not due to the counterbalancing of weights given to non-price attributes.

Results

One hundred seventy-three people completed the study: 47 were university students and 126 were participants recruited via Amazon mTurk who completed the study online. Preliminary analyses revealed no significant main or interaction effects of collection method, so the samples were collapsed. As in studies 2 and 3, an ANOVA on the purchase intention measure with attention mode and price changeability as between-subjects factors did not reveal any significant main or interaction effects (all *p*s > .13).

The price weight and importance measures were highly correlated (r = .55, p < .001), so the two measures were standardized and averaged to form a price weight index. The core predictions were tested using an ANOVA on the price weight index with attention mode and price changeability as between-subjects factors. The only significant effects were the main effect of price changeability (F(1, 167) = 4.54, p < .04), and more importantly, the predicted two-way interaction (F(1, 167) = 6.75, p < .02), depicted in figure 3.

[insert figure 3 about here]

Follow-up analyses confirmed that the pattern of the interaction was in accordance with predictions. Specifically, people in an experiencing (mind-wandering) mode attached more (less) weight to price when product prices were framed as changeable ($M_{Experiencing}$ = .36, $M_{Mind\text{-}Wandering}$ = -.08, t(167) = 2.24, p < .03), but this effect was attenuated when prices were framed as unchangeable ($M_{Experiencing}$ = -.27, $M_{Mind\text{-}Wandering}$ = -.01, t(167) = 1.41, p > .15). Looking at this interaction another way, experiencers significantly reduced the weight given to price when informed that prices were unlikely to change ($M_{Changeable}$ = .36, $M_{Unchangeable}$ = -.27, t(167) = 3.25, p < .01); however, there was no change in the weighting of prices for the mind-wanderers across the two conditions ($M_{Changeable}$ = -.08, $M_{Unchangeable}$ = -.01, t(167) < 1, *ns*).

Discussion

This study furthers the proposed framework in several ways. First, the manipulation of attention mode contributes to the empirical understanding and robustness of the effect. Second, by using entirely different non-price attributes than in study 2, the findings of this study suggest that it is highly unlikely that the effects observed for price were due to experiencers (vs. mind-wanderers) systematically assigning less weight to some other category of non-price attribute(s), which subsequently had to be counterbalanced by assigning more weight to the price attribute. In fact, the only apparent consistency between the two studies is that people in an experiencing (vs. mind-wandering) mode attached more weight to price.

Third, this study cleanly demonstrates that the effect is indeed due to the changeable aspect of the price attribute. In a conceptual replication of study 2, people in an experiencing (mind-wandering) mode attached more (less) weight to prices in a baseline condition where preexisting notions of prices as capable of change were affirmed. However, this effect was attenuated when prices were instead framed as unchangeable. This happens because when the people believe that prices are capable of change (either naturally or if the belief is reinforced, as in this study), beliefs in the likelihood of the product's price changing vary by attention mode, with people in an experiencing (versus mind-wandering) mode believing that the price is more likely to in fact change. However, when this belief of price as capable of change is dispelled, there is no opportunity for differences across attention mode to emerge, since all people equally believe that the price will not change. As the previous studies have robustly demonstrated the domain of the effect (for objects and attributes capable of change), the following

study moves forward by directly testing whether the proposed mechanism – beliefs of future price change – indeed accounts for the effect.

STUDY 4

This study has two objectives. First, this study directly tests the proposed process for the effect of attention mode on price weighting by measuring beliefs of future price change and testing for its mediating role. Second, this study also measures and tests alternative mechanisms.

Method

One hundred and four people participated in the study in exchange for course credit or as part of a larger session for $6. This study was a 2 (attention mode: experiencing vs. mind-wandering) x 6 (attribute) mixed-design, with attention mode as a between-subjects factor and attribute as a within-subjects factor. Participants entered the lab and completed the same attention mode manipulation as was used in Study 3. Afterwards, participants completed the same purchase decision task and dependent measures as in studies 2 and 3. The only difference was that the target advertisement was for an all-weather running shoe, which presented six attributes in the following order: (1) brand (Montrail), (2) weight (10oz), (3) non-slip treads, (4) soft shell, (5) reinforced heel,

and (6) price ($109) (copy of ad provided in Appendix G). As in study 2, weight and importance measures were taken for all attributes.

After completing the dependent measures, participants responded to a series of measures to test the underlying process. First, to measure beliefs of price change (the proposed mechanism), participants judged how likely it was that the company would change the price in the future without changing the model version (1 = not at all likely, 7 = very likely). Next, to test whether perceptions of other forms of price variation might account for the effect, participants rated the extent to which they perceived prices had previously changed for running shoes in general (1 = has not changed at all; 7 = has changed very much) and varied across different models currently on the market (1 = no variability at all; 7 = a lot of variability). To test whether differences in emotional reactions to price may account for the effect, participants then rated the extent to which they had an emotional response to the price (1 = no emotional response at all; 7 = a strong emotional response). At the end of the study, participants reported their age and gender.

Results

As in studies 2 and 3, preliminary analyses showed that there was no effect of attention mode on whether participants would consider buying the running shoes ($M_{Experiencing} = 2.69$, $M_{Mind\text{-}Wandering} = 2.58$, $F(1, 100) = .40$, $p > .52$). The weight and importance measures were highly correlated for each attribute (all rs > .48, all ps < .001),

so they were standardized and averaged within each attribute to form a weight index for each attribute. Attribute weights were analyzed using a 2 (attention mode) x 6 (attribute) repeated measures ANOVA with attention mode as a between-subject factor and attribute as a repeated measure. There was no main effect of attribute ($F(5, 500) = .55$, $p > .73$) or attention mode ($F(1, 100) = .04$, $p > .83$), but the omnibus attention mode by attribute interaction was significant ($F(5, 500) = 2.26$, $p < .05$), as depicted in figure 4.

[insert figure 4 about here]

As predicted, people in an experiencing mode gave more weight to price than those in a mind-wandering mode ($M_{Experiencing} = .22$, $M_{Mind\text{-}Wandering} = -.20$, $t(100) = 2.49$, $p < .02$). To counterbalance this effect, the non-slip treads attribute was given more weight by those in a mind-wandering mode, as compared to those in an experiencing mode ($M_{Experiencing} = -.19$, $M_{Mind\text{-}Wandering} = .17$, $t(100) = 2.11$, $p < .04$). There were no significant effects of attention mode for any other attribute (all ts < 1, *ns*).

Several mediation analyses were then conducted to explore the underlying process. As expected, price was rated significantly above the midpoint (4) of the beliefs of price change measure ($M = 5.6$, $t(103) = 11.48$, $p < .001$), thus confirming that price is generally regarded as likely to change. To test the mediating role of beliefs of price change in the effect of attention mode on price weight, a mediation analysis was conducted using Andrew Hayes's PROCESS macro (detailed in Preacher and Hayes, 2004). As predicted, beliefs of price change differed by attention mode ($M_{Experiencing} =$

5.91, $M_{Mind\text{-}Wandering}$ = 5.32, $F(1, 100) = 4.55$, $p < .04$), such that experiencers perceived the shoe price as more likely to change than did mind-wanderers. Finally, a bootstrapping analysis with 10000 samples confirmed that the effect of attention mode on price weighting was mediated by change likelihood ratings [95% CI: .012, .206], as depicted in figure 5. Similar mediation analyses performed with measures of alternative mechanisms yielded no significant indirect effects.

[insert figure 5 about here]

Discussion

This study provides direct evidence that compared to a mind-wandering mode, an experiencing mode leads to beliefs that a price (an attribute capable of change) is more likely to in fact change, and therefore results in greater price weights. Alternative processes, including emotional responses to price, perceived price variability, and memories of previous price changes for the category were ruled out as possible explanations. Now that clear and detailed support for the underlying mechanism has been demonstrated, the following study moves forward by explicitly ruling out other explanations for the effect.

STUDY 5

This study has three objectives. First, it extends the previous effects in purchase consideration to a quality judgment context. The use of this context is important insofar as it helps tease apart the findings for attention mode from those one might expect for construal level. Specifically, Yan and Sengupta (2011) found that a concrete (versus abstract) construal leads to increased weighting of price in purchase decisions, since price is often related to feasibility rather than desirability concerns. However, they found the opposite to be true in a quality assessment context, where price tends to be regarded as an abstract or summary attribute for quality. Given that construal level has divergent effects on price weighting depending on context, a replication of the previous effects in this setting would provide strong evidence against a construal level account and in favor of attention mode.

Second, this study tests the effect of price weighting on a downstream judgment. This is accomplished by manipulating price and measuring perceived quality. In concert with the findings of previous studies that experiencers more heavily weight prices in their judgments than mind-wanderers, the prediction here is that for experiencers, a product priced relatively higher should be rated as higher quality than the same product priced relatively lower, whereas for mind-wanderers, such differences should not emerge as strongly or at all.

The third objective of this study is to directly rule out the alternative explanation that the observed effects emerge not because price is changeable, but because price in many cases also tends to be more intrinsically important or diagnostic than other attributes. This alternative explanation is tested by pitting price against a less changeable

but even more diagnostic attribute for a product quality judgment – brand reputation. If attention mode alters weighting of any highly diagnostic attribute for a judgment, then the expected pattern of effects for price should replicate or emerge even stronger for the brand attribute; however, if the account proposed in this research holds, then the effect should emerge only for the price attribute.

Method

Development of Materials. Two pretests were used to develop the materials for the main study. The first pretest was conducted to test the relative diagnosticity of brand name versus price for water quality judgments. Sixty people responded to the following question: "In your opinion, what is a better predictor of the quality of bottled water, its price or brand?" (1 = price much better, 3 = price and brand equally good, 5 = brand much better). On average, people rated brand as the more diagnostic attribute, as evidenced by ratings significantly above the midpoint ($M = 3.53$, $t(59) = 4.13$, $p < .001$). The second pretest was conducted to select the brands and ensure that the magnitude of difference between the high and low reputation brands and prices were relatively equivalent to what would be encountered in the marketplace. Thirty-four participants were asked for their evaluations of several water brands (1 = very poor; 5 = very good), and how much they remembered paying for a 20oz bottle of each brand. Based on the results, the Fiji and Market Pantry brands were selected as the high- and low-reputation brands respectively ($M_{Fiji} = 4.09$ vs. $M_{MarketPantry} = 3.15$, $t(33) = 7.59$, $p < .001$) and their

corresponding recalled prices as the values for the two price conditions (M_{Fiji} = \$2.35 vs. $M_{MarketPantry}$ = \$1.10, $t(33) = 4.22$, $p < .001$).

Main study. This study was a 2 (attribute: brand vs. price) x 2 (attribute quality signal: high vs. low) x (attention mode) design with attribute and quality signal as between-subjects factors and attention mode as a continuous trait variable. Participants viewed a picture of a 20oz bottle of water, an accompanying description, and one of the four versions of the final attribute (i.e., high price, low price, high-reputation brand, or low-reputation brand; stimuli depicted in Appendix H). Participants rated how they thought the water would taste (1 = very bad; 7 = very good) and what they thought the water's overall quality would be (1 = very low quality; 7 = very high quality). As manipulation checks, participants in the brand attribute conditions rated how good the brand was compared to other brands on the market (1 = very bad; 7 = very good), and those in the price attribute conditions rated how expensive the water was compared to other brands on the market (1 = very cheap; 7 = very expensive). Finally, participants responded to the EvMW measure and provided their age and gender.

Results

One hundred eighty-eight undergraduates participated in the study for course credit. The manipulation checks confirmed that Fiji was perceived to be a significantly better brand than Market Pantry (M_{Fiji} = 5.54 vs. $M_{MarketPantry}$ = 4.24, $t(90) = 5.29$, $p <$ .001) and that \$2.35 was perceived as significantly more expensive than \$1.10 ($M_{HighPrice}$

= 5.55 vs. $M_{LowPrice}$ = 3.67, $t(94) = 9.49$, $p < .001$). The taste and quality ratings were averaged to form a water quality index ($\alpha = .77$). This index was regressed on attribute (dummy coded as 0 = brand, 1 = price), quality signal (dummy coded as 0 = low, 1 = high), EvMW ($\alpha = .86$), and their two- and three-way interactions. As shown in table 1, all terms in the model reached significance, except for the two-way interaction between attribute and EvMW and the gender and age covariates. Most importantly, the omnibus three-way interaction was significant ($\beta = .90$, $t(178) = 2.46$, $p < .02$)

.

[Insert table 1 about here]

The interaction was decomposed by examining the simple effects of quality signal for each attribute at +/- 1 SD of the mean of EvMW. The stated predictions were confirmed, as experiencers rated the quality of high-priced water higher than low-priced water ($M_{HighPrice}$ = 4.64 vs. $M_{LowPrice}$ = 3.49, $t(178) = 3.44$, $p < .001$), whereas mind-wanderers did not show this pattern ($M_{HighPrice}$ = 4.54 vs. $M_{LowPrice}$ = 4.23, $t(178) < 1$, *ns*). Notably, this effect was local to the price attribute, as high-reputation-branded water was rated higher than low-reputation-branded water by both experiencers (M_{Fiji} = 5.23 vs. $M_{MarketPantry}$ = 4.49, $t(178) = 2.36$, $p < .02$) and mind-wanderers (M_{Fiji} = 5.39 vs. $M_{MarketPantry}$ = 3.80, $t(178) = 4.56$, $p < .001$). A graph of these results is depicted in figure 6.

[insert figure 6 about here]

Discussion

This study provides additional evidence for the core proposition that an experiencing (as compared to mind-wandering) mode leads to an increased prioritization of changeable stimuli. Experiencers were more likely than mind-wanderers to use a changeable attribute – price – to judge the quality of a product. By replicating the basic effect in this context, this study provides evidence that the underlying mechanism is not local to a specific judgment context, but rather that the mechanism operates on a general feature of the price attribute – changeability. This supports the broad applicability of the framework across a range of judgment contexts involving price information.

These findings also rule out several other explanations. First, they are inconsistent with explanations based on either the sheer diagnosticity of price or construal level. Second, the results for the brand reputation conditions rule out the possibility that the effects are an artifact of experiencers paying more attention to the materials than mind-wanderers, as this explanation cannot account for why the effect for price did not replicate for brand. In the sixth and final study, the implications of this framework are stretched to the choice context, and further tests of alternative mechanisms are conducted.

STUDY 6

In this study, the implications of the framework are expanded to a preference formation context where one option is built to be dominant on benefits and the other is subsequently built to be dominant on price. Consistent with the proposed framework, people in an experiencing (vs. mind-wandering) mode should give price a greater weight and therefore be more likely to switch from a benefit-leading option to a price-leading option. Additionally, this study further rules out mere task involvement as an explanation for the results.

Method

Participants entered the lab and completed the EvMW measure. Participants then completed a preference formation task that was adapted from Carlson, Meloy, and Lieb (2009). Specifically, participants were told that the researchers were interested in restaurant choices, and that they would be encountering information about two new restaurants, which were referred to as "L" and "R". Six attributes in narrative form were then sequentially presented to participants. The first five attributes (service, dessert selection, entrée selection, beverage selection, and appetizer selection) were worded to favor Restaurant L, making Restaurant L the "benefits leader" option. The sixth attribute – price – stated that the average cost of a meal (including one appetizer, mid-range entrée, and dessert) at Restaurant L is about $50, while Restaurant R is approximately 20% cheaper ($40/meal). This information positions Restaurant R as the "price leader" option. Prior to the study, a pretest was conducted to ensure that each attribute strongly

favored the intended restaurant. The wording for each attribute is included in Appendix J. After each attribute, participants rated which restaurant the attribute information favored (1 = Restaurant L, 9 = Restaurant R), which restaurant they preferred up to that point (L or R), and how confident they were in their judgment up to that point (1 = not at all, 9 = very much).

Results

Two hundred and thirteen undergraduate students participated in the study for course credit. The seven EvMW items were averaged, with appropriate reverse-coding, to form the EvMW scale (α = .83). As anticipated, an overwhelming majority of participants preferred Restaurant L after the fifth attribute (i.e., immediately prior to encountering the price information). Since the objective of the study is to test the effect of an attention mode on switching to a price leader option, 12 participants who preferred Restaurant R prior to encountering the price information were screened out of the analysis (consistent with the analysis in Carlson et al., 2009), leaving 201 participants in the focal sample. Overall, 70 of the 201 participants (35%) in the focal sample had a final preference (i.e., preference after encountering the price information) for the price leader. To test the core prediction, a logistic regression was estimated with final preferences for the price leader (coded as 0 = final preference for benefits leader and 1 = final preference for price leader) as the dependent measure and EvMW as the independent measure. As predicted, experiencers were more likely to switch to the price leader than mind-

wanderers, as evidenced by a significant positive effect of EvMW on switching likelihood (β = .53, Wald = 7.10, $p < .01$).

One might suggest an alternative explanation for this result, namely that experiencers (versus mind-wanderers) were more likely to switch simply because they were more highly involved in the task and therefore noticed that the price favored a different option (i.e., Restaurant R) than did the previous attributes (Restaurant L). Follow-up analyses did not support this explanation, as a regression of the measure of price attribute favorability on EvMW yielded no significant effect (β = .09, $t(197) = .69$, $p > .49$). In fact, when including this measure as a covariate in original model, the effect of EvMW on switching likelihood remained virtually unchanged (β = .53, Wald = 6.06, $p < .02$). These results show that task involvement does not appear to account for the effect of attention modes on price weighting.

In fact, further analyses suggested that the effects of attention mode are distinct from those found in previous work on mere task involvement or depth of processing. Specifically, past work has shown that deeper processing of strong and consistent attitude information leads to greater confidence in attitudes (Haugtvedt and Petty 1992). However, correlations between EvMW and confidence in judgment after each benefit-related attribute were all non-significant (all rs < .06, all ps > .41). This strongly suggests that task involvement or depth of processing did not play a role in the results.

Discussion

This study demonstrates the effect in a preference formation context. Experiencers were more likely to switch their preference from an option preferred on the basis of non-price attributes to an option with a favorable price. This happens presumably because experiencers infer that prices are more changeable than do mind-wanderers, and therefore more heavily weighted the price information in their decision. Follow-up analyses showed that task involvement did not play a role in the results, as neither judgment confidence ratings taken after each benefit attribute nor perceived favorability of the price attribute correlated with attention mode. One might wonder why price did not function as a cue for quality in this context, therefore leading experiencers to more heavily favor the benefit leader (with a higher price) at the end. Note that significant information regarding quality was disclosed through the benefit attributes, which presumably negated the necessity to use price as a cue for quality. As evidence of this, ratings of price attribute favorability were significantly above the midpoint (4) and in the direction of Restaurant R ($M = 4.89$, one-sample $t(200) = 8.64$, $p < .001$). Overall, the results support the proposed framework, while directly ruling out task involvement as a viable explanation for the results. Managerially, the findings also suggest ways for marketers to capitalize on the effect, as the findings implicate experiencers as a viable segment for price-leading brands.

TABLES

Table 1: Regression Model Results for Study 5

Term	Coefficient	Standard Error	T	p
Constant	3.45	1.07	3.24	< .005
Age	-.03	.04	-.72	> .47
Gender	-.15	.16	-.92	> .36
Attribute	2.90	1.01	2.86	< .005
Quality Signal	3.07	1.10	2.78	< .01
EvMW	.36	.15	2.46	< .02
Attribute x Quality Signal	-4.21	1.52	-2.78	< .01
Attribute x EvMW	-.76	.24	-3.22	< .005
Quality Signal x EvMW	-.45	.25	-1.80	< .08
Quality Signal x Attribute x EvMW	.90	.35	2.56	< .02

FIGURES

Figure 1: Number of Objects Correctly Identified by Attention Mode and Object Category in Study 1

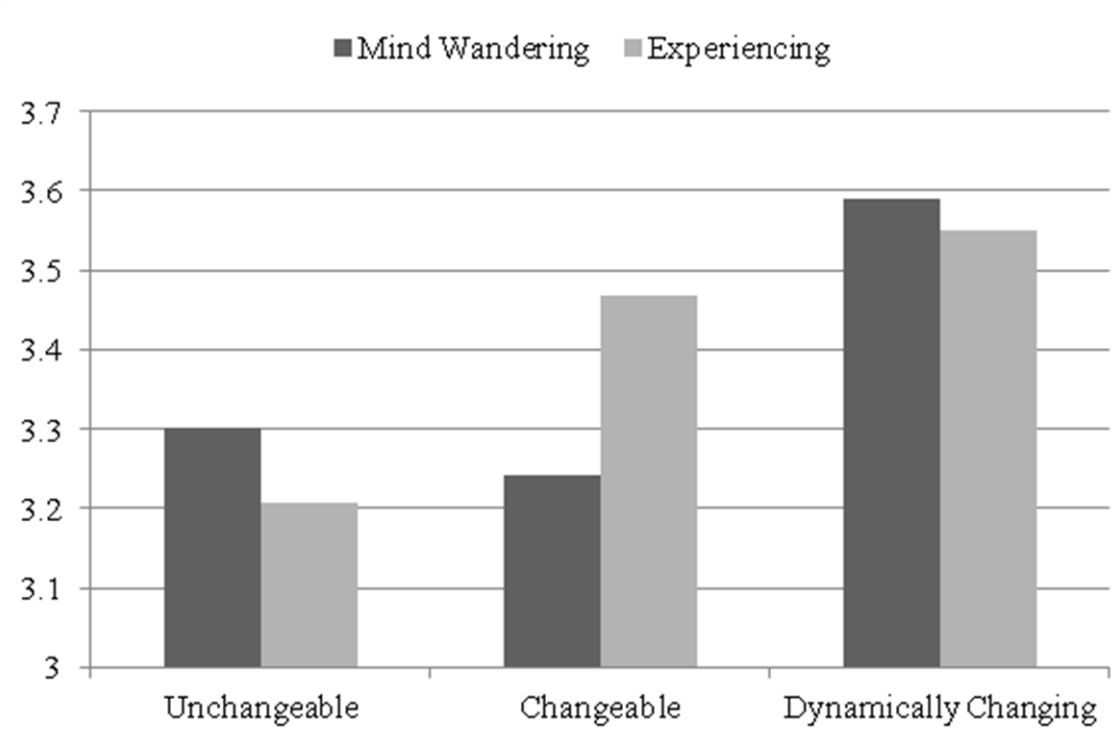


Figure 2: Standardized Attribute Weights by Attention Mode in Study 2

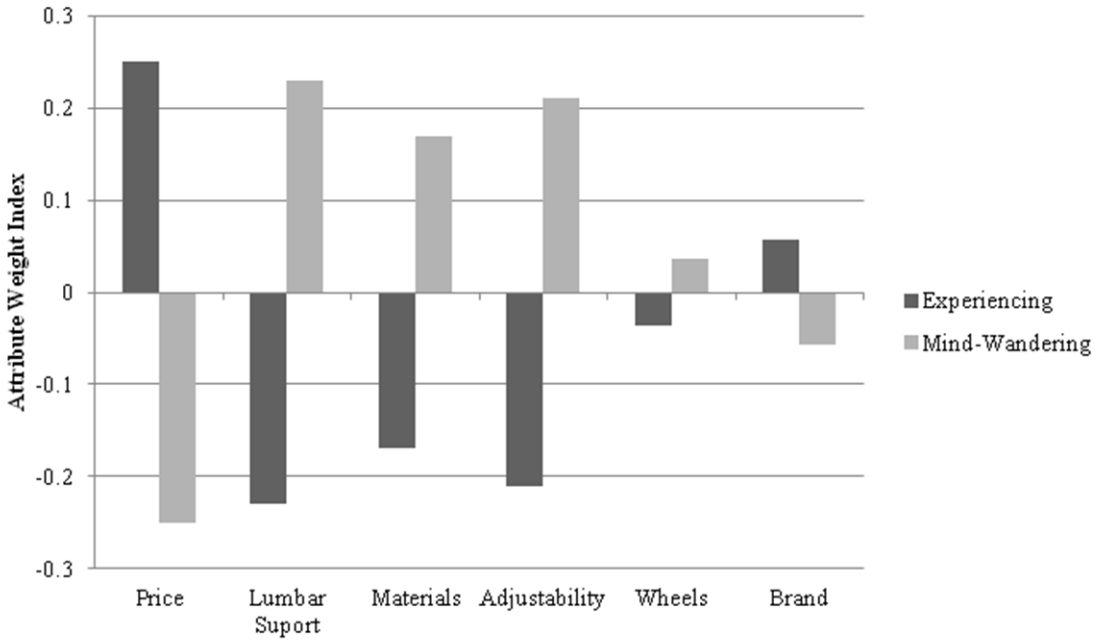


Figure 3: Standardized Price Weights by Attention Mode and Price Changeability in Study 3

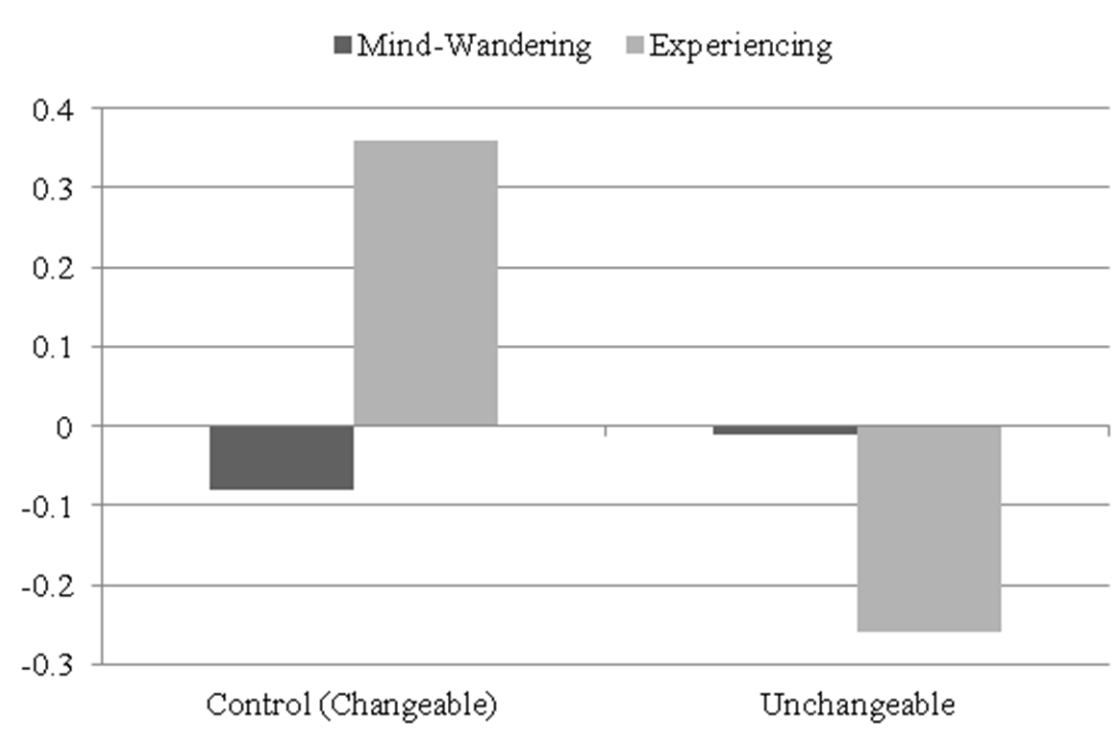


Figure 4: Standardized Attribute Weights by Attention Mode in Study 4

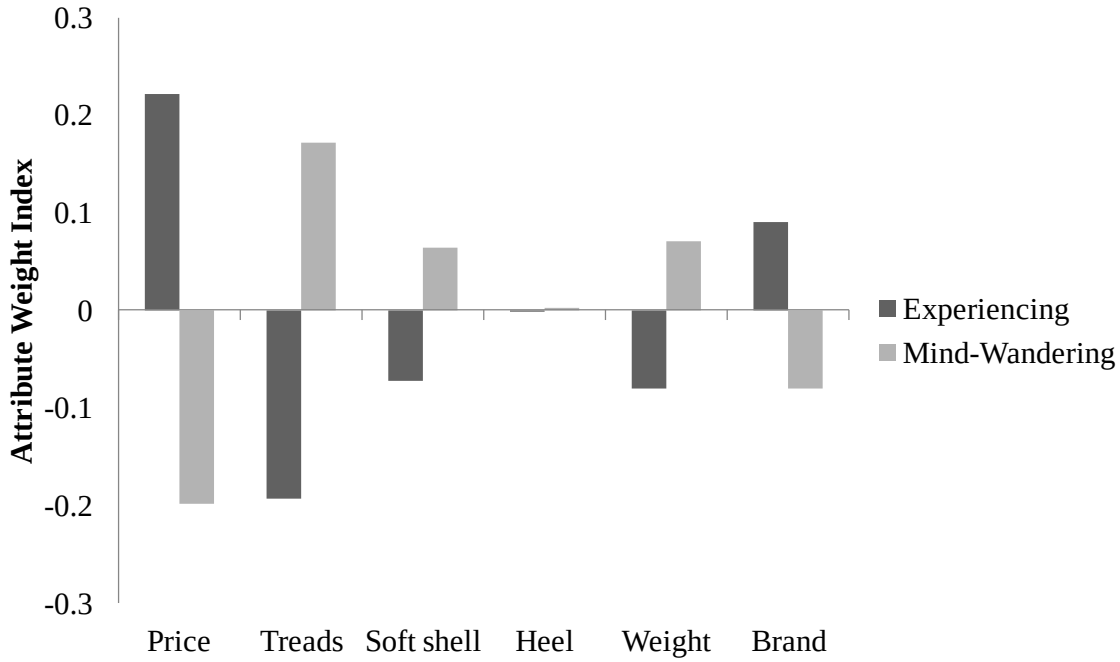
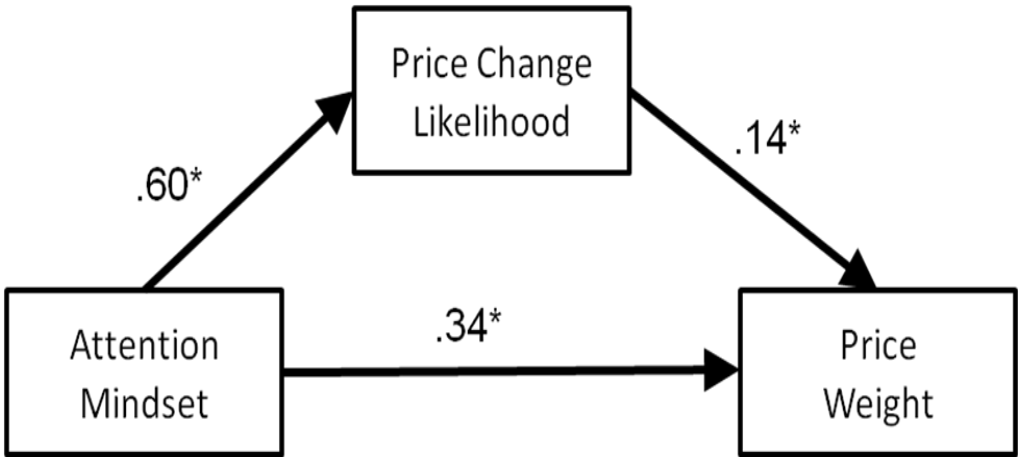


Figure 5: Mediation Results in Study 4



Notes

- Bootstrap 95% CI [.012; .206]
- *p<.05
- No other constructs mediated effect

Figure 6: Bottled Water Quality Ratings by Cue Quality, Cue Type, and Attention Mode in Study 5

CHAPTER III

SUMMARY OF EMPIRICAL RESULTS

The results of six studies converge to support the proposed framework. Study 1 tested the framework in a basic encoding context using physical objects across the spectrum of change and found that experiencers prioritized the encoding of changeable objects, while there were no differences for either unchangeable or dynamically changing objects. A comparison of the means across stimuli categories showed that experiencers treated changeable stimuli as if they were likely to change, whereas mind-wanderers treated changeable stimuli as if they were unlikely to change. Study 2 then extended the findings into a product judgment context with price acting as the changeable stimulus and consumers judging whether to consider buying a product. Consistent with predictions, experiencers attached more weight to price than did mind-wanderers, and this effect did not emerge for any other attribute. In study 3, the changeability of price was manipulated to ensure that it was the core stimuli characteristic that allowed the proposed mechanism to operate. As hypothesized, the core effect was attenuated when prices were framed to be unchangeable, but replicated when prices were framed as changeable. Study 4 then provided a direct test of the proposed mechanism. Results showed that an experiencing (vs. mind-wanderering) mode led people to believe that a product's price was more likely to change, and therefore attach more weight to it in their decision. Study 5 extended the effect to a quality judgment context, and directly ruled out explanations based on

construal level and attribute diagnosticity. Consistent with the proposed framework, experiencers rated high-priced water as of higher quality than low-priced water, whereas mind-wanderers did not show this effect. Furthermore, both experiencers and mind-wanderers rated high-reputation branded water as of higher quality than low-reputation branded water, which runs counter to the aforementioned bases for alternative explanations. In the sixth and final study, the framework was extended to the preference formation context and explanations related only to task-involvement were further ruled out. Results showed that experiencers (vs. mind-wanderers) were more likely to favor a price-leading (vs. benefit-leading) option, and analysis of accompanying measures did not support task involvement as an explanation for the results. Across the six studies, the data clearly show that an experiencing (versus mind-wandering) attention mode leads one to believe that a changeable stimulus (such as a price) is more likely to change, and therefore attach more priority to considering it.

CONCLUSIONS, IMPLICATIONS, AND CONTRIBUTIONS

Price changes are one of the quickest, easiest, and most effective ways for marketers to manage demand and profits. As a result, price changes occur frequently in the marketplace and take many forms, from temporary price promotions on apparel to fluctuating prices for airline flights and gasoline. Although such price changes often have marked effects on the products to which they are attached, past research has yet to

uncover how the general notion of prices as a changeable attribute affects consumer behavior.

This research capitalizes on this general notion of price changeability to explain how and why consumers' attention mode affects the extent to which one weights price in their judgments. Because people in an experiencing (versus mind-wandering) mode attach a greater importance to their interactions with the environment, they also attach a greater importance to noticing change in their environment. As a result, they subsequently believe that a changeable stimulus, such as a product's price, will in fact change and subsequently consider it with higher priority. This framework was tested and supported in a series of six studies using different operationalizations of constructs and diverse contexts.

In addition to supporting the framework, the findings also rule out a host of alternative explanations. For example, one might suggest that experiencers were more highly involved in the study tasks than mind-wanderers and therefore were more likely to use particularly salient cues (such as price) in their judgments. Theoretically, this account runs counter to past literature, which suggests that price, as a salient cue for many judgments and decisions, tends to carry more weight when consumers are *less* involved (Chakravarti et al., 2013; Cronley et al. 2005; Kardes et al. 2004; Rao and Monroe 1989; Lichtenstein et al. 1988). Empirically, the account cannot explain why dynamically changing stimuli, which are arguably more salient than changeable stimuli, did not show the effect in study 1. Furthermore, in the pricing context, it cannot explain the moderation results in study 3 or the mediation results in study 4. Conversely, one may instead argue

that an experiencing mode leads to higher task involvement, which leads to a higher consideration of diagnostic attributes (Miniard et al., 1991; Petty and Cacioppo 1979, 1986). However, this does not explain why the effect did not occur for an attribute more diagnostic than price (study 5) or for physical objects both less and more intrinsically important to consider (study 1). In addition, it cannot account for why measured beliefs of price change mediated the effect (study 4). Likewise, it seems unlikely that people in an experiencing (mind-wandering) mode systematically assigned less (more) weight to some unobserved category of non-price attributes, which artificially created an uptick in price weights. The studies were conducted using a variety of different non-price attributes that shared few if any relationships with each other and only price showed consistent effects across the studies. As well, like the task involvement explanation, this explanation cannot easily account for process evidence in studies 3 and 4. Rather, the package of evidence triangulates upon beliefs in the change of a price (an attribute inherently capable of change) as the underlying mechanism.

These findings contribute to several bodies of literature. As the first work to study attention modes in a judgment context, the findings enable one to glean new insights regarding the underlying psychology of attention modes. Past work has shown that compared to a mind-wandering mode, an experiencing mode enhances processing of environmental stimuli, regardless of the stimuli's characteristics (Barron et al. 2011; Kam et al. 2010). This work shows that such findings may be constrained to rather uncommon contexts in which stimulus prioritization is unnecessary. In the current context, where prioritization is necessary, only changeable stimuli are prioritized by experiencers (vs.

mind-wanderers). Moreover, that the effects were found to be constrained to changeable stimuli allowed for the prediction, testing, and confirmation of a novel implication of the framework for consumers' use of price in judgments. Future work should look to identify other ways in which consumer contexts can enrich the understanding of attention modes, and reciprocally, how attention modes can help predict other consumer outcomes.

In this regard, the work also contributes to literature on consumer price weighting. Price weights have typically been addressed by viewing prices as either a painful consequence of consumption or as a summary cue of product quality (Bornemann and Homburg 2011). This work instead views prices as a changeable attribute, and shows that this view sheds light on unique and theoretically counterintuitive relationships between attention and price weights. Moreover, the findings also demonstrate the capability of this new view of prices to predict price weighting in both price sensitivity and quality judgment contexts, where past work has often shown divergent effects (e.g., Bornemann and Homburg 2011; Yan and Sengupta 2011). Future work should continue to investigate how the mere changeability of price relates to both price weighting as well as other consumer factors.

Moving beyond theory, there are multiple ways one can imagine harnessing these findings in practice. For marketers, these findings suggest that favorable prices should be communicated in promotional materials likely to be encountered while in an experiencing mode (e.g., during sales presentations) versus those likely to be encountered while in a mind-wandering mode (e.g., seeing an advertisement while casually flipping through a

magazine). For consumers, the findings suggest that reducing instances of mind-wandering may be an effective way to stay within spending goals.

A likely question here is whether one can tease apart which attention mode (i.e., experiencing or mind-wandering) drives the results. Recall that although study 5 showed that a baseline condition exhibited results similar to the experiencing condition, attention modes reflect positions along a continuum of attention along which an individual, at any moment, can be located. As such, there is no true "control condition" or baseline level for attention modes that one may use for a control condition. In support of this position, Killingsworth and Gilbert (2010) found that people spend approximately 50% of their time in each mode. As well, this research was interested in how the attention modes shift beliefs about the likelihood of change and how such beliefs might carry over to attribute weighting, not on identifying which mode appeared to calibrate one to some objective measure of change likelihood better than the other. Future research may examine such issues using paradigms in which changeable stimuli actually exhibit controlled rates of change.

Price weighting is clearly a topic of great importance to marketers, consumers, and decision researchers. This work uncovers how price shares a common characteristic with aspects of the physical world – changeability. As a result, this work shows that cognitive mechanisms designed for handling changeable objects are co-opted for the handling of price. Future work should seek to uncover other ways in which consumers' judgments and decisions are shaped by cognitive mechanisms that are designed for the physical environment.

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APPENDICES

APPENDIX A – EvMW MEASURE ITEMS

1. When engaged in an activity, my attention tends to remain focused on what I'm doing, without really wandering off in other directions, such as my thoughts or feelings or daydreams.
2. I notice the details in my current realm of experience and activity
3. My attention is focused more on what I am doing and experiencing as opposed to what I am thinking, feeling, and imagining
4. My mind is often distracted by thoughts or feelings about things that are not relevant to what I'm doing at the time*
5. My mind easily wanders away from what I am currently engaged in doing or experiencing*
6. I find myself getting lost in my internal thoughts or feelings*
7. I don't pay attention to what is going on in what I'm doing because I'm daydreaming, worrying, or otherwise distracted*

*Reverse-coded
All items rated on a 7-point scale where 1 = "never" and 7 = "all the time"

APPENDIX B – COLLAGE OF PICTURES USED IN STUDY 1

Note: Pictures in boxes were animated to depict dynamically changing objects. Boxes not shown to participants.

APPENDIX C – ADVERTISEMENT USED IN STUDY 2

APPENDIX D – PRIMING MANIPULATIONS USED IN STUDY 3 AND 4

Experiencing – Walk

Imagine yourself taking a walk in the park. As you stroll, you start to get into the different things you're experiencing. You notice your stride. It's not too fast, or too slow; you're moving at a leisurely pace. You notice the color of the leaves on the trees, the texture of the grass, and how the clouds are slightly blocking the sun. The air smells fresh and birds are chirping, just like it is after a spring rain.

You spot a bench nearby and decide to take a seat. The bench feels slightly lopsided. You look under the bench and see that one of the legs of the bench has really sunk into the ground. As you sit some more and get in touch with your surroundings, you hear the sound of an airplane passing overhead. Just then, a family who is also out for a stroll passes by, and you can't help but pick up on the smallest details as they walk by. The father's hair is slightly graying, but more so on the sides than the back. He is holding a basket and a blanket, as if they had gone for a picnic. The young daughter is holding on tightly to her baby brother's stroller as her mother pushes it.

Eventually, you get up and continue walking. You focus on walking a bit faster now, since it has gotten a bit colder outside. You notice that you are starting to catch up to the family you saw earlier, but now the father is carrying the younger daughter. You feel like you are completely in the moment, like nothing else seems to matter except what you're experiencing right now.

Mind-Wandering - Walk

Imagine yourself taking a walk in the park. As you stroll, you start going through what you need to pick up at the grocery store later. Snacks. Bread. Some fruits. Cereal. No...scratch cereal. You should probably finish the ones you have at home first. You get the nagging feeling that you're forgetting something. Oh right…paper towels. Hmm...what should you do after the grocery store? Maybe you'll just stay home, put your feet up, and watch some TV.

You take a seat on a bench to think about what is usually on this night of the week. You remember a couple things you could watch. Oh wait, that new show is premiering tonight - the one with the funny preview commercials. You make a mental note to be home from the grocery store before it starts. Just then, a family who is also out for a stroll passes by you. You don't notice anything about them but it does trigger thoughts about your family. You wonder what it would be like to watch the show tonight with them. It seems like a show they would like too. You start to think about the shows that you used to watch with your family as you were growing up. Those shows were so funny.

Eventually you get up to continue walking. Hmm maybe you'll pick up a treat at the grocery store too, like a candy bar or ice cream. This whole time, it feels like your mind has been off in another world. In fact, you haven't even realized how much ground you've covered or the different things that you've passed by. You've been so focused on your thoughts, feelings, and daydreams.

Experiencing - Meal

Imagine yourself at a restaurant having a meal. As you begin to eat, you really get into your restaurant experience. You immerse yourself in the food, which is still piping hot. Actually, you can still feel the steam emanating from the food as it hits your cheeks. It is fragrant, but not overly pungent. You unroll the napkin and put it on your lap. As you take your first bite, you notice the contrast between the different flavors in the dish. Some pieces are a bit sweet, others more savory, and there are slight notes of spiciness in the side dish. You feel the different textures in your mouth, and recognize each component as it hits your pallet.

As you continue eating, you also take a few moments to take in the environment of the restaurant. The theme is modern – the dining furniture has clean lines, the wall décor is abstract, and the colors are simple and bold. The centerpiece at your table is a white orchid in a tall vase. There is also some jazz music playing softly in the background, so softly that it is hard to make out amidst the other sounds in the restaurant. A lot of these sounds come from the kitchen, where you hear the chef talking to his line cooks, and the occasional sizzle of food hitting the grill. You continue to experience the flavors, textures, and aromas of your food, but your senses have adapted to them, so they don't seem as intense as they were when you first started eating.

As you come to the end of your meal, you realize that you've been so captivated by your experience that you haven't at all daydreamed or thought about anything else. In fact, it feels like all this time you've spent eating has just whizzed by in the blink of an eye, as you've been immersed in your experience.

Mind-Wandering – Meal

Imagine yourself at a restaurant having a meal. As you begin to eat, you think back to the last time you had this dish. It was a couple visits ago when you were here with your best friend. You think back to that dinner and all the things you two talked about that night. It had been awhile since you two had seen each other so there was a lot of catching up to do. You remember what your friend ordered that night. It looked pretty good. Maybe you'll get that next time you're here. Hmm…when would that be anyway? Oh right, you have plans to come here next week with some people from work for one of their birthdays.

As you continue eating, you start to think about what you might do after you leave the restaurant today. Maybe you'll stop by the mall and finally buy that pair of shoes you've been eyeing for awhile. You've looked at them twice, no wait…three times already. You go through all the expenses you have this month. You have some wiggle room for new shoes. Just then, you remember that you also need to pick up some milk on the way home; you ran out yesterday. Maybe you'll just get it at the grocery store close to your place. It's a bit more expensive than the one you usually go to but it's on the way home from the mall. You think about the last time you were in the store by your place. You had trouble finding something; the layout is so confusing.

As you come to the end of your meal, you realize that your mind has been off in another world this whole time. In fact, it feels like all this time you've spent eating has just whizzed by in the blink of an eye, as you've been immersed in your thoughts, feelings, and daydreams.

Second part of prime completed by all participants

A moment ago, you read a scenario and were asked to put yourself in the frame of mind depicted in the scenario. Now we would like you put yourself back in that frame of mind. Imagine yourself back in the scenario you read. After taking a few moments to visualize it again, please write a few sentences about what you recalled and visualized in the scenario as you put yourself back in it.

APPENDIX E – PRICE CHANGEABILITY MANIPULATION USED IN STUDY 3

Changeable Condition (Control)

Economists have been discovering that market prices of consumer products have been fluctuating over the past few years. "Most products tend to change prices many times while they are on the market," says Jason Foster, a pricing trends expert at Consumer Reports. "Take airline flight prices for example. People see them go up and down wildly based on the market. And they used to before too."

Other experts seemed to strongly support Foster's observations. "This trend seems to be true for almost all the product categories that we've looked at, from apparel to electronics to furniture. A price available on one day might not be available the next day."

Unchangeable Condition

Economists have been discovering that market prices of consumer products have been stabilizing over the past few years. "These days, most products tend to stay the same price for as long as they are on the market," says Jason Foster, a pricing trends expert at Consumer Reports. "Take airline flight prices for example. People used to see them go up and down based on the market. And they still do, just not nearly as much as they used to."

Other experts seemed to strongly support Foster's observations. "This trend seems to be true for almost all the product categories that we've looked at, from apparel to electronics to furniture. A price available on one day will probably be available the next day too." Researchers are currently looking for the cause of this recent phenomenon.

APPENDIX F – LAMP ADVERTISEMENT USED IN STUDY 3

APPENDIX G – SHOE ADVERTISEMENT USED IN STUDY 4

APPENDIX H – BOTTLED WATER DESCRIPTION USED IN STUDY 5

This water is purified using a standard double-filtration process that minimizes impurities in the water. The result is a clean and refreshing drink suitable for any occasion. It is sold in stores all over the United States. Below are some more attributes of the water:

pH factor	7.8
Calcium (Ca)	18 mg/l
Magnesium (Mg)	14 mg/l
Silica (SiO2)	91 mg/l
Brand [Price]	_____

APPENDIX J – ATTRIBUTES USED IN STUDY 7

Attribute 1 (Waitstaff) – Favors L

A local food critic has recently been to both restaurants and had this to say in his column. "Service at **Restaurant L** is excellent. The waitstaff is well-trained, courteous, knowledgeable, and friendly, and the service is well-timed. The chef and management are polite and responsive to customer requests. Service at **Restaurant R** is very good. The waitstaff is well-trained, knowledgeable, and friendly. Management is responsive to customer needs."

Attribute 2 (Desserts) – Favors L

The **Restaurant L** dessert menu includes several different gourmet pies, cakes, and sherberts. The pastry chefs at this restaurant also have special fruit- and custard-based specials that they have learned through international experience. **Restaurant R's** has many classic pies and ice creams for dessert. They rotate their cake specials each day.

Attribute 3 (Entreés) – Favors L

Restaurant L's offers a variety of entreés, including poultry, beef, vegetarian items (including salads), and pasta dishes. In addition, they always have two meat specials, one vegetarian special, and one or two pasta specials. **Restaurant R's** main entrée menu consists of a few poultry dishes, pasta dishes, and two different dinner salads. They have a dinner special, which rotates between meat and vegetarian dishes.

Attribute 4 (Drink Menu) – Favors L

Restaurant L offers a variety of juices, sodas, teas, coffee, wines, and beers. Their trained drink mixologists have perfected classic cocktails and also make a menu of specialty cocktails exclusive to the restaurant. **Restaurant R** offers a selection of sodas, sparkling waters, coffee, wines, and beers. Their experienced bartenders have all worked for the restaurant for many years.

Attribute 5 (Appetizers) – Favors L

Restaurant L offers many appetizers, from American classics to international favorites. They also have a wide array of soups, breads, and starter-sized organic salads. **Restaurant R** appetizer menu consists of many choices of soups and breads. They also offer a diverse selection of dips to go with fresh-cut vegetables.

Attribute 6 (Prices) – Favors R

You do some math using prices from the two menus to figure out how much the meal might cost. You compute the average cost for dinner at **Restaurant L** assuming one appetizer, a mid-range entrée, and dessert as being roughly $50 per person. You do the same for **Restaurant R** and discover that it is roughly 20% cheaper, with the average cost being roughly $40.