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Fairness judgments and counterfactual thinking: pricing goods versus services

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Abstract

Purpose – This paper aims to propose and empirically document the idea that people's perceptions of having been treated fairly depend, in part, on whether the explanation provided to them of a product's pricing is primarily based on the costs of labor (a service) versus materials (goods). Because materials are more fixed and tangible than the effort of labor, it is argued that people will have fewer counterfactual thoughts about how things could have been different with the cost of materials than those associated with labor. This has implications for fairness judgments more generally, as it suggests that people may be uneven in which types of data they attend to when making fairness judgments. Three experiments are presented that empirically test the relationship between the salience of goods versus services in the price paid and the resulting perceptions of fairness. Findings confirm that thoughts of money spent on a service were associated with lesser feelings of fairness than were thoughts of money spent on a good. This research uniquely identifies the mechanism by which some evaluations are considered fairer than others. Implications for organizational processes, such as procedural justice and fair compensation, are discussed.

Design/methodology/approach – Three experiments are presented that empirically test the relationship between the salience of goods versus services in the price paid, and the resulting perceptions of fairness.

Findings – Findings confirm that thoughts of money spent on a service were associated with lesser feelings of fairness than were thoughts of money spent on a good.

Originality/value – This research uniquely identifies the mechanism by which some evaluations are considered fairer than others. Implications for organizational processes, such as procedural justice and fair compensation, are discussed.

Keywords Evaluation, Perception, Pricing, Counterfactual thinking, Fairness, Goods evaluation

Paper type Research paper

What makes people feel like they paid a "fair" price for a product? Fairness, after all, is not an absolute objective criteria – rather, it is a perception that can be shaped by many variables such as anchoring (Ariely *et al.*, 2003; Tversky and Kahneman, 1974), egocentric biases (Messick and Sentis, 1979), comparison with others (Ackerman and Perner, 2004), etc. Fairness has generally been defined as a judgment of whether an outcome and/or the process to reach an outcome are reasonable, acceptable or just

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(Xia *et al.*, 2004). In this paper, we define fairness as a judgment of whether an outcome – in our case, the price of a product – is reasonable and just (Bolton *et al.*, 2003). Perceptions of fairness are subjective, often depending upon a comparison to a standard or a referent, either internal or external (Adams, 1963). In the case of internal referent, the price is compared with that of the same good available at different stores. External referent would mean that a product with similar attributes or a substitute is used for comparison. Concerns for fairness are highly salient in the realm of pricing (Nguyen and Meng, 2013). Several studies have shown that price difference is an important driver of perceived price fairness (Grewal *et al.*, 2004; Xia *et al.*, 2004). However, research on price fairness, when the price is the same but the components of the product that went into the pricing decision have different weights, is sparse, and it is in this area that we make our main contribution.

Our second contribution comes from the empirical investigation of counterfactual thinking as the mediating mechanism of the relationship between the components of pricing and the perceptions of price fairness. In our research, we aim to understand the thought processes regarding fairness by exploring the relationship between perceptions of fair pricing and counterfactual thinking (which are "if only" thoughts that seek to undo unsatisfactory events that have occurred). Specifically, we argue that objectively equivalent products will be perceived differently as a function of whether the product price is presented as having a salient labor cost (a mutable service) or a salient materials cost (fixed goods). This, we posit, is because people tend to form more counterfactual thoughts about intangible labor pricing than they do about the pricing of tangible materials. Although counterfactual thoughts have been linked to a variety of judgment and decision-making outcomes, it is empirically unclear how counterfactuals may influence perceptions of fairness in this domain. Thus, our research provides an intersection of literature on counterfactual thinking and pricing fairness literature.

Variables influencing perceptions of fair product pricing

People may judge fair pricing based on their expectations of the performance of a product (Voss *et al.*, 1998), the place of purchase (Grewal and Baker, 1994) and/or their estimate of the seller's cost (Bolton *et al.*, 2003). Customers may also compare the prices they paid with those of others, and may feel disrespected when they pay a higher price than others (Ashworth and McShane, 2012). Interestingly, discounted pricing for "frequent customers" is considered fair, but it is considered as preferential treatment if given to the employer's friends (Maxwell, 1995). Although buyers understand that sellers are entitled to a "reasonable" profit, it is unclear which psychological factors influence judgments of what constitutes reasonable profit-taking. Even in the absence of an external referent, people often resort to internal devices and calculations of what is fair, which are subject to a number of biases. For instance, even though it is clear that larger-sized goods require more materials, consumers would consider it unfair to pay more for a size-12 jacket than a size-6 one. Understanding this sense of fairness can help companies set uniform prices in ways that can lead to higher profitability (Yuxin and Cui, 2013).

It is not only the price itself but also the motive behind the price that seems to matter, which falls in line with the reasoning behind procedural justice (Campbell, 1999). When buyers believe that sellers have increased prices to take advantage of an increase in demand or a scarcity of supply without a corresponding increase in costs, they tend to

perceive the new higher prices as unfair (Frey and Pommerehne, 1993; Kahneman *et al.*, 1986a, 1986b; Urbany *et al.*, 1989). Take, for example, the often-quoted examples of consumers who consider a price increase for snow shovels the morning after a snowstorm, or water bottles after an earthquake, as being unfair (Kahneman *et al.*, 1986a). However, an increase in a firm's costs may make the price increase acceptable (Kahneman *et al.*, 1986a), such as when people consider an increase in grocery prices after an equivalent increase in wholesale prices (Frey and Pommerehne, 1993; Kahneman *et al.*, 1986b). Left to their own thoughts, people tend to infer a negative motive (to exploit consumers) in prices (Campbell, 1999). This effect is magnified when news of the price increase is delivered via a human salesperson as opposed to being read about on the Internet (Campbell, 2007). Newer work reinforces the idea that consumers look for the motive of a price-change, and also judge whether the behavior seems out of character for that business such that once a suspicion is formed about a retailer, it is difficult to change (Ferguson *et al.*, 2011).

When considering fair product pricing, people also seem to underestimate inflation and seller's costs, and overestimate profit margins in general. For example, people were more willing to concede that the higher prices charged by department stores as opposed to discount stores were fair when cued with information about the benefits that these stores have (better service, for instance), but not unless prompted to think about these intangibles (Bolton *et al.*, 2003). It is also important to note (for our purposes) that participants did not spontaneously take labor costs fully into account when estimating profits in the above example. Similarly, when prices increase for goods, people react more positively when they can trace the root cause of the increase back to something directly related (like increased prices for raw materials) than for indirectly relevant costs (such as rent increase for the store), although they are less sensitive to this relationship for services (Bolton and Alba, 2006). Thus, framing can influence perceptions of the fairness in prices. Nguyen and Meng (2013) have noted that in the pricing context, procedural fairness (i.e. the procedure used to set the price) is an end in itself and not just a means for an outcome (price), as people care about fairness for fairness's sake. These authors have found that perceived procedural fairness has direct effects on buyer's responses to prices.

Pertinent to our research question, studies also show that people feel that a product or purchase is more "risky" to the degree that it is intangible as opposed to tangible, either physically or mentally, and that intangibility is "a central characteristic of services" (Eggert, 2006, p. 554). Services are not only intangible by nature due to their immateriality (or the inability to touch or feel them) but also because one cannot ascertain their value until after it has been performed (Flipo, 1988). In fact, Martín-Ruiz and Rondán-Cataluña (2008) have argued that price fairness can be different for services and goods and that price unfairness in services may even have different antecedents. In fact, intangibility affects pricing perceptions in many ways. An example of this would be whether shopping is done in an actual physical store or over the Internet. The rules by which people decide pricing appropriateness vary as a function of the type of store (online or physical), as demonstrated by Wang (2013). Jifeng *et al.* (2012) have even noted that whenever the actual quality of any product can be ascertained only after its purchase or consumption, consumers feel a higher degree of uncertainty and thereby risk associated with the product. Because this reasoning applies to services even more than to actual physical goods (as they can potentially be touched and felt before

purchase), there is bound to be more uncertainty associated with a service. Further, the recent economic crisis has raised consumers' suspicion of companies' motives and price-gouging behavior, thereby making them more sensitive to price fairness (Ferguson *et al.*, 2011). Thus, we argue that consumers will be sensitive to how prices are set and also the components of pricing if an intangible component is involved.

We argue that the risky feelings associated with intangible services will lead, on average, to more counterfactual thoughts about a better possible outcome with the purchase than the same money spent on a fixed good.

Counterfactual thoughts and fairness perceptions

Counterfactual thoughts, as mentioned above (often characterized by sentences starting "If only […]"), are mental representation of how things might have occurred otherwise, or how things "could have been" (Byrne, 2002; Roese, 1997). Such thoughts have been found to link to a variety of faulty judgments such as the hindsight bias (Nestler and Von Callani, 2008), regret (Zeelenberg, 1998; Gilovich and Medvec, 1995) and even positive judgments such as satisfaction (Naquin, 2003). Counterfactual thoughts tend to be divided into two main categories or directions: upward and downward. Upward counterfactual thoughts tend to imagine how things might have turned out better, for example: "If only I ran the race a little bit faster, I would have won gold instead of silver", while downward counterfactuals tend to imagine how things could have occurred even more negatively, for example: "Fortunately I ran as fast as I did or I may not have even gotten a medal" (Medvec *et al.*, 1995). The upward counterfactual imagines a better possible world and makes us feel bad about missed opportunities, while the downward counterfactual imagines a worse possible world and makes us feel better as compared with how much worse things might have been. Thus, the upward counterfactual thoughts may motivate us to improve our lot in the future (Morris and Moore, 2000), while the downward counterfactuals, in contrast, may serve to regulate emotions by allowing people to feel better about their existing condition (Sanna *et al.*, 2001a, 2001b). Counterfactual thoughts can also aid judgments of fairness, for example, if an employee deems that a supervisor could and should have acted differently to lead to a fairer outcome (Folger and Cropanzano, 2001). The more people consider a situation to be unfair, the greater their upwards counterfactual thinking (Nicklin *et al.*, 2011).

Counterfactual thoughts, thus, by definition, involve comparison with an alternative scenario. Often when individuals visualize a better outcome, they also visualize the state that they would be in, thereby adding structure to events (Teigen *et al.*, 2011). For example, "if only I had studied harder, I would have passed the exam" indicates the state that one would be in had the counterfactual actually happened. Further, counterfactual thinking can impede learning and performance, as in the presence of counterfactual thoughts, people tend to be more judgmental about the outcomes they have received (Petrocelli and Seta, 2013). When speculating over what could have happened, individuals feel much more strongly about the counterfactual event than the factual event, for both positive and negative events (Teigen *et al.*, 2011). Thus, it has been shown that counterfactual thoughts not only have a cognitive component but also an affective one (Celuch and Saxby, 2013; Teigen *et al.*, 2011). When confronted with spending one's own money, we posit that most people will try to minimize waste. As such, evaluating product pricing is more likely to engender upward counterfactual thoughts, which focus on improving the status quo – how this price might have been even better. After all,

research in counterfactual thinking suggests that people are motivated to have counterfactual thoughts based on their desired goals (e.g. saving money). This is supported by research suggesting that self-improvement and self-protective motives increased upward counterfactual thoughts (Sanna *et al.*, 2001a, 2001b).

Based on our earlier discussion comparing goods and services (Eggert, 2006), we hypothesize that the degree of counterfactual thoughts generated will vary as a function of whether the price of fixed costs such as materials is salient, or variable costs such as labor is salient. Because variable costs, like labor, are more open to interpretation as the basis or value of the return (Flipo, 1988), we expect them to generate more upward counterfactual thoughts than will the fixed materials costs. In other words, we predict that when evaluating product pricing, people will tend to form more counterfactuals about how they could have gotten a better price when labor costs are salient than when fixed materials costs are salient. To add to this line of reasoning, it has been shown that negative or unfavorable events often generate more counterfactual thoughts (Roese and Hur, 1997).

H1. People will have more upward counterfactual thoughts about money spent on services versus materials.

We now extend this line of reasoning into perceptions about fairness in product pricing. Building off *H1*, people who experience thoughts about a how the price could have been better may also feel that the current pricing is not "reasonable" because they are able to imagine an even better possible price. Because such thoughts about a possible lower price are likely to be associated with imagining a price that is more "reasonable", the counterfactual price may also be considered fairer. The role of counterfactuals in advertising has been explored, such that when upward counterfactual thoughts are present, more elaborate advertising communication is required (Krishnamurthy and Sivaraman, 2002). An important argument leading to our mediation *H2b* is that counterfactual thoughts have been shown to lead to more polarized judgments (Teigen *et al.*, 2011), thus implying that their feelings of unfairness may be more dramatic if they do indeed create counterfactual thoughts about this process:

H2a. People will consider a product price to be less fair when framed as being based on services versus materials.

H2b. Counterfactual thoughts will mediate the relationship between price framing and judgments of fairness.

H3. People will be more satisfied if they feel fairly treated with respect to price.

To explore these issues, what follows are three empirical studies which manipulate whether the price paid for a standard item (a personality test given as part of an MBA curriculum) is thought to be driven primarily by materials (the development of the test) or by service costs (experts to rate the answers provided by the participants). In this way, the standardization of the good and the price paid for it gives us confidence that any different psychological reactions (thoughts and feelings) that people may experience when thinking about the money that they spent on this task are due to the explanation of these pricing components that we provided. Study 1 aims to lay out the main effect, while Studies 2 and 3 explore the mediating effect of counterfactual thoughts. Consistent with other work in the area of counterfactual thinking, our

measures of this construct ask people to identify how they might imagine that the price could be different (and in which direction these thoughts occur). Finally, in Study 1, satisfaction is measured in isolation as a proxy for fairness, while in Studies 2 and 3, both constructs (fairness and satisfaction) are measured independently to directly assess the degree of their interrelationship.

Study 1

Participants and research design

Participants included 63 full-time graduate-level business students who participated in the study as part of an Organizational Behavior class assignment. The experimental design had one manipulation – whether the price of an assessment tool was based mostly on labor (a service, $n = 31$) or on materials (a good, $n = 32$). Participants were randomly assigned to experimental conditions.

Procedures and materials

Participants were instructed that as part of their (MBA) degree requirements, they must complete an assessment of their managerial skills, called the Iliad (see http://iliadassessment.com for detailed information on the assessment). Participants completed a variety of tasks, and the results were evaluated offsite by the Iliad's trained raters.

In the class, after the assessment was completed but *before* they received any results or feedback on their individual answers, participants were told the following based on high material (high labor) conditions:

> You may be curious as to how the $69 payment was determined. It is broken out as 20 per cent (80 per cent) for labor costs and 80 per cent (20 per cent) for materials. In other words, $13.80 ($55.20) for labor costs and $55.20 ($13.80) for materials.

In both of these conditions, the order of presentation (labor or material) was counterbalanced.

All participants, regardless of experimental condition, then answered three questions. First, satisfaction was measured by the direct question, "How satisfied are you with the experience you had with the Iliad?" Satisfaction in this study was a proxy for perceptions of fairness (a more direct measure is used in Studies 2 and 3). Responses were on a scale of 1 ("not at all") to 6 ("completely"). Second, to record the degree of counterfactuals judged in the price as set, participants were asked a pair of questions: "To what degree do you feel the pricing, $69, could have been different?" with responses again on a scale of 1 ("not at all") to 6 ("completely") and then "In what direction might you imagine the price could be different?" Here responses were again recorded on a scale of 1 ("less") to 6 ("more"). Please note that if participants wished the price different, particularly by imagining it lower, we can also infer that they felt the pricing was less fair than others who either could not imagine it different or imagined it to be higher, so this variable may also give us some early insight into the fairness issue in *H2a*.

After getting their assessment results, participants were asked two follow-up questions. First, satisfaction post-results was measured on a scale of 1 ("not at all") to 6 ("completely"): "How satisfied are you with the total experience you had with the Iliad?" Again, satisfaction is used in this study as a proxy for perceptions of fairness. Second, again, to assess overall fairness of the money spent, participants were asked about their perceptions of price value, measured on a scale of 1 ("lowest value") to 6 ("highest

value"): "To what degree do you find value in the Iliad? What is meant by 'value' is the comparison of the Iliad (experience and feedback) versus the price you paid, $69?" Thus, value is used to operationalize the concept of fairness in this setting. These two questions regarding fairness were counterbalanced.

Results[1]

Summaries of descriptive statistics and correlations are presented in Tables I and II.

Counterfactual judgments. As predicted, participants' thoughts imagining a different price varied as a function of how the price was presented. Supporting *H1*, an ANOVA on the measures of counterfactual thinking revealed that participants in the high labor cost condition reported having more thoughts about how the price may have been different ($M = 4.48$, $SD = 1.26$) than those in the high material cost condition ($M = 3.28$, $SD = 1.46$), $F(1,61) = 12.16$, $p < 0.004$, $\eta^2 = 0.17$. Furthermore, participants in the high labor cost condition reported more thoughts about how the price could have been *less* ($M = 2.16$, $SD = 1.04$) than did those in the high material cost condition ($M = 4.47$, $SD = 1.24$), $F(1,61) = 63.79$, $p < 0.001$, $\eta^2 = 0.51$, supporting *H1*.

Satisfaction measure time 1. Participants were less satisfied in assessments where they believed the labor costs to be higher. Specifically, participants in the high labor cost condition reported being less satisfied with their assessment ($M = 3.19$, $SD = 0.95$) than

Variable	M	SD	1	2	3	4	5
Manipulation[a]			–				
Counterfactual question 1[b]	3.87	1.49	−0.41**	–			
Counterfactual question 2[c]	3.33	1.63	0.72**	−0.34**	–		
Satisfaction time 1	3.62	1.13	0.37**	−0.59**	0.361**	–	
Satisfaction time 2	3.54	1.35	0.54**	−0.37**	0.49**	0.45**	–
Value	3.81	1.11	−0.52**	0.17	0.61**	0.32*	

Table I.
Study 1 descriptive statistics and correlations

Notes: $^*p < 0.05$, $^{**}p < 0.01$; [a] the manipulation was coded as either "0" (high labor cost) or "1" (high material cost); [b] "to what degree do you feel the pricing, $69, could have been different?" (1 = not at all, 7 = completely); [c] "in what direction might you imagine the price could be different? If you have no such thoughts, circle the number four" (1 = less, 7 = more, with 4 being the midway point)

	High labor costs		High material costs	
Variable	M	SD	M	SD
Counterfactual question 1[a]	4.48	1.26	3.28	1.46
Counterfactual question 2[b]	2.16	1.04	4.47	1.24
Satisfaction time 1	3.19	0.95	4.03	1.15
Satisfaction time 2	2.81	0.99	4.25	1.41
Value	3.48	1.03	4.125	1.11

Table II.
Study 1 mean and standard deviations by experimental condition

Notes: [a] "to what degree do you feel the pricing, $69, could have been different?" (1 = not at all, 7 = completely); [b] "in what direction might you imagine the price could be different? If you have no such thoughts, circle the number four" (1 = less, 7 = more, with 4 being the midway point)

similar participants in the high material cost condition (M = 4.03, SD = 1.15), $F(1,61) = 9.94$, $p < 0.01$, $\eta^2 = 0.14$, providing preliminary support for *H2a*.

Satisfaction measure time 2. After participants received their results for the Iliad assessment, participants in the high labor cost condition were still less satisfied with their assessment (M = 2.81, SD = 0.79) than similar participants in the high material cost condition (M = 4.25, SD = 1.41), $F(1,61) = 24.76$, $p < 0.001$, $\eta^2 = 0.29$], again providing some support for *H2a*.

Post-results value. Participants in the high labor cost condition also reported finding less value in the assessment (M = 3.48, SD = 1.03) than did those in the high material cost condition (M = 4.13, SD = 1.10), $F(1,61) = 5.70$, $p < 0.05$, $\eta^2 = 0.09$, which is consistent with *H2a* as well.

Study 1 discussion

Study 1 shows a clear pattern of results. When a product price was framed as being primarily composed of labor costs, participants considered the price to be less fair, as measured by being less satisfied and finding less value in the price paid. In addition, when the product price was framed as being primarily composed of labor costs, participants also had more thoughts about how the price could have been better. This basic finding adds to the literatures on counterfactual thinking and framing. However, although our results suggest differences in perceived fairness (through less satisfaction, feelings of lesser value, and more thoughts of lower prices in the high labor cost condition), fairness itself was not measured directly in this study. Hence, a second study was designed to directly measure perceived fairness and test our *H2a* and *H2b*.

Study 2

Methods and measures

Participants included 89 full-time graduate-level business students who participated in the study as part of an Organizational Behavior class assignment. The procedure and materials were identical to Study 1. The measures for counterfactual thinking were also identical to Study 1 (with the exception of a seven-point scale used instead of a six-point scale). An item directly addressing fairness was also added.

To assess fairness, after participants got their assessment results (approximately three weeks later), they were reminded again about how the $69.00 fee for the assessment was broken down (either mostly labor or materials) and were asked on a scale of 1 ("not at all") to 7 ("completely"): "To what degree do you feel the $69.00 price you paid is fair?"[2] In addition, to assess satisfaction, we also asked, "How satisfied are you with the *total* experience you had with the Iliad?"[3] Questions were counterbalanced.

Results

See Tables III and IV for descriptive statistics from Study 2.

Counterfactual thinking. As predicted in *H1* and supporting Study 1, participants had more thoughts about a better price when most of the cost was based on labor than that of materials, and these counterfactual thoughts tended to be upward in direction, imaging a better possible price (see Tables III and IV for a summary of means, standard deviations and correlations). An ANOVA on the measures of counterfactual thinking revealed that participants in the high labor cost condition reported having more thoughts about how the price may have been different (M = 4.87, SD = 1.16) than those

Variable	M	SD	1	2	3	4	5
Manipulation[a]			–				
Counterfactual question 1[b]	4.39	1.44	−0.32**	–			
Counterfactual question 2[c]	3.97	1.63	0.68**	−0.36**	–		
Price fairness	4.03	1.10	0.34**	−0.20	0.51**	–	
Price satisfaction	3.76	1.17	0.19	0.05	0.33*	0.52**	–
Overall satisfaction	4.13	1.06	0.34**	−0.29**	0.38**	0.35**	0.13

Table III.
Study 2 descriptive statistics and correlations

Notes: $*p < 0.05$; $**p < 0.01$; [a] the manipulation was coded as either "0" (high labor cost) or "1" (high material cost); [b] "to what degree do you feel the pricing, $69, could have been different?" (1 = not at all, 7 = completely); [c] "in what direction might you imagine the price could be different? If you have no such thoughts, circle the number four" (1 = less, 7 = more, with 4 being the midway point)

Variable	High labor costs M	High labor costs SD	High material costs M	High material costs SD
Counterfactual question 1[a]	4.87	1.16	3.96	1.54
Counterfactual question 2[b]	2.83	1.13	5.04	1.26
Price fairness	3.64	1.06	4.4	1.02
Price satisfaction	3.53	1.05	3.97	1.24
Overall satisfaction	3.76	0.93	4.48	1.06

Table IV.
Study 2 mean and standard deviations by experimental condition

Notes: [a] "to what degree do you feel the pricing, $69, could have been different?" (1 = not at all, 7 = completely); [b] "in what direction might you imagine the price could be different? If you have no such thoughts, circle the number four" (1 = less, 7 = more, with 4 being the midway point)

in the high material cost condition [M = 3.96, SD = 1.55), $F(1,87) = 9.92$, $p = 0.002$, $\eta^2 = 0.10$]. When assessing direction of counterfactual thoughts (if any), participants in the high labor cost condition reported more thoughts about how the price could have been less (M = 2.82, SD = 1.13) than did those in the high material cost condition (M = 5.04, SD = 1.26), $F(1,87) = 76.18$, $p < 0.001$, $\eta^2 = 0.47$.

Fairness judgments. As predicted, participants' judgments of fairness varied as a function of how the price was framed. Supporting *H2a*, an ANOVA on the item measuring perceived fair price revealed that participants in the high materials cost condition felt the price to be more fair (M = 4.39, SD = 1.02) than did those in the labor cost condition (M = 3.64, SD = 1.06), $F(1,87) = 11.67$, $p < 0.001$, $\eta^2 = 0.12$.

Satisfaction. Further supporting *H2a*, participants in the high labor condition tended to feel less satisfied with the overall experience (M = 3.76, SD = 0.93) than similar participants in the high material cost condition (M = 4.48, SD = 1.06), $F(1,87) = 11.58$, $p < 0.001$, $\eta^2 = 0.11$. We also find that perceived fairness and reported satisfaction are correlated ($r = 0.52$, $p < 0.01$), suggesting that while satisfaction and a sense of fairness are not identical, they do tend to co-occur, confirming *H3*. Studies in two different contexts (online auctioning and hotel reservations) have also shown that perceived fairness leads to purchase satisfaction (Haws and Bearden, 2006; Mattila and Choi, 2005).

Mediation analysis. We also tested the potential mediating role of upward counterfactual thoughts (e.g. "the price could have been better") as per Kenny *et al.*'s (1998) four-step process to test *H2b*. The regression analyses demonstrated each that:

- how the price was framed (our manipulation) was correlated with perceived fairness in pricing [$\beta = 0.34$, $t(87) = 3.42$, $p = 0.001$];
- price framing was also correlated with the degree of upward counterfactual thoughts [$\beta = 0.68$, $t(87) = 8.73$, $p < 0.001$];
- upward counterfactual thoughts were correlated with the dependent variable (perceived fair price) [$\beta = 0.51$, $t(87) = 5.48$, $p < 0.001$] and remained significant even when controlling for our manipulation, price framing [$\beta = 0.51$, $t(86) = 4.01$, $p < 0.001$]; and
- when controlling upward counterfactual thoughts, the significant relationship between price framing and perceived fairness in pricing [$\beta = 0.34$, $t(87) = 3.42$, $p = 0.001$] was reduced to non-significance [$\beta = -0.03$ $t(86) = -0.04$, ns].

The conservative Sobel test of the mediation strength (the indirect effect of the relationship between the manipulation and perceived fairness via upward counterfactual thoughts) was significant ($Z = 4.81$, $p < 0.001$). Thus, upward counterfactual thoughts mediated the relationship between how the price is framed (as a function of labor versus material) and the perceived fair value.

Study 3

The purpose of Study 3 was to twofold. First, it allows us to better examine counterfactual thoughts by having participants respond to an open-ended question versus filling out a seven-point scale. Second, it allows us to use a more robust scale for the construct of fairness. Finally, to better capture the intent of the experimental manipulation, we made the two conditions objectively equivalent in all regards (i.e. 20 per cent for profit and 40 per cent each for labor and materials in all conditions) except which component is salient – either labor or material. Thus, with the exact same amount of money spent on each labor and materials in all conditions, it is merely the prime of which element is highlighted that brings one topic to the forefront.

Participants and research design

Participants were 97 graduate-level business students who participated in the study as part of an Organizational Behavior class assignment. The experimental design had one manipulation – whether:

- the cost of labor ($n = 49$); or
- the cost of materials ($n = 48$) was made salient for the price of the assessment tool.

Participants were randomly assigned to experimental conditions.

Procedures and materials

The same procedures and materials were used in this study as in the prior studies. In the class after the assessment was completed, but *before* they received any results or feedback on their individual answers, all participants were given a questionnaire. Participants were told the following based on high material (high labor) conditions:

> You may be curious as to how the $78 payment was determined[4]. The price varies depending upon three variables: profit, labor (materials), and materials (labor). In the assessments for this year 20 per cent of the price was allocated for profit, and 40 per cent was used to cover labor (material) expenses.

In both of these conditions, the order of presentation (labor or material) was counterbalanced.

Measures

Counterfactual thoughts. To measure counterfactual thoughts, we used an open-ended question. Participants were told that "after these sorts of assessments, people often think 'what if' or 'if only' types of thoughts regarding the price paid" and were then asked to report what they thought the price *could have been*(instead of what it was) on a blank line.

Fairness. Fairness was measured by participant response to two questions. Participants were asked "To what degree do you feel the $78.00 price you paid is fair?" Responses were recorded on a scale from 1 ("not at all") to 7 ("completely"). Participants were also asked, "To what degree do you agree with the statement, 'Most students in this class will say that the $78.00 is a fair price'," on a scale of 1 ("strongly disagree") to 7 ("strongly agree") ($\alpha = 0.70$).

Results

See Tables V and VI for descriptive statistics from Study 3.

Counterfactual thinking. As predicted in *H1* and supporting both Studies 1 and 2, participants had more thoughts about a better price when most of the cost was based on labor than that of materials. In particular, when the labor price was salient, they imagined a price that was much less than the actual price of $78.00 (M = 39.64, SD = 12.61) than did those who had the material costs salient (M = 50.18, SD = 16.98), $F(1,95) = 12.07$, $p = 0.001$, $\eta^2 = 0.11$. In both conditions, participants imagined a lower price than reality, but more so when the labor cost was salient.

Fairness judgments. As predicted, and supporting Study 2, participants' judgments of fairness varied as a function of how the price was framed. Supporting *H2a*, participants with a salient labor cost felt the price to be less fair (M = 3.41, SD = 0.81)

Table V.
Study 3 descriptive statistics and correlations

Variable	M	SD	1	2
Manipulation			–	
Counterfactual pricing	44.86	15.77	−0.34**	–
Fairness	3.73	0.91	0.36**	0.42**

Note: $^{**}p < 0.01$

Table VI.
Study 3 mean and standard deviations by experimental condition

	Salient labor costs		Salient material costs	
Variable	M	SD	M	SD
Counterfactual pricing	39.64	12.62	50.18	16.98
Price fairness	3.41	0.81	4.05	0.90

than did those within the salient materials condition (M = 4.05, SD = 0.90), $F(1,95) = 13.85$, $p < 0.001$, $\eta^2 = 0.13$. Keep in mind that both labor and material costs are objectively equivalent (each being 40 per cent of the total cost).

Mediation analysis. We also tested the potential mediating role of counterfactual prices between the experimental manipulation and perceptions of fairness using Kenny *et al.*'s (1998) four-step process to test *H2b*. Replicating the pattern of results in Study 2, the regression analyses demonstrated each that:

- what factor of pricing was made salient (our manipulation) was correlated with perceived fairness in pricing ($\beta = 0.36$, $t(96) = 3.72$, $p = 0.001$);
- price framing was also correlated with the degree of counterfactual thinking ($\beta = 0.68$, $t(87) = 8.73$, $p < 0.001$);
- counterfactual thoughts were correlated with the perceived fairness ($\beta = 0.34$, $t(96) = 3.48$, $p < 0.001$), and remained significant even when controlling for our manipulation ($\beta = 0.21$, $t(94) = 2.18$, $p < 0.05$); and
- when controlling for counterfactual thoughts, the significant relationship between our manipulation (what factor of pricing was salient) and perceived fairness in pricing ($\beta = 0.36$, $t(95) = 3.72$, $p = 0.001$) was reduced ($\beta = 0.24$, $t(94) = 2.53$, $p < 0.05$).

This last step suggests partial mediation as the level of significance was reduced but not eliminated. A Sobel test of the mediation strength (the indirect effect of the relationship between the manipulation and perceived fairness via counterfactual thoughts) was significant ($Z = 2.75$, $p < 0.01$). In sum, in Study 3, counterfactual thoughts about pricing partially mediated the relationship between how the price is framed (whether labor or material are salient) and the perceived fair value.

Discussion

This research examined whether the way that product pricing is framed can influence counterfactual thoughts and subsequent perceptions in fair pricing. The results from these experiments indicate that even though the product and price were the same, people felt that the price was more justified when the major component of pricing was the cost of the materials as opposed to the labor costs. One underlying explanation could be that the material costs represent a tangible feature of the cost of the product, whereas labor is much less tangible. It could also be that people underestimate (or undervalue) the skill/effort required to administer a product. In this case, if one underestimates the skill involved in the service, one might think: "Can I imagine myself administering and scoring this assessment tool? If so, I am likely being overcharged for someone else to engage in these behaviors that I can do for myself". This possibility offers further scope for future research, as well on specifically what factors mediate the relationship between pricing fairness/justification and the components of pricing. The type of product or service may also have an effect on the perception that a price is fair, as very specialized labor such as jewelry-making, customized furniture or even complicated software programming may change people's mindsets about the value of the labor-portion of the price (Nunes *et al.*, 2004). In fact, as more and more technologically advanced products hit the market, bundling them with service packages is becoming more commonplace. Our results suggest that caution should be used when deciding how to frame the pricing

breakdown between the good and the service portions, as this could make the difference in final purchasing decisions.

This has a direct application to a business setting in those cases where jobs entirely rest of the ability to sell services (certain consultants, for example), or aim to sell a combination of a product and a service (Enterprise Resource Planning software, for instance, which is a technological platform that often needs support for both installation, job realignment and ongoing technical support). Although, in truth, people often have no good way of gauging whether $X for the software itself is a reasonable or an unreasonable amount, it seems to feel more solid than paying $X for someone's time to consult. One other explanation for this, in the consultant setting, is that material goods may be more of a commodity, whereas one particular expert's help may feel more like a unique opportunity. In any case, our results suggest that clients may be more receptive to fees attached to the more tangible aspects of the promised goods-and-services package, as opposed to those attached to the expertise of the consultants. Nobody wants to feel like they were the victim of a consultant who charged an incredible amount for a job that could have been attained at a lower fee, especially if one is not fully convinced that the expertise was truly needed in the first place.

Our studies have certain limitations. We only studied one type of good, and it is possible that the type of thinking that occurs with luxury goods might be substantively different than the reasoning that people use on value-based goods. In a related way, different brands marketed to evoke different emotions may also trigger different sets of ideas about the fairness of certain prices. Because we did not give the buyers the chance to compare the price of this good with any other referent, we leave to future research the exploration of these types of possible moderating variables. Similarly, we did not compare across different time frames in which the general economic environment might change from boom times to lean times. It is certainly possible that the broader economic climate could influence the sense of value attained from particular purchases. We also acknowledge that most people are not likely to imagine that a price should be higher in most everyday circumstances. Finally, we studied only one group of people (MBA students enrolled in a particular course). To truly understand the generalizability of the phenomenon, follow-up studies should be completed to explore whether the effect holds in different settings and within a different population.

Despite this, we still find support for our argument, as participants in the high labor cost condition had more upward counterfactuals about the price than did those in the high materials cost condition. The findings thus add to the literature regarding perceptions of fairness, counterfactual thinking and framing. Consistent with previous studies where contextual information is important (Campbell, 1999, 2007), this study also indicates that the breakdown of pricing or components of pricing can significantly alter the perception of fairness.

Yet the findings may also extrapolate past the pricing realm and have implications for other situations where intangible elements play out in decision-making. Our findings also have implications for managers in terms of procedural justice (the procedure used to justify a decision). For example, when addressing fair compensation, trying to evaluate the intangible services one provides to an organization is always more challenging than evaluating a quantifiable outcome, such as sales figures. This study may suggest that people have a consistent bias in under-appreciating the intangible elements when assessing the fairness of their outcomes or rewards. Fixed versus variable pay is another

format where tangibility is often preferred, even if variable pay has the potential to lead to much greater outcomes. This highlights the fact that risk in general is another form that intangibility can take in the workplace, and appreciating the value of something intangible such as risk might be also overlooked. Perhaps employees underestimate the monetary value of benefits as opposed to more tangible outcomes such as base salary, bonus and commissions. When comparing compensation, it is likely that the base pay level counts much more than the value of benefits. In fact, some research has shown that when it comes to satisfaction with pay level, people use a more distributive framework and focus only on the actual bottom-line number, while less tangible aspects of compensation such as benefits, raises and pay structure seem to trigger more concerns with fair process (Jawahar and Stone, 2011), indicating that here again, we see that tangibility has an effect on how people respond to fairness concerns.

The study also shows that perceptions of unfair pricing affects satisfaction with the use of the product (as shown by the post-results satisfaction measures), indicating that the subjective aspect here (relative pricing break-down) can have serious repercussions for how consumers think about products after the fact of purchase. Another premise that can be looked into is whether and when consumers may spontaneously try to find out about the components of the cost-structure and if so, then for what kind of products or services. Also, because perceived motive also matters (Campbell, 1999), if the reason for high labor cost is given as "employing local labor to generate local employment" or if the reason for high material costs is given as "higher cost of completely eco-friendly products", these cues may alter satisfaction with the purchase arising out of perceived fairness in pricing. These questions provide scope for further research in the area of pricing and fairness perceptions, particularly with respect to what other factors make people evaluate goods and services differently.

Notes

1. All results were calculated with raw price scores and with prices as percentages of the total amount paid. The results in all three studies remain identical either way.
2. Although a single-item measure, this has high face-validity. See Study 3 for a multi-item measure.
3. A second satisfaction question was dropped from further analyses, as it showed no relationship with any variable of interest.
4. The price went up from the time the previous studies were conducted.

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