

A Behavioral Account of Compensation Awarding Decisions

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ABSTRACT

Suppose an individual loses an irreplaceable object and someone else is at fault. How much should he be compensated? Normatively, compensation should equal the value (utility) to the victim. Our experiments demonstrate that compensation decisions often ignore value and are instead based on cost (how much the victim originally paid for the item) except when cost is zero. For example, we found that people awarded \$200 for a destroyed item worth \$500 to the victim if the cost was \$200; however, they awarded \$500 if the original cost was zero. We explain these phenomena in terms of lay scientism (the tendency to base decisions on objective factors) and discuss how the prevalent cost-based compensation rule hurts consumer welfare. Copyright © 2008 John Wiley & Sons, Ltd.

KEY WORDS compensation; rationale; lay rationalism; rule; consumer welfare; predicted consumption experience; inconsistency

INTRODUCTION

Suppose Mary has a technician^{Q1} set up cable service at her house. While working, he accidentally breaks a record by the Beatles that she bought a few years ago for \$200. Mary, a dedicated Beatles fan, just rejected an offer of \$500 for that record a week before the damage. The record is irreplaceable, and Mary states that she is willing to pay up to \$500 for an identical record. In this scenario, the cable technician is fully responsible for the damage. How much compensation should the cable company award Mary in order to fully cover her loss? How might they quantify her welfare, the value that she places on the record?

Effective and just compensation ought to make a person whole, restoring the injured party to the condition prior to the damage occurring. One way to achieve this would be to purchase an identical record for Mary. However, this is not an option when damage occurs to one-of-a-kind items not available on the market. Thus, we need an alternative means of compensation that provides an equitable replacement based on the subjective value of the item, not on its original cost.

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Real-world compensation decisions are complex and may have other goals other than covering the loss of the victim. It is beyond the scope of this article to discuss such other purposes or to determine whether existing laws on compensation are normatively correct. In this research, we only consider situations where the purpose of compensation is to cover the loss of the victim and examine how lay people make compensation decisions in these situations regardless of what the law says. Thus, we refer to compensation as a specific pecuniary amount and define the goal of making compensation decisions as identifying the amount necessary to cover the damage to a unique item that cannot be restored or replaced such as a roll of film that people use to take photos for special occasions (e.g., honeymoon, wedding, or college graduation), a case of rare wines, or tailor-made furniture. We choose to study compensation for unique and non-replaceable items, because it allows us to distinguish between the value-based approach and the cost-based approach. If the damaged item can be replaced with an identical item, the most obvious compensation solution is simply to replace the damaged item with a new one, a solution that would not allow us to tease apart the cost-based approach and the value-based approach.

Compensation decisions are ubiquitous. Airlines establish compensation policies for lost luggage and flight cancellations; insurance companies must appraise insured items and determine what premium to charge based on the compensation prediction; managers have to decide on compensation for unused vacation (e.g., when employees are asked to avoid or cancel vacation due to workload); marketers have to decide warranty policies in case of product defects; juries have to award compensatory damages for plaintiffs who suffer from personal injury, medical malpractice, or environmental issues.

Given our definition of compensation, the issue regarding the broken Beatles record becomes: How much money is the record worth to Mary? Specifically, how much would she need to be paid so that she would be equally happy to have the record or to receive the monetary compensation? Economic theories assert that normative compensation will be either the minimum amount that she is willing to accept (WTA) to relinquish the same record or the maximum amount that she is willing to pay (WTP) to obtain the record, that is, \$500, the monetary worth of the record to Mary.

For simplicity, we can equate WTA with WTP in the broken record scenario. While WTA and WTP can differ for reasons such as the endowment effect (Thaler, 1980), the WTA–WTP disparity does not render the normative approach invalid for compensation decisions. When a disparity occurs, normative compensation should fall within the range of WTA and WTP.

We propose that contrary to the normative approach, lay people follow folk conceptions of compensation, making decisions based on the principle that compensation should equal the initial cost of the item instead of its actual value. Following this principle, the cable company would only reimburse Mary for \$200, the amount she originally paid for the record.

Cost-based compensation can lead to significantly different award amounts than value-based compensation, because cost can differ significantly from value. For example, the cost of a pain relief medication may be a few dollars, but the value of the medicine to the patient (e.g., reduced pain, quality of life, and work productivity) may far exceed a few dollars. Compensation decisions based on cost are as normatively illegitimate as investment decisions based on sunk cost (Arkes & Blumer, 1985; Thaler, 1999). Similar to the sunk-cost fallacy, a cost-based compensation rule is anchored to past cost and neglects future benefits. Despite their similarity (i.e., past-cost oriented), the sunk-cost fallacy and cost-based compensation are probably governed by different psychological mechanisms. Sunk-cost effects involve the over-application of the heuristic “waste not” (Arkes & Ayton, 1999) in situations where future benefits are independent of past investment. On the other hand, the cost-based compensation arises from the motivation to base decisions on objective rather than subjective information. We will elaborate on the underlying mechanism later in the article.

Not only is the cost-based compensation inaccurate but it often under compensates victims rather than over compensating them. In most cases, a consumer buys a product because the subjective value of the product (as can be measured by WTP) exceeds its cost. She would not purchase the product if its cost exceeds

its perceived value. In economics, the difference between value and cost is called the consumer surplus. The cost-based approach ignores the consumer surplus and thus fails to make up for the lost welfare to consumers when damage occurs.

In summary, we distinguish between two approaches to compensation: (a) a cost-based approach and (b) a value-based approach. Our central hypothesis is as follows.

Hypothesis 1: When deciding how much to compensate for a damaged item, people are more likely to base their decision on the cost of the item than on its value.

Other scholars have also proposed behavioral accounts of compensation awards, but our focus is different from theirs. Prior research suggests that compensation decisions, like other decisions, are rule-based (e.g., Frisch & Clemen, 1994; March & Heath, 1994; March & Simon, 1993; Prelec & Herrnstein, 1991; Shafir, Simonson, & Tversky, 1993; Simonson, 1989; Simonson & Nowlis, 2000) and often violate normative principles aimed to maximize individual satisfaction or utility. For example, Beattie and Baron (1995) find that lay decision makers tend to follow the “eye for eye, tooth for tooth” Biblical adage (see Exodus 21, 23–25, New International Version of the Bible) and thus favor penalty and compensation consistent with the type of crime. Researchers in compensation decisions have also documented people’s resistance to utilitarian thinking and the impact of protected, obligatory values (Baron, 1994, 1999; Baron & Spranca, 1997). Similarly, Kunreuther and Easterling (1996) observe that people consider hazardous facilities (e.g., nuclear waste repositories) too risky to be acceptable with or without compensation and thus they are insensitive to amounts of compensation. The present research differs from prior research on compensation decisions in that it contrasts the cost-based approach with the value-based approach.

When the cost-based approach is adopted, compensation varies depending on the original cost of a damaged item. But what if the cost is zero? In the broken record scenario, suppose the record cost Mary nothing (e.g., a gift or a lottery prize). If the cost-based approach is used, Mary would receive \$0 in compensation. We expect that in this circumstance, the cost-based model fails, and we predict that people tend to switch to the value-based approach when the cost is nil. That is, Mary would be awarded \$500 in compensation.

Why might people adopt the value-based approach when cost is zero? In the broken record scenario, we suspect that people would find it inappropriate to award Mary nothing. Despite the cost, the record is obviously worth something to her; the only question is how much. When cost is zero, people might consider cost to be irrelevant to compensation decisions, because the cost information does not provide any insight into how much the record is worth to the victim. Thus, people ignore the irrelevant cost information and base compensation on value. We will further elaborate the rationale behind this prediction later. Our second hypothesis is as follows.

Hypothesis 2: When deciding how much to compensate for a damaged item, people are more likely to base their decision on the value of the item if the original cost is zero than if it is greater than zero.

Hypotheses 1 and 2 yield a paradoxical corollary: People will award a higher compensation to a victim if the victim has paid nothing for the damaged item than if she has paid something.

In this paper, we report five experiments that demonstrate the cost-based approach. We identify boundary conditions where decision makers are willing to base compensation on value instead of cost, and to address possible alternative explanations for cost-based compensation. We also offer a theoretical account for the cost-based approach and test that hypothesis.

In each experiment, we describe damage to an irreplaceable item and provide information about the cost and value of the item. We then ask participants to indicate a proper amount to compensate for the damage. This general method provides direct assessments of the extent to which participants rely on one principle or the other when determining compensation awards.

STUDY 1: VASE

Study 1 was designed to test hypotheses 1 and 2. First, we examined the cost-based approach by varying the initial cost of an item while holding its value constant. Second, we tested whether value information overrides cost information when the original cost is zero.

Method

Participants were 96 MBA students recruited from a Midwestern University; they completed this study individually and received candy afterwards. We specifically recruited MBA students for this study in order to determine whether business majors, who are trained to think normatively and behave rationally, would base their decision on normatively-irrelevant factors.

Participants were provided with information about a vase including its initial cost and value to the owner. The vase was said to be damaged and someone else was at fault. In the same spirit of the Lost-Pleasure-of-Life scale (Andrews, Meyer, & Berla, 1996), participants understood the assessed value of the vase to have been determined by an expert instead of an amount reported by its owner.

Participants were randomly assigned to the following conditions: (a) high-cost (\$400) condition, (b) low-cost (\$200) condition, and (c) no-cost (\$0) condition. In the high-cost condition, participants read,

Ann had a vase shipped from Europe to her home in the U.S. However, the package was damaged by the shipping company and the vase was broken beyond recovery. Ann ordered the vase in Europe and paid \$400 for it. The vase is one-of-a-kind and cannot be replaced. An impartial psychologist has determined that the joy that the vase would have brought Ann (if it had not been broken) is equivalent to the joy of receiving \$500.

The questionnaires that participants in the other two conditions read were the same except for the cost information. In the low-cost condition, participants were told, "Ann ordered the vase in Europe and paid \$200 for it." In the no-cost condition, participants were told, "The vase was a gift from a relative in Europe." Participants in all conditions were asked to answer the question, "Regardless of what the law says, how much do you think the shipping company ought to compensate Ann?"

Results and discussion

We expected compensation to be the same as the cost (\$400 vs. \$200) in the high-cost and low-cost conditions, whereas compensation would be as high as the value (\$500) in the no-cost condition. The results confirmed our hypotheses (see Figure 1). Compensation in the high-cost condition was greater than that in the low-cost condition, $t(64) = -4.60, p < .01$, confirming Hypothesis 1. It was striking that even MBA students, who apply economics theories in the majority of their coursework, fall prey to the cost-based rule.

We also had evidence to support Hypothesis 2 concerning the boundary condition where cost was zero. Compensation in the no-cost condition was significantly greater than that in the low-cost condition, $t(60) = -3.84, p < .01$. Median compensation was \$500, identical to the value of the vase. This result suggested that the value-based approach, rather than the cost-based approach, is adopted when cost is zero. Our result was reminiscent of prior research showing that zero is a special number and prompts people to behave differently than other numbers (e.g., Gneezy & Rustichini, 2000a,b; Shampanier, Mazar, & Ariely, 2007).

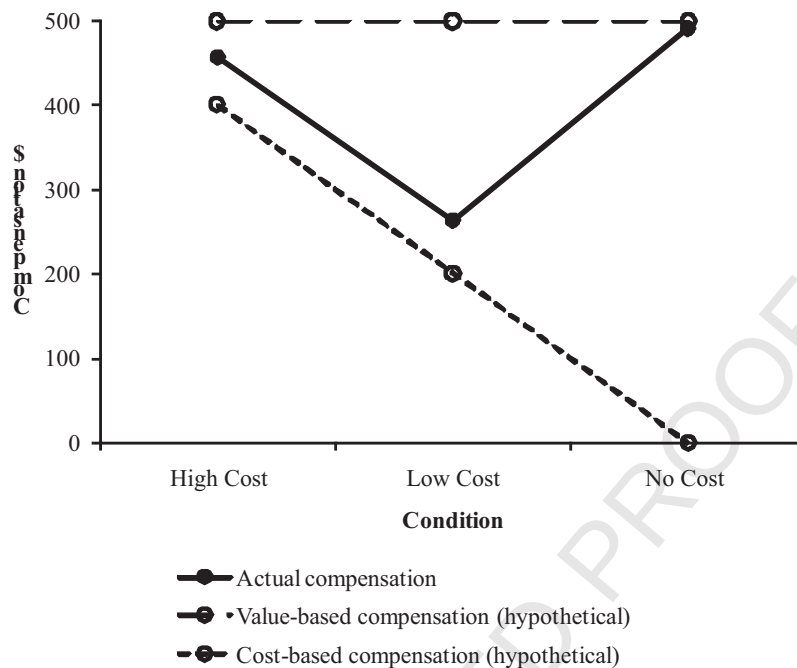


Figure 1. Study 1 results. On average, actual compensation (solid line) was close to cost (dash line) in the high-cost and low-cost conditions and it was close to value (long dash line) in the no-cost condition. Median compensation was identical to cost in the high-cost and low-cost conditions and identical to value in the no-cost condition

STUDY 2: CONCERT

One possible explanation for the cost-based approach is that people want to avoid overcompensation and thus they equate compensation with cost, which is typically lower than value. It is reasonable to suspect that the victim or victim's advocate might be motivated to overstate value in order to increase compensation. Thus, people ignore value when making compensation decisions. A number of studies have shown when mock jurors are provided with an anchor in the form of the amount requested by the attorney who represents the plaintiff, their damage awards are biased toward that anchor (Chapman & Bornstein, 1996; Hastie, Schkade, & Payne, 1999; Malouff & Schutte, 1989). However, participants in Study 1 were not informed how the expert was hired and we had no evidence that they believed the expert to be biased toward the damaged party. To further address the value exaggeration issue, we conducted Study 2 to demonstrate that biases toward the victim in expert judgment and judges' intention to avoid overcompensation were unlikely to account for the results of Study 1.

In particular, Study 2 introduced the condition where cost exceeded value. If decision makers were simply conservative in awarding compensation, they would choose to base compensation on value in that condition where value was smaller than cost. To ensure the generality of our findings, we adopted another context in Study 2—a lost concert ticket instead of a damaged vase.

Method

Participants were 61 MBA students from a Midwestern University. Similar to Study 1, participants were presented a scenario where the damaged party was unable to attend a concert and a courier service was fully responsible for the damage. They were provided with information about the initial cost and the value of the

concert to the victim and asked to determine compensation. There were two conditions: (a) high-cost condition, in which the cost was \$250 and the value was only \$100; and (b) low-cost condition, in which the cost was only \$100 and the value was \$250. In the high-cost condition, participants read,

Chris paid \$250 to attend a show. After he purchased the ticket, some changes were made to the program. Chris felt that the show would not be as good and felt and still feels that the show was worth only \$100 to him. He actually put the ticket up for sale for \$100 but no one was interested so he was still planning to attend the show.

In the low-cost condition, participants read,

Chris wanted to attend a show which he felt and still feels was worth \$250 to him. He placed a \$250 bid on the ticket but was outbid. A few days later, more seats became available and he was able to get a ticket for \$100. In other words, the show only cost him \$100.

In both conditions, Chris missed the show for the same reason: The ticket was lost during transit and the delivery service company was fully responsible for it.

Results and discussion

The results confirmed Hypothesis 1. Compensation was greater in the high-cost condition than that in the low-cost condition, $t(59) = -4.27, p < .01$. Median compensation was \$250 and \$101 for the high-cost and the low-cost conditions, respectively (see Figure 2).

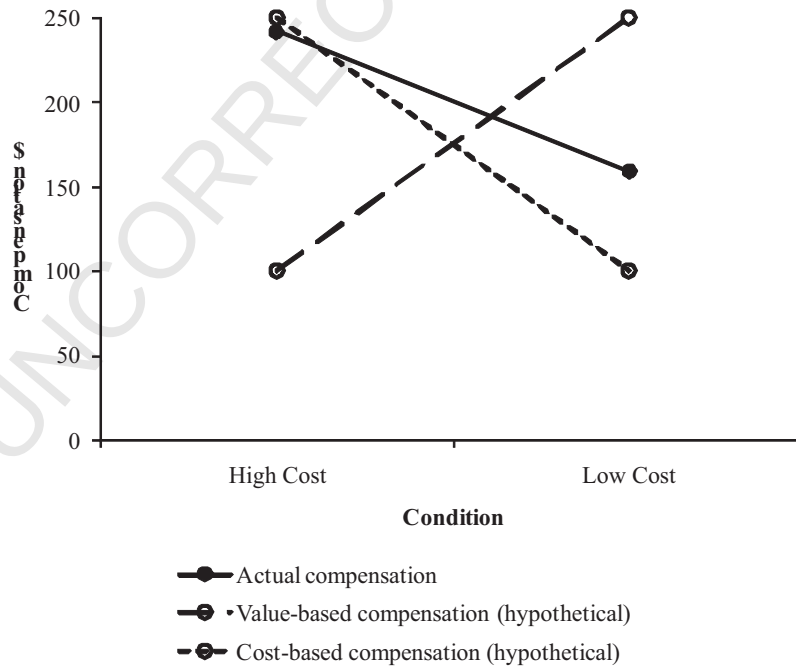


Figure 2. Study 2 results. On average, actual compensation (solid line) was close to cost (dash line) rather than to value (long dash line) in both conditions. Median compensation was identical to cost in both conditions

The desire to prevent overcompensation would not account for the results of Study 2, because the majority of the participants still awarded compensation based on cost when the cost (\$250) was higher than the value (\$100). In the high-cost condition, 24 (out of 30) participants awarded \$250 in compensation, rather than \$100.

STUDY 3: EXPERT, WTP, AND SURVEY

In Studies 1 and 2, participants might have ignored value information out of concerns about its credibility. In Study 3, we examined whether the credibility of value information caused participants to use the cost-based compensation approach and thereby further tested Hypothesis 1. We addressed the credibility issue in two ways. First, we improved the WTP elicitation method by creating a condition (WTP condition) where the victim actually paid his WTP for the vase. Second, we modified a common contingent value elicitation procedure (Cummings, Brookshire, & Schuize, 1986; Kahneman, Ritov, Jacowitz, & Grant, 1993; Mitchell & Carson, 1989; Payne, Bettman, & Schkade, 1999; Peterson, Driver, & Gregory, 1988) and used it to derive the value information.

In Study 2, value was described as an amount that the victim agreed to pay for the concert. It was unlikely for the victim to foresee the loss of the ticket and to purposely overpay for the concert so that he could obtain higher compensation later on. However, some participants might still complain that the pre-committed WTP was hypothetical since the transaction was never completed (see low-cost condition). Thus, we sought to improve the elicitation method of WTP here. In Study 3, since the individual actually paid her WTP for the item, there would be no reason for the participants to suspect the validity of her WTP value.

Furthermore, we added a more conservative and commonly used method to elicit value: An independent expert elicited the WTP from a group of people including the damaged party. We then described value as the lowest WTP among the respondents. Note that this value would always be equal to or smaller than the actual WTP of the damaged party.

Method

The design of Study 3 was similar to that of Study 1 with three conditions: (a) expert condition, (b) WTP condition, and (c) survey condition. Cost and value were held constant at \$200 and \$500, respectively, across conditions. The expert condition was identical to the low-cost condition in Study 1. In the WTP condition, expert opinion was replaced with the information as follows.

After she paid \$500 for the vase, the salesperson found out that it actually only cost \$200 so he gave Ann \$300 back. Ann only paid \$200 for the vase in the end.

In the survey condition, participants read,

An impartial expert interviewed Ann and a group of 50 people who didn't know Ann and who were similar to Ann in wealth and tastes. The expert asked them about the amount they would be willing to pay for an identical vase had it been available. The expert started from \$0 and raised the price if everyone agreed to pay until one person disagreed. Each of the respondents said he/she would still have purchased the vase had it cost up to \$500.

Results and discussion

We expected compensation to be based on cost across all the conditions, and the results confirmed our hypothesis (see Figure 3). Medium compensation was the same as the cost, \$200, across conditions. The compensation amount was much lower than the value of the vase for each individual condition,

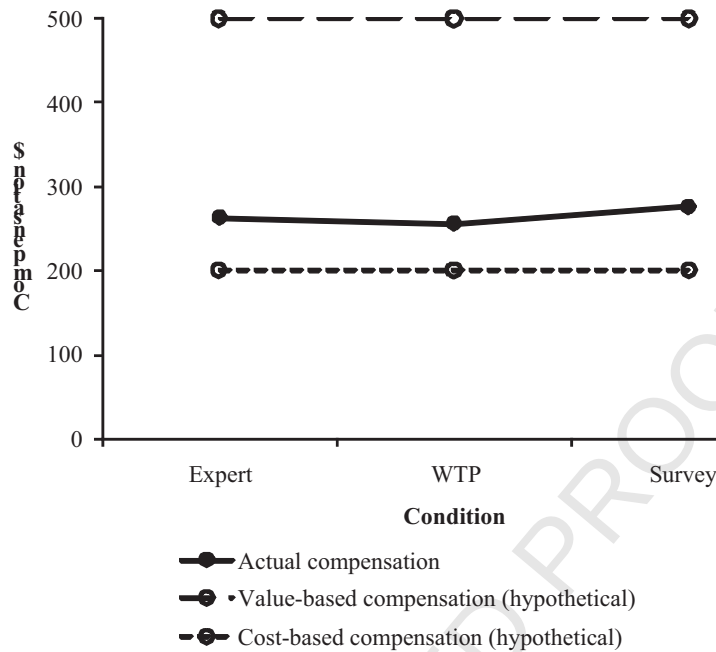


Figure 3. Study 3 results. On average, actual compensation (solid line) was close to cost (dash line) rather than to value (long dash line) in all the conditions. Median compensation was identical to cost in all the conditions

$t(31) = -8.16$, $t(31) = -9.46$, $t(30) = -8.65$, in the expert, WTP, and survey conditions, respectively, all $p < .01$.

Study 3 attests to the robustness of the cost-based approach and shows that participants adopt the cost-based approach, not because they consider value information inaccurate. Take the WTP condition, for example. It was unlikely for the victim to exaggerate the value of the vase, because the value was measured by the amount she actually paid prior to the damage. On the other hand, value (lowest WTP among the respondents) in the survey condition was determined using a conservative measure. Although the value here could be lower than the victim's WTP, it still better reflected the victim's true value than did the cost.

LAY SCIENTISM

We believe that the reason people use the cost-based approach in compensation decisions stems from their desires to base decisions on objective rather than subjective information. Cost is often perceived as objective and unequivocal, whereas value is perceived as subjective and malleable. Prior research shows that people tend to base their decisions on hard, objective product attributes and avoid using soft, subjective attributes, even if the soft attributes are normatively relevant. This tendency to discount subjective information is referred to as "lay scientism" and it can lead to non-optimal choices (Hsee, Zhang, Yu, & Xi, 2003).

In one study, Hsee et al. (2003) asked one group of participants to choose between two stereo systems and had another group predict the enjoyment that could be derived from these stereos. The prediction task and decision task both involved a tradeoff between power and sound richness. In one condition, power was described as a hard attribute (objectively rated wattage) and sound richness as a soft attribute (subjective experience). In another condition, the attribute descriptions were reversed so that sound richness was

described objectively and power was described subjectively. This manipulation had a significant effect on choice but not on predicted enjoyment. That is, people would choose the more powerful model when power was described objectively, but would choose the better sounding model when sound richness was described objectively.

Normatively, basing a compensation decision on cost is even less warranted than basing a stereo purchase decision on wattage ratings. After all, the wattage of a stereo system is a normatively relevant factor; the only mistake that people make is to assign too much weight on that attribute. However, cost is irrelevant to normative compensation decisions and people should not rely on cost information when determining compensation.

Consistent with the notion of lay scientism, habitual thinking perpetuates people to favor objective information over subjective information. For example, Baron (1994) observes that lay decision makers demonstrate a strong resistance to consider compensation from a utility theory perspective and provides several speculative explanations. Ayton and Harvey (1994) interpret Baron's (1994) results and propose that a strong habitual form of reasoning disrupts the normative approach that participants might have tried to take. It is possible that people question the cost-based approach when considering compensation for damage. Nonetheless, the cost-based approach persists due to the deeply rooted belief that objective information is superior to subjective information.

On a related note, the desire to base decisions on objective information is due to a pervasive need for justification in social decision making. A large body of research shows that people tend to make decisions that seem justifiable (Kray, 2000; Kray & Gonzales, 1999; Kunda, 1990; Lerner & Tetlock, 1999; Tetlock & Boettger, 1989). The desire to justify decisions manifests itself in compensation decisions as people favor objective cost information over subjective value information.

In summary, we propose that in making compensation decisions, people ignore value and use the cost-based approach if value seems subjective and cost seems objective. Thus, we predict that people will switch to the value-based approach if value is described as objective information. Our hypothesis is as follows.

Hypothesis 3: When deciding how much to compensate for a damaged item, people are more likely to base their decision on the value of the item if value is perceived as objective than if it is perceived as subjective.

STUDY 4: EXPERT OPINION VERSUS MARKET PRICE

Study 4 tested and confirmed Hypothesis 3. A mediation analysis showed that the objectivity (vs. subjectivity) of value information mediated the effect of the cost-based approach on compensation.

Method

Participants were 61 MBA students from a Midwestern University. Test materials and procedure were similar to Study 1. There were two conditions: (a) expert condition and (b) market-price condition. The expert condition here was identical to the expert condition in Study 3. To test Hypothesis 3, we described value in the market-price condition as follows.

The market price for an identical vase is \$500 now. Ann still feels that she would have purchased the vase if it had cost \$500 when she placed the order.

As in Studies 1 and 3, participants were told that the vase was unique and could not be replaced. Notice that the market price was not the replacement cost for the vase but rather the price that a given buyer would have been willing to pay for the vase had it not been damaged.

In order to verify the objectivity of the value information, we included manipulation checks in Study 4. After finishing the compensation judgment about the vase, participants were asked to rate the quality of the information about the cost and value on dimensions including objectivity, justification, concreteness, and malleability. For each question, the value information was rated on a 5-point Likert scale ranging from strongly disagree (scale = 1) to strongly agree (scale = 5). For example, in the market-price condition, participants read,

Did you find the information of the original paid price (\$200) more objective than the market price (\$500)?

In the expert condition, participants read,

Did you find the information of the original paid price (\$200) more objective than the psychologist's judgment (\$500)?

Results and discussion

The results confirmed Hypothesis 3. Compensation was greater in the market-price condition than the expert condition, $t(59) = 2.11, p < .05$ (see Figure 4). In the market-price condition, almost half of the participants

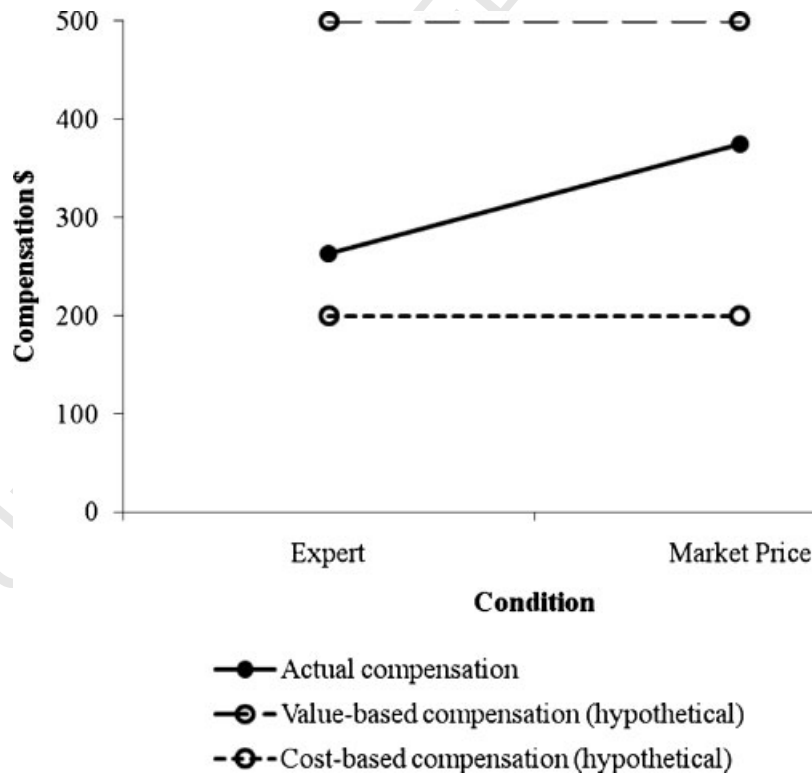


Figure 4. Study 4 results. On average, actual compensation (solid line) was closer to value (long dash line) in the market price condition than in the expert condition. Median compensation was equal to value (\$500) in the market-price condition and it was equal to cost (\$200) in the expert condition

(14 out of 30) awarded compensation equal to the value when an objective measure (market price) was used to describe value. By contrast, only 5 out of 31 participants adopted the value-based approach in the expert condition. The results of the manipulation checks indicated that the manipulation of the objectivity of value was successful. Because the ratings for the four dimensions were highly inter-correlated, we averaged the ratings to create a cost-value objectivity index. The index was used in the following statistical analyses, including a mediation analysis.

We first compared the mean ratings for the objectivity index with the midpoint of the scale, 3.0. In the market-price condition, participants did not perceive cost to be more or less objective than market price, $t(29) = .80$, $p = .43$, whereas in the expert condition, participants perceived cost to be objective than the expert opinion, $t(30) = 9.86$, $p < .01$. When we compared the ratings in the expert condition and the market-price condition, we found that value described as market price was considered more objective than value reported by an independent expert, $t(59) = 5.35$, $p < .01$.

To test the extent to which compensation depends on the objectivity of value information, we conducted a mediation analysis (Baron & Kenny, 1986). The analysis revealed that the effect of the cost-based approach on compensation was mediated by the objectivity of the value information. When compensation was regressed on a dummy variable created for the source of value information (expert = 1; market price = 0), the effect of the dummy variable was significant ($\beta = -80.59$, $t(59) = -2.11$, $p < .05$). The effect of source of value information on objectivity of value was also significant when the objectivity index was regressed on the dummy variable ($\beta = 1.33$, $t(59) = 5.61$, $p < .01$). Finally, when objectivity was entered as a predictor in the first regression equation, the effect of source of value information became insignificant, ($\beta = 26.03$, $t(58) = .63$, $p = .53$), and objectivity index remained significant ($\beta = -80.07$, $t(58) = -4.36$, $p < .01$).

STUDY 5: WHEN COST INFORMATION BECOMES SUBJECTIVE

Study 5 was designed to further test Hypothesis 3. Study 4 demonstrated that people adopt the value-based approach when cost and value both seem objective so we wanted to evaluate the situation where cost and value both seem subjective. According to lay scientism, people would abandon the cost-based approach if cost seems subjective and unreliable, although it does not predict what would happen if both value and cost seem subjective. However, results from Study 4 shed some light on that situation: Everything else being equal, the value-based approach would be superior to the cost-based approach and that was why people chose the value-based approach when value and cost both seemed objective in Study 4. Therefore, we predicted that the value-based approach would also dominate the cost-based approach when cost and value both seem subjective.

We conducted Study 5 in another consumer domain, tailor-made furniture, to further generalize our findings. As in previous studies, participants were told that the damaged item, tailor-made furniture, was unique and could not be replaced.

Method

Participants were 76 undergraduate and graduate students from a Midwestern University and they were recruited through an electronic newsletter. They participated in the study by completing a web-based survey posted on a dedicated web site hosted and maintained by the university. Each participant stood a chance to win a prize of \$60 as compensation and the expected value of participation was approximately \$1.

The set up of Study 5 was similar to previous studies with two modifications. First, value was self-reported and we designed a value elicitation method that incentivized the victim to be honest in reporting the value that he placed on the target item. Second, we replaced the dollar amount of value and cost with mathematics notations, \$X and \$Y, and participants were asked to present compensation using those two abstract

notations. This helped us generalize the rules that people apply in determining compensation, because when people described their compensation decision using abstract terms, their decision would be independent of other complications such as the relationship between cost and value (i.e., whether cost is greater or lower than value).

Participants were randomly assigned to two conditions: (a) receipt condition and (b) drunken condition. In the receipt condition, participants read,

A house was being built next to Chris' home. One day, the construction workers accidentally damaged Chris' patio furniture beyond repair. *Chris had the patio furniture custom-built 5 years ago.*

To settle the amount of compensation, Chris and the construction company turned to an independent arbitrator. The arbitrator . . . asked Chris the following question, "The construction company is willing to rebuild the entire set of furniture for you, or pay you cash instead. Indicate a cash amount that would make you indifferent between getting the cash and having the furniture rebuilt. If the amount you demand is high, they will just rebuild the furniture for you. If it is low, they will just pay you cash. There is no negotiation." Chris says the cash amount is \$X. . .

The arbitrator tracked down the person who originally built the furniture for Chris. He said he charged Chris a total of \$Y and he provided all the original records.

In the drunken condition, participants read a similar scenario except for one difference. They were told that the furniture builder remembered the cost to be \$Y but he could not provide any original records for the cost of the furniture and he seemed drunk when the arbitrator spoke with him. Finally, participants were asked to indicate the amount of compensation and they chose from one of the four options: (1) \$X, (2) \$Y, (3) $(\$X + \$Y)/2$, and (4) other. Note that \$X indicated cost, \$Y indicated value, and $(\$X + \$Y)/2$ indicated the average of cost and value.

Results and discussion

The results confirmed our prediction. When cost was perceived as subjective, most participants awarded compensation based on value and none of them awarded compensation purely based on cost ($p < .01$, *Fisher's Exact Test*).¹ In the drunken condition, 69% of the participants adopted the value-based approach and awarded the victim \$X and the remaining gave some combination of \$X and \$Y, whereas in the receipt condition, most people (41%) awarded compensation based on cost and only 24% of the participants used the value-based approach (see Table 1).

Table 1. Study 5: Compensation between receipt and drunken conditions

	Compensation (% of participants choosing each option)			
	\$X (value)	\$Y (cost)	$(\$X + \$Y)/2$	Other
Receipt	24.3	40.5	13.5	21.6
Drunken	69.2	0.0	28.2	2.6

¹We used Fisher's Exact Test instead of χ^2 , because one of the cells had zero count (i.e., no one chose to award compensation based on cost in the drunken condition) and 25% of the cells had expected counts less than 5. χ^2 may not be a valid test.

GENERAL DISCUSSION

In this article we demonstrate a robust tendency for people to base compensation decisions on the cost rather than on the value of a damaged item. This tendency exists, because cost is usually perceived as more objective and justifiable than value. Accordingly, we have identified three boundary conditions of the cost-based compensation effect: (a) when the cost is zero (and therefore cannot serve as the basis of compensation), (b) when cost and value are both perceived as subjective, and (c) when cost and value are both perceived as objective.

Difficulty of using value does not justify using cost

The value or utility of a damaged item is often difficult to assess, and lay assessments of such values are susceptible to biases (e.g., Baron & Greene, 1996; Green, Kahneman, & Kunreuther, 1994; Hsee & Rottenstreich, 2004; Jones-Lee & Loomes, 1995; Kahneman & Knetsch, 1992; Kahneman et al., 1993). However, the difficulty of assessing the value of the damaged item does not justify basing compensation decisions on its original cost any more so than the difficulty of assessing the future payment of an ongoing investment project justifies continuing the project based on already sunk costs.

An extreme example serves to illustrate that value cannot be ignored even if it is hard to ascertain. Suppose that prior to a family trip, a mother buys an asthma inhaler for \$50 for her young child who suffers from a mild form of asthma. During the trip, the child has an asthma attack which the mother attempts to stop with the inhaler. Due to a defect in the inhaler's valve, she cannot administer medicine to her child, and the child suffocates. How much should the manufacturer of the inhaler compensate the family? If compensation were based on cost, the award would be \$50. The cost-based approach certainly seems inappropriate in this situation. While the value of a life is difficult to quantify in monetary terms, people are likely to consider value when making their award decision. Yet as our studies reveal, in less obvious cases, people tend to ignore the value of a damaged item when its value is hard to quantify and instead base their compensation decisions on its cost. Theoretically, such decisions are as inappropriate as awarding \$50 for an asthma inhaler death.

The need for psychological appraisers

Value is most difficult to ascertain when it involves emotions. Suppose that a thief destroys an old oil portrait painted by a person's great grandfather. The painting has tremendous emotional (sentimental) value to the victim, but little market value. How much should the victim be compensated?

Theoretically, such emotional losses should be compensated, and occasionally they indeed are. However, these losses are usually difficult to ascertain, and consequently they are often ignored. In a case such as a lost portrait, the person making a compensation decision (e.g., an arbitrator or the court) may hire an art appraiser to assess market value, ignoring the special emotional and sentimental value of the painting to the victim. What is subjective and hard to ascertain is simply treated as if it does not exist. In our opinion, this common bias in compensation decisions leads to seriously inaccurate value assessments.

To minimize this bias, we recommend the establishment of a new profession—independent psychological appraisers. Like art appraisers, psychological appraisers would receive special training in assessing emotional losses, and would be licensed in order to practice. They should be readily available when needed. With such a profession in place, the court might appoint a psychological appraiser to complement or even replace an art appraiser, in an effort to assess the psychological loss of the victim and base compensation amounts on that assessment.

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