Situational Influences on Consumers’ Willingness to Pay:
Mood, Stress, and Certainty

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<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tr>
<td>ANOVA</td>
<td>analysis of variance</td>
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<td>ed.</td>
<td>editor</td>
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<td>eds.</td>
<td>editors</td>
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<tr>
<td>et al.</td>
<td>et alii (and others)</td>
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<tr>
<td>e.g.</td>
<td>exempli gratia (for example)</td>
</tr>
<tr>
<td>i.e.</td>
<td>id est (that means)</td>
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<tr>
<td>€</td>
<td>Euro (currency)</td>
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<tr>
<td>LS</td>
<td>less stressed</td>
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<tr>
<td>MS</td>
<td>more stressed</td>
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<td>NSP</td>
<td>no stress-reducing potential</td>
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<td>p.</td>
<td>page</td>
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<td>PANAS</td>
<td>positive affect, negative affect scale (Watson et al., 1988)</td>
</tr>
<tr>
<td>S-O-R</td>
<td>stimulus–organism–response (research paradigm based on Woodworth, 1918)</td>
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<tr>
<td>SP</td>
<td>stress-reducing potential</td>
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<td>WTP</td>
<td>willingness to pay</td>
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I. Preamble
1. Introduction

“In our modern world we have seen inaugurated the reign of a dull bourgeois rationalism, which finds some inadequate reason for all things in heaven and earth and makes a god of its own infallibility.”

—John Buchan, A Lodge in the Wilderness (1906, p. 69)

The conservative Lady Amysfort in John Buchan’s book challenged the reign of rationalism some 50 years before the first research mention of bounded rationality (Simon, 1955). Her assertion that some “inadequate reason” had to be found to retain consistency between the empirical reality and rationality thus appeared highly prophetic 50 years later. Today, the myth of the fully rational consumer, with stable preferences and permanent utility maximization, has been questioned by researchers from many disciplines (Gigerenzer & Selten, 2002). The stance that rationality is limited is standard in marketing textbooks (e.g., Hoyer et al., 2012; Solomon, 2013), even leading to popular acclaim (Ariely, 2009; Kahneman, 2012). This development has stemmed from not only psychologists questioning the dogma of rationality (Tversky & Kahneman, 1974) but also economists challenging rational tenets (Thaler, 1980), similar to conservative Lady Amysfort’s objection to “bourgeois rationalism”.

As consumer rationality increasingly topples, faced with the dominance of empirically demonstrated irrational consumer behavior, a group of variables has become increasingly prominent: situational influences (Kakkan & Lutz, 1981). Solomon (2013, p. 359) acknowledges that “many factors at the time of purchase dramatically influence the consumer’s decision-making process,” such as salient needs, perceived risks, and emotions (Hoyer et al., 2012). Among these factors, situational influences are defined as “all those factors particular to a time and place of observation which do not follow from a knowledge of personal (intra-individual) and stimulus (choice alternative) attributes, and which have a demonstrable and systematic effect on current behavior” (Belk, 1974, p. 157). Although this definition has attracted criticism for its limits to a fixed point in time and negative approach (Barker & Wicker, 1975), as well as its lack of parsimony (Russell & Mehrabian, 1976), its broad nature is what renders it so compelling for the present analysis. A list of positive situational variables would always be incomplete; restricting the definition (e.g., to emotional reactions, Russell & Mehrabian, 1976) would exclude potentially relevant non-emotional consequences of a situation (e.g., consumer uncertainty).
According to Belk’s (1974) definition, the specific characteristics of a situation vary and function as a stimulus that changes consumer behavior. This situational stimulus elicits a psychological reaction, which drives the consumer’s behavior (Mehrabian & Russell, 1974). This thesis applies a classic stimulus–organism–response (SOR) function (Woodworth, 1918) to manipulations of situational variables as the *stimuli* and thereby aims to explain consumers’ behavioral *responses*, in the form of emotional or cognitive changes in the consumer, or *organism*. The focus thus is on those situational triggers that are likely to stimulate psychological reactions in the consumer, such as “momentary moods” or other “momentary conditions” (Belk, 1975, p. 159), rather than on physical or social surroundings. A consumer’s social surroundings are integrated to the extent that they interact with situational antecedents though (e.g., the impact of a mood stimulus on behavior could depend on the surrounding group). This thesis analyzes three influences on consumer behavior: consumers’ mood (e.g., Andrade, 2005), their stress levels (e.g., Pham et al., 2011), and their certainty about their preferences or product performance (e.g., Wang et al., 2007).

These situational variables may function as either the subject (i.e., unconscious driver) or the object (i.e., being consciously driven) of consumer behavior. On the one hand, consumer behavior might be unconsciously influenced by various situational variables (e.g., Bargh, 2002; Dijksterhuis et al., 2005). On the other hand, consumers might consume consciously, in reaction to the situation or group setting (e.g., Andrade, 2005; Park et al., 1986; Richins, 1994). The focus of the present investigation is the unconscious drivers of consumer behavior, with consideration of situations in which conscious decisions overrule unconscious influences (e.g., mood regulation, coping with stress).

Willingness to pay (WTP) provides the dependent variable, for three main reasons. First, WTP relates directly to a firm’s profitability, through its effect on pricing decisions (Han et al., 2001). Second, WTP can be measured, to reveal unbiased consumer preferences (Voelckner, 2006). Third, the WTP construct has been conceptually and methodologically extended, with the introduction of WTP as a range (Dost & Wilken, 2012; Wang et al., 2007). This enhancement offers a rich means to analyze consumer behavior, both theoretically and empirically.

Following a discussion of the dimensionality of the independent situational variables (mood, stress, certainty), three chapters each address the impact of a particular variable on con-
sumer behavior. Additional empirical evidence supplements these findings. Finally, the last chapter summarizes all the results and offers general implications and routes for further research.
2. Situational variables

This thesis considers two realms of situational factors, both of which likely prompt consumer behavior responses, but based on different mediating psychological reactions. The first realm refers to situational variables that primarily prompt an emotional reaction to the situational stimulus. Specifically, this investigation considers the role of mood and stress. The second arena pertains to consumers’ cognitive reactions and behavioral responses to situations trigger different degrees of consumer certainty.

2.1 Emotional reactions: Mood and stress

The broadest conceptualization of emotional reactions to a situation consists of three dimensions: pleasure, arousal, and dominance (PAD, Mehrabian & Russell, 1974). These dimensions appear orthogonal; Mehrabian and Russell (1974) develop semantic differentials to highlight their bipolar natures (e.g., pleasure uses happy/unhappy; arousal relies on stimulated/relaxed; dominance is controlling/controlled). Their work contrasts with a prior understanding, namely, that consumer arousal constituted an antecedent to all emotions (Schachter & Singer, 1962). This assumption has been empirically discredited by research that shows arousal is an essential component of most emotional reactions (Bagozzi et al., 1999).

Empirical research also affirms the relevance of two of Mehrabian and Russell’s (1974) three dimensions: pleasure and arousal. Russell (1980) introduced the Circumplex Model of Affect, which used a factor analytical design to substantiate their conceptualization. Different emotional reactions were summarized as “affect” and positioned in a two-dimensional system, with differing degrees of pleasure and arousal. Some reactions denoted axes of the system (misery vs. pleasure; sleepiness vs. arousal); others combined the axes (e.g., distress = misery + arousal). Despite some general criticism (Richins, 1997), this two-dimensional system has found widespread empirical support (Havlena & Holbrook, 1986; Mano, 1991; Mayer et al., 1991), with subsequent research adding nuance to the notion (Russell & Barrett, 1999). Consensus affirms the bipolar nature of each dimension (Cohen et al., 2008), and similar models offer different terminology but similar content (e.g., Watson and Tellegen [1985] refer to arousal as engagement/disengagement).

Other emotional conceptualizations have received less empirical support and remain somewhat difficult to apply, because they do not relate the different emotional reactions to one
another. Plutchik (1980) introduces eight emotional dimensions (joy/sadness, disgust/acceptance, anger/fear, expectancy/surprise), partially similar to Russell’s (1980) model, but without empirical support (Havlena & Holbrook, 1986; Plutchik & Kellerman, 1980). The PANAS scale, developed by Watson and colleagues (1988), distinguishes only between positive (PA) and negative affect (NA), so it supports the classification but not the relation of various emotional reactions (e.g., stress and bad moods are both negative affect). Finally, Laros and Steenkamp (2005) structurally relate different emotional reactions but again only through positive–negative distinctions. Therefore, this thesis relies on the differentiation between pleasure and arousal to distinguish different emotional reactions.

**Mood.** In empirical investigations, differences in mood usually are described on a continuum, according to the pleasure dimension of Russell’s (1980) model. Consensus exists that mood is bipolar (Cohen et al., 2008), and most mood scales use semantic differentials, such as pleasure/misery (e.g., Swinyard, 1993). Substantial empirical research thus employs the pleasure dimension to generate different mood states (e.g., Lopéz Lopéz & Ruiz de Maya, 2012). However, some authors suggest a second mood dimension: mood management (e.g., Mayer et al., 1991; Thayer et al., 1994). Mood management refers to the person’s assessment of her or his own mood and regulation toward a personally optimal level. Although the relationship between the perception and management of mood has not been formalized, research on mood regulation has built on this dimension (conceptually: Andrade & Cohen, 2007; empirically: Gould, 1997). This thesis applies a mood management perspective where theoretically necessary. Specifically, beliefs in the changeability, or “transience” (Labroo & Mukhopadhyay, 2009), of mood serve as potential moderators of mood-regulating behavior, such that a person seeks to regulate mood only when he or she believes that mood can be changed through such behavior.

**Stress.** Stress is usually characterized as the opposite of relaxation (Russell & Barrett, 1999). Although accompanied by discomfort, stress mainly induces higher levels of arousal, associated with higher heart rates, increased metabolism, and breathing (Benson, 2001). Arousal thus must be distinguished from activation: Arousal measures physical reactions to stress, whereas activation includes mental effort (Gardner, 1986) and is not purely emotional.

The use of the arousal dimension to differentiate stress from relaxation is common. Extant research has applied this approach (Park et al., 1989; Paulhus & Lim, 1994; Pham et al., 2011).
Scales to measure stress and relaxation generally use semantic differentials associated with the arousal dimension of Russell’s model (e.g., Gorn et al., 1997). Other scales ask participants to directly state their stress levels in a given situation (e.g., “The situation is not at all/extremely stressful,” Oliver et al., 2000; “My life was very stressful,” Lee et al., 2007a). Other emotional components of stress (relaxation) also have been acknowledged, including its negative (positive) perception. Benson (2001) highlights a close relationship between good mood and relaxation; both Gorn and colleagues (1997) and Pham and colleagues (2011) recognize the pleasantness of an affective state in their research on relaxation. Therefore, this study relies mainly on the arousal dimension to differentiate between stress and relaxation but also acknowledges the unpleasant and pleasant emotions associated with both states. Positive stress, or eustress (“eu-” is the Greek root for “good”; Seyle, 1974; see also Le Fevre et al., 2006), is not addressed here.

Current textbooks acknowledge the roles of mood and stress and their dimensionality but mostly focus on the impact of mood on consumer behavior, without integrating the influence of arousal (Hoyer et al., 2012; Solomon et al., 2002). This observation suggests the need to establish stress more strongly as a driver of consumer behavior.

### 2.2 Cognitive reactions: Certainty

Certainty is a relatively cognitive construct. Although in a specific situation, a consumer might “feel” very certain or uncertain about her or his own preferences or the future performance of a product, this state likely has resulted from an active, cognitive evaluation of available consumption options. High attribute conflict could cause consumers to become less certain about their preferences. For example, a consumer faced with two conflicting dinner choices (healthier and less tasty versus unhealthy and tasty) probably does not decide intuitively which option he or she prefers but actively assesses both options’ (dis)advantages. The degree of consumer certainty also might interact with the situation: If this diner has just finished a long run, he or she might feel more certain about wanting the less healthy option, because indulging would generate less regrets. Again, the consumer decision likely rests on a cognitive evaluation of the person’s current state, in the current situation.

Various types of certainty have been noted, but two appear most relevant for consumer behavior: preference and performance (Wang et al., 2007). In line with extant research (Byzalov & Shachar, 2004; Fischer et al., 2000), the present investigation analyzes the impact of both cer-
tainty types on consumers’ WTP. Preference certainty describes the degree to which a consumer’s goals are perceived to conflict (e.g., consumer health and taste goals in the dining decision; Fischer et al., 2000). Performance uncertainty captures the risk of product non-performance (e.g., the dinner option will not taste as expected; Rust et al., 1999). Both preference and performance certainty reflect differences in individual consumers’ evaluations of their consumption options in a specific situation. Other certainty classifications instead capture certainty about market composition or development, such as price (Mazumdar & Jun, 1992), knowledge, or choice (un)certainty (Urbany et al., 1989). Certainty also has been associated, albeit infrequently, with the pleasure/displeasure dimension (Goldsmith & Amir, 2010; Lee & Qiu, 2009). Because it appears related mostly to certainty about gifts or prices, this association does not appear in the current study.

Furthermore, consumer certainty constitutes a situational stimulus, because most situations drive consumer certainty perceptions, creating intraperson variance in consumer behavior. Although preference certainty is more intuitively situational, performance certainty also is strongly influenced by situational variables. The conflicting dinner options scenario highlights the highly situational nature of preference certainty. First, the options available across multiple situations might affect preferences. The consumer faces some situations in which he or she would have to evaluate both consumption options separately and not jointly, whereas in other situations, the two options combine with other options. A low degree of preference certainty arises from the utility tradeoff of the two options (less tasty and healthier vs. tastier and less healthy). Had the evaluation taken place separately or combined with a less contrasting or inferior option (e.g., less tasty and not healthy), the degree of preference certainty would have been higher. Second, the situation might alter the weights of the different option attributes, creating more or less conflict and thus more or less certainty about preferences (i.e., a long jog might make the decision for a less healthy option easier). Third, preferences are mainly constructed during the preference elicitation process (i.e., in determining own preferences; Gregory et al., 1993), so they are prone to situational influences, such as additional information or the consumer’s previous actions.

Performance certainty, in contrast, is not intuitively situational, as the expected performance of a product or service should be stable. However, the expected performance of a product is not objectively measurable or constant, because consumers do not possess complete infor-
mation about the product. Therefore, consumers must estimate its future performance, and this estimation depends strongly on the situation, as four examples highlight:

1. The consumer may possess more or less information that is relevant to estimations of future product performance (e.g., information on a washing machine’s number of options, energy efficiency, or objective test results might be available during the decision process, or not).

2. Feedback from the market could influence the evaluation situationally (e.g., current availability, valence, and variance of product reviews for washing machines, as well as previously received word of mouth; Heiner, 1985).

3. The utility payoffs might be unstable, depending on the situation (e.g., product becomes outdated with the introduction of a new technology, such as combined washing machines and dryers).

4. Performance expectations might rest on past experience with the product or product category (e.g., previous acquisitions, product testing at the retailer). The presence of such experiences is also situational, because a consumer, for instance, might (not) have the opportunity to test the product while shopping.

Thus, though certainty about a product’s performance should be intra-personally stable, in reality it is strongly influenced by the decision situation.

Finally, research on WTP as a range notes the presence of within-consumer variance in the WTP range (e.g., Dost & Wilken, 2012; Wang et al., 2007). Therefore, situational and non-individual factors must exist, as well as drive consumer behavior.

For this study, certainty represents the opposite of uncertainty. The described research differentiates different degrees of certainty, though extant research mainly discusses the effects of uncertainty. This terminological distinction does not constitute a conceptual difference; certainty and uncertainty locate at the opposite ends of a single continuum.
3. Introduction: Manuscripts and empirical investigations

The subsequent chapters each deal with one of the focal situational variables: mood, stress, and certainty. Figure 1 shows their conceptual relation. Mood and stress rely on Russell’s (1980) model of affect; certainty is independent. Mood is operationalized by the pleasure/displeasure dimension, and stress uses high and low levels of arousal. The operationalizations of both variables thus is orthogonal, though interactions exist (see Section 2.1). Certainty constitutes an additional dimension.

![Diagram of Russell's (1980) Circumplex Model of Affect]

Figure 1: An extension of Russell's (1980) Circumplex Model of Affect

Although these chapters are linked through their focus the behavioral impact of situational variables, each manuscript constitutes an independent contribution to research, with distinct relevance for their respective fields. Table 1 provides an overview of the manuscripts, their contributions, and publication status.

The first contribution, “In the Mood to Buy? Understanding the Interplay of Mood Regulation and Congruence in an International Context,” introduces the moderating role of culture to the mood–WTP relationship. Specifically, four studies show that consumers’ tendency to use mood regulation when in a bad moods and faced with a mood-lifting product depends on their degree of collectivism. Individualist consumers (from Germany) refrained from mood regulation and consistently behaved mood congruently as their WTP levels decreased. Collectivist consumers (from Turkey) instead used consumption to regulate their negative mood when the product in question offered the chance, which increased their WTP. These behavioral differences can be
explained by higher mood transience beliefs about the extent which one’s own mood can be changed in collectivist versus individualist cultures.

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<td>In the mood to buy? Understanding the interplay of mood regulation and congruence in an international context</td>
<td>R. Wilken; H. Schneider; G. Kelemçı-Schneider</td>
<td>Analysis of impact of product category and consumer culture on mood-WTP link</td>
<td>Published in: <em>Marketing Letters</em> 23(4), 2012, pp. 1005-1018</td>
</tr>
<tr>
<td>The Impact of Stress and Level of Construal on Willingness to Pay</td>
<td>R. Wilken</td>
<td>Analysis of impact of stress on consumer valuations, and of moderating role of feature and product level of construal</td>
<td>Under review in: <em>Psychology &amp; Marketing</em> (submitted: March 13, 2013)</td>
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<tr>
<td>The Double Benefits of Consumer Certainty: Combining Risk and Range Effects</td>
<td>R. Wilken; F. Dost</td>
<td>Demonstration of impact of certainty on WTP ranges, and analysis of impact on expected WTP and range thresholds</td>
<td>Currently being revised for: <em>Marketing Letters</em> (“revise &amp; resubmit”: August 08, 2013)</td>
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Table 1: Overview of manuscripts

The second manuscript, “The Impact of Stress and Level of Construal on Willingness to Pay,” establishes the negative impact of stress on consumer valuations of products. This effect rests on changes in consumers’ construal levels, associated with stress (low construal) or relaxation (high construal), which unconsciously influences importance perceptions and consumers’ valuations. However, the negative effects of stress can be mitigated if the product’s level of construal matches the consumer’s.

Finally, “The Double Benefits of Consumer Certainty: Combining Risk and Range Effects” investigates the link between consumer certainty and WTP ranges. The results demonstrate empirically the conceptually established negative effect of certainty on WTP range size. The analysis also suggests that certainty increases consumers’ expected WTP, irrespective of their position, through a stronger increase of consumers’ floor relative to ceiling prices.

Additional empirical investigations in Chapter III replicate findings about the moderating role of culture in the mood-WTP link in a broader European context (Section 1), show the moderating role of products’ stress-reducing potential on the relationship between stress and WTP.
(Section 2) and aim to establish review variance as a means to manipulate consumer certainty and their WTP range (Section 3).
II. Manuscripts
1. In the mood to buy? Understanding the interplay of mood regulation and congruence in an international context

Manuscript No. 1

This manuscript was published as: Maier, E., Wilken, R., Schneider, H., & Kelemci Schneider, G. (2012). In the mood to buy? Understanding the interplay of mood regulation and congruence in an international context. *Marketing Letters, 23*(4), 1005–1018.

DOI: 10.1007/s11002-012-9200-7
Addition to the manuscript: limitations not presented in the publication

We limited our research in manuscript 1 purposefully to a specific experimental design; thus, several opportunities for further research remain. Generally, the experimental character of Studies 1, 3, and 4 may be a concern. Although laboratory settings help isolate the effects of interest, their applicability to acquisitions at the point of sale may be limited, despite our application of incentive-compatible WTP measures in Study 4. We analyzed the impact of good or bad moods on only two sample products, which consumers do (chocolate) or do not (sponges) associate with mood-lifting capabilities. Although we validated these manipulations, we cannot guarantee that consumers might not react differently to other mood manipulations or different (mood-lifting) products. Our operationalization of mood transience on the basis of the different sample countries also could constitute a limitation, in that international surveys are susceptible to several biases (Tellis & Chandrasekaran, 2010).

Further research should tackle these limitations. For example, the impact of mood on WTP might be tested in a retailing environment. Additional analyses could address the impact of other mood states (e.g., neutral) or mood orientations (e.g., avoidance) on consumer behavior. With regard to product choice, the dominance of mood-congruent versus -regulating behavior could be assessed for “mood-threatening” products too. Andrade (2005) has analyzed the impact of mood on the choice of negatively perceived options, though he used nonmonetary evaluations as a dependent variable and did not assess the impact of beliefs about mood transience as moderator.

Our understanding of the moderating role of mood transience beliefs might be extended too. The mood–WTP link should be analyzed in other countries. Research thus could replicate our findings in countries that diverge equally in terms of collectivism/individualism but that are more geographically distant. In turn, contrasting our findings for highly collectivistic versus highly individualistic cultures with countries characterized by lower levels could extend our results.

Research could also determine if variables other than product-related traits and beliefs about mood transience (culture) drive the impact of mood on WTP. Personality traits such as extraversion or neuroticism influence evaluations of stimuli (Mooradian, 1996). Vivid memories of past regulation experiences could increase beliefs in the success of mood regulation (Luomala, 2002; Pollai et al., 2010). Furthermore, Pham et al. (2011) find that the degree of relaxation (vs. stress) increases monetary evaluations by consumers in good moods. Particularly considering the
mood-lifting capabilities of certain products, analyzing a stress scenario with participants in bad moods could generate further insights. For example, stressed consumers might try to regulate their stress levels by consuming relaxing products.

Finally, we based the mood–WTP link on mood transience, which depended on consumers’ collectivism. Cross-cultural studies on links between consumers’ feelings (other than mood) and behavioral measures (other than WTP) should consider reliance on feelings or associated constructs (need for affect, need for emotion, need for cognition, or faith in intuition). These constructs also vary with collectivism, and they may apply, beyond transience beliefs, as a rationale for such links.
2. The impact of stress and level of construal on willingness to pay

Manuscript No. 2
Authors: Erik Maier and Robert Wilken
Publication status: Under review in Psychology & Marketing.
Manuscript available from the author upon request.
3. The double benefits of consumer certainty: combining risk and range effects

Manuscript No. 3

Authors: Erik Maier, Robert Wilken and Florian Dost

Publication status: Revise and resubmit in Marketing Letters.

Manuscript available from the author upon request.
III. Additional empirical investigations
1. Impacts of mood on WTP in European contexts

Manuscript 1 suggests that one way of segmenting European markets might be according to their individualism, due to the moderating role of culture in the relationship between mood and WTP. This finding contradicts intuitive and preconceived notions of segmentation in Western Europe, where a country’s location (e.g., South vs. North) and cultural peculiarities (e.g., extroverted Italians vs. reserved Finns) generally has been used to predict different consumer behaviors. For example, a survey conducted on the 50th anniversary of the Elysée Treaty between France and Germany revealed that French people associate diligence and parsimony with Germans, while Germans associate indulgence and savoir vivre with their French neighbors (Die Zeit, 2013). A well-established segmentation of Western Europe thus distinguishes the Northern or Germanic segment from the Mediterranean or Latin segment (Carr & Texeraud, 1993; Gatley et al., 1996). This distinction has resonated in both scientific literature (e.g., Jesuino, 2012) and marketing practice (e.g., Cova & Halliburton, 1993; Kaynak & Jallat, 2005). Whereas consumers from the Mediterranean region are usually characterized as “suave, refined, rich and enjoy[ing] hedonic pleasure” (Kabiraj & Shanmugan, 2011, p. 295), their northern counterparts are said to possess a “tradition of orderliness, standards, and rules” (Chandrasekaran & Tellis, 2008, p. 853).

This empirical investigation aims to replicate the findings from Manuscript 1 regarding the impact of culture on the mood–WTP link in an extended European setting of four countries (France, Germany, Greece, and Italy). Thus it might add validity to the presented challenge to the segmentation of European markets into simply North/Germanic versus Mediterranean/Latin. The first empirical investigation contrasts France and Germany directly; these two countries exhibit similarly low collectivism scores but typically are associated with different clusters (Mediterranean vs. Northern). A second study extends this analysis to more countries with varying degrees of collectivism (Greece and Italy compared with Germany), to gain finer-grained insights into the effect of mood on WTP and determine if traditional segmentation approaches should be modified.

1.1 Similar consumer collectivism levels

Method. Two countries that do not differ in their individualism but are usually clustered into different country segments were selected: France as part of the Mediterranean cluster and Germany as part of the Northern cluster (House et al., 2004; Ronen & Shenkar, 1985). Both countries score
equally high on individualism (France = 71, or 9th of 66 countries; Germany = 67 or 14th; Hofstede, 2001) and low on societal in-group collectivist practices (France = 4.37 or 49th of 62 countries, Germany = 4.02 or 56th; House et al., 2004). A pretest also confirmed the two countries’ cultural similarity in terms of their collectivism ($M_{France} = 3.98$, $M_{Germany} = 3.89$, $F(1, 133) = .3$, $p = .58$; House et al., 2004). They did not differ in potential confound variables (e.g., Gaston-Breton & Martin, 2011; Lin et al., 2006), such as materialism ($M_{France} = 4.20$, $M_{Germany} = 4.15$, $F(1, 133) = .06$, $p = .81$; Richins & Dawson, 1992) or openness to feelings ($M_{France} = 3.81$, $M_{Germany} = 3.74$, $F(1, 133) = .53$, $p = .47$; Costa & McCrae, 1985).

As in Manuscript 1, chocolate served as the mood-lifting product. A pretest supported the appropriateness of this selection: Chocolate was consistently perceived as mood lifting (“Every now and then I buy chocolate to improve my mood,” test for difference from scale mean of 3.5, $M = 3.98$, $t = 1.84$, $p = .07$) and significantly more hedonic than utilitarian on scales proposed by Khan and Dhar (2010) (test for difference from scale mean, $M = 2.17$, $t = -7.91$, $p < .001$) and by Voss and colleagues (2003) (paired t-test, $M_{HED} = 4.75$, $M_{UT} = 3.74$, $t = 4.1$, $p < .001$). Perceptions of mood-lifting and hedonic characteristics did not differ for Germany and France.

Participants from each culture were randomly assigned to either the good or bad mood condition. The survey was administered online. The procedure, manipulation, manipulation checks, and the calculation of the WTP index were similar to those for Manuscript 1.

**Results.** Of the 158 participants who completed the survey, 5 were excluded because they offered extreme WTPs, more than twice the standard deviation for their respective group. The remaining 153 participants (60 from France, 68% female; 93 from Germany, 49% female) had an average age of 24.75 years. For the 73 participants in the good mood stimulus and the 80 respondents in the bad mood stimulus, the manipulations of mood ($F(1, 152) = 178.2$, $p < .001$, $\eta = .74$) and product perception (paired t-test, $t = 4.94$, $p < .001$) were successful, across both countries.

According to a 2 (mood) × 2 (country) analysis of variance (ANOVA), when they were in bad moods, people’s WTP decreased in both France (mean decrease = 4.2%; $M_{WTP\_good} = 1.90$ €, $M_{WTP\_bad} = 1.82$ €) and Germany (mean decrease = 20.8%; $M_{WTP\_good} = 1.43$ €, $M_{WTP\_bad} = 1.13$ €). As expected, the main effect of mood was significant ($F(1, 152) = 4.44$, $p < .05$, $\eta = .17$), whereas the interaction effect was not ($F(1, 152) = 1.39$, $p = .25$, $\eta = .09$).
Although this insignificant interaction indicated that consumers from both countries behaved similarly, caution is warranted. First, the absolute WTP levels differ considerably, and the insignificance of the interaction mainly reflects the large standard deviations. Second, though the p-value of the interaction effect considerably exceeds the 5% threshold, the effect size is nearly small (Cohen, 1988). Third, the likelihood of a type-II error β (i.e., falsely accepting the null hypothesis) is approximately 80%, considerably greater than the common threshold of four times the p-value (Cohen, 1988). Although this first investigation thus constitutes a replication of the findings of Manuscript 1, namely, that individualism moderates the mood–WTP relationship, the results should be treated with caution and further replicated.

1.2 Differing levels of consumer collectivism

Method. This second investigation aims to substantiate the moderating character of culture in an extended country setting that includes two additional countries from the Mediterranean cluster that differed considerably in their individualism. Italy is highly individualistic (76, 6th of 66 countries; Hofstede, 2001) and low on collectivism (4.94, or 41st of 62 countries; House et al., 2004). In contrast, Greece scores low on individualism (35, or 38th) and high on collectivism (5.27, or 35th). Both countries are associated with the Mediterranean cluster (Ronen & Shenkar, 1985), though Greece is sometimes grouped with Eastern Europe (House et al., 2004). The comparison of these two countries included a different German sample, to provide an established individualistic benchmark.

Similar to the previous investigation, participants from each culture were randomly assigned to the good or bad mood condition for an online survey. Each respondent confronted the same mood-inducing stories and the same manipulation checks. The WTP index for each country was calculated as previously described.

Results. The survey was completed by 214 respondents, but 5 were excluded due to their extreme WTP outliers. The remaining 209 participants (48 from Greece, 46% female; 108 from Italy, 41% female; 53 from Germany, 58% female) were 26.37 years on average. The experiment induced 101 participants to be in a good mood and 108 in a bad mood. Again, the manipulations of mood ($F(1, 208) = 149.32, p < .001, \eta = .65$) and product perceptions ($t = 7.76, p < .001$) were significant.
As expected, participants from the individualist countries lowered their WTP when they were in bad moods: Italy by 15.6% ($M_{WTP,\,\text{good}} = 2.11$, $M_{WTP,\,\text{bad}} = 1.78$) and Germany by 6.0% ($M_{WTP,\,\text{good}} = 1.89$, $M_{WTP,\,\text{bad}} = 1.77$). In contrast, consumers in collectivist Greece paid a premium (mean increase = 10.6%; $M_{WTP,\,\text{good}} = 1.95$, $M_{WTP,\,\text{bad}} = 2.15$). A $2 \times 2$ (mood × culture: collectivism vs. individualism) ANOVA used the pooled data from Germany and Italy as individualist countries. As predicted, consumer culture significantly moderated the relationship between mood and WTP ($F(2, 208) = 3.1$, $p < .05$, $\eta = .17$), but the main effect of mood remained insignificant ($F(2, 208) = .02$, $p = .89$, $\eta = 0$, $\beta < .05$). This result reaffirms the appropriateness of individualism–collectivism as a segmentation criterion, rather than the traditional North–South divide.

1.3 Summary and limitations

Figure 2 summarizes the results of these empirical investigations into the relationship between consumers’ mood and their WTP for a mood-lifting product. In line with the predictions from Manuscript 1, the present studies establish a mood-congruent effect in countries that score relatively high on individualism (Germany, France, Italy), even though they do not belong to the same geographical cluster. In contrast, Greek consumers (low individualism) exhibit mood-regulating behavior, such that consumers in bad moods express a higher WTP than consumers in good moods. These findings are in line with recent research that has demonstrated mood-regulating behavior in collectivist Spain (López López & Ruiz Maya, 2012).

Firms dealing with multicultural markets (even in supposedly homogeneous geographical clusters) must use their knowledge about consumers’ individualism and collectivism, or some chronic measures, to adapt their advertising, promotions, and displays. The international marketing mix should be adjusted to match consumers’ culturally unique beliefs about their ability to change their moods through consumption. In collectivistic countries such as Greece, emphasizing the mood-lifting capabilities of a product can increase consumers’ valuation of that product. Consumers in a bad mood likely identify mood-lifting cues and are willing to pay a premium to improve their mood. In individualistic countries such as Italy or France, a similar package and advertising may be less effective. To improve individualistic consumers’ WTP, store designs and staff behaviors should seek to ensure that customers experience positive moods at the point of sale; any deterioration decreases the price they are willing to pay, irrespective of product type.
Figure 2: Summary of findings regarding the impact of consumers' bad moods on their WTP for chocolate

However, the findings from the additional empirical investigation also feature some limitations. First, the results indicate sizable differences in the test results for Germany across studies: The effect of negative mood in the first investigation decreased consumers’ WTP by 21%, but its effect in the second investigation was only 6%. The difference could be due to the non–incentive-aligned form of WTP measurement, which might increase WTP variance, but it raises doubts about the reliability of the results. Second, whereas the first empirical investigation showed a similar impact of bad mood in both Germany and France (insignificant interaction effect), the likelihood of falsely accepting the null hypothesis remained high. Third, the sample composition in the second investigation was unbalanced (only 25% collectivistic). Fourth, the analyses were conducted using participants’ passport nationality as the indicator of their culture, as a nominal independent variable. Studies that assess consumer collectivism on an individual level and conduct regression analyses could produce more fine-grained results, circumvent the danger of type-II errors, and evade issues with unbalanced designs. Fifth, the means and timing of the data collection could have distorted the results. Online surveys may induce strategic answering behavior (Lusk et al., 2007) and yield the danger of non-random selections (Wells et al., 2012). The data collection also lasted more than a year: For investigation 2, data from Greece and Germany were collected in 2010, and in the midst of the economic crisis, but data from Italy were collected in
late 2011. This difference in timing could also explain the measured behavioral differences, as that, for instance, consumers during an economic crisis could have compensated for their personal economic difficulties with indulging with hedonic products, rather than aiming to regulate their mood.
2. Stress, coping, and willingness to pay

Although Manuscript 2 detailed the unconscious impact of different degrees of stress on consumer cognition and product valuation (i.e., stress as the subject), it ignored consumer behaviors designed to reduce stress levels (i.e., stress as the object). Yet abundant research on coping with stress (Duhachek, 2008) predicts an influence of coping on consumer behavior. Specifically, coping potential likely improves the product’s valuation under stress, through additional value generated from a product’s stress-reducing capabilities. This effect would run counter to the finding of a negative effect of stress on consumer valuations. This investigation therefore offers an initial test of the role of coping in consumer valuations.

2.1 Theoretical background: Coping with stress

In contrast with unconscious reactions to stress (Manuscript 2), coping with stress is a conscious act, based on the perception of a situation as stressful, in which “Appraisal is the cognitive process through which an event is evaluated with respect to what is at stake (primary appraisal) and what coping resources and options are available (secondary appraisal)” (Folkman & Lazarus, 1980, p. 223). The intensity of the coping response depends on the severity of the perceived stressor (Thoits, 1995). This situational assessment includes an evaluation of the situation, past experiences, and current beliefs (Duhachek, 2008; Thoits, 1995). As a consequence, consumers exhibit interindividual (Cooper et al., 1992; Duhachek, 2005) and situational (Mick & Fournier, 1998) differences in their coping behavior.

The most common classification of coping behavior distinguishes between problem- and emotion-focused coping (Lazarus & Folkman, 1984). Problem-focused coping targets the perceived environmental stressor; emotion-focused coping aims to regulate the consumer’s emotional reaction to the stressor. Although other classifications have been introduced (e.g., Mick & Fournier, 1998), the traditional distinction between problem- and emotion-focused coping remains valid (Yi & Baumgartner, 2004). This investigation focuses on emotion-focused coping, because it might be linked to changes in consumer behavior (e.g., acquisition of a stress-relieving product), whereas problem-focused consumption is a less common initiator of consumption (e.g., acquisition of conflict resolution tools, drugs enhancing work capabilities).

Emotion-focused coping is more likely when a consumer experiences a stressful situation as uncontrollable (Thoits, 1995) or unexpected (Moschis, 2007). Consumers might apply multiple
coping strategies in parallel (Duhachek & Kelting, 2009). If a consumer resorts to coping through consumption (Moschis, 2007), evaluations of products that offer coping potential likely improve, through anticipation of a positive emotional reaction. However, to be suitable for consumption coping, a product must offer stress-reducing or relaxation potential (e.g., drinking alcohol, Cooper et al., 1992). If instead a product offers no coping potential (Figure 3, left side), construal-level effects should drive its evaluation (see Manuscript 2). Consumers’ WTP then might decrease under more, relative to less, stressful conditions. Only if the product’s construal level matches the consumer’s is a mitigation of the negative impact of stress possible (see Manuscript 2, study 3).

Even if a product offers coping potential (Figure 3, right side), not all consumers under stress resort to coping behavior. Some consumers prefer not to apply the product’s coping potential (bottom right, solid line), and others might vigorously aim to cope, leading to greater WTP under more stress (bottom right, dotted line). The net effect is unclear; because the effects run contrary to each other, they likely to increase the WTP variance for consumers under more relative to less stress. Previous research into the effect of negative moods on consumer valuation of mood-lifting products, including Manuscript 1, proposes similar effects of the stimulus on WTP variance. Applied to the regulation of consumers’ stress levels:

**H1:** For products with stress-reducing potential, consumers exhibit greater WTP variance when they are under more relative to less stress.
Although consumers’ propensity to use coping is unclear, the positive effect of some coping behavior is likely to increase the average valuation of a product with stress-reducing potential relative to a product without such capabilities. The WTP net effect for a product with coping potential depends on the magnitude of coping behavior among consumers (Figure 3, bottom right). The more common it is to cope through consumption, the more strongly the negative effect of stress on valuation gets mitigated, or even reversed if many consumers resort to coping. Formally:

H2: The product category moderates the relationship between consumer stress and WTP, such that the negative effect of more relative to less stress on WTP is mitigated or reversed for products with, relative to products without, stress-reducing potential.

2.2 Empirical investigation

Method. Two products that differed in their potential to help consumers cope with stress were selected: wine (high potential) and sponges (low potential). In a pretest with 13 products and 19 participants, wine was described as the most relaxing product (“The product helps me relax,” 1 = “Do not agree at all” to 5 = “Fully agree”; M = 3.85; difference from scale mean: t = 3.65, p < .01) and sponges as the least relaxing (M = 1.00; SD = .00). The products differed significantly in their relaxation and thus their coping potential (within-sample t-test: n = 19, t = 11.6, p < .001). The selection was confirmed with a second question item (“The product helps me reduce stress”; MWine = 3.48, MSponge = 1.00).

The survey was conducted in an experimental setting among graduate students. To manipulate stress levels, the participants in the experimental group were confronted with a simple computation task, masked as annual assessment of students’ quantitative capabilities: They were asked to subtract 17 from 1,194 as often as possible and note the resulting series. This procedure raises people’s arousal levels and causes stress (Benson, 2001). In a supposedly unrelated study, participants later stated their WTP and arousal levels (Mehrabian & Russell, 1974). Finally, participants had to qualitatively guess the purpose of the survey. The control group received no stress-inducing treatment. A WTP index for each product was calculated with an expected value of 0 for the control group under lower stress (i.e., indicating the WTP change under stress).

Results. Of the 46 participants who completed the survey (mean age = 23.2 years; 71% female), 4 were excluded because they guessed the purpose of the survey and 5 because they stated WTP
levels that exceeded twice the standard deviation within the product, leaving 37 participants in the sample. The remaining participants differed marginally significantly in their arousal levels ($M_{\text{Less stressed}} = 4.18$, $M_{\text{More stressed}} = 3.5$; $F(1, 36) = 3.8, p = .06, \eta = .31$).

In line with $H1$, participants’ WTP variance for wine in the more stressed conditions exceeded the WTP variance in the less stressed control condition by four times ($F(1, 36) = 5.0, p < .01$). Though not formally hypothesized, Figure 3 implies the similarity of WTP variance for non–stress-reducing products, in that coping for consumers under stress was unlikely. As expected, WTP variance for sponges did not differ across groups ($F(1, 36) = 1.2, p = .35$).

As predicted by $H2$, more stressed consumers’ WTP decreased significantly for sponges ($M_{\text{Less stressed}} = 1.61 \text{ €}, M_{\text{More stressed}} = 1.14 \text{ €}; F(1, 36) = 4.1, p = .05, \eta = .32$) and increased marginally significantly for wine ($M_{\text{Less stressed}} = 4.18 \text{ €}, M_{\text{More stressed}} = 5.03 \text{ €}; F(1, 36) = 3.2, p = .08, \eta = .28$). That is, participants’ WTP showed a significant moderating effect by product category for more relative to less stress ($M_{\text{Wine}} = +20\%, M_{\text{Sponge}} = -29\%$; within-sample $t = 4.8, p < .001$).

### 2.3 Summary and limitations

These findings provide some evidence of a moderating effect of product category in the stress–WTP relationship. A significant portion of consumers uses consumption to cope with stressful situations: If a product has stress-reducing potential, their WTP likely increases when they experience higher, relative to lower or no, stress. This effect is particularly noteworthy because stress often is perceived negatively or accompanied by bad moods. Following Manuscripts 1 and 2, the effect of stress and negative affect should have been unidirectional in the absence of coping behavior. The increase in WTP for wine, as a stress-reducing product, suggests that increasing consumer valuation from coping might exceed the overall negative evaluation (Manuscript 2) or counter potential interference from negative moods (Manuscript 1).

Therefore, marketing practitioners might exploit coping behavior to increase consumers’ WTP for a product when they are under stress. The marketing mix could be adjusted to position a product as stress-reducing. If many consumers are likely to be stressed (e.g., during rush hours), their average WTP could be increased by adjusting in-store advertising to promote the stress-relieving nature of these products. Furthermore, there is no indication that consumers who relaxed then perceived stress-reducing products any more negatively. Thus, even if the product description cannot be altered according to expected consumer stress levels (e.g., by the producer
of a product, which cannot alter the package design), a referral to its stress-relieving nature would not deteriorate product perceptions for consumers suffering from less stress. A retailer that sells products commonly perceived as stress relieving (e.g., wine merchant, candy store) also might increase WTP by creating stress for consumers or, as a less drastic means, convincing them that they are in a stressful situation that must be countered (e.g., salespeople noting the many daily hassles people face and how a glass of wine might help).

The applicability of these recommendations is limited in three ways though. First, the evidence came from a small sample. Although the described effects were similar in non-parametric tests (Mann-Whitney U-test), further analyses in different settings and with larger samples should seek to substantiate these results. Second, most participants were recruited in a university context and participated only in a hypothetical, non–incentive-aligned survey, which limits the validity of the findings. Third, the investigation featured only two sample products that contrasted very strongly in terms of consumers’ perceptions of their stress-reducing potential. To generalize the results, further research should include more products in the analysis and investigate the effects of stress with a larger sample, potentially at the point of purchase and with non-hypothetical WTP measures.
3. Impacts of review distributions on consumer certainty and WTP as a range

This investigation aims to replicate previous findings from Manuscript 3 with an analysis of the influence of different review distributions on consumer certainty and WTP ranges. Manuscript 3 established reviews as one means to increase consumer certainty (study 1) but only by differing the number of reviews (e.g., Jang et al., 2012). The present study employs differences in the review distribution to manipulate consumer certainty levels. Prior investigations adopt different review distributions to manipulate the polarization of consumer reviews (Shao, 2012). Thus, decreasing review variance (i.e., less polarized responses) should be associated with higher consumer certainty. Reviews for two product could yield the same mean (e.g., 3/5 stars), but perceptions of product A could be very polarized (e.g., many consumers with either 1-star or 5-star ratings), whereas perceptions of product B might be very similar (e.g., many consumers rate product around the mean), which determines the level of review variance. The mean product perception likely reflects the review distribution much more closely for product B (low variance), so consumers should be more certain of this product’s (average) performance than of the performance of product A (high variance), which could be either very good or very bad.

This certainty manipulation is particularly relevant in online settings (Zhu & Zhang, 2010), where consumers rely heavily on peer-generated reviews for information (Ludwig et al., 2013; Weathers et al., 2007). It might be difficult to influence the valence of consumer reviews, but marketing managers could relatively easily increase the number of reviews, which should generate a certainty effect of its own (see Manuscript 3, study 1) and also cause more normally distributed reviews, with smaller variance. This investigation therefore tests the effect of review valence on WTP ranges, with the expectation that decreasing review variance causes higher certainty and thus, similar to Manuscript 3, (a) increase expected WTP levels, (b) decrease the WTP range, and (c) increase the floor price more strongly than the ceiling price.

3.1 Empirical investigation

Method. Consumers received quantitative reviews in a 5-star system of different variance (more certain: \( Var = .4 \); less certain: \( Var = 3.8 \)) but equal valence (\( M = 3 \) out of 5 stars) and number (\( n = 27 \)) for two services associated with high performance uncertainty (hotel accommodation, spa visit; see also Jang et al., 2012). In the more certain condition, the reviews were normally distrib-
uted, with the majority of reviews similar to the mean review (i.e., inverted u-shape); in the less certain conditions, reviews were strongly polarized at the extremes (i.e., u-shape).

The review perceptions were confirmed in a prestudy: Lesser review variance was associated with higher degrees of certainty ($M = .59$) than greater review variance ($M = -1.40$; index of three items: “How certain are you that the product will function?” “How well can you judge how the product would function?” and “I feel the product would probably not work properly/work properly”; $-3 = \text{low certainty}, +3 = \text{high certainty}$; within-sample t-test: $n = 28, t = 7.6, p < .001$). The pretest also included a third review distribution of medium variance ($Var = 2.2$) whose certainty perceptions were located between the former two manipulations ($M = -.7$).

The orders of services and review variance presentation were random. The survey was conducted in an online setting with Amazon MTurk. Before each evaluation, participants were introduced to the scenario (trip to Paris/New Orleans; looking for accommodation/spa), then viewed the reviews, along with brief, standardized information about the service (e.g., location of the hotel, room size) for at least 30 seconds. They next answered questions that identified non-attentive participants for exclusion, and finally, they estimated their WTP and stated their certainty levels, as manipulation checks.

**Results.** Of the 198 participants who completed the survey (56% female, mean age = 33 years), 72 had to be excluded due to non-attention to the study’s content, as evaluated by the control questions (e.g., “Which service were you just introduced to?” hotel accommodation, spa visit, dinner in a restaurant; “Which sources of information were presented to you about the service?” online reviews, press clippings, general information), or because their expected WTP exceeded twice the standard deviation of the respective group. The sample characteristics did not change substantively due to the sample reduction (50% female, mean age = 33 years).

Participants’ WTP ranges for the hotel accommodation were in line with expectations, though insignificant: Expected WTP increased by 9% with more (MC) versus less certainty (LC; $M_{MC} = $120.8, $M_{LC} = $110.6; $F(1, 125) = 2.3, p = .135, \eta = .13$). The WTP range decreased but only by 3% ($M_{MC} = 43.9\%, M_{LC} = 44.3\%; F(1, 125) = .1, p = .75, \eta < .1$). The floor prices (+10%) increased slightly more strongly than the ceiling prices (+9%, $t = .36, p = .7$). The insignificant results matched the main study’s manipulation check, which showed only an insignificant difference in consumer certainty ($M_{MC} = 4.47, M_{LC} = 4.35; F(1, 125) = .22, p = .63, \eta < .1$).
In contrast, the stated WTP ranges for the spa visit remained inconclusive and insignificant: With increasing certainty, the expected WTP increased slightly (-2%, $F(1, 126) = .05, p = .8, \eta < .01$), the range hardly decreased (-7%, $F(1, 126) = .6, p = .4, \eta < .1$), and the floor price increased by a small margin (+2%), while the ceiling price decreased (-4%, $t = 1.7, p = .09$). This mixed evidence is also reflected in consumer certainty perceptions, which did not differ between the two manipulations ($M_{MC} = 4.07, M_{LC} = 4.18; F(1, 126) = .23, p = .63, \eta < .1$).

### 3.2 Summary

The results of this survey were inconclusive. Although the WTP range for the hotel accommodation developed directionally, as expected, the changes were not significant. The data for the spa visit remained contradictory (e.g., higher ceiling price under less certainty). However, this finding does not mean certainty levels cannot be manipulated with review variance. First, the prestudy confirmed the different consumer certainty levels. Second, the data quality of the MTurk survey was very low; participants seemingly did not pay close attention to the reviews, as indicated by the unsuccessful manipulation checks. The impact of review variance on certainty and WTP ranges thus demands further investigation.
IV. Conclusion
1. Summary of findings

The combined results of this research imply that situations generally influence consumer behavior. Although this thesis has analyzed the impact of only three exemplary variables (consumers’ mood, stress levels, and certainty about their own preferences or product performance), it offers notable indications that surrounding situations prompt behavioral responses for other variables as well. First, the three variables created significant consumer behavior responses in each field of investigation, as well as across all three areas, in 15 studies. Second, the effects of the situational variables seemed strong enough to affect consumer behavior, despite the likely presence of other situational (e.g., weather) or non-situational (e.g., individual product perceptions) variables, particularly in non-experimental settings. Third, though the focus of this research was on WTP as a dependent variable, situational variables also affected other behavioral measures (e.g., perceptions of feature importance, Manuscript 2).

Consumers’ behavioral responses to situational stimuli appeared unconscious in many cases though. This finding appears intuitive for emotional reactions to situational stimuli: Consumers should be unaware that their mood state drives their retrieval of mood-congruent information (Table 2, part 1). Most consumers are not even generally aware of how their product perceptions evolve (Kahneman, 2012). The finding that consumers are ignorant of the impact of different levels of construal on the way they perceive a product also is not surprising (Table 2, part 2); until recently, even scholars of consumer behavior were unaware of construal level as a research construct. For the more cognitive construct of certainty, a conscious reaction to a specific situational stimulus is expected. The present research supports this view, namely, that consumers deliberate about their certainty levels. However, the result of these deliberations are likely unconscious, in that they might be aware they are willing to pay more for a product with a certain performance level, but they probably do not realize that this increase in valuation stems from a stronger elevation of the floor relative to the ceiling price of the WTP range.

The findings of this research offer further support for the feasibility of the S-O-R paradigm in research into consumer behavior. The manipulations of the three situational variables caused reaction within consumers: Consumers’ mood influenced information retrieval, stress affected their level of construal, and certainty altered perceived risk of dissatisfaction with a product choice. These consumer reactions all affected WTP, as the dependent behavioral response.
Table 2: Summary of manuscript results

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<th>Dependent variables</th>
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<th>Findings</th>
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<td>Culture (measured)</td>
<td>Transience beliefs</td>
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</tr>
<tr>
<td>2</td>
<td>2 cultures (passport)</td>
<td>Reasons for WTP</td>
<td>Survey in collective and individualistic country</td>
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<td>2 moods (good vs. bad)</td>
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</tr>
<tr>
<td>4</td>
<td>2 culture (passport)</td>
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</tr>
<tr>
<td>2</td>
<td>2 stress (high vs. low arousal)</td>
<td>WTP</td>
<td>Experimental manipulation of stress</td>
</tr>
<tr>
<td>3</td>
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<tr>
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<td>4</td>
<td>2 performance certainty (high vs. low)</td>
<td>WTP range (measured)</td>
<td>Experimental manipulation through product testing</td>
</tr>
</tbody>
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* The direction of the WTP change is dependent on the product characteristics and description.
The influence direction of the situational variables on consumers’ WTP often is not constant but instead dependent on moderators specific to the situational variable. On the one hand, the mood–WTP link is moderated by the type of product (mood-lifting vs. non–mood-lifting), in combination with consumers’ culture (individualist vs. collectivist, Table 2, part 1; Table 3, studies 1.1 and 1.2). On the other hand, the characteristics and descriptions of the product under evaluation (high vs. low level of construal, Table 2, part 1; stress-reducing vs. non–stress-reducing, Table 3, study 2) influence the relationship between consumers’ stress levels and their WTP. The positive impact of consumer certainty on their valuation of products instead was established without a moderator (e.g., no impact of position of consumers’ expected WTP relative to retail price or of the valence of information about a product, Table 2, part 3).

<table>
<thead>
<tr>
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<tr>
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<td>WTP (hypothetical)</td>
<td>Experiment in individualistic countries with mood-lifting product</td>
<td>Culture moderates the mood–WTP link: consumers from both countries (France, Germany) display equal WTP patterns, irrespective of perceived cultural differences</td>
</tr>
<tr>
<td>1.2</td>
<td>Culture (consumers from 2 individualist and 1 collectivist countries)</td>
<td>WTP (hypothetical)</td>
<td>Experiment in collectivistic and individualistic countries with mood-lifting product</td>
<td>Culture moderates the mood–WTP link: – under bad moods and faced with mood-lifting product, consumers from collectivist country (Greece) appear to be mood regulating (increased WTP) – individualist (Italy, Germany) appear to behave mood congruently (decreased WTP)</td>
</tr>
<tr>
<td>2</td>
<td>2 stress (high vs. low arousal)</td>
<td>WTP (hypothetical)</td>
<td>Experimental manipulation of stress</td>
<td>Product type likely to moderate the stress–WTP link: – when under higher stress and faced with product with stress-reducing potential (wine), consumers appear to be coping (increased WTP) – when product offers no stress-reducing potential, consumer WTP decreases</td>
</tr>
<tr>
<td>3</td>
<td>2 performance certainty (high vs. low)</td>
<td>WTP range (hypothetical)</td>
<td>Experimental manipulation of certainty through review variance</td>
<td>No statistically significant effects of certainty: most likely due to online survey location (MTurk) and unsuccessful manipulation</td>
</tr>
</tbody>
</table>

Table 3: Summary of additional empirical investigation results

Although the impact of situational variables on consumer behavior might be expected from extant research, a few results are surprising. The influence of between-subject differences in regulating behavior, due to both mood and stress, on consumer WTP variance is novel and unexpected. Although previous research has established the possibility of mood regulation and stress coping, it has not fully investigated the drivers of interpersonal behavioral differences. Manuscript 1 (impact of mood on WTP) and empirical extension 2 (impact of stress on coping and WTP) offer evidence that negative emotions (bad mood, stress) cause greater WTP variance for
products with regulation potential, driven by consumers’ different susceptibilities to regulating behavior. Manuscript 1 also uses consumer culture as a means to operationalize the degree to which consumers are prone to mood regulation. Therefore, this research contributes to debates about mood regulation and coping with stress.

The individual manuscripts each offer unexpected insights as well. In the mood–WTP relationship, the consistently mood-congruent behavior of more individualistic consumers was surprising; in qualitative discussions, most consumers indicated they were prone to mood regulation. However, this statement was neither theoretically supported nor substantiated by three main (Manuscript 1) and two additional (empirical investigation 1) surveys. This research thereby adds to the debate about the predominance of mood-regulating behavior.

Another surprising result was the positive impact of negative certainty (i.e., more reviews with negative valence) on consumers’ WTP in study 1 of Manuscript 3. Intuitively, the more certain a consumer is about the bad performance of a product, the less he or she should be to pay for it. Instead, the empirical results showed that consumers who saw more negative reviews were willing to pay more, compared with those who viewed fewer negative reviews. This result is counterintuitive and has not been explained sufficiently, such that it warrants additional research.
2. Implications
2.1 Research implications

Theory. The research presented herein yields relevant implications for three theoretical debates in marketing research. First, for the discussion of consumers as *homo economicus*, the results of this investigation imply that consumers are not fully rational beings with stable preferences and constant, conscious utility maximization, in contrast with classic economic theories. This finding is in line with many research findings in consumer behavior. Future theorizing and practitioners’ marketing mix choices thus should rest on the assumption that the consumer is not rational, and the situation might interfere with consumers’ stable utility maximization. Instead, the same consumer facing equal products at two different points in time is likely to behave differently, because situational variables have interfered with his or her preferences.

Second, for research on consumer behavior, the present findings call for additional attention to situational variables, beyond consumer moods. Stress and certainty thus far have received limited attention; they require additional research (Dost & Wilken, 2012; Mathur et al., 2006). The empirical significance of both variables’ impact on consumer behavior supports this demand for more attention. Multiple moderators of the mood–WTP link already have been identified (a selection from more than 20 established moderators: product category, Gardner & Scott, 1990; consumers’ openness to feelings, Chuang & Chang, 2007; consumers’ long-term well-being, Zhong & Mitchell, 2012; gender, Thayer et al., 1994; social situations, Wang Erber & Erber, 2001), but fewer potential influences have been established for the relationship between stress and WTP, referring to either construal level (e.g., product knowledge, Hong & Sternthal, 2010) or coping (e.g., consumers’ social class, Henry, 2000). Still fewer refer to the certainty–WTP link (e.g., risk aversion, Kahn & Sarin, 1988; affect, Laran & Tsiros, 2013). This list highlights the discrepancy in research effort across fields, even though it is not complete, nor does the inclusion of additional variables necessarily indicate better model quality (Coughlan et al., 2010). Theoretical approaches thus must recognize the influence of consumer stress and certainty on consumer behavior. The relationships of stress and certainty with WTP also need further analysis to reveal the respective links fully.

Third, this research supports a conceptualization of WTP as a range, informing the debate about appropriate measures of consumers’ WTP. This range-based understanding appears to offer
both theoretical and empirical advantages. As the investigation of the impact of certainty on WTP ranges shows, a point-based understanding of WTP might lag behind theoretical developments (Manuscript 3, H2 and H3) and their empirical investigation. Specifically, changes in the size of the WTP range would have gone unnoticed, and the effect of certainty on expected WTP incompletely explained, if the dependent variable had been point based, because both these effects require an understanding of WTP as a range. Additional research that uses WTP as a dependent variable therefore should measure the variable as a range. Even if the research hypotheses in question predict only effects on the expected WTP, not on the floor or ceiling prices, an exploratory analysis of the WTP thresholds is meaningful. Only limited research thus far has adopted a range-based conceptualization of WTP, so hypotheses based on extant research are unlikely to yield implications for the WTP range.

On a related note, research on WTP measurement should extend its focus, from a methodological discussion (i.e., which measurement approach is most promising) to research into consumer behavior more generally. In extant and the present research, the analysis has pertained only to the impact of different certainty levels on the thresholds of the WTP ranges. However, it is likely that multiple independent variables affect the components of the WTP range differently (i.e., a variable causing a stronger shift in the floor relative to the ceiling price, or vice versa). The self-limitation of research on WTP as a range on technical assessments of measurement techniques thus forfeits the chance to contribute theoretically as well.

Methodology. The research efforts outlined in the enclosed manuscripts and additional investigations also yield methodological implications. First, when consumer behavior, particularly WTP, is the dependent variable, situational variables need to be included as potential confounds. This applies to both hypothetical and incentive-aligned WTP measurement techniques, as well as to different degrees of participants’ reactivity, because situational variables likely do not interact with strategic consumer behavior (e.g., the impact of consumers’ mood on WTP is unconscious, so it should be similar irrespective of whether WTP has been stated hypothetically or not). Although only the effects of consumers’ mood, stress, and certainty on WTP have been formally established, other situational variables likely interact with them (e.g., sad mood and failing interpersonal relationships lead to mood-congruent preferences, Lee et al., 2013; sad mood and an option with a prevention focus increase selection likelihood, Baek & Reid, 2013) or have a direct impact on consumer behavior (e.g., social visibility, Wysong et al., 2012; service encounter con-
text, Kim & Lee, 2012). If analyses of consumer behavior omit relevant situational variables, measured variance could remain unexplained.

Second, the present research implies that several measures could decrease research costs. Empirical investigations could use hypothetical measures, which are easier to generate, and supplement them with incentive-aligned procedures. Incentive-aligned measures of WTP validated the results generated by the hypothetical measures (e.g., studies 1.4 and 2.1), offering an early indication that it is unnecessary to measure dependent variables only non-hypothetically. However, none of the survey participants had any strategic interest in misstating their WTP, because the research was branded as academic, not as a corporate pricing survey.

Another option to reduce research costs is online surveys, which offer an appropriate substitute for offline research. The results generated from online surveys (studies 1.3, 2.1, 3.2, and 3.3) matched the findings from the seven offline studies. Measures generated at the point of purchase (studies 1.2 and 3.4) also were in line with those from experimental settings. Thus, the evidence suggests that researchers may rely on online surveys, as long as external validity is confirmed by using alternative survey locations that can be better controlled (e.g., laboratory) or are closer to the consumer (e.g., point of purchase). This advice might shift in retail environments for which online shopping is a dominant purchase form (e.g., books and music in the United States), because online surveys then would represent more realistic environments for testing behavioral hypotheses.

Another pertinent measure entails the use of pretests, rather than manipulation checks, which can reduce the main survey length and even potentially increase validity, by avoiding any indications of an experimental manipulation (Herr et al., 2012). The studies of both stress and certainty relied on extensive pretesting of the experimental manipulations, rather than manipulation checks in the main study, and generated results in line with the hypotheses. Although not a necessary indicator of the feasibility of pretests, this finding indicated their utility. Some measures of manipulation strength also could not have been generated in a main study, such as the physical assessment of participants’ arousal in the pretests for studies 2.2 and 2.3.

Third, the methodological implications of this study indicate the need for awareness of the difficulties encountered, which could affect further research as well. Although the use of experimental designs is common in consumer psychology and can help isolate certain situational influences on consumers, it suffers the risk of insufficient manipulation strength or incorrect manipu-
lation directions. Experimental conditions are comparatively easy to establish and control in a laboratory setting, but their supervision is impossible in online experiments. This difficulty is especially salient for online samples acquired through panels (e.g., Amazon MTurk), in which participants often answer surveys professionally and thus might pay limited attention to the manipulations. For example, the additional empirical investigation of the effects of different review distributions on consumer certainty and WTP ranges suffered from failed manipulations (III.3). If experiments are to be conducted online, prestudies testing the manipulations also should be undertaken online (e.g., study 3.1). An alternative would be to use non-experimental designs (e.g., measure the independent variable without manipulation, as in study 3.3), though a considerable sample size is likely needed to ensure sufficient sample heterogeneity.

Fourth, researchers must be careful when designing experiments with stress or consumer construal levels as variables, because stress is difficult to manipulate, and construal level is challenging to measure. In particular, low levels of stress are difficult to generate, because many participants possess a generally high arousal level (e.g., due to daily hassles), which is difficult to mitigate. An extensive manipulation to reduce arousal levels or a careful selection of situations that cause consumers to exhibit lower arousal levels thus might be required. Finally, because consumers’ level of construal is nearly impossible to measure (Pham et al., 2011), it might be easier to prime.

2.1 Managerial implications

Three managerial implications go beyond the conclusions drawn from the manuscripts and the research suggestions. First, any market research targeted at supporting pricing decisions should acknowledge the impacts of consumers’ mood, stress, and certainty on their product valuation. If situational influences on consumers’ WTP are disregarded in marketing research, the results are likely to be distorted, and the resulting pricing decisions would lead to suboptimal results. Although the situational determinants might be normally distributed among participants, external conditions likely influence the sample overall (e.g., weather causes bad moods, Parker & Tavassoli, 2000; prominence of stress after work, Hoel et al., 2001). Any measurement of WTP, without either controlling or measuring the situational variables, thus is likely to be biased.

Second, this research has established situational variables as tools for influencing consumer behavior, particularly for retailers. Most reactions of consumers to the three situational
variables are unconscious, so such stimuli appear especially powerful for marketers, in that the consumer responses resulting from situational marketing stimuli tend to be non-strategic. From a societal standpoint, the unconscious nature of the impact of the situational variables on consumer behavior appears rather alarming; most consumers would not approve being subconsciously tampered with by marketers hoping to make them pay more. Despite this normative objection though, retailers might use situational variables to increase consumers’ WTP. Intuitively, happy consumers spend more; the manuscripts detailing the impact of mood and stress on consumer behavior also indicate ways to increase consumers’ valuation by encouraging them to enter a favorable state (good mood, low stress), such as through music (Oakes, 2003; Sar et al., 2011) or pleasant smells (Morrison et al., 2011). Furthermore, a retailer might present peer preferences to influence shoppers’ preference certainty (Narayan et al., 2011), and information at the point of purchase could reassure consumers of the product’s future performance (Manuscript 3). Both means to increase certainty likely improve consumers’ valuation of the products.

Third, products designed to help consumers manage their mood or stress levels might be evaluated more favorably (Manuscript 1, empirical investigation 2). The package design of a product with mood-lifting or stress-reducing possibilities should be adjusted to stress this potential and increase consumers’ valuation. However, the positive effect of a product’s potential regulating capability is limited by moderating variables (e.g., consumer culture). Therefore, marketers must evaluate if target consumers possess appropriate characteristics that leave them prone to mood regulation (e.g., member of a collectivistic society) and adjust package designs or advertisements accordingly (e.g., stress mood-lifting capabilities in collectivist societies).
3. Limitations and further research

“Indeed, it is a strange-disposed time:
But men may construe things after their fashion,
Clean from the purpose of the things themselves.”

—Cicero to Casca, *Julius Caesar* (I.iii)

Cicero saw through the traitor Casca’s description of various signs that he claimed announced impending changes in the state of Rome (i.e., the assassination of Caesar; Shakespeare, 1957), ascertaining Casca of his awareness that “men may construe things after their fashion.” Similarly, consumer behavior researchers appear to see through the consumer. This investigation constitutes no exemption: for instance, the impact of consumers’ stress levels on their WTP has been described as mostly negative, explained via changes in consumer level of construal and characterized as dependent on the level of construal of the product under investigation (see manuscript 2). However, the above quote issues two insights that challenge the predictive nature of the findings of this research. First, “men construe things after their fashion”, which raises awareness to the fact that any generalization generated from empirical research cannot apply to every consumer. For example, in Manuscript 2’s investigation of the stress–WTP link, the product or feature level of construal is not necessarily perceived, or construed, similarly by all consumers. Rather, each consumer construes products, options, or stimuli (and their respective construal levels) differently, “after their fashion.” The findings detailed herein thus might be statistically significant, but they characterize consumers *on average*, rather than any individual. The introduction of soothing music in a store setting might relax consumers and increase their WTP in the long run, but it also could backfire for the first customer who enters the shop. This limitation is particularly applicable for the empirical investigation related to coping with stress, which relied on consumer product perceptions and featured a limited sample size, without replication.

Second, any prescription of future consumer behavior is likely to be overtaken by reality at some point. Casca’s predictions about the future of Rome might have come true to some extent, but they did not lead to the desired outcome, in that Casca was forced to flee. This research has established and explained the influence of three situational, irrational variables on consumer behavior; even as it challenges consumer rationality, it seeks to rationalize the non-rational. The implications suggest that it may be possible to explain or predict consumers’ WTP in certain situ-
ations (e.g., under stress) and when faced with certain consumption options (e.g., high level of construal product). Thus, this research could be questing for an “inadequate reason for all things in heaven and earth” (Buchan, 1906, p. 69), in line with the quote that opened this thesis.

This challenge to the predictive nature of research on consumer behavior applies to most investigations, because research inherently seeks to explain and generalize “all things.” However, this contestation is not an absolute call for a change in the foundations of consumer research; rather, it offers a note of caution. It is necessary to treat any research results carefully, because they might become inadequate in the light of reality, just as the myth of the fully rational consumer was dismantled. The findings of this research aim to be as explanatory and general as possible, but they demand constant challenges by further research to test their validity, rather than making “a god of [their] own infallibility” (Buchan, 1906, p. 69).

**Limitations specific to this research.** The three independent variables in this study were analyzed separately, in an effort to manipulate one dimension of the affective space at a time. However, some affective states likely are characterized by more than one dimension. For example, stress can result from both high arousal and unpleasant feelings. Although the collected manuscripts have aimed to prevent any double manipulation, complete exclusion of this potential is unlikely. If consumer stress not only increases arousal levels but also causes a negative mood, the separation of the effect of stress from the effect of arousal on the dependent variable would be difficult. Furthermore, arousal increases existing emotional reactions (Reisenzein, 1983), so if a mood manipulation were conducted under arousal, the emotional reaction might increase. These potential dual manipulations cannot be addressed at this stage of the research, but they should be systematically addressed in the future.

All the effects in this research also were established with regard to WTP only. The impact of the situational variables on other purchase-related variables (e.g., purchase probability, offer evaluation, satisfaction) might differ. For example, many individualist participants claimed that, when they were in bad moods, they more frequently bought chocolate as mood-lifting product, in contrast with the empirical evidence about the impact of their moods on their WTP. Extant research also indicates the susceptibility of different forms of consumer behavior to mood (e.g., willingness to try, Andrade, 2005; willingness to wait, Pyone & Isen, 2011; risk-taking, Lin et al., 2006; eating behavior, Tice et al., 2001), stress (e.g., brand preferences, Lee et al., 2007b; purchase satisfaction, Andreasen, 1984; decision deferral, Dhar & Nowlis, 1999; price perceptions,
Anglin et al., 1994), and certainty (e.g., tradeoffs, Gregory & Slovic, 1997; information search, Grant & Tybout, 2008; pleasurable feelings, Lee & Qiu, 2009). These variables have been linked partially to established measures of WTP, whether conceptually (e.g., option choice as dependent on consumer certainty, incorporated into purchase probability in the range construct) or by content (e.g., price perceptions in research on the impact of stress are comparable to WTP). Researchers must determine whether findings from studies using comparable dependent measures are in line with this investigation, as well as whether the three situational variables influence other forms of consumer behavior differently.

The dependent variables for this study were not systematically compared; namely, though point- and range-based measures of WTP aim to capture the same construct, they are conceptually different. An analysis of the effects of consumers’ mood and stress on their WTP ranges could offer additional insights, as generated for consumer certainty. For example, regulating behavior might influence consumers’ ceiling price in the WTP range, because consumers hope to improve their mood or stress state, which is associated with high rather than with low product performance. In addition, the precision of the existing results regarding the impact of mood and stress on consumer behavior could be enhanced. A range-based understanding of WTP captures consumer heterogeneity by assessing the floor and ceiling price separately, so the magnitude of the error terms in this analysis could be smaller than those in point-based measures, which only measure one variable. That is, the consumers’ uncertainty about their preferences or the product’s performance are incorporated not in a single measure (WTP as a point) but by two or three variables (floor price, ceiling price, expected WTP). Each variable for the WTP range then should carry less individual uncertainty and display, on average, smaller variance. It remains to be determined if consumers’ WTP variance for the point-based measure is significantly larger than that for range-based approaches in the long run.

The generalization of the results also is limited; most results came from homogeneous student or university-related samples. The importance of unique interindividual perceptions renders this limitation particularly salient. The generalization of the findings is thus limited, even though most of the results were validated with more heterogeneous samples and at the point of purchase (study 2 in Manuscript 1, studies 2 and 4 in Manuscript 3).

The external validity of the findings is limited too. Most of the research designs were experimental, though some results represented surveys without manipulation (e.g., studies 1.1, 1.2,
3.3). In particular, research into the impact of stress on WTP relied exclusively on experiments, without any validation of the findings in a different setting (e.g., closer to the actual point of purchase). Prior research has used qualitative designs to explore consumer behavior (e.g., mood, Luomala, 2002; stress, Pavia & Mason, 2004); open-ended questions appeared only in the research into the effects of mood (study 1.2).

Finally, an infinite list of moderating variables on the respective influences on WTP could be generated. Without detailing all potential influences on the explanatory links, further research could always generate additional insights. However, it remains to be determined whether any such potential addition to knowledge is sufficiently relevant to demand further investigation.

**Proposals for research.** Two routes for research appear most promising. First, the effects of different emotional states in Russell’s (1980) circumplex model of affect should be systematically explored. As the limitations of this study revealed, mood and stress might not be characterized by the pleasure and arousal dimensions alone but by a combination of both axes. No research, including the present thesis, has analyzed the impact of combinations of both dimensions on consumer behavior. With further research, these separate research domains could be connected (i.e., research on impact of mood and stress on consumer behavior). But the design of such research admittedly would be challenging. To analyze the impact of different combinations of pleasure and arousal, researchers might manipulate them and test the impact on WTP in pairs (e.g., effects of positively versus negatively perceived high arousal, or stress and eustress). This method appears difficult in practice in a quantitative research setting though, because some circumplex combinations likely would be difficult to manipulate (e.g., positive stress, negatively perceived low arousal). Another approach to investigating the impact of combinations of pleasure and arousal would be to measure the two dimensions on the individual level and analyze their main and interaction effects in a regression analysis. However, this approach would require significant variance on both dimensions. Variance might be generated by questioning participants at different points in time (e.g., weekend vs. rush hour) or during social occasions associated with specific affective combinations (e.g., positive stress during a soccer game; negatively perceived low arousal during a funeral), but such an investigation would require massive research effort. A third approach could involve a more qualitative research format. For example, consumption diaries can reveal the impact of various situations on consumer behavior (e.g., Aldridge-Gerry et al., 2011; Sudman & Ferber, 1977). In these diaries, participants note consumption behavior in specific,
predefined conditions. Because consumers undergo different combinations of pleasure and arousal over time and constantly face consumption options, this self-assessment offers a promising source of examples of the impact of affective combinations on consumer behavior.

Second, a promising research field could investigate the effects of negative certainty on consumers’ WTP ranges. The present research has established a positive effect of negative certainty on expected WTP—a counterintuitive result that warrants further attention. Further research should determine if the established results are valid and reliable, such as by replicating the results with a larger sample than in the present research. In addition, because negative certainty was manipulated with consumer reviews, alternative manipulations could help increase external validity. Finally, the drivers of a potential increase in WTP due to negative certainty demand clearer explications. It remains to be determined, for example, whether any performance certainty is better than none, or if a product is perceived as truly low performing when other users’ evaluations fall short of a certain threshold.
References


