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People often assume that costlier means lead to better outcomes, even in the absence of an objective relationship in the specific context. Such cost–benefit heuristics in goal pursuit have been observed across several domains, but their antecedents have not been fully explored. In this research, the authors propose that a person's tendency to use cost–benefit heuristics depends on the extent to which that person subscribes to the Protestant Work Ethic (PWE), an influential concept originally introduced to explain the rise of capitalism. The PWE is a core value predicated on the work-specific belief that hard work leads to success, but people who subscribe strongly to it tend to overgeneralize and align other work-unrelated cognitions for consistency. Across ten studies (N = 1,917) measuring and manipulating PWE, robust findings show that people who are high (vs. low) in PWE are more likely to use cost–benefit heuristics and are more likely to choose costlier means in pursuit of superior outcomes. Suggestions are provided for how marketers may identify consumers high versus low in PWE and tailor their offerings accordingly.

Keywords: Protestant Work Ethic, core belief, lay theories, cost–benefit heuristics, price–quality relationship

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Do Costly Options Lead to Better Outcomes? How the Protestant Work Ethic Influences the Cost–Benefit Heuristic in Goal Pursuit

Imagine you have a nasty cough. There are two cough syrups available: one that tastes awful and one that tastes great. Which of these would be more effective in treating your cough? When we asked this question to our colleagues and friends, many of them (though not all) answered, "The one that tastes awful." However, most of them admitted on reflection that the taste of a medicine should not objectively determine its effectiveness. When people have multiple means to pursue the same performance goal and these means differ in the cost involved, they often use the cost of the means to predict the benefit of the outcome. Such cost–benefit heuristics have been documented across different types of cost and different goal pursuit contexts (e.g., Kramer et al. 2012; Labroo and Kim 2009). What causes people to hold such associations? Although there has been some speculation about possible causes, such as market efficiency (Kramer et al. 2012) and the reverse of conditional relations (Labroo and Kim 2009), there is no single general explanation for all the extant findings.

In this research, we propose a robust antecedent, namely, that a person's tendency to hold cost–benefit heuristics in goal pursuit derives from the extent to which that person believes that hard work leads to good outcomes. Because work is a dominant feature of the daily life of most adults (Giorgi and

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Marsh 1990), we speculate that a person's work-related core beliefs may overgeneralize and influence their judgment and decision making even in work-unrelated contexts. One such work-related core belief is the Protestant Work Ethic (PWE), a concept introduced by Max Weber (1905) to argue that capitalism initially emerged in Western Europe and North America partially because Protestants' stronger work ethic facilitated the accumulation of wealth. The PWE has been regarded as part of America's core values and national character (Hsu 1972; Katz and Hass 1988), and it is a cornerstone of much social science research, although it has been largely ignored in the marketing literature. An essential component of the PWE is a work-specific belief that if you work hard, you will succeed (Furnham 1990; Miller, Woehr, and Hudspeth 2002; Tang 1993); because people tend to protect their core beliefs and align their other cognitions to be consistent with those core beliefs (Briley, Morris, and Simonson 2000; Lerner and Miller 1978; Plaks, Grant, and Dweck 2005), we propose that people who believe strongly in the PWE are more likely than those low in PWE to assume that costlier means lead to better outcomes, even in work-unrelated contexts (e.g., medicine taste as related to efficacy, service price as related to quality). Across multiple studies measuring and manipulating PWE, we find that consumers high (vs. low) in PWE are (1) more likely to apply cost–benefit heuristics in their judgment and (2) more likely to choose costlier means (e.g., bitter health food) to achieve goals, even though the cost does not objectively ensure better outcomes in those specific contexts. This effect holds robustly across different types of cost, including physical and mental (effort), monetary (price), and physiological (taste). We also show that the PWE influences people's preferences for marketing tactics that inherently emphasize the effort–reward link.

We begin by reviewing the literature on cost–benefit heuristics. We then introduce Weber's original theory, followed by the modern conceptualization of PWE, and review psychological research on the PWE. Next, we develop our key hypothesis on the basis of previous findings on core beliefs. We then report five studies that test our hypothesis, and conclude with a discussion of the contributions, limitations, and implications of this research.

THEORETICAL FRAMEWORK

Cost–Benefit Heuristics in Goal Pursuit

When people have multiple means available to pursue the same performance goal and these means differ in the level of cost involved, they often use the cost of the means to predict the benefit of the outcome. For example, Kramer et al. (2012) demonstrate a "no pain, no gain" lay inference for pharmaceutical products. They find that when people are motivated to process information about a medicine, they judge a bad-tasting cough syrup to be more effective than a good-tasting one. Similarly, Labroo and Kim (2009) document an "instrumentality heuristic" whereby people who have an accessible goal evaluate a means more favorably if that means is more effortful (vs. easier).

Although previous literature on cost–benefit heuristics in goal pursuit has documented the prevalence of such heuristics, a robust cause/origin of these heuristics has not been discovered. Kramer et al. (2012) suggest that the "no pain, no gain" lay inference they observe for pharmaceutical products is due to market efficiency, whereby a bad-tasting cough syrup should not survive in a competitive market unless it is functionally superior. However, market efficiency cannot explain the effects observed by Labroo and Kim (2009) because the efforts that Labroo and Kim study in their experiments (e.g., ease of reading text, distance of a donation box) were not offers on a competitive market. Correspondingly, Labroo and Kim (2009, p. 133) speculate that the instrumentality heuristic occurred "because people *usually* put high effort into whichever means promises goal attainment, and they *mistakenly* reverse this correlation" (emphasis added). Such a mistakenly reversed association may not be strongly held or employed when the situation calls for explicit trade-off on effort (i.e., when a high-effort option and a similar low-effort alternative are both available).

In the current research, we propose a different and more general antecedent to cost–benefit heuristics in goal pursuit, namely, an individual's core belief in the Protestant Work Ethic. Researchers have previously explored several boundary conditions that moderate the use of cost–benefit heuristics, such as need for cognition and issue involvement (Kramer et al. 2012), or goal accessibility and strength (Labroo and Kim 2009; Kim and Labroo 2011). These moderators are informative and suggest when consumers might use the specific cost–benefit heuristics, but they do not explain why individuals hold such associations to begin with. The present research explores an important source of these associations rather than what triggers the motivation to utilize them.

The Protestant Work Ethic

The PWE is a concept introduced by the sociologist Max Weber (1905) to explain the historical rise of capitalism. During the 16th-century Protestant Reformation, Protestants deviated from the Roman Catholic Church in terms of the way they pursued salvation. Whereas the Roman Catholic Church focused on ceremonial sacraments such as baptism and confession, Protestants (especially the most extreme believers, Puritans) believed that the true way of showing their faith to God was through asceticism and economic success. As a result, Protestants developed systematically different work ethics: they worked hard and condemned idleness; favored asceticism and showed distaste for hedonism; were frugal and avoided wasting money and time; and were self-reliant and independent. Weber argued that the PWE facilitated the accumulation of wealth in Protestant societies and that it partially explained why capitalism started in Western Europe and North America.

As a concept, the Protestant Work Ethic has attracted its share of criticism, but it has survived as one of the most influential components of modern thought in social science, across fields as disparate as history, anthropology, sociology, economics, and psychology (Jones 1997). The question of the extent to which religion has shaped economic history remains hotly debated (see Web Appendix A), but "few have denied the validity and accuracy of Weber's specifications of behavior patterns, goals and values dictated by the PWE" (Furnham 1984, p. 88). Although the original conceptualization of PWE was steeped in religion, its manifestation and implication today are completely secular. Religion plays a less central role in modern society, whereas the work ethic itself is still highly valued and passed on across generations through parenting, education, media, and popular culture (Giorgi and Marsh 1990; Kelvin and Jarrett 1985). For example, a significant

proportion of childhood reading contains fables that advocate a strong work ethic (e.g., "The Ant and the Grasshopper," "The Three Little Pigs"). Some of Benjamin Franklin's famous maxims, such as "Diligence is the mother of good luck," "Well done is better than well said," and "Haste makes waste," remain in common usage today. Hollywood is also a constant enthusiast in creating and popularizing role models who succeed through hard work (e.g., *Rocky*, *The Pursuit of Happyness*, *Homeless to Harvard*). Collectively, a civilized society has a sufficiently rich social environment to cultivate the PWE, even without the help of religion. As Ray (1982, p. 135) points out, the PWE "is certainly not yet dead; it is just no longer Protestant."

Psychologists today see the PWE as a secular individual-difference variable. Several researchers have developed psychometric scales to measure the PWE, of which the most reliable and widely used scale was developed by Mirels and Garrett (1971). Using these scales, psychologists have tested the influence of PWE on many work-related behaviors. For example, people with high PWE spend more time at tedious work (Merrens and Garrett 1975), are more motivated if a task is labeled as "work" (Tang and Baumeister 1984), and are more likely to work while commuting (Greenberg 1978).

Almost all psychological research on PWE, however, has tested its consequences only in work-related domains (for a notable exception, see Quinn and Crocker 1999). In this research, we explore the consequences of the PWE on work-unrelated behaviors, specifically, behaviors relating to purchase and consumption. Although the PWE has been invoked quite frequently as a plausible rationale underlying certain marketing phenomena (Keinan and Kivetz 2011, p. 936; Kivetz and Keinan 2006, p. 274; Kivetz and Simonson 2002, p. 156; Raghunathan, Naylor, and Hoyer 2006, p. 171), the current research is the first we know of in the marketing literature to investigate it empirically and systematically.

The Overgeneralized Effect of Core Beliefs

Much research suggests that people tend to maintain their core beliefs and make judgments that are consistent with these beliefs (Lerner and Miller 1978). For example, Briley, Morris, and Simonson (2000) find that Western participants who came from a Judeo-Christian tradition that valorized extreme trade-offs (as exemplified by the story of Abraham's sacrifice of his son Isaac) were less likely to demonstrate the compromise effect than Asian participants who believed in Buddhist-Confucian traditions of keeping to the mean. Convergent evidence is seen from domains that are not religious in origin but also represent the effect of socialization, namely, people's lay beliefs regarding the malleability of human attributes (i.e., entity vs. incremental theories; Dweck and Leggett 1988; Molden and Dweck 2006). Because these lay theories represent core assumptions about the nature of the self and the social world (Molden and Dweck 2006), both entity and incremental theorists tend to resist theory-inconsistent information or actively scrutinize it (Plaks et al. 2005).

The Protestant Work Ethic has been regarded as one of America's core values and national character (Hsu 1972; Katz and Hass 1988). Throughout the world, work is also the central theme of daily life for most adults (Giorgi and Marsh 1990) because it constitutes the majority of people's waking time and is the major source of income and economic independence. A person's work ethic regulates his or her daily working behaviors and serves crucial adaptive functions. It is also constantly reinforced. Therefore, a work ethic, once developed, is likely to become a core belief, and an individual should have a strong tendency to protect his or her work ethic and align other cognitions and behaviors to be consistent with it.

What, then, is the implication of PWE for consumer behavior, if any? As mentioned earlier, cost–benefit heuristics in goal pursuit have been frequently documented, but their origins have not been fully explored. We propose that the tendency to exhibit a cost–benefit heuristic depends on the extent to which a person subscribes to the PWE. An essential component of the PWE is the work-specific belief that "if you work hard, you will succeed" (Furnham 1990; Miller, Woehr, and Hudspeth 2002; Tang 1993). We suggest that this work-specific belief is likely to overgeneralize to a domain-free heuristic that costlier means lead to better outcomes. This is because, as mentioned, a person's work ethic is a core belief around which other cognitions and behaviors are organized. Thus, when people have multiple means to pursue a performance goal but lack information about which means is more efficacious in achieving that goal, those who subscribe to the PWE are more likely to assume that costlier means lead to better outcomes and thus to choose the costlier option.

We now report five studies that test the effect of individual PWE, measured as well as manipulated, on a variety of cost–benefit heuristics in goal pursuit. Study 1 tests the moderating effect of PWE on the "taste–efficacy heuristic" for medication and tests whether other related constructs can account for the results. Study 2 manipulates PWE and demonstrates its effect on the "price–quality heuristic." Study 3 then extends the effect of PWE from judgment to real choice and tests an important boundary condition regarding the context-specific applicability of PWE. Study 4 replicates the effect of PWE on real choice and tests the mediating role of cost–benefit heuristics. This study also tests whether observable behavioral proxies of PWE can predict similar results. Study 5 then shows the robustness of PWE relative to other conceptualizations in explaining cost–benefit heuristics in goal pursuit. Finally, we discuss the contributions, limitations, and managerial implications of this research.

STUDY 1: MEASURED PWE AND THE TASTE–EFFICACY HEURISTIC

Kramer et al. (2012) demonstrate a "taste–efficacy heuristic" for pharmaceutical products, whereby cost of means is manipulated by the stated taste of the medicine. All else constant, medicine that tastes awful is a costlier way of treating a cough than medicine that tastes great. The aim of Study 1 was to test whether belief in the PWE drives this effect. We expected that only consumers high in PWE would use bad (vs. good) taste to infer higher (vs. lower) efficacy, whereas consumers low in PWE would not do so.

Method

We collected data from Amazon Mechanical Turk (MTurk), with 154 people from the United States participating for payments of $.80 each. In the demand check, two participants linked product efficacy judgments to the PWE scale and thus were excluded from analysis. Of the remaining 152 participants, 79 (52%) were female. Ages ranged from 18 to 56 years (median 28 years). Neither gender nor age had significant main or interactive effects and thus will not be discussed further. Moreover, 23 participants reported having a cough at

the time they filled out the questionnaire, which might influence their answers regarding the cough syrup. We control for this in the following analyses, although the results all hold if this covariate is not included.

This study was in a 2 (taste of medicine: good vs. bad) × PWE design, with taste manipulated between subjects using a print advertisement and PWE measured. Participants first evaluated an ad for a cough syrup called Buckley's Mixture (stimuli from Kramer et al. 2012, Study 1). In the good-taste condition, the cough syrup was described as tasting great, whereas in the bad-taste condition, it was described as tasting awful. After reviewing the ad, participants provided judgments of product efficacy. Specifically, we asked them three questions: "How _____ do you think Buckley's Mixture is in treating coughs?" where the blank space stands for "effective," "powerful," and "useful," respectively (1 = "not at all," and 9 = "very"). We also asked two further questions: "If you take Buckley's Mixture to treat your nasty cough, how likely do you think it will cure you _____?" where the blank space stands for "quickly" and "thoroughly," respectively (1 = "very unlikely," and 9 = "very likely"). All five questions were highly intercorrelated ($\alpha = .92$) and loaded on a single factor; thus, they were averaged to represent the judgment of efficacy. Finally, participants evaluated the ad as per the cover story.

After the ad evaluation task, participants advanced to the "next study," where they completed the Mirels and Garrett (1971) PWE scale, as well as the need for cognition (NFC) scale (Cacioppo, Petty, and Kao 1984) and the trait self-control (TSC) scale (Tangney, Baumeister, and Boone 2004), to help determine whether the effect of PWE on efficacy judgment may alternatively be explained by other possibly relevant traits. None of these scale responses was affected by the manipulation (all $p > .34$). Demographic information was collected at the end.

Results and Discussion

The PWE scale showed good internal consistency ($\alpha = .80$); thus, we computed the average and mean-centered it for analysis. We hypothesized that the bad-tasting cough syrup would be judged more effective than the good-tasting counterpart, but only among participants high in PWE. Regression and spotlight analysis supported our prediction. We regressed the efficacy judgment on taste (0 = good, 1 = bad), PWE, and their interaction. There was a main effect of taste manipulation ($M_{good} = 5.58$, $M_{bad} = 6.50$; $\beta = .31$, $t = 3.90$, $p < .001$), which replicates Kramer et al. (2012); no main effect of PWE ($\beta = .01$, $t = .06$, n.s.); and a significant interaction ($\beta = .26$, $t = 2.05$, $p < .05$). Spotlight analysis revealed that individuals with low PWE (examined at one standard deviation below the mean) did not judge the syrup as being more or less effective across the taste conditions ($M_{good} = 5.89$, $M_{bad} = 6.31$; $\beta = .14$, $t = 1.27$, n.s.). In contrast and as predicted, individuals with high PWE (examined at one standard deviation above the mean) judged the bad-tasting syrup as being more effective than the good-tasting syrup ($M_{good} = 5.26$, $M_{bad} = 6.68$; $\beta = .48$, $t = 4.18$, $p < .001$).

Additional analyses tested whether the effect of PWE could be alternatively explained by NFC or a general self-control tendency, and these possibilities were not supported. First, PWE was not correlated with either NFC ($r(150) = -.05$, n.s.), or TSC ($r(150) = -.03$, n.s.), supporting the uniqueness of this construct. Moreover, rerunning the aforementioned regressions, replacing PWE with either construct did not generate the same interaction effect as PWE did (NFC: $\beta = -.16$, $t = -1.36$, n.s.; TSC: $\beta = -.06$, $t = -.54$, n.s.).

These results show that PWE moderated the tendency of consumers to use the cost in the means to predict the benefit in the outcome. We find that consumers who believed strongly in the PWE judged a cough syrup to be more effective if it tasted bad than if it tasted good, whereas consumers who did not believe in the PWE did not infer any difference in efficacy from taste. This result also highlights the role of the PWE and indicates that a superficial reversal of an association cannot explain all cost–benefit heuristics, because the latter explanation would predict that everybody, regardless of PWE level, should be equally likely to reverse a learned association and thereby exhibit cost–benefit heuristics. Moreover, this moderating effect of PWE on the taste–efficacy heuristic could not be explained by other individual differences such as NFC or self-control tendency.

STUDY 2: MANIPULATED PWE AND THE PRICE–QUALITY HEURISTIC

Although price usually has a negative impact on sales, many behavioral models incorporate an assumption of a positive subjective relationship between price and quality (Rao and Monroe 1988). Interestingly, an objective price–quality relationship is weak or even absent for many products (Gerstner 1985; Riesz 1979). Therefore, a rational learning-by-observation account cannot fully explain the origin of this heuristic, and many researchers have called for the study of its causes (Rao 2005; Shiv, Carmon, and Ariely 2005). In Study 2, we directly manipulate participants' PWE and examine its effect on the use of a price–quality heuristic, where price is the monetary cost to achieve a better service outcome.

It is important to note that although the PWE is an individual difference trait, it has been manipulated in previous research (Quinn and Crocker 1999). Because Quinn and Crocker's manipulation is context-specific and dated (and they do not report manipulation checks), we primed high versus low PWE by asking participants to rank order six quotes that either advocated or negated a work ethic (Schrift, Kivetz, and Netzer 2016). Pretests showed that this priming manipulation successfully influenced participants' PWE as measured by the Mirels and Garrett scale (see the Appendix).

Method

We hypothesized that manipulating high (vs. low) PWE would make respondents more likely to apply a price–quality heuristic in judging service providers. Data were collected on MTurk five days before Christmas, with 180 people from the United States (60 female, ages 18–72 years, median age 29 years) participating in this study for $.80 each.

In this single-factor, between-subjects experiment, we first manipulated high versus low PWE using the quotes-ranking task described in the Appendix. All participants then proceeded to an ostensibly unrelated study, in which they first named a person who lived far away to whom they would like to send a Christmas gift and then described the gift they would like to send. These two questions were intended to increase participants' involvement and make their subsequent decisions feel more consequential. Participants were then asked to imagine that they woke up that morning (i.e., December 20) and had to hire a courier to deliver their gift. For

some reason, only two unfamiliar brands were available. Both brands guaranteed delivery before Christmas (or would refund if they failed to deliver in time), and one brand charged 50% less than the other. Given this scenario, participants answered a question that measured their judgment of service outcome: "Which courier brand is more likely to successfully deliver your Christmas gift in time?" (1 = "the less expensive one," 9 = "the more expensive one"). Finally, demographic information was collected.

Results and Discussion

As expected, participants primed with high (vs. low) PWE anticipated that the more expensive courier brand was more likely to successfully deliver their Christmas gift (M_{high} = 5.95, SD = 1.55 vs. M_{low} = 5.51, SD = 1.36; t(178) = 2.03, $p < .05$). This result provides the first evidence for our proposed causal relationship between PWE and the cost–benefit heuristic. Higher PWE made consumers more likely to use monetary cost (i.e., price) to predict the service outcome. Because participants were randomly assigned to high and low PWE manipulation conditions, the observed effect could not be alternatively explained by differences in prior knowledge (Rao and Monroe 1988), such as previous exposure to objective price–quality relationship (e.g., learning by observation) or knowledge about market efficiency.

Studies 1 and 2 show that people who believe strongly in the PWE are more likely to use cost–benefit heuristics, as indicated by their judgments of cough syrup effectiveness and courier service quality. These results held when we used PWE as a measured variable and when it was manipulated. Importantly, these results do not suggest that the PWE is the only cause for the price–quality heuristic. Learning by observation and the efficient market assumption may well be other drivers in parallel. What we suggest and demonstrate is that the PWE is one important antecedent of price–quality associations that explains variance but has until now been ignored in the literature. Studies 3 and 4 extend this effect from judgment to real choice. We test whether people high (vs. low) in PWE are more likely to choose costlier options for goal pursuit. We also test a boundary condition, namely, the applicability of PWE in the specific context.

STUDY 3: MANIPULATED PWE AND REAL CHOICE BETWEEN DIFFICULT AND EASY INSTRUMENTAL TASKS

In Study 3, we manipulated PWE and employed a consequential choice design to examine whether PWE would influence real choice. Because PWE leads people to assume that costlier means lead to superior outcomes, we hypothesize that people high (vs. low) in PWE are more likely to choose the costlier of two options in goal pursuit if they perceive both available options as viable means to the performance goal (i.e., achieving a superior outcome). Like other beliefs, PWE is a type of knowledge whose influence on information processing is subject not only to its availability (Study 1) and accessibility (Study 2) but also to its applicability in the context (Higgins 1996). We test this boundary condition in Study 3, namely, the applicability of PWE in the decision context. Specifically, when we frame the choice options as unrelated to the pursuit of a performance goal, even people high in PWE should not show a preference for the costly option.

Method

Students at a major East Coast university (N = 213, 117 female, M_{age} = 27 years) participated for monetary compensation and were randomly assigned across conditions in a 2 (PWE: high vs. low) × 2 (task framing: training vs. unrelated) between-subjects design. We first manipulated PWE using the quotes-ranking task described earlier. All participants then proceeded to an ostensibly unrelated study, called the Perceptual Ability Test (PAT), to test spatial visualization skills. Participants were told that the PAT might seem easy but that so far only 5% of participants had solved it correctly. To make the choice incentive-compatible, we also told them that anyone who got the correct answer would be entered into a lottery for two cash prizes of $30 each.

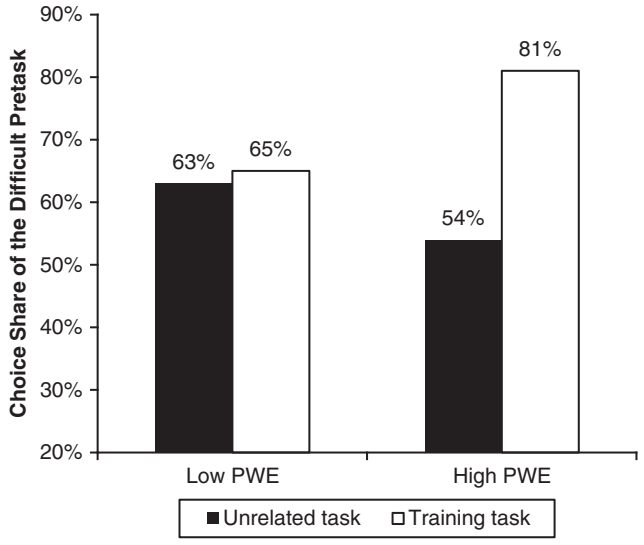
Prior to administering the actual PAT, participants were asked to perform an additional pretask and were offered the choice between a more difficult task and an easier task. Participants assigned to the training-task condition were informed that the pretask would serve as a training exercise for the subsequent PAT test (i.e., a means to the performance goal). In contrast, participants assigned to the unrelated-task condition were told that the pretask was unrelated to the subsequent PAT test (i.e., the pretask was not a means to the performance goal). Participants in all conditions, regardless of their choice, received the exact same task, which involved reading a short paragraph and indicating how many times the letter "s" appeared in the text. After they had completed this pretask, all participants proceeded to the main PAT, which included reading a one-page article and determining the number of times the letter "e" appeared in the article.

Results and Discussion

The dependent variable of interest was participants' choice of pretask. Using a binary logistic regression, we regressed participants' choice of pretask (0 = easy task, 1 = difficult task) on PWE condition, task framing, and their interaction. There were no main effects, but there was a significant interaction between PWE and task framing (B = 1.20, SE = .60; Wald(1) = 4.01, $p < .05$; see Figure 1). As expected, when the pretask was framed as a training task, priming high (vs. low) PWE made participants more likely to choose the difficult task ($M_{highPWE}$ = 81%, M_{lowPWE} = 65%; B = .82, SE = .45; Wald(1) = 3.31, $p = .07$). In contrast, when the pretask was framed as an unrelated task, priming high (vs. low) PWE did not increase choice share for the difficult task ($M_{highPWE}$ = 54%, M_{lowPWE} = 63%; B = −.38, SE = .40; Wald(1) = .40, n.s.).

Using manipulated PWE and real choice, Study 3 provides convergent evidence for the causal impact of PWE on choice. Priming high (vs. low) PWE made people more likely to choose what they believed was a more difficult task, but only when the task was framed as a means to achieving a performance goal. This result indicates that the PWE, like other beliefs, influences judgment and behavior only when it is both accessible and applicable in the specific context. Study 3 also ruled out alternative mechanisms such as the preference for effortful options being driven by a goal of restoring an illusion of control (Cutright and Samper 2014) or collecting novel experiences (Keinan and Kivetz 2011). If these alternative mechanisms were indeed at play here, there should have been a main effect of PWE regardless of the framing, since exerting effort satisfied the other goals that were possibly relevant. The

Figure 1
CHOICE OF DIFFICULT TASK AS A FUNCTION OF PWE AND TASK FRAMING IN STUDY 3



observed interaction pinpoints the role of the PWE and the necessity of a concern for instrumentality in the process. Moreover, market efficiency also cannot explain the cost–benefit heuristic in this study because the easy and difficult pretasks were not offers on a competitive market.

Up to this point, we have consistently found the effect of PWE on consumer judgment and decision making, with both manipulated and measured PWE, across different decision contexts and different types of cost. One may ask how marketers may identify consumers high versus low in PWE and customize their marketing strategy. Study 4 provides some preliminary answers to this question and also provides further insights into the mechanism by demonstrating the mediating role of cost–benefit inferences underlying the observed choices.

STUDY 4: OBSERVABLE PWE AND CHOICE OF HEALTH FOOD

Study 4 has five purposes. First, we want to replicate our previous results in yet another context: consumers' real choices of food. Second, in Study 3, the applicability of PWE was manipulated at two levels such that in one condition, the options were clearly relevant means to the performance goal (i.e., training task), whereas in the other condition they were not. Here, we employed a more conservative test such that in one condition, the relevance of options was left ambiguous rather than clearly specified, whereas in the other condition, the cost was irrelevant, as before. Third, Study 3 used moderation to rule out alternative mechanisms for the effect of PWE on choice; in Study 4, we directly test the mediating role of cost–benefit heuristics in the decision. Fourth, we want to investigate how marketers might be able to apply our findings using specific behavioral cues that help identify consumers high or low in PWE. For example, Greenberg (1978) finds that people high in PWE tend to engage in work-related activities while commuting. Accordingly, in Study 4, besides measuring PWE with the standard scale, we also measured some self-reported behavioral cues as proxies for PWE and tested how well these predicted the dependent variable. Finally, we want to replicate our findings in a non-Protestant society because the contemporary view of the PWE is not unique to Protestantism or any particular religion.

Method

Data were collected at a major Asian university in a largely nonreligious city, with 182 undergraduate students participating for course credit. Twelve of them had either heard of or participated in a pretest conducted to select stimuli and were thus dropped from further analyses. Among the rest, 96 (56.5%) were female, and ages ranged from 18 to 23 years with a median of 20 years. The majority of this sample was atheist or had no religion (irreligion and atheism = 49.4%, other = 31.8%, Catholicism = 10%, Protestantism = 4.7%, Buddhism = 4.1%, Eastern Orthodox Church = 0%, Islam = 0%). Each session was carried out in a lab room with a maximum of six participants. The experimenter introduced a food that was widely considered to improve health. Participants chose between two flavors of this food, one bitter and the other sweet, and answered a few questions. At the end of each session, we ran a lottery and one participant received the food in their chosen flavor.

This experiment had a two-factor design, with applicability of PWE, operationalized as outcome ambiguity, manipulated between subjects at two levels (outcome-ensured vs. outcome-ambiguous) and PWE measured as before. Upon entering the lab room, participants were told that the study was sponsored by the "Center for Retailing Research" to document consumer choice. They were asked to imagine a situation in which they visited a supermarket and had to choose between two food products. They were asked to make choices as in real situations and were told that one person in the session would, by lottery, be selected to receive the product he or she chose. The experimenter made all participants fill out their lottery tickets, tear the counterfoils off, and drop the tickets into a box kept clearly visible in the room.

The experimenter then introduced the food: herbal jelly, a common Chinese health food. Outcome ambiguity was manipulated using the experimenter's verbal protocol and thus was held constant within an experimental session. In the outcome-ambiguous condition, the experimenter said, "Herbal jelly has herbal ingredients. People usually eat it to keep healthy, especially to deal with humidity and heat. Now, here are two bottles of herbal jelly that my colleague bought at a local supermarket. Actually, we don't know more about these herbal jellies than you do. We are only told by the supermarket staff that the green one is bitter and the blue one is sweet." In the outcome-ensured condition, the experimenter also added, "However, although the flavors are different, all the effective ingredients are exactly the same." Thus, in the outcome-ensured condition, taste was not a means to the health goal and PWE was not applicable. The experimenter then displayed the two bottles to all participants and asked them to make their choice of flavor on the computer questionnaire. The two bottles had similar packages, except one was blue and the other was green. We counterbalanced which color was framed as bitter versus sweet. The two photos were presented alongside each other, and we also counterbalanced whether the bitter option was displayed on the left or the right. The analyses reported below control for color preference and order.

After participants had made their choices, they were asked to explain their choices in an open-ended response format. They then answered two questions about color preference and brand familiarity and proceeded to irrelevant filler studies lasting more than 30 minutes. After the filler studies, all participants completed the PWE scale and demographic questions. They then responded to two behavioral questions that might be associated with the PWE: "How many hours do you study on each weekend?" and "When you set an alarm clock for a future appointment, how much earlier before departure would you usually set the alarm?" (1 = "1 hour before departure," 2 = "50 min before departure" ... 7 = "at the time of departure," 8 = "I don't set an alarm"). Finally, the lottery was conducted, and the winner was given his or her chosen flavor of herbal jelly.

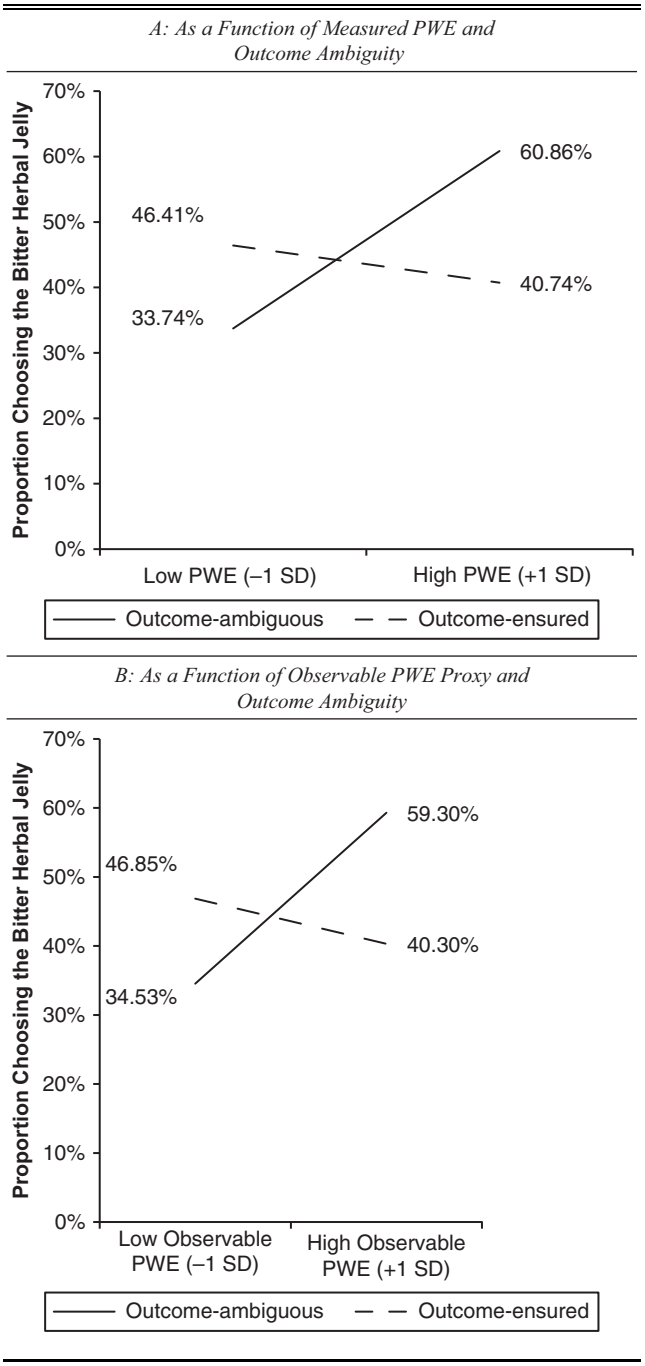
Results

The PWE scale had moderately acceptable internal consistency (α = .65), and we averaged and mean-centered it prior to analysis. First, using a binary logistic regression, we regressed participants' choice of herbal jelly (0 = sweet, 1 = bitter) on outcome ambiguity, PWE, and their interaction. As expected, the interaction effect was significant (B = −.67, SE = .34; Wald(1) = 4.05, $p < .05$; see Figure 2, Panel A). Slopes analysis showed that in the outcome-ambiguous condition, increasing PWE led to higher probability of choosing the bitter option (B = .56, SE = .25; Wald(1) = 5.07, $p < .05$). However, in the outcome-ensured condition, when participants knew taste was irrelevant and not a means to health goal, higher PWE did not lead to a higher probability of choosing the bitter option (B = −.12, SE = .23; Wald(1) = .26, n.s.). Echoing Study 3, this result again indicates that the effect of PWE on cost–benefit heuristic is subject to its applicability in the goal pursuit context. Importantly, in our study, when the applicability was left ambiguous, people high in PWE could connect the dots and assume applicability. This was probably because the performance goal motivated them to look for possible means to achieve it. Only when the applicability was explicitly negated did PWE not have an effect.

To shed further insight on the underlying mechanism, two coders blind to conditions coded the responses to the open-ended question that asked participants to freely explain their choices. Specifically, the coders assigned 1 to a "cost–benefit heuristic" variable if the participant mentioned inferring higher efficacy/healthiness from the food's bad taste or lower efficacy/healthiness from the food's good taste, and 0 if the participant did not specifically associate taste with efficacy or healthiness. The two coders agreed 85.7% of the time, and disagreements were resolved by discussion. Because Hayes's (2013) bootstrap utility cannot perform mediation analysis with a dichotomous mediator, we used Baron and Kenny's (1986) method (which has lower power but should be less likely to yield false positives). First, outcome ambiguity and PWE significantly interacted to influence the cost–benefit heuristic variable (B = −.72, SE = .34; Wald(1) = 4.46, $p < .05$). Specifically, higher PWE led to a higher probability of making a cost–benefit inference in the outcome-ambiguous condition (B = .74, SE = .26; Wald(1) = 7.85, $p < .01$) but not in the outcome-ensured condition (B = .02, SE = .22; Wald(1) = .005, n.s.). When choice was regressed on outcome ambiguity, PWE, their interaction, and the cost–benefit heuristic measure, the cost–benefit heuristic measure significantly predicted choice (B = 2.69, SE = .41; Wald(1) = 43.73, $p < .001$), but the interaction between PWE and outcome ambiguity dropped from significance (B = −.43, SE = .40; Wald(1) = 1.11, n.s.), indicating that the effect of the interaction on choice was fully mediated by the cost–benefit heuristic. The coders did not find any evidence that participants high in PWE listed reasons pertaining to other goals (e.g., experience collection, restoring illusion of control).

Finally, exploratory analyses tested whether self-reported behavioral proxies of PWE generated the same patterns. We

Figure 2
PROPORTION CHOOSING BITTER HERBAL JELLY IN STUDY 4



first reverse-coded the question about alarm setting and found it positively correlated with the question about studying on the weekend (r(168) = .15, $p < .05$). We thus mean-centered the two cues and averaged them into a single index. This index was marginally correlated with PWE (r(168) = .14, $p = .07$), suggesting that increasing PWE is associated with setting an earlier alarm and studying longer on the weekend. We then replaced PWE with this behavioral proxy and found a similar interactive effect on choice of herbal jelly, although it was marginally significant (B = −.85, SE = .46; Wald(1) = 3.38, $p = .07$; see Figure 2, Panel B). Slopes analysis revealed the same pattern. Stronger behavioral proxies predicted marginally higher probability of choosing the bitter option in the outcome-ambiguous condition (B = .67, SE = .36; Wald(1) = 3.51, $p = .06$) but not in the outcome-ensured condition (B = −.18, SE = .29; Wald(1) = .38, n.s.).

Discussion

Study 4 replicates our earlier findings with real choice of health food products by a largely nonreligious sample. It also provides strong evidence, using both moderation and mediation, that people high in PWE choose costlier options due to their use of cost–benefit heuristics rather than any alternative mechanisms. Moreover, and relevant to practice, we find that observable behavioral proxies of PWE can predict similar results, albeit with slightly lower statistical significance. This implies marketers may be advised to tailor their product mix after simply observing how "hardworking" a consumer looks and behaves.

Marketers may be able to leverage their consumers' PWE in other ways. For example, it may be possible to infer a consumer's PWE by allowing him or her to self-select into marketing programs that vary in relationship between effort and reward. To test this, we asked 75 MTurk users to imagine buying an electronics product worth $100 and then choose between getting a $7 discount immediately versus receiving a mail-in rebate worth $15. Remitting the rebate required effort—to fill out the rebate form, include the receipt, and mail it in. Regardless of whether PWE was measured before or after this decision, higher PWE was associated with higher likelihood of choosing the rebate (for details, see Study 6 in Web Appendix B). Furthermore, marketers who know the PWE of a target customer can select the most effective promotional program (e.g., mail-in rebates for high-PWE targets, immediate discounts for low-PWE targets). For example, in another study assessing responsiveness to different promotional programs, we manipulated PWE by asking participants to read an actual letter written either by Benjamin Franklin (a paragon of PWE) or by the novelist Charles Bukowski (see Web Appendix C). Reading the Franklin letter (i.e., high-PWE priming) made participates more likely to choose a loyalty program over a sweepstakes (for details, see Study 7 in Web Appendix B). We elaborate on the implications of these ideas in the general discussion.

STUDY 5: GENERALITY OF PWE RELATIVE TO OTHER MECHANISMS

There is a key difference between this and previous research that has documented cost–benefit heuristics in goal pursuit. Previous research has manipulated the cost of means between subjects and studied people's judgment regarding a single means (Kramer et al. 2012; Labroo and Kim 2009; see also Study 1 in this article). In contrast, the current research also presents high- and low-cost means side by side as a direct trade-off (Studies 2–4). This is important because certain mechanisms may operate under one paradigm but not another. Labroo and Kim (2009) explain the instrumentality heuristic as arising from a mistaken reversal of the causal association between the effort required by a given means and its usefulness. According to this mechanism, people usually invest effort in means that are useful for attaining a certain goal and thus learn that instrumentality of a means requires effort. They may later mistakenly reverse this association and assume that effort implies instrumentality and therefore greater value. Such a heuristic, generated by a mistakenly reversed association, may not be strongly held, and its effect may not manifest when there is an explicit trade-off between effortful and effortless options. That is, a more stringent test for the instrumentality heuristic would be to make the effort associated with the means more salient by offering individuals an explicit choice between the high- and the low-cost means.

According to the mechanism proposed in this article, and unlike the one suggested by Labroo and Kim (2009), because the PWE is a core belief and an important part of one's self-concept, people have a strong motivation to protect it and align other cognitions and behaviors to be consistent with it. As we have shown, even when high- and low-cost means are presented side by side and a trade-off is required, people high in PWE prefer the effortful means more than those who are low in PWE. Therefore, as a direct test of the instrumentality heuristic against the PWE, in our Study 5, we adapted Kim and Labroo's (2011) Study 1 such that the high- and low-effort options were presented side by side. If only the instrumentality heuristic holds, there should be no effect of PWE, and a significant majority should choose the high-effort option over the low-effort option. If, however, PWE has an effect, increasing PWE should lead to a greater preference for the effortful option. In this setup, two main effects would mean support for both mechanisms.

Procedure

Undergraduate students at a major public university (N = 234, 127 female, M_{age} = 19.7 years) participated for course credit and were randomly assigned across conditions in a 2 (value: incentive vs. inherent) × PWE (measured) design. Following Kim and Labroo (2011), we asked participants to imagine they were looking for the best gift wine for their favorite cousin Pat's birthday and were choosing between two wines that were both rated 96 points by *Wine Spectator*. As in Kim and Labroo's (2011) manipulation of value, those in the incentive-value condition were told they were wondering whether the wines were worth going to the store to check out, whereas those in the inherent-value condition were told they were planning on going to the store. All participants were then told that one of the wines was available just down the road, and the other was only available much further away. Participants then indicated their relative preference by rating three items ("Which wine do you like more?" "Which wine are you more favorable toward?" and "Which wine are you more likely to buy?") on nine-point scales, with higher numbers indicating greater preference for the distant wine. The items were highly correlated ($\alpha = .89$) and were averaged to create an index of preference. Participants continued to a filler study, followed by the PWE scale.

Results and Discussion

We regressed preference on value (0 = inherent, 1 = incentive), standardized PWE, and their interaction. The interaction was not significant ($\beta = -.09$, $t = -.95$, n.s.). However, there was a main effect such that increasing PWE was indeed related to stronger preference for the distant wine ($\beta = .13$, $t = 2.04$, $p < .05$), again showing the robust effect of PWE on cost–benefit heuristics in goal pursuit.

According to the instrumentality heuristic, participants should prefer the distant wine in a side-by-side comparison, in the incentive-value condition if not in both conditions. However, we find that participants preferred the nearer (low-effort) wine, as reflected by a score significantly lower than the scale midpoint, in both conditions ($M_{inherent} = 2.68$; $t(116) = -13.73$, $p < .001$; $M_{incentive} = 2.89$; $t(116) = -11.43$, $p < .001$). Furthermore, there was no effect of the value condition on the preference for effort ($M_{inherent} = 2.68$, $M_{incentive} = 2.89$; $t(232) = .81$, n.s.). These findings suggest that the instrumentality heuristic may exert its effect primarily in situations in which only one level of effort is available. In contrast, the effect of PWE is robust across contexts, regardless of whether a single means is evaluated or both high- and low-effort means are available for trade-off and choice.

GENERAL DISCUSSION

Across multiple studies, we consistently find that cost–benefit heuristics in goal pursuit are driven by the extent of belief in the Protestant Work Ethic. Compared with consumers low in the PWE, those who believe strongly in the PWE are more likely to use the cost of the means to predict the benefit in the outcome, and they are more likely to choose costlier options in pursuit of performance goals, even though the cost may not objectively ensure a better outcome in the specific context. Study 1 replicates and extends prior research, showing that PWE moderated the effect of taste on efficacy judgments for cough syrup. Study 2 manipulates PWE with a quotes-ranking task and shows that participants with higher PWE judged a more expensive courier service as more likely to successfully deliver their Christmas gifts. Study 3 extends the effect of PWE from judgment to incentive-compatible choice and demonstrates that higher PWE made participants more likely to choose a difficult task over an easy task. It also reveals a boundary condition such that the effect does not hold when the means is clearly not applicable in the specific context. Study 4 replicates the above patterns with real food choice and a largely secular sample. It examines competing mechanisms using both moderation and mediation and shows that the same effects can be predicted with observable behavioral proxies of PWE. Finally, Study 5 shows that the PWE operates even in trade-off situations where the instrumentality heuristic does not. Table 1 summarizes the main results of these five studies and five supplementary studies described in Web Appendix B.

Theoretical Contributions

Our research contributes to marketing, consumer psychology, and the PWE literature in the social sciences. First, we contribute to the study of cost–benefit heuristics in goal pursuit by suggesting a general and parsimonious antecedent. Past research has documented several interesting cost–benefit heuristics, but their origins have not been fully explored. Two possible mechanisms have been suggested (i.e., market efficiency and mislearned association), but neither holds across all contexts or explains all the extant findings. Market efficiency (Kramer et al. 2012) cannot explain the instrumentality heuristic (Labroo and Kim 2009) or the results of our Study 3, because the stimuli in Labroo and Kim's research (e.g., font legibility, distance of a donation box as proxies for effort) and in our Study 3 (task difficulty) were not offers on a competitive market. Correspondingly, in Study 5, Labroo and Kim's mechanism implicating the reverse of a learned correlation did not hold when there were two available options that varied in terms of effort. Both market efficiency and the instrumentality heuristic may drive cost–benefit heuristics in certain contexts, but our results demonstrate that the extent of belief in the PWE generally serves as antecedent to these important phenomena across contexts.

We contribute to the PWE literature by extending this influential theory to the consumer domain. As Jones (1997, p. 757) writes, "Two measures of a theory's importance are the time period over which it continues to attract attention and the number of scholars who undertake to investigate it.... [PWE] must by these two measures be listed as among the most influential in the history of social science." Interestingly, almost all psychological research on the PWE examines its consequences only on work-related behaviors (Quinn and Crocker 1999 being an exception). We are the first to test whether PWE influences consumer judgment and decision making. Work and consumption are two major facets of modern life, and it is not difficult to conceive that people's work-related core values and beliefs may influence their consumption behaviors. Moreover, any such relationship is likely to be robust because a person's work ethic is formed over time and reinforced throughout life. Therefore, we believe that the interface between consumers' working lives and consumption lives is an important direction for research. Indeed, although the PWE has never been systematically studied by marketing researchers, it has been invoked quite frequently as a plausible rationale for certain phenomena. For instance, Kivetz and colleagues suggest that the priority given to necessities over luxuries and indulgence and the over-controlled hyperopic behavior displayed by some people might be rooted in the PWE (Kivetz and Keinan 2006; Kivetz and Simonson 2002). Raghunathan, Naylor, and Hoyer (2006) also speculate that a belief that "unwholesome = fun" is rooted in the PWE, making consumers judge an unhealthy food to be tasty. However, neither group of researchers empirically incorporates the PWE into their investigations—the current research is the first we know of in the marketing literature to do so.

Managerial Contributions

Our findings have direct and actionable implications for pricing, advertising, production, and promotion. Marketing activities, such as advertising (Study 1), promotions (Studies 6 and 7; see Web Appendix B), and product design (Study 4), may differentially highlight the link between effort and reward, thereby appealing differently to individuals with high or low PWE. Price cuts are popular because marketers often have more control over pricing than other tactics. However, if consumers apply cost–benefit heuristics, signaling lower price may backfire because consumers infer lower quality. Rao and Monroe (1989) review 36 studies and find a moderate price–quality heuristic overall. Thus, one may ask, "When

should marketers use a low-price strategy, and when should they not?" Our findings suggest that the answer may depend on the extent to which the target segment subscribes to the PWE. If the target segment is high in PWE, marketers should be cautious in using low-price strategies and perhaps even use higher price to signal higher quality. For example, Study 2 finds that people high in PWE might underappreciate a courier service that charges a lower price. However, if the target segment is low in PWE, it is relatively safe to use a low-price strategy because people low in PWE are less likely to use a cost–benefit heuristic.

Similar advice may be offered to marketers who plan to signal other types of cost, such as unpleasant taste of health food or medicine. Compared with pricing, these costs allow more freedom in advertisement and production. For example, Study 1 shows that a cough syrup brand might easily tailor its advertising to emphasize the bad taste, thereby increasing efficacy judgments among consumers high in PWE. This idea has been proven successful in the marketplace. Whereas most cough medicines tout their improved flavors, Buckley's, a Canadian cough mixture, has been positioned on bad taste since 1986—a campaign that has increased its market share from 2% to 12.3% and won numerous awards. Similarly, firms can engineer their products to taste bad in order to signal efficacy, as suggested by our Study 4 and evidenced by the enduring success of Listerine.

As we find in Study 4, PWE is not only a robust predictor of consumer behavior but also a relatively visible one. Unlike other personality variables that can only be reliably measured using complex psychometric scales, we suggest that the extent of people's belief in the PWE might be assessed simply by assessing their behavioral characteristics, such as how punctual they are, how long they work on weekends (Study 4), and whether they work while commuting (Greenberg 1978). In addition, two studies we report in Web Appendix B (Studies 6 and 7) indicate that marketers may be able to identify people high or low in PWE according to how they self-select into different promotional programs. Modern information technology provides marketers many possible ways to track behaviors. Do people subscribe to business journals or entertainment magazines? How frequently do they use productivity apps? Do they read news or play games on their smartphones to pass time?

Table 1
SUMMARY OF THE MAIN RESULTS OF TEN STUDIES

	Measured PWE		*Manipulated PWE*	
	−1 SD	*+1 SD*	*Low*	*High*
Study 1 (N = 152)				
Efficacy judgment				
Bitter cough syrup	6.31	6.68		
Sweet cough syrup	5.89	5.26		
Study 2 (N = 180)				
Favorable judgment of the expensive courier			5.51	5.95
Study 3 (N = 213)				
Proportion choosing the difficult pretask				
Training-pretask condition			65%	81%
Unrelated-pretask condition			63%	54%
Study 4 (N = 170)				
Proportion choosing the bitter herbal jelly				
Outcome-ambiguous condition	34%	61%		
Outcome-ensured condition	46%	41%		
Study 5 (N = 234)				
Preference for the distant wine				
Incentive-value condition	2.74	3.05		
Inherent-value condition	2.26	3.05		
Identifying PWE in the Marketplace: Study 6 (N = 75)[a]				
Proportion choosing mail-in rebates over price discount	63%	81%		
Identifying PWE in the Marketplace: Study 7 (N = 241)[b]				
Proportion choosing loyalty program over sweepstakes			74%	88%
Testing BJW Hypothesis: Study 8 (N = 191)				
Anticipated learning outcome				
Difficult course	4.99	5.40		
Easy course	5.15	4.69		
Testing Reverse Causality: Study 9 (N = 160)[c]				
Alex believes in cost–benefit heuristics			4.98	5.88
Testing Motivation to Process as a Moderator: Study 10 (N = 301)				
Favorable evaluation of the expensive courier				
High motivation to process	4.38	5.26		
Low motivation to process	4.15	3.94		

[a]The results of Study 6 in this summary table are computed using a median split on the PWE measure.

[b]The results of Study 7 in this summary table are presented collapsing across the framing conditions because framing did not show a moderating effect (see Web Appendix B).

[c]Here, we present only the two conditions that tested the effect of PWE on cost–benefit heuristics. The other two conditions tested whether cost–benefit heuristics influenced PWE. A detailed description of Study 9 can be found in Web Appendix B.

Table 2
CORRELATIONS BETWEEN PWE AND OTHER PERSONALITY TRAITS (N = 70)

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. PWE	1										
2. NFC	.132	1									
3. Need for Cognitive Closure	.048	−.172	1								
4. Extraversion	.143	.229	.008	1							
5. Agreeableness	−.055	−.115	−.150	.048	1						
6. Conscientiousness	.050	.243*	.117	.310**	.295*	1					
7. Neuroticism	−.041	−.176	.152	−.347**	−.252*	−.498**	1				
8. Openness	.038	.550**	−.131	.110	−.072	.145	−.097	1			
9. Tightwadness	.147	.376**	.223	.124	−.012	.402**	−.274*	.102	1		
10. Conservatism	.498**	−.308**	.227	.166	.101	.264*	−.112	−.386**	.187	1	
11. Authoritarianism	.533**	−.197	.244*	.161	−.077	.008	.028	−.269*	.119	.829**	1

*$p < .05$.
**$p < .01$.
Notes: The following scales are not mentioned in the text. Need for Cognitive Closure: Roets and Van Hiel (2007); Big Five Personality (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness): John and Srivastava (1999); Tightwadness: Rick, Cryder, and Loewenstein (2008); Conservatism: Wilson and Patterson (1968); Right-Wing Authoritarianism: Altemeyer (1981).

Future research can explore how marketers can use big data analysis to identify people who may be high or low in PWE. Finally, firms that operate internationally may tailor their PWE-related marketing mix according to the level of development of their target country, because economically developing countries tend to have higher PWE, and consumers from these countries may be more receptive to appeals that emphasize cost–benefit relationships (see Web Appendix A).

Possible Correlates and Alternative Explanations

Can other individual difference variables explain our findings? In Study 1, neither need for cognition nor trait self-control was correlated with belief in the PWE, and replacing PWE with either of these did not yield the same results. In another MTurk survey (see Table 2), we found that belief in the PWE was not correlated with need for cognitive closure ($r(68) = .05$, n.s.) or any of the Big Five personality traits (all $rs < .14$, n.s.). Protestant Work Ethic was correlated with Authoritarianism ($r(68) = .53$, $p < .01$) and Conservatism ($r(68) = .50$, $p < .01$), but the Heterotrait–Monotrait Ratio of Correlations (HTMT; Henseler, Ringle, and Sarstedt 2015) method established the discriminant validity of PWE with both Authoritarianism (HTMT = .57, confidence interval [CI] = [.46, .71]) and Conservatism (HTMT = .66, CI = [.65, .83]).

Several other traits appear related but are conceptually and empirically distinct from the PWE. For example, four studies reviewed by Furnham (1984, p. 97) find that belief in the PWE is only moderately correlated with (internal) locus of control (LOC; r = .23 ~ .41). We find the same in our samples ($r(217) = .20$, $p < .01$, for a university student sample; $r(241) = .26$, $p < .01$, for a U.S. MTurk sample). In addition, the Bukowski letter we used as a prime, which significantly reduced PWE in participants (see Web Appendix C), does not represent external LOC because it advocates freedom from the slavery of one's work. This was confirmed by a separate pretest on LOC ($M_{Bukowski} = 12.28$, $M_{Franklin} = 11.03$; $t(56) = .92$, n.s.). The Franklin and Bukowski letters used in our manipulation did not induce different entity-incremental lay theories, as measured by the three questions from Chiu, Hong, and Dweck (1997, p. 22; $M_{Bukowski} = 3.67$, $M_{Franklin} = 3.42$; $t(56) = .69$, n.s.). Correspondingly, PWE was not correlated with entity vs. incremental theory ($r(217) = .001$, n.s., for a university student sample; $r(241) = .08$, n.s., for a U.S. MTurk sample). One other relevant trait is the "belief in a just world" (BJW; Lerner and Miller 1978), which is the belief that people generally get what they deserve. However, although both concepts are related to justice, they are theoretically different because the PWE is more specific to work and success—dimensions that are not captured in the BJW and that are necessary for our proposed over-generalization. To empirically test for the difference between PWE and BJW, we conducted a Study 8 (see Web Appendix B) similar to Study 1, in which we found that although PWE was correlated with BJW ($r(189) = .31$, $p < .001$), replacing PWE with BJW did not generate the same results. Finally, we conducted two additional studies (Studies 9–10) to test reverse causality, the role of motivation to process, and frugality. Details are provided in Web Appendix B.

Limitations and Future Research

Origins of PWE in non-Protestant and non-Western cultures. In Studies 4 and 5, we replicated the basic effect of PWE with a largely nonreligious Asian sample. Although Weber based his original theory in his study of Protestant countries, it is worth reemphasizing that our conceptualization follows the modern interpretation of PWE as a secular individual difference (Furnham 1984). First, there is no religious content in our empirical operationalization of this construct: it taps into a universal belief about work that people from all cultures can relate to. Second, our unit of analysis is an individual decision maker rather than an ethnic or religious group. Regardless of whether an Asian country has higher or lower average PWE than the West, two individuals from this Asian country may still differ in PWE, and that difference predicts their heterogeneous responses. Current thinking conceptualizes belief in the PWE as a function of one's exposure to secular work-ethic content and life experience, including but not limited to parenting, education, media, popular culture, and personal success and failure experiences associated with effort (Giorgi and Marsh 1990; Kelvin and Jarrett 1985; Larrick, Morgan, and Nisbett 1990). This is in line with Wyer's (2004) assertion that people's implicit theories are formed by their past experiences. In summary, the PWE is a complex construct, and

there is a need for further investigation into its antecedents (Web Appendix A).

Dimensionality of PWE. The PWE reflects a set of values and beliefs pertaining to work, including hard work, asceticism, frugality, and self-reliance. Factor analyses in past research have not generated a consistent factor structure, and there has been no agreement on its dimensionality (Furnham 1990; Miller, Woehr, and Hudspeth 2002; Tang 1993). As a result, researchers in social sciences have traditionally emphasized a unidimensional definition of this construct (Miller, Woehr, and Hudspeth 2002), and "psychologists have chosen to conceive of and measure the PWE as a coherent, bipolar belief system" (Furnham 1990, p. 100). Consistent with this tradition, the current article empirically treats the PWE as a unidimensional construct. Correspondingly, we find uniform effects of PWE across a variety of cost-related domains. We believe this is a good starting point for consumer researchers interested in each of these underinvestigated subconcepts. However, what might happen if people needed to trade off two different types of cost (e.g., money vs. effort, as with a do-it-yourself product)? This is an intriguing question we leave for future research.

Goal pursuit under uncertainty. Our findings are limited to goal pursuit when it is uncertain whether the available means will be effective. Under such conditions, people high in PWE tend to use cost–benefit heuristics to choose a means to pursue their goal. Other researchers have examined how perceptions of cost and effort impact judgment, attitudes, and behavior in other contexts. For example, consumers judge products to be of higher quality when greater effort was expended in producing or displaying them (Kruger et al. 2004; Morales 2005), and decision makers facing a decision that feels too easy complicate their choice by artificially constructing a more effortful choice process (Schrift, Kivetz, and Netzer 2016; Schrift, Netzer, and Kivetz 2011). However, these findings are distinct, and in this research we focus on individuals' choice of means when pursuing a specific goal.

Conclusion

To conclude, most of our waking time is spent either working or consuming. A person's work is a major source of economic independence and constitutes an important part of identity. Therefore, it is not surprising that work-related core values and beliefs such as the PWE spill over and influence consumption decisions. The current research demonstrates that this fundamental belief may serve as a foundation for heuristics employed in consumer judgment and choice. In this spirit, we believe that the interface between work and consumption, with possible influences in either direction, is a promising and important avenue for future research.

APPENDIX: PWE QUOTES MANIPULATION PRETEST

Method

The manipulation pretest was administered to two different samples, one drawn from U.S. MTurk users (N = 200, 86 female, median age = 28.5 years) participating for payments of $.40 each, and the other drawn from undergraduates at a major Asian university (N = 76, 55 female, median age = 20 years) participating for course credit. All participants were randomly assigned to one of two conditions as part of a study that ostensibly examined the effectiveness of different messages. Participants were asked to read six quotes that advanced a certain idea and order these quotes from most effective to least effective. In the high-PWE condition, participants read quotes that advocated a work ethic, whereas in the low-PWE condition, participants read quotes that contradicted or negated a work ethic (see full list of quotes in the next section). After this task, participants advanced to an ostensibly unrelated survey, and completed the Protestant Ethic Scale (Mirels and Garrett 1971). Analysis of variance (ANOVA) with the PWE manipulation and sample as two factors revealed, as expected, that participants primed by the quotes that advocated work ethic reported higher PWE than those primed by the quotes that opposed it ($M_{high} = 4.34$ vs. $M_{low} = 4.11$; $F(1, 272) = 8.04$, $p < .01$). There was no main effect of sample ($M_{student} = 4.28$, $M_{MTurk} = 4.21$; $F(1, 272) = .59$, n.s.) and no interaction ($F(1, 272) = .44$, n.s.). The MTurk sample had greater variance than the student sample (Levene's Test; $F(3, 272) = 5.56$, $p < .01$), which violates the ANOVA assumption of equal variances. The concern of violating the equal-variance assumption is the potential Type I error. A classic way of dealing with this concern is to use a more stringent significance level, such as $\alpha = .025$ (Keppel and Wickens 2004, p. 152). Our analysis was significant at $p < .01$, which is lower than the conservative .025 criterion, indicating that the test was robust and the manipulation was successful. We also performed a planned contrast with the more robust Welch's t-test, and the results held as before (main effect: $t(197.90) = 3.38$, $p < .01$; interaction: $t(197.90) = -.79$, n.s.).

Quotes Used for Manipulating PWE

Note that the names following the quotes were not shown to the participants.

Quotes supporting PWE:

- "Talent is cheaper than table salt. What separates the talented individual from the successful one is a lot of hard work." (Stephen King)
- "Life grants nothing to us mortals without hard work." (Horace)
- "There are no shortcuts to any place worth going." (Beverly Sills)
- "I know you've heard it a thousand times before. But it's true—hard work pays off." (Ray Bradbury)
- "Success for an athlete follows many years of hard work and dedication." (Michael Diamond)
- "A dream doesn't become reality through magic; it takes sweat, determination and hard work." (Colin Powell)

Quotes opposing PWE:

- "Talent is cheaper than table salt. What separates the talented individual from the successful one is a lot of luck." (modified from Stephen King)
- "Enjoy your sweat because hard work doesn't guarantee success." (Alex Rodriguez)
- "A good idea is about ten percent implementation and hard work, and luck is 90 percent." (Guy Kawasaki)
- "No, I don't believe in hard work. If something is hard, leave it. Let it come to you. Let it happen." (Jeremy Irons)
- "It is a pity that doing one's best does not always answer." (Charlotte Bronte)
- "A dream doesn't surely become reality through hard work; sometimes it takes magic, a strike of luck, to make it happen." (modified from Colin Powell)

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