Stretching the Truth: Elastic Justification and Motivated Communication of Uncertain Information

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Abstract

Although both cognitive and motivational factors can influence the communication of uncertain information, most of the work investigating the communication of uncertainty has focused on cognitive factors. In this article, we demonstrate that motivational factors influence the communication of private, uncertain information and we describe the relationship between elasticity (i.e. uncertainty and vagueness) and motivated communication. We report results from four experiments that demonstrate that motivated communication is not purely opportunistic. The values people report are constrained by the elasticity of private information even when the costs and benefits of misrepresenting information are held constant. Perceptions of justifiability mediate the relationship between elasticity and motivated communication, and we explain our results in terms of the self-justification process.

Keywords: communicating uncertainty, motivated communication, deception, elastic-justification

JEL Classification: C91, D81, D82

Experts and decision makers are often asked to represent uncertain information with specific values. For example, a real estate manager may be asked to specify the cost of renovating a building. Rather than knowing this cost exactly, a manager might select a number from a range of potential values. A substantial literature has identified cognitive factors that influence the way people interpret and communicate uncertain information (see Budescu and Wallsten, 1995; Fox and Irwin, 1998 for reviews). In many cases, however, motivational factors also influence this decision process. For example, a manager engaged in a negotiation to sell a property may have an incentive to under-report the true cost of renovations.

In this article we describe the influence of motivational factors on the communication of elastic information. We define elastic values to include uncertain outcome values, uncertain probability values and vaguely defined values (see for example, Budescu, Weinberg, and Wallsten, 1988). Unlike specific, certain values (e.g. $500) elastic values are imprecise and open to multiple interpretations (e.g. ranges or sets of values). We examine the relationship between elasticity and motivated communication across four studies. In each of these studies the elastic information is privately known, and the opportunities and incentives to misrepresent information are constant across the conditions. In the first two studies we

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operationalize elasticity by using a range of possible values, and in the third and fourth study we operationalize elasticity by changing the clarity with which we present a value. Across all four studies we demonstrate that motivational factors influence the communication of elastic information, and that the elasticity of private information constrains motivated communication even when the costs and benefits of distorting information are held constant.

Uncertainty, ambiguity and choice

A substantial literature has investigated decision making under uncertainty and ambiguity (see Camerer and Weber, 1992 for a review). Much of this literature has centered around two normative models of choice, expected utility (von Neumann and Morgenstern, 1947) and subjective expected utility (Savage, 1954). Results from empirical studies, however, challenge the basic assumptions of these models (see Kahneman and Tversky, 2000 for a review). For example, expected utility assumes that decision makers are indifferent to whether uncertain outcomes are described in terms of gains or losses. In fact, most decision makers attach much greater weight to losses than to equivalent monetary gains (Tversky and Kahneman, 1991), and other models such as Prospect theory (Kahneman and Tversky, 1979) offer a better descriptive account of behavior.

Related studies have investigated decision making under ambiguity. Subjective expected utility assumes decision makers to be indifferent between cases when probabilities are known (unambiguous) and not known (ambiguous). Ellsberg (1961) and others (e.g. Einhorn and Hogarth, 1986; Kunreuther, Hogarth, and Meszaros, 1993), however, demonstrate that individual preferences are influenced by ambiguity. In general, people are ambiguity averse, but preferences over ambiguity can change as a function of the expected probability value (Hogarth and Kunreuther, 1989), the decision context (Kahn and Sarin, 1988), and whether the outcome is framed as a gain or a loss (Ho, Keller, and Keltyka, 2002). Different perspectives can also influence the way individuals value ambiguous risks. For example, Hogarth and Kunreuther (1985, 1989) find that people who adopt an insurer's perspective value ambiguous risks more highly than do people who adopt a consumer's perspective. These findings have prompted scholars to develop descriptive models of choice under ambiguity (see for example, Kahn and Sarin, 1988; Einhorn and Hogarth, 1986) that account for some of these deviations.

Recent work has also investigated the decision processes used to evaluate both outcome ambiguity and probabilistic ambiguity in managerial decision making (Ho, Keller, and Keltyka, 2001). Results from this work suggest that the decision processes people use to investigate both types of ambiguity are similar.

Communicating uncertain information

Prior work investigating the communication of uncertainty has focused on cognitive rather than motivational factors. This work has identified a number of factors that influence perceptions and communication of uncertain information. For example, different presentations of the same information can lead to different intentions and preferences. In early work, Slovic, Fischhoff, and Lichtenstein (1978) demonstrated this effect with intentions to wear

a seatbelt. They found that intentions to wear a seatbelt were lower when the risk of an accident was described per trip than over the course of 50 years of driving. More recently, Stone, Yates, and Parker (1994) found that willingness to pay measures could be influenced by whether risky information was presented in terms of incidence rates or relative risk ratios. Related work has also identified important differences in risk perception across both individual (Gaba and Viscusi, 1998; Weber and Hsee, 1998) and contextual (Weber and Milliman, 1997) factors.

In general, lay perceptions of risk are likely to diverge from those of experts for a number of reasons. In many cases, lay people consider a number of dimensions, such as dread and controllability, that experts often neglect (Slovic, 1992). In addition, lay people have difficulty aggregating divergent risk assessments. Rather than using Bayesian updating, people tend to focus on extreme risk estimates and are easily alarmed (Viscusi, 1997).

Similar problems characterize the way lay people communicate uncertain information to others. For example, when people are asked to provide probability estimates, such as the likelihood of developing cancer by age 50, their responses are predictably influenced by the type of response scale they are given (Fischhoff and De Bruin, 1999; Poulton, 1994). Even experts' probability assessments are influenced by this response scale effect. For example, Slovic and Monahan (1995) demonstrated that response scales systematically influenced clinicians' judgments of the need to coerce mental patients to ensure that they received treatment.

A related literature has compared the use of verbal (e.g. "very likely") and numerical (e.g. "75% chance") expressions of uncertainty. In general, people prefer to use verbal expressions rather than numerical expressions (Budescu and Wallsten, 1985; Wallsten et al., 1993), even though verbal expressions are less precise and can produce judgments that are less consistent and less reliable (Budescu, Weinberg, and Wallsten, 1988; Wallsten, Budescu, and Zwick, 1993).

Motivated communication

Motivational factors are also likely to influence the way in which people decide to communicate uncertain and ambiguous information. For example, buyers and sellers often have opposing incentives to distort the claims they make about uncertain values.

In this paper we explore the relationship between elasticity and motivated communication. We expect the elasticity of private information to constrain motivated communication. Even when the costs and benefits of distorting information are held constant, we expect motivational factors to exert greater influence in cases involving high rather than low elasticity. This prediction contradicts the economic assumption of pure self-interest. If people communicate in a self-interested way, the elasticity of private information should not matter. For example, consider the problem a target company faces when negotiating with an acquirer. Among other assets, the acquirer needs to ascertain the value of the target's inventory. This can be a very difficult proposition. Some portion of a company's inventory is likely to be damaged or obsolete, and the value of this inventory is often difficult to verify. During the course of negotiation the acquirer is likely to ask the target to assess the value of their inventory. Suppose that the head of the target company personally believes that

the market value of the target's inventory is $3 million, but the accounting records indicate that the value of the inventory is $6 million. (In this case $3 million is the target's private information.) According to an economic model of pure self-interest, the head of the target company should ignore her private information and claim $6 million. However, we argue that people need to justify the claims they make to themselves. In this example, we predict that the target's claim would not be $6 million, but would instead be $3 million or a value somewhere between $3 million and $6 million. More importantly, we predict that the more elastic (ambiguous) the private information is the more likely people are to state a higher number. For example, targets who do not clearly know how valuable their inventory is, but only know that the value is somewhere around $3 million (and that true value could be higher or lower than $3 million) are more likely to state a number higher than $3 million than people who clearly know that the market value is exactly $3 million—even if a prospective acquirer could never verify their claim.

Our prediction is related to Hsee's (1995, 1996) work on elastic justification. According to elastic justification, decisions are influenced not only by justifiable factors (those which decision makers believe they should take into consideration), but also unjustifiable factors (those which decision makers are motivated to take into consideration but do not believe they should). Hsee found that unjustifiable factors tended to exert greater influence on the decision process when the justifiable factors were elastic, presumably because the elasticity of the justifiable factors gives decision makers leeway to prefer options favored by unjustifiable factors without feeling guilty. This finding is consistent with Kunda's (1991) proposition that motivated reasoning is constrained by an individual's ability to construct reasonable justifications.

Motivated communication, deception, and unethical behavior

In many cases motivated claims are intentionally used to mislead others. We define motivated communication as the self-interested distortion of information. Motivated communication often constitutes deception, but unlike prior definitions of deception, we do not define motivated communication in terms of the liar's beliefs (Bok, 1978; Lewicki, 1983), and we do not require motivated communication to violate legal or moral standards (Jones, 1991).

Prior work investigating deception has devoted little attention to the role of uncertainty in the deception decision process. Lewicki (1983) developed a behavioral model of deception in negotiations. According to this model, the decision to lie involves perceptual weighting of the costs and benefits of lying. Lewicki argued that these perceptions are moderated by individual factors, such as personality, and situational factors, such as contingent rewards and punishments. Although uncertainty may influence contingent rewards and punishments, Lewicki did not explicity identify uncertainty as a moderating factor of deception. In subsequent work, Grover (1993) developed a model of deception in the workplace. Grover modeled lying as a product of workplace conflict and distress, but did not identify uncertainty as a moderator of deception.

More generally, Trevino (1986) developed a "person-situation interactionist model" of ethical decision making. Consistent with Lewicki's (1983) model, Trevino explicitly described the ethical decision process in terms of both individual factors, such as the decision

makers' stage of moral development, and contextual factors, such as organizational culture. Trevino identified uncertainty as an antecedent of ethical dilemmas, but did not describe how uncertainty might influence the ethical decision process.

Jones (1991) expanded Trevino's (1986) model of ethical decision making to consider characteristics of the ethical issue itself. Jones (1991) postulated that the ethical decision process changes across attributes such as the temporal immediacy of the consequences and the decision makers' relationship to those affected by the decision. Jones also posited that the "certainty of probability of effects" influences moral intensity. Jones' model suggests that greater uncertainty may reduce moral intensity which in turn may lead a decision maker to be less likely to recognize the ethical issue and to be less likely to act ethically.

Surprisingly little research has tested any of these models. One exception is work by Trevino and Youngblood (1990) which tested Trevino's (1986) model. Consistent with the model they found that an individual's stage of moral development and locus of control influenced ethical decision making. Other experimental work investigating deception in negotiations has demonstrated that solidarity and direct questions curtail deception (Schweitzer and Croson, 1999), that incentives increase deception (Tenbrunsel, 1998), and that negotiators are more likely to misrepresent a common interest if they have individualistic motives and incomplete information (O'Connor and Carnevale, 1997). In this article we extend prior work by examining the links between uncertainty, the justification process, and motivated communication.

Study 1

Study 1 investigates the relationship between elasticity and motivated communication. We used a between-subject design and asked respondents to complete either a low- or a high-elasticity version of a survey. The survey asked respondents to make a claim about an uncertain value. In the low-elasticity version of the survey the uncertain value was described in terms of a narrow range of potential values, and in the high-elasticity version the uncertain value was described in terms of a wide range of potential values. In both conditions the expected value of the ranges and the lowest credible claim were the same. In addition, the costs and benefits of making a low claim were held constant across conditions.

We expect the elasticity conditions to influence respondents' claims even when the elastic information is private and the opportunity to misrepresent information is held constant. Specifically, we expect higher levels of elasticity to make motivated communication easier to justify to oneself, and consequently we expect motivational factors to exert greater influence in the high-elasticity condition than in the low-elasticity condition. This prediction implicitly contradicts the alternative hypothesis that people behave according to an economic model of pure self-interest. According to this alternative hypothesis responses in both conditions will be opportunistic, and equal the most extreme credible value.

Methods

We recruited 115 participants from a large Eastern university to complete one of two versions of a questionnaire. The questionnaire asked participants to assume the role of a prospective

seller of a used car. In this case the car's odometer had been disconnected, and the actual odometer reading was "unrealistically" low. Participants were told that "there is no way for the buyer to find out [the car's] actual mileage," and that "buyers would believe you if you said the actual mileage was 60,000."

We then presented participants with either a low-elasticity or a high-elasticity treatment condition. In the low-elasticity condition respondents were told that their personal estimate of the number of miles the car had been driven was between 74,000 and 76,000, with "all numbers in that range equally likely." In the high-elasticity condition respondents were told that their personal estimate was between 60,000 and 90,000 miles, with "all numbers in that range equally likely."

We then asked respondents to specify the number of miles they would claim the car had, and to rate how justifiable and how honest it would be if "a seller in this case put down that the car had been driven 60,000 miles." The scales for the justifiability and honesty questions ranged from 1 to 5 (1: Completely Justified, 5: Completely Unjustified; 1: Completely Honest, 5: Completely Dishonest). Half of the respondents specified a number before the rating task and half specified a number after the rating task.

By design, respondents in both conditions could credibly claim that the car has 60,000 miles. According to an economic model of pure self-interest, this is the value sellers should report. Our prediction, however, is that respondents in the low-elasticity condition will have more difficulty justifying extreme claims to themselves than respondents in the high-elasticity condition, and consequently, we expect respondents in the low-elasticity condition to claim higher mileage numbers than respondents in the high-elasticity condition.

Results and discussion

We report results about respondents' mileage claims, their ratings, and the relationship between the two. Overall, we found that motivated claims were constrained by the elasticity of private information and that perceptions of justifiability were influenced by the elasticity of private information. Our results also suggest that perceptions of justifiability mediate the influence of elasticity on motivated communication.

We conducted a 2 (Elasticity) $\times$ 2 (Order) ANOVA for mileage claims. We found that only the elasticity parameter was significant, $F_{(1,111)} = 4.53$, $p < 0.05$. The average mileage claimed in the high-elasticity condition was 68,354 (s.d. $= 6,878$), and the average mileage claimed in the low-elasticity condition was 70,764 (s.d. $= 4,979$); these values are significantly different from each other, $t_{(113)} = 2.12$, $p < 0.05$. Both of these values were also significantly below the unbiased value of 75,000, $t_{(61)} = 7.60$, $p < 0.0001$ and $t_{(52)} = 6.19$, $p < 0.0001$, respectively.

Second, we analyzed respondents' ratings of how justifiable and how honest they considered the hypothetical claim of 60,000 miles. These ratings were closely correlated ($\rho = 0.74$). We used analysis of variance to model ratings as a function of elasticity condition, question order, and an interaction term. For justifiability ratings the elasticity condition parameter was significant, $F_{(1,113)} = 18.51$, $p < 0.0001$, the question order parameter was significant, $F_{(1,113)} = 7.63$, $p < 0.01$, and the interaction term was not significant, $F_{(1,113)} = 0.62$, $p = $ n.s. For honesty ratings the elasticity condition parameter was significant,

$F_{(1,113)} = 28.70$, $p < 0.0001$, the question order parameter was significant, $F_{(1,113)} = 4.67$, $p < 0.05$, and the interaction term was not significant, $F_{(1,113)} = 0.93$, $p = $ n.s. That is, the hypothetical claim of 60,000 miles was rated as more acceptable in the high-elasticity condition and when respondents rated this claim after making their own claim.[1] We depict average justifiability and honesty ratings in Figures 1 and 2.
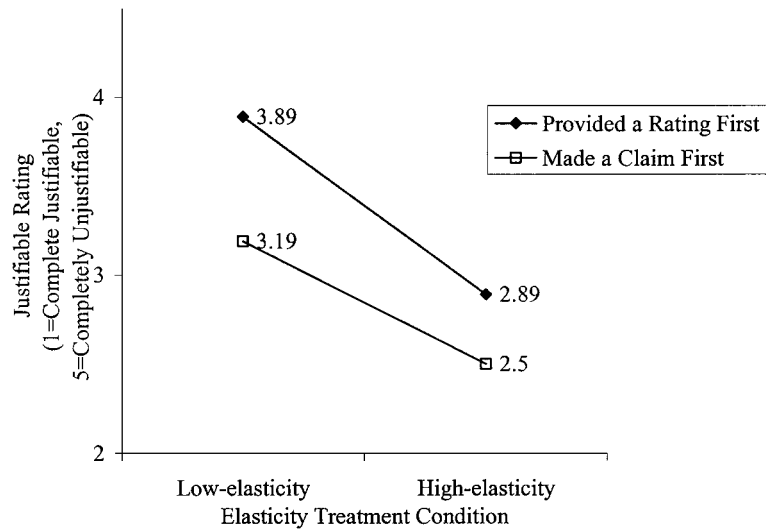

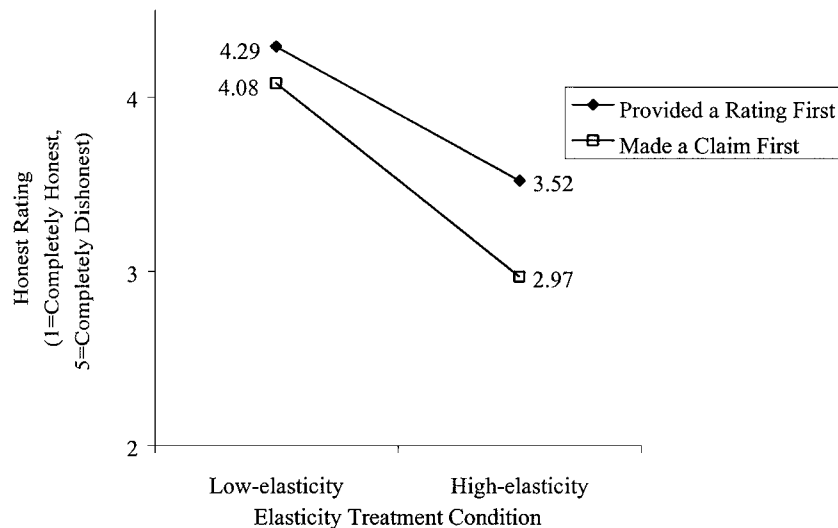*Figure 1.* Average justifiability ratings for study 1.

Figure 2. Average honesty ratings for study 1.

According to our thesis, motivational factors exert greater influence on judgment under high elasticity conditions than under low elasticity conditions because elasticity creates leeway for decision makers to justify extreme claims to themselves. To explore this proposition we conducted a mediation analysis (Baron and Kenny, 1986). We expect respondents in the high-elasticity condition to rate the hypothetical claim of 60,000 miles as more justifiable, and we expect these perceptions to mediate the relationship between the elasticity condition and respondents' mileage claims.

Our results support the mediation hypothesis. First, respondents in the high-elasticity condition rated the hypothetical claim as more justifiable than did respondents in the low-elasticity condition, 2.67 (s.d. $= 1.08$) versus 3.56 (s.d. $= 1.10$), $t_{(114)} = 4.34$, $p < 0.001$. Second, justifiability ratings mediated the effect of the elasticity condition on mileage claims. We conducted two regression models with mileage claims as the dependent variable. In the first model with elasticity alone, the elasticity parameter was significant ($p = 0.036$); in the second model, when justifiability ratings were included, the justifiability parameter was significant ($p < 0.0001$) and the elasticity parameter became insignificant ($p = 0.498$).

In this study motivational factors influenced mileage claims. These claims, however, were not opportunistic. Even though respondents in both elasticity conditions had the same incentives and the same information about the lowest credible mileage number they could claim, mileage claims in the high-elasticity condition were significantly lower than mileage claims in the low-elasticity condition. That is, the elasticity of respondents' information constrained the extent to which motivational factors influenced their claims. In addition, our results suggest that perceptions of justifiability mediate the influence of the elasticity condition. These results imply that the elasticity of private information influences the self-justification process, which in turn constrains motivated communication.

Study 2

Study 2 extends our investigation of the relationship between motivated communication and elasticity. In this study, we used a two-by-two factorial design with a high- and a low-elasticity condition, and an incentive to over- and an incentive to under-report the value of a forecast. Across all four conditions the expected value of the forecast remained the same, and respondents in each of the four treatment conditions had the same opportunity to distort the forecast value they reported.

We expect the elasticity of private information to influence the self-justification process and constrain motivated communication. In this experiment we predict a significant interaction between the incentive and the elasticity conditions. That is, we expect the magnitude to which respondents' claims are influenced by motivational factors to be moderated by elasticity. The greater the elasticity, the greater the influence of motivational factors in influencing respondents' claims.

Methods

We recruited a non-overlapping population of 163 undergraduate students from a large Eastern University to complete one of four versions of a questionnaire. The questionnaire

described the purchase of a small company and asked respondents to provide a profit estimate for the coming year, assuming that the company were to operate under current management.

The treatment conditions involved two levels of elasticity, a high-elasticity and a low-elasticity condition, and two incentive levels, incentives to report a high profit level and incentives to report a low profit level. In the high-elasticity condition respondents were provided with a wide range of forecasted values, and in the low-elasticity condition respondents were provided with a narrow range of forecasted values. In the high-profit-incentive condition respondents were asked to assume the perspective of the seller, and in the low-profit-incentive condition respondents were asked to assume the perspective of the buyer.

In each of the four conditions, respondents were told that no one had a good sense of what the correct forecast should be:

The year to year profits for the company have been very volatile. Some years the company has earned profits as high as $1 *per share, while in others they have earned as little as* $0 *per share. As a consequence, even with historical information, the seller is not sure how much profit the company will make in the future.*

And that their forecast information was confidential:

You have confidentially forecasted profit for the coming year. No one else has seen or will ever see these figures... [and that if the company is purchased the] change in management would affect profits.

The high-elasticity and low-elasticity treatment conditions were operationalized in the following way:

Based on your confidential forecast, you believe the company would earn somewhere between $X *and* $Y *per share under current management. You think any amount between* $X *and* $Y *per share to be equally likely.*

where $X and $Y were equal to $0.50 and $1.00 in the high-elasticity condition or $0.70 and $0.80 in the low-elasticity condition.

Respondents in the high-profit-incentive condition were asked to assume that they represented the seller, and respondents in the low-profit-incentive condition were asked to assume that they represented the buyer.

Results and discussion

We conducted a 2 (Elasticity) $\times$ 2 (Incentive) ANOVA for profit estimates. As predicted, we found a significant interaction between the incentive condition and the elasticity condition, $F_{(1,159)} = 11.99$, $p < 0.001$. Planned comparisons further indicate that elasticity polarizes responses toward the direction of one's motivation, whatever it is. Average responses were higher in the high-profit-incentive, high-elasticity condition ($0.90) than in the high-profit-incentive, low-elasticity condition ($0.79), $t_{(78)} = 2.64$, $p < 0.01$, and average responses
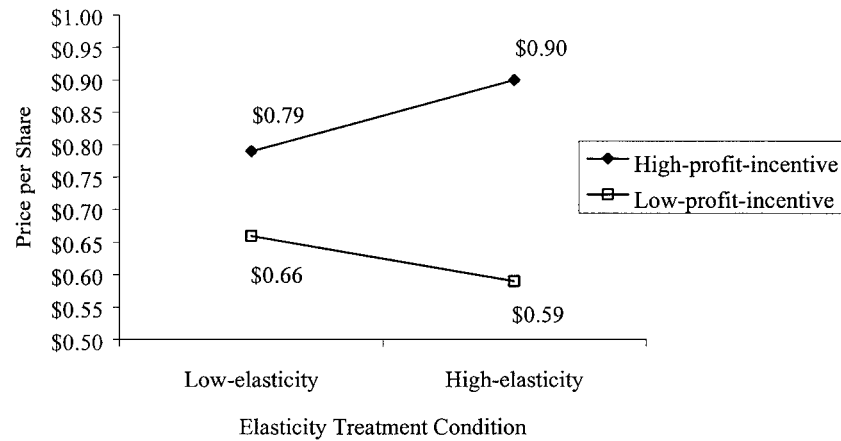
Figure 3.   Average forecast claims of profit per share for study 2.

were lower in the low-profit-incentive, high-elasticity condition ($0.59) than in the low-profit-incentive, low-elasticity condition ($0.66), $t_{(81)} = 2.19$, $p < 0.05$. We depict average forecast claims by treatment condition in Figure 3.

Results from study 2 identify the predicted interaction between motivated communication and elasticity. In this study, responses in the high-elasticity conditions were more extreme, both higher and lower, than responses in the low-elasticity conditions. Motivational factors influenced responses in both directions, and despite identical incentives for over- and under-stating values the elasticity of private information constrained motivated communication.

Study 3

In this study we extend our investigation of the relationship between elasticity and motivated communication by operationalizing elasticity differently than we did in studies 1 and 2. Rather than manipulating the range of potential values, we changed the clarity with which we described alternatives. This type of elasticity is similar to Budescu, Weinberg, and Wallsten's (1988) definition of vagueness.

Study 3 also extends our investigation to a new domain. In this study we asked respondents to assume the role of a sales manager who had agreed to offer the same discount to a new client that s/he had given a previous client. In the low-elasticity condition, the previous discount was stated as a lower price, and in the high-elasticity condition the previous discount was stated as a lower price with an automatic rebate. The net price in both conditions was the same. Participants were then asked to specify a discounted price for the new customer, who insisted that the offer only include price information.

In this study respondents had an incentive to inflate the price they reported. Respondents were explicitly told that the terms of their prior deal were confidential and respondents in both the low-elasticity and high-elasticity conditions had the opportunity to report higher prices.

As before, we expect respondents to be more likely to report higher prices in the high-elasticity condition. In the high-elasticity condition respondents may mentally segregate the rebate component of the deal from the total price, and justify a higher price to themselves by ignoring the rebate. As before, we expect the influence of motivational factors to be constrained by the elasticity of private information.

Methods

We recruited a non-overlapping population of 96 M.B.A. students from a large Eastern University to respond to a survey. In this study respondents were asked to assume the role of a sales manager for disk drives and to set a price for a large purchase. Respondents were told that they would be "evaluated based upon the total revenue [they] generate for the company."

The scenario then described the discount they gave a prior client for placing a particularly large order. In the low-elasticity condition the discount was described as "$120 per disk drive," while in the high-elasticity condition the discount was described as "$140 per disk drive, with a $20 automatic cash rebate (with revenue for the company of $120 per disk drive)."

Respondents were then told that a new buyer recently contacted them about placing an equally large order, and that

> *During your talks with this buyer, you wanted to build their confidence in your ability to fill a large order, and you mentioned that you had just filled a* 1,000 *disk drive order last month. While this buyer knows that your list price is* $180*, they do not know the price of your last* 1,000 *disk drive order. (Your previous* 1,000 *disk drive sale was a confidential transaction with a rival company, and there is no chance that this buyer would ever find out the terms of this sale.)*
>
> *During your negotiation you agreed to give them the same discount you gave for your last* 1,000 *disk drive sale. This buyer is now ready to close the deal and asks for the final price. (They are not interested in any additional incentives or terms.)*

The questionnaire concluded by asking respondents to specify the price they would tell the buyer.

Results and discussion

We report results for study 3 in terms of the distribution of prices respondents gave in both the high- and low-elasticity conditions. We identify two main results. First, significantly more responses were influenced by motivational factors in the high-elasticity condition than in the low-elasticity condition. Second, in the high-elasticity condition the majority of motivated responses were constrained by private information.

We describe the distribution of prices by treatment condition in Table 1. A significantly higher proportion of responses were influenced by motivational factors in the high-elasticity condition than in the low-elasticity condition, 38 of 51 versus 8 of 45, $\chi^2_{(1)} = 30.83$, $p < 0.0001$. Consistent with these results, average prices were significantly higher in the

Table 1.   Distribution of prices claimed in study 3.

	Prices claimed				
Treatment condition	Less than $120	$120	$121–$139	$140	More than $140
Low-elasticity condition ($n = 45$)	0	37	1	0	7
High-elasticity condition ($n = 51$)	0	13	0	31	7

high-elasticity condition than in the low-elasticity condition, \$137.31 (s.d. $=$ 12.0) versus \$125.80 (s.d. $=$ 13.4), $t_{(94)} = 4.42$, $p < 0.001$.

We also found that the majority of motivated responses were constrained by private information. In the high-elasticity condition, 31 of the 38 motivated responses (81.6%) equaled \$140.

In this study we found that respondents were more likely to inflate their prices in the high-elasticity condition than in the low-elasticity condition, and that elasticity constrained motivated communication. We manipulated elasticity differently in this study than we did in studies 1 and 2, and again found that private, elastic information moderated motivated communication.

Study 4

Study 4 investigates the relationship between elasticity and motivated communication in a negotiation experiment with monetary incentives. In this study we operationalized elasticity by manipulating the clarity of the alternatives as we did in study 3.

This study involved a distributive negotiation with three rounds of written communication. In the first round buyers made a claim about private information they had regarding a price they had been quoted. Buyers were randomly assigned to either a low- or a high-elasticity condition. In the low-elasticity condition, buyers had been quoted a simple price, and in the high-elasticity condition buyers had been quoted a price with an automatic discount, with the same net price as the low-elasticity condition. In both conditions buyers knew the same common information about the seller's estimate of the price, and in both conditions buyers had an incentive to inflate their claims. As before, we expect motivational factors to exert greater influence over buyers' claims in the high-elasticity condition than the low-elasticity condition, and we predict buyers' claims to be higher in the high-elasticity condition than in the low-elasticity condition.

Methods

We recruited a non-overlapping population of 136 undergraduate students from a large Eastern University to participate in a negotiation experiment. Participants were randomly assigned to the role of either buyer or seller. Our elasticity conditions and dependent variable measures only involved the buyers, and consequently, we focus our discussion on the buyers.

In this experiment buyers were asked to assume that they had found a house they liked very well, that they had signed an "as is" purchase agreement, and that they had completed an

inspection of the house. Buyers were told that the one remaining issue left to negotiate was the amount of compensation sellers would pay them for completing house repairs. Buyers were informed that their goal was to maximize the total compensation they received. Buyers were told that they would be randomly paired with sellers in a different room, and that four dyads would be randomly selected and that both the buyer and the seller in these dyads would be paid $1 for every $100 in compensation they earned.

Buyers and sellers were told that their "as is" contract was subject to reaching an agreement on the issue of compensation for repairs. Specifically, the contract did not obligate sellers to pay for repairs, and similarly did not obligate buyers to purchase the house. Both sides were told that in cases like these sellers often do pay for some repairs to ensure that the buyer purchases the house. In addition, both sides were told that the buyer had hired an inspector to examine the house and that the inspector's report was common information. That is, the buyers knew the following:

> *The inspection company identified several repairs . . . The report stated that the total cost of repairs would be approximately* $2,000. *The inspector gave both you and the seller a copy of this report.*

In addition to this common information, buyers were told that they had private information about the following two issues. First, that they liked the house so well they would purchase the house even if the seller offered no compensation for repairs. Second, since the buyer had hired the inspector the buyer had met with him privately. During this meeting the inspector had given the buyer a written guarantee for the total cost of repairs. Buyers knew that the sellers did not have access to this information. Specifically, buyers were told:

> *The seller knows that the inspector is likely to have told you additional information about the cost of repairs, but there is no way for the seller to learn this information. The seller could hire another inspector to estimate the cost of these repairs, but this would take too much time and money for the seller.*

Buyers were randomly assigned to one of two between-subject elasticity conditions. In the low-elasticity condition, buyers were told that the written guaranteed price was "$2,000. That is, your total cost is guaranteed to be $2,000." In the high-elasticity condition, buyers were told that the written guaranteed price was "$2,500 with an automatic $500 discount. That is, your total cost is guaranteed to be $2,000."

The negotiation took place in writing and involved three rounds. In the first round buyers told sellers how much the repairs were expected to cost, and asked for a specific amount of compensation from the seller. In the second round, sellers read buyer's claims and requests and either accepted or rejected the buyer's request. In the third round, buyers learned whether or not seller had agreed to their compensation request, and then decided to purchase or not to purchase the house. In actuality, buyers were willing to purchase the house even without compensation, but sellers did not know this.

In this study the key dependent variable is the amount buyers claim the repairs will cost. We predict that buyers will be more likely to inflate their claims in the high-elasticity

Table 2.   Distribution of costs claimed in study 4.

Treatment condition	Costs claimed				
	Less than $2,000	$2,000	$2,001–$2,499	$2,500	More than $2,500
Low-elasticity condition ($n = 35$)	2	26	3	1	3
High-elasticity condition ($n = 33$)	0	18	0	10	5

condition than in the low-elasticity condition, and that buyers' claims in the high-elasticity condition will be constrained by their private information.

Results and discussion

This study extends our investigation to a negotiation context with monetary incentives. We focus our discussion of results from study 4 on the claims buyers made regarding the expected cost of repairs. As predicted, we found that claims in the high-elasticity condition were significantly higher than claims in the low-elasticity condition. In the high-elasticity condition 15 of 33 (45%) responses exceeded $2,000, while in the low-elasticity condition only 7 of 35 (20%) responses exceeded $2,000. These proportions are significantly different, $\chi^2_{(1)} = 4.36$, $p < 0.05$.[2] Consistent with this result, average claims were significantly lower in the low-elasticity condition than in the high-elasticity condition, $2,131.4 (s.d. $= 441.8$) versus $2,417.4 (s.d. $= 692.6$), $t_{(66)} = 2.04$, $p < 0.05$. We depict the distribution of claims in Table 2.[3]

These results are consistent with the thesis that elasticity facilitates and constrains motivated communication. As predicted, claims were higher in the high-elasticity condition than in the low-elasticity condition, and the majority of motivated claims in the high-elasticity condition were constrained by private information. In this study the mechanics of elastic justification could involve mental accounting. In the high-elasticity condition people may justify a claim of $2,500 by coding the $500 rebate as their own money (see Thaler, 1999 for a review of mental accounting). Alternatively, people in the high-elasticity condition may have employed an anchoring and adjustment heuristic to make their claim (Payne, Bettman, and Johnson, 1992). In the high-elasticity condition both the $2,000 and $2,500 values could serve as possible anchors for claims. Claims in the high-elasticity condition, however, were bimodal, and none of the participants "adjusted" their claim to a value between $2,001 and $2,499.

General discussion

This work demonstrates that elasticity moderates opportunistic behavior. Even when the costs and benefits of misrepresenting information are held constant, private information limits motivated communication. Our results also suggest that the relationship between elasticity and motivated communication is mediated by the self-justification process. That is, private information constrains motivated communication because decision makers are likely to have difficulty justifying extreme claims about inelastic information to themselves.

In these studies we emphasized participants' anonymity. Participants completed materials in large groups and our materials had no identifying information. Despite our emphasis on anonymity, however, respondents' responses may have been subject to a self-presentation effect. Even so, results from this work identify important implications for the communication of uncertainty and ambiguity. While the vast majority of prior work investigating the communication of uncertainty has focused on cognitive limitations, results from this work highlight the importance of motivational factors in the communication of uncertain and ambiguous information. Future work should account for the influence of motivational factors, and explore the relationship between motivational factors and cognitive limitations.

Our results also have direct application to models of deception and ethical behavior. In general, these models have ignored the role of uncertainty and the self-justification process. Our results demonstrate that the elasticity of private information plays an important role in the deception decision process, and we identify the self-justification process as a key antecedent of the decision to use deception.

In addition, these results suggest a number of prescriptive implications. When decision makers interpret estimates and forecasts made by others, they should assess the underlying elasticity of the information and the incentives others have to distort the claims they make. Specifically, decision makers should check assumptions, ask clear, detailed questions, and encourage others to provide ranges in addition to point estimates.

The finding that people are reluctant to distort information in self-serving ways, even with impunity, when they cannot justify the distortion themselves merits further investigation. The self-justification process represents an important component of the deception decision, and both normative and non-normative factors are likely to influence the perceived justifiability of using deception. Ultimately, insight into the self-justification process will enhance our understanding of the decision to use deception and enable us to identify important prescriptions for curtailing deception.

Acknowledgments

Notes

1. The finding that participants rated the claim of 60,000 miles as more justifiable and honest after making their own claim is consistent with a proposition advanced by Scott and Jehn (1999). They proposed that judges who had engaged in a dishonest activity would judge that activity less harshly.
2. This analysis excludes the 2 responses in the low-elasticity condition that were less than $2,000. If we include these data the test of proportions yields an even more significant result, $\chi^2_{(1)} = 5.03$, $p < 0.05$.
3. Unrelated to our thesis, we also found that the average amount of compensation buyers requested was greater in the high-elasticity condition than in the low-elasticity condition, $1,545.5 versus $1,385.7, and that sellers were more likely to reject buyer's offers in the high-elasticity condition than in the low-elasticity condition, 39.4% versus 34.3%. Neither of these differences, however, were significant, $t_{(66)} = 1.04$, $p = $ n.s. and $\chi^2_{(1)} = 0.19$, $p = $ n.s., respectively.

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