Check for updates

AMA AMERICAN MARKETING ASSOCIATION

Article

Journal of Marketing Research
2023, Vol. 60(2) 219-236
© American Marketing Association 2022
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/00222437221112312
journals.sagepub.com/home/mrj
SAGE

"It Could Be Better" Can Make It Worse: When and Why People Mistakenly Communicate Upward Counterfactual Information

Xilin Li, Christopher K. Hsee, and Ed O'Brien

Abstract

Imagine you are a real estate agent and are showing a prospective buyer a house with a lake view, but it is foggy, and the view is less than ideal. Are you inclined to tell the prospective buyer, "Unfortunately, it is foggy outside. If it were not foggy, the view would be even better!"? Eight studies, spanning diverse domains, reveal a novel discrepancy: most presenters (e.g., the seller) choose to communicate such upward counterfactual information (UCI) to experiencers (e.g., the prospective buyer), believing it will enhance experiencers' impressions (e.g., of the house)—yet UCI actually worsens their impressions. This discrepancy arises because presenters insufficiently account for the fact that they possess more knowledge about the presented target than experiencers do; they fail to realize that noting an imperfection reveals it. Accordingly, when experiencers are knowledgeable about the target, either because the imperfection is obvious or because they can easily envision the upward counterfactual, the discrepancy attenuates. Finally, the presenter–experiencer discrepancy occurs only when the counterfactual information is upward, such that presenters do not overcommunicate downward counterfactual information, which rules out a desire to share *any* information as an alternative mechanism for presenters' communication decisions. Together, this research highlights the prevalence and costs of sharing UCI.

Keywords

prediction errors, self–other asymmetry, communication, egocentrism, counterfactual thinking

Online supplement: https://doi.org/10.1177/00222437221112312

Imagine you are a real estate agent and are showing a prospective buyer a house. The house faces a lake, but it is foggy outside, and it is hard to see the lake. Would you simply say, "Look how beautiful the view is!" Or are you tempted to add, "Unfortunately, it is foggy outside; if it were not foggy, the view would be even better!"?

We refer to the additional information in this example as "upward counterfactual information" (UCI). UCI informs consumers that their current consumption experience of an evaluation target is imperfect and that a better version exists (Epstude and Roese 2008; Roese 1997). In the current research, we explore the extent to which presenters (e.g., the real estate agent) freely choose to communicate UCI to experiencers (e.g., the prospective buyer) to maximize experiencers' impressions of the evaluation target (e.g., the house) and whether doing so is a wise decision—that is, whether experiencers are more positively disposed to the evaluation target after presenters inform them of UCI as compared with when no UCI is communicated.

These questions are important because opportunities for people to convey UCI are abundant in marketing and consumption contexts, and their decisions to do so (or not do so) have downstream consequences for the content being evaluated. Circumstances often are not as ideal as presenters would like: a tour guide wishes her favorite spot in town were not closed for renovations, a pet seller wishes her dog were not feeling so lethargic when a customer visits, and so on. In these situations, presenters are likely to generate UCI in their own minds (Kahneman and Miller 1986; Roese and Epstude 2017) and need to choose whether to communicate it to others. In turn, a presenter's choice to communicate UCI may influence

Xilin Li is Assistant Professor, China Europe International Business School (CEIBS), China (email: xilinli@ceibs.edu). Christopher K. Hsee is Theodore O. Yntema Professor, Booth School of Business, University of Chicago, USA (email: christopher.hsee@chicagobooth.edu). Ed O'Brien is Associate Professor, Booth School of Business, University of Chicago, USA (email: eob@chicagobooth.edu).

the experiencer's attitudes and behaviors toward the target (e.g., consumption enjoyment, online reviews). We propose (and find) that presenters tend to communicate UCI, believing that doing so will improve experiencers' impressions—even when doing so actually makes impressions worse.

Communicating Positive Information

Our theorizing begins with the assumption that people are motivated to communicate what they consider to be positive information, especially self-relevant positive information. People can accomplish this goal by actively drawing others' attention to their own positive features and/or experiences that they find personally meaningful—and indeed, many people readily adopt this strategy (Sedikides, Gaertner, and Toguchi 2003). From professional tour guides who boast about their favorite spots in town to the millions of people who promote themselves on social media, presenters generally communicate information that they think will lead experiencers to see their content in the most positive light possible.

Yet, what is positive for one person may not be positive for another, and this potential gap must be considered for communicators to achieve their intended effect. Previous research suggests that presenters often fail to bridge the gap. In one study, for example, nearly 80% of participants volunteered "humblebrag" answers (e.g., "I work too hard") to the job interview question, "What is your biggest weakness?" Presumably, participants believed that interviewers would regard such answers favorably, yet actual interviewers much preferred hearing a real weakness (e.g., "Sometimes I procrastinate": Sezer, Gino, and Norton 2018). Other research finds that people similarly overshare information that they think is positive but that audiences actually find negative, such as advertising the sheer quantity of a product's amenities (rather than advertising the high quality of a select few amenities; Weaver, Garcia, and Schwarz 2012), engaging in "shameless" self-promotion (Scopelliti, Loewenstein, and Vosgerau 2015), and telling stories of one's flawless successes in past goal-pursuit experiences (rather than telling stories of one's effortful stumbles; Klein and O'Brien 2017).

Upward Counterfactual Information (UCI): A Presenter–Experiencer Discrepancy

The current research explores these dynamics in the context of overcommunicating UCI. As previously reviewed, people generally communicate information that will lead others to perceive their content in the most positive light possible. We hypothesize a presenter–experiencer discrepancy in the positive valuation of UCI and therefore in the likelihood and value of its communication. Specifically, we hypothesize that presenters generally view UCI as positive information and thus may choose to communicate it, whereas experiencers are less likely to view UCI as positive information and thus would have had a better impression of the evaluation target had presenters not communicated the UCI.

We operationalize UCI as information that admits an imperfection in the current version of the target and highlights an upward counterfactual version of it. This imperfection can lie in the stimulus itself (e.g., during a test drive, a car salesperson might mention that the car motor usually performs even better) or in its surrounding consumption context (e.g., mentioning that the car would be fun to drive if only the traffic abated); our theorizing makes the same predictions regardless of the source of the imperfection, so long as it and its better version are communicated. (We revisit the topic of whether specific UCI components matter more or less than other components in the "General Discussion" section.)

Theoretically, UCI could produce two possible effects on evaluation of the target: it may produce a positive effect by highlighting the target's upward potential; it may also produce a negative effect by highlighting the imperfection in the target's current state. We propose that the presenter will overestimate the weight of the positive effect relative to the negative effect on the experiencer.

We posit that these dynamics reflect a fundamental discrepancy in knowledge about the target between presenters and experiencers: presenters know more about the target than experiencers do. Specifically, presenters know what the target *should* be like, and so can easily spot deviations from this untarnished state; yet experiencers know only what the target is like *now*, and so have little reason to question whether and how it could be any different. Presenters who share UCI with experiencers may therefore *dampen* the experiencers' good impressions.

Indeed, people readily generate upward counterfactuals (Roese and Epstude 2017), and upward counterfactuals typically produce contrast effects (Markman and McMullen 2003; O'Brien 2022; Roese 1997). Put in terms of our research, presenters are likely especially prone to these dynamics, as they know the upward counterfactual. In our real estate example, the agent knows how good the view could be if the sky were clear, which forms a stark contrast (for them) with the current foggy view. Presenters are effectively in "joint-evaluation mode" whereby differences between alternative states of the target seem obvious and are easily brought to mind (Hsee et al. 1999; Hsee and Zhang 2004, 2010; Li and Hsee 2019), which likely compels them to broadcast that information to others.

In contrast, naive experiencers fall on the opposite end of these dynamics, as they likely lack the comparative knowledge needed to elicit any contrast effects in the first place; to experiencers, who are effectively in "single-evaluation mode," the foggy view may look perfectly fine because they do not know the better alternative. The UCI prompts the experiencers to notice the current imperfection (e.g., the foggy view), which may lower their overall evaluation of the target product, for example, making the prospective buyer realize that the view of the house is not always good after all.

Finally, rounding out our theorizing, one might assume that presenters should know these dynamics by default (i.e., real estate agents should understand that naive buyers are not the best "others" with whom to share UCI). Unfortunately, presenters may not fully account for this gap: extant research on egocentrism and insufficient perspective-taking posits that people estimate others' preferences and reactions by first anchoring on their own preferences and reactions, yet they often fail to make sufficient adjustments (Epley et al. 2004; O'Brien and Ellsworth 2012; Pronin 2009). Most relevant to the current research, people who possess privileged knowledge about a target often struggle to "backtrack" when taking the perspective of naive others. For example, expert teachers often underestimate the struggles of novice learners (Camerer, Loewenstein, and Weber 1989; Kardas and O'Brien 2018), people who have adapted to pleasurable and painful sensations often underestimate the hedonic intensity felt by first-time experiencers (Campbell et al. 2014), and people who notice a personal blemish often overestimate the degree to which others will notice it, too (e.g., believing that strangers will ridicule one's "bad hair day" despite strangers lacking the requisite knowledge of one's typical hairstyle; Gilovich and Savitsky 1999).

In summary, by virtue of their own knowledge and past experience, presenters likely have a clear mental image of how ideal the evaluation target can be. From their perspective, imperfections in a current version of the target are obvious. By conveying UCI, the presenter thus believes they are simply highlighting the impressive nature of the target overall, a reaction that they egocentrically assume will be shared by experiencers. However, without the UCI, experiencers are often unaware of these features (or, at least, are less able than presenters to reference these features), and are simply responding to the target as is, without perceiving it as a "negative" per se. With the UCI, experiencers realize that the target item could be flawed and also are less able than presenters to clearly envision the untarnished version. Therefore, the UCI lowers experiencers' overall evaluation of the target item.

The Current Research

The current research explores whether there is a discrepancy between presenters and experiencers regarding UCI, and if so, when and why this discrepancy is likely to emerge. First, we hypothesize the basic effect, which consists of two components:

H_{1a}: When the evaluation target entails an imperfection, the presenter tends to convey UCI to the experiencer.

H_{1b}: The experiencer is less positively disposed to the evaluation target if they receive the UCI than if they do not.

H_{1a} and H_{1b} extend existing literature on counterfactual information. First, whereas previous research demonstrates that UCI can trigger negative feelings pertaining to one's *present* imperfect state (such as regret, dissatisfaction, and disappointment: Gilbert et al. 2004; Kassam et al. 2011), we measure participants' attitudes and behaviors toward the *overall* stimulus rather than toward the present flawed version itself. Thus, we are assessing more than whether participants simply confirm that our declared flawed stimulus is indeed negative. Second, whereas prior research focuses on the *recipients*' reactions to UCI (Morewedge, Zhu, and Buechel 2019; Roese 1997), we go further by focusing on the discrepancy between the presenter and the recipient (i.e., experiencer). Of key novel interest to the current research is the behavior of the *presenter*, who is in control of sharing (or not sharing) UCI; we assess the extent to which presenters share, and when and why doing so hurts rather than helps.

We conducted three pilot studies (see Web Appendix A), which suggested that people spontaneously communicate UCI in daily life (Pilot 1); indeed, even people who actively participate in marketing activities, such as salespeople and shop clerks, spontaneously communicate UCI to their clients, believing that it will improve their clients' impression of the target items (Pilot 2 and Pilot 3). Our studies in the main text test whether participants actually exhibit this effect in controlled experimental settings.

Next, we aimed to unpack the underlying psychology that drives this basic effect, which we propose reflects a fundamental difference in knowledge between presenters and experiencers: although presenters intend to depict their content positively, they insufficiently adjust for the fact that communicating UCI draws experiencers' attention to the imperfection without enabling experiencers to easily simulate the upward counterfactual. If our rationale is correct, then presenters' decisions to communicate UCI should have a less negative (or no) effect when experiencers are less naive. In other words, experiencers' knowledge about variation in the target should moderate the effect of UCI on the evaluation of the target. This proposition is consistent with previous literature showing that different levels of consumer knowledge lead to different judgments about a product among consumers who receive the same piece of information (Capraro, Broniarczyk, and Srivastava 2003; Li, Miniard, and Barone 2000; Park, Mothersbaugh, and Feick 1994).

We manipulate experiencers' knowledge about variation in the target in two different ways: by making imperfections either nonobvious or obvious and by making the upward counterfactual version either nonvivid or vivid. When the imperfections are obvious or the upward counterfactual version is vivid, experiencers gain more knowledge about variation in the target. Then, the knowledge gap is narrower, and the adverse effect of UCI should be attenuated. Put formally, our account uniquely hypothesizes that

H_2: The presenter–experiencer discrepancy predicted in H_{1a} and H_{1b} is attenuated if the imperfection is obvious. Specifically, the presenter will likely convey UCI to the experiencer regardless of whether the imperfection is obvious, but UCI will hurt the experiencer's evaluation less if the imperfection is obvious.

H_3: The presenter–experiencer discrepancy predicted in H_{1a} and H_{1b} is attenuated if the experiencer can vividly

envision the upward counterfactual of the target. Specifically, the presenter will likely convey UCI to the experiencer regardless of whether the experiencer can vividly envision the upward counterfactual, but UCI will hurt the experiencer's evaluation less if the experiencer can vividly envision the upward counterfactual version.

Another possible reason the presenter shares UCI is that they are eager to share *any* privileged information with others (Lovett, Peres, and Shachar 2013; Marett and Joshi 2009). If this were the case, then the presenter should be just as willing to communicate *downward* counterfactual information (DCI) as they are to communicate UCI. According to our theory, however, the reason the presenter shares UCI is that the UCI is positive information to themselves, and they mistakenly believe that it will also produce a positive effect on the experiencer. In other words, the valence of the counterfactual information should matter. Specifically, we predict the following:

H_4: Presenters are more likely to convey UCI than equivalent DCI to the experiencer.

We conducted 12 studies to test these hypotheses; we report 8 of them in the main text (see Table 1 for an overview) and 4 of them in the Web Appendix. We targeted a sample size of 150 participants per condition for all studies in the main text. We report all measures, manipulations, and exclusions (if any). Studies 2, 3, 4, 7, and 8 were preregistered,[1] and we have made all of our data and analysis files available online (https://osf.io/dhuxv/?view_only=2f3e3837f22045cabec7eaac5bf50c3c).

Study 1: Indoor Plant

Study 1 tested H_{1a} and H_{1b} with an incentive-compatible design that simulated real promotion and acquisition behaviors.

Method

Presenters. We used CloudResearch's blocking-low-quality-participants function to request 150 participants from Amazon Mechanical Turk (MTurk), and 155 workers (76 women, $M_{age} = 40.35$ years) completed the study. Participants read the following:

In this study, you are going to play the role of a salesperson. Your task is to promote an indoor plant to a group of potential buyers by sending a message to them. This is real, not hypothetical. That is, we will actually send the message to the potential buyers, and your message may actually influence the potential buyers' purchase intention. The plant is called Bird of Paradise. It is easy to care for and will add style and vitality to any setting. Unfortunately, the plant looks a bit withered now due to insufficient sunlight (see the picture on the left for what the plant looks like now). It would look fresher and livelier if it received sufficient sunlight (see the picture on the right below for what the plant will look like with sufficient sunlight). We will show the potential buyers only the picture on the left (i.e., what the plant looks like now, which is a bit withered due to insufficient sunlight).

[Picture of the current plant: Figure 1, left; picture of the upward counterfactual plant: Figure 1, right]

We told participants, "You can send one of the following two messages to the potential buyers along with the picture to introduce the plant. If the message you choose to send leads to a higher purchase intention of the potential buyers, you can get a $.50 bonus." Then, participants chose between the following two messages:

Message Option A: The plant is called Bird of Paradise. It is easy to care for and will add style and vitality to any setting.

Message Option B: The plant is called Bird of Paradise. It is easy to care for and will add style and vitality to any setting. Unfortunately, the plant looks a bit withered now due to insufficient sunlight. It would look fresher and livelier if it received sufficient sunlight.

Experiencers. We aimed to recruit another 300 participants as experiencers from the same population as the presenters, and 305 workers (147 women, $M_{age} = 40.29$ years) completed the study. They were randomly assigned to either an experiencer-without-UCI or an experiencer-with-UCI condition. All of them read the following:

This study examines your intention to purchase an indoor plant. Suppose that we give you $2 and ask you to decide whether to keep the $2 or use the money to buy the following indoor plant:

[Picture of the current plant, see Figure 1, left]

[Message A in the without-UCI condition; Message B in the with-UCI condition]

We emphasized to participants, "Your choice now may actually influence what you will get. Specifically, we will randomly pick ten participants at the end of the study and play out the situation for real. If you are one of the participants, we will actually give you either $2 or the plant, depending on your choice now." Then, participants chose between the indoor plant and $2. At the end of the study, we actually gave a $.50 bonus to each of the presenters who chose the message that led to the higher acquisition intention on average, and we gave ten randomly picked experiencers their choice.

Results and Discussion

In support of H_{1a} and H_{1b}, most presenters (59.4%) chose to convey UCI ($\chi^2(1, N = 155) = 5.43$, $p = .020$, $\varphi = .14$,

[1] Study 2: https://aspredicted.org/73T_9VL; Study 3: https://aspredicted.org/254_1NL; Study 4: https://aspredicted.org/5ZR_PVN; Study 7: aspredicted.org/blind.php?x=vy2n6s; Study 8: aspredicted.org/blind.php?x=s9bn3k.

Table 1. Study Overview.

Study	Target	Purpose	Moderator	Presenter's Result	Experiencers' Impression of the Target or % of Experiencers Choosing the Target	
Study 1 (N = 460)	Indoor plant	Tests H_{1a}–H_{1b} (the discrepancy) with an incentive-compatible design	N.A.	59.4% conveying UCI	Without UCI	42.5% choosing the target
					With UCI	32.2% choosing the target
Study 2 (N = 454)	Photo set	Tests H_{1a}–H_{1b} in a real counterfactual situation	N.A.	65.6% conveying UCI	Without UCI	7.40 (1.35)[b]
					With UCI	7.00 (1.65)[b]
Study 3 (N = 451)	Birthday gift	Tests H_{1a}–H_{1b} as well as emotional reactions in the domain of gift giving	N.A.	87.4% conveying UCI	Without UCI	7.43 (1.62)[b]
					With UCI	6.24 (2.15)[b]
Study 4 (N = 448)	Restaurant	Tests H_{1a}–H_{1b} as well as behavioral consequences in the domain of restaurant dining	N.A.	80.1% conveying UCI	Without UCI	6.68 (1.66)[b]
					With UCI	5.75 (2.16)[b]
Study 5 (N = 450)	Northern lights	Tests H_{1a}–H_{1b} via free-response in the domain of tours	N.A.	83.8% conveying UCI	Without UCI	7.35 (1.66)[b]
					With UCI	6.83 (1.67)[b]
Study 6 (N = 904)	Business presentation	Tests H_2 (and H_{1a}–H_{1b} again)	Nonobvious imperfection	4.68 (1.41)[a]	Without UCI	6.08 (1.86)[b]
					With UCI	5.15 (1.96)[b]
			Obvious imperfection	4.97 (1.33)[a]	Without UCI	2.97 (2.03)[b]
					With UCI	3.82 (1.89)[b]
Study 7 (N = 903)	Indoor plant	Tests H_3 (and H_{1a}–H_{1b} again)	Without envisioning	4.79 (1.52)[a]	Without UCI	7.20 (1.43)[b]
					With UCI	5.34 (1.77)[b]
			With envisioning	4.44 (1.70)[a]	Without UCI	7.03 (1.52)[b]
					With UCI	6.36 (1.65)[b]
Study 8 (N = 905)	Oriental Pearl Tower	Tests H_4 (and H_{1a}–H_{1b} again)	UCI	4.71 (1.64)[a]	Without UCI	6.95 (1.36)[b]
					With UCI	6.34 (1.43)[b]
			DCI	2.90 (1.98)[a]	Without DCI	6.88 (1.53)[b]
					With DCI	7.29 (1.54)[b]

[a]Presenters responded on a six-point scale where higher values indicate stronger preferences of conveying UCI/DCI.
[b]Experiencers responded on a nine-point scale where higher values indicate higher evaluations.
Notes: N.A. = not applicable.

Figure 1. Study 1 Stimuli.
Notes: Left image: current; right image: upward counterfactual.

compared with 50%), but experiencers who received the UCI were marginally less likely to choose the target product than those who did not receive it (32.2% vs. 42.5%; $\chi^2(1, N = 305) = 3.42$, $p = .064$, $\varphi = .11$).

Study 2: Photo Set

Study 2 tested H_{1a} and H_{1b} with real consequences by adopting a different paradigm from Study 1. In Study 2 we created a real counterfactual situation within the experiment and let every participant actually experience it.

Method

Presenters. We requested 150 workers on Prolific, yielding 154 workers (84 women, $M_{age} = 27.41$ years) who completed the study. Participants read the following:

> We will ask a group of online workers (not you) to evaluate a photo set called One Day in Petra. The photo set depicts Petra, a historic and archaeological city in southern Jordan. The area has been inhabited from as early as 7000 BC and is one of the most magnificent ancient cities. The photo set includes two photos: one shows Petra during the day (below, left) and one shows Petra at night (below, right).

[Picture of Petra during the day: Figure 2, left; picture of Petra at night: Figure 2, right]

We asked participants, "Which photo do you think is more impressive?" and they made a binary choice. They continued to read,

Although you have viewed both photos in the photo set, the other workers will view only one of the photos in the photo set, as picked by the computer. Therefore, some of the workers will see only the less impressive photo and do not know that the other photo is more impressive.

Finally, participants decided whether to share UCI. Specifically, we asked, "In order to give the workers (who will view only the less impressive photo) the best impression of the One Day in Petra photo set, would you share the following information with them?" The following text is the UCI for the presenters who picked the nighttime photo as the more impressive one; the phrases in the square brackets were reversed for the presenters who picked the daytime photo as the more impressive one:

Unfortunately, the photo you see is only [the daytime photo] of Petra, which is not the most impressive photo in the photo set. The photo set also includes [a nighttime photo]. If you saw that photo, you would be more impressed.

Experiencers. We recruited another 300 workers from the same population as the presenters (196 women, $M_{age} = 26.61$ years), and randomly assigned them to an experiencer-without-UCI or an experiencer-with-UCI condition. All of them read the following:

In this study, we will ask you to evaluate a photo set. The photo set includes two photos. Please click >> to view one of the photos in the set, along with some information about the photo set.

[Picture of Petra during the day or the picture of Petra at night; see Figure 2][2]

The photo set is called One Day in Petra. It depicts Petra, a historic and archaeological city in southern Jordan. The area has been inhabited from as early as 7000 BC and is one of the most magnificent ancient cities.

In the without-UCI condition, participants were asked, "What's your impression of the One Day in Petra photo set?" and answered on a nine-point scale ranging from 1 = "not that good" to 9 = "extremely good." The with-UCI condition was identical except participants received the UCI as described in the presenter condition before indicating their impression of the photo set.

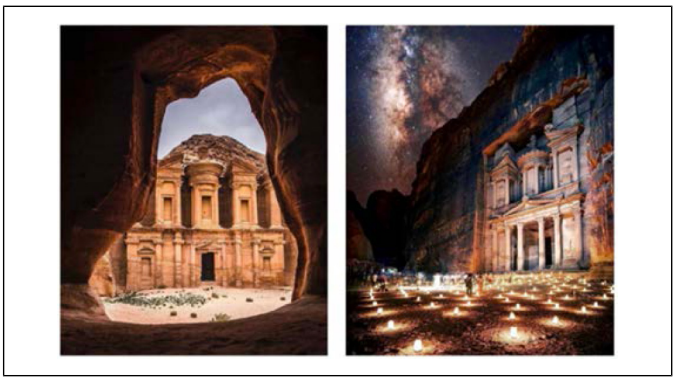

Figure 2. Study 2 Stimuli.
Notes: Left image: daytime; right image: nighttime.

Results and Discussion

In support of H_{1a}, most presenters (65.6%) chose to share the UCI ($\chi^2(1, N = 154) = 14.96$, $p < .001$, $\varphi = .31$, compared with 50%). In support of H_{1b}, experiencers who received UCI ($M = 7.00$, $SD = 1.65$) had a worse impression of the photo set than experiencers who did not receive UCI ($M = 7.40$, $SD = 1.35$; $t(298) = 2.30$, $p = .022$, $d = .27$).

The results of Studies 1 and 2 verified H_1 with real consequences in different contexts. The next three studies tested whether this effect is robust to different measures across a variety of marketing contexts.

Study 3: Birthday Gift

Study 3 tested H_1 in the context of gift-giving. Presenters were gift givers who were giving their friend a dog (i.e., the target item) as a birthday gift, and experiencers were gift receivers who were having a birthday. We measured not only experiencers' overall impressions of the target item but also their happiness and gratitude toward the gift giver—two important variables in the context of gift-giving.

Method

We requested 450 workers on Prolific, yielding 451 workers who completed the study (242 women, $M_{age} = 27.12$ years). They were assigned to one of three conditions: presenter, experiencer without UCI, and experiencer with UCI.

Participants in the presenter condition read,

Imagine the following. Your good friend Ze invited you to attend their birthday party. Ze has wanted a dog but does not have one yet. So you decide to give Ze a dog as a birthday gift. After careful selections, you ordered a young dog from a reputable pet store. It is Ze's birthday today. You go to pick up the dog

[2] Among the presenters, 82.5% of them picked the nighttime picture as more impressive and 17.5% of them picked the daytime picture as more impressive. To approximately match the ratio, we set a procedure so that experiencers would view the daytime picture at a probability of 80% and the nighttime picture at a probability of 20%.

from the pet store. The following picture shows what the dog looks like today. The store owner told you that the dog is having a cold today and feeling down. She will naturally and fully recover tomorrow. She would be more energetic and active if she were not sick. You now bring the dog to Ze's birthday party and give Ze the dog to Ze.[3] Ze sees the dog as shown in the picture, and asks you about the dog's personality. You want to maximize Ze's gift-getting experience (their impression of the dog; their happiness; their gratitude).

[Picture of the current dog: Figure 3]

Then, we asked the presenters, "What would you tell Ze?" The presenters chose between the following two options, one without UCI and one with UCI.

She is very friendly and amiable.

She is very friendly and amiable. Unfortunately, she is having a cold today and feeling down. She will naturally and fully recover tomorrow. She would be more energetic and active if she were not sick.

Participants in the experiencer condition read,

Imagine the following. You have wanted a dog but do not have one yet. You invited your friend Ze to attend your birthday party. On the day of your birthday, Ze comes to your party and gives a dog as a birthday gift (as shown in the picture). You asked Ze about the dog's personality. Ze tells you: [without-UCI condition: "She is very friendly and amiable"; with-UCI condition: "She is very friendly and amiable. Unfortunately, she is having a cold today and feeling down. She will naturally and fully recover tomorrow. She would be more energetic and active if she were not sick"].

[Picture of the current dog: Figure 3]

Then, the experiencers were asked three questions and answered on nine-point scales: "What is your impression of the dog?" (1 = "not very good," and 9 = "extremely good"), "How happy are you now?" (1 = "not very much," and 9 = "extremely happy"), and "How grateful are you to Ze?" (1 = "not very much," and 9 = "extremely grateful").

Results and Discussion

The study replicated the previous findings: most presenters (87.4%) chose to convey UCI in the hope of maximizing experiencers' gift-getting experience ($\chi^2(1, N = 151) = 84.56$, $p < .001$, $\varphi = .75$, compared with 50%), but the UCI actually lowered the experiencers' impression of the dog ($M = 6.24$, $SD = 2.15$ vs. $M = 7.43$, $SD = 1.62$; $t(277.02) = 5.40$, $p < .001$, $d = .63$). Moreover, experiencers who received UCI felt less happy after receiving the gift ($M = 6.50$, $SD = 2.43$ vs. $M = 7.09$, $SD = 2.07$; $t(290.55) = 2.28$, $p = .023$, $d = .26$), and experiencers who received UCI were marginally less grateful to the gift giver ($M = 6.65$, $SD = 2.51$ vs. $M = 7.14$, $SD = 2.20$; $t(293.21) = 1.81$, $p = .071$, $d = .21$).

Figure 3. Study 3 Stimulus.

The results suggest that UCI not only worsens gift receivers' impressions of the gift but also decreases gift receivers' happiness and evokes less gratitude toward the gift giver. More importantly, gift givers do not appear to anticipate these adverse effects, as they were tasked with the goal of maximizing these exact outcomes as described yet chose to share UCI anyway.

Study 4: Restaurant

Study 4 tested H_{1a} and H_{1b} in another marketing context: dining at a restaurant. In addition to measuring experiencers' overall impressions of the restaurant, we explored two potential behavioral consequences of the presenter–experiencer discrepancy in the dining context: online ratings and tips.

Method

We requested 450 workers on Prolific, yielding 450 workers who completed the study. Two responses came from duplicate IP addresses with the same demographic information, leaving us with 448 valid participants (264 women, $M_{age} = 26.41$ years).[4] They were assigned to one of three conditions:

[3] It should be "give the dog to Ze." The extra "Ze" was a typo in the original stimulus.

[4] In the preregistrations of Studies 4, 7, and 8, we did not specify this exclusion. However, note that these numbers of excluded participants are extremely small (just a handful); moreover, including the responses from duplicate IP addresses with the same demographic information does not significantly change the results.

presenter, experiencer without UCI, and experiencer with UCI. Participants in the presenter condition read the following:

> You are the owner of a famous local seafood restaurant. One summer day, a guest who has never been to your restaurant before steps in and orders one of your signature dishes: the secret crab claw. The main ingredient in this dish is the Alaskan crab. You know that the best season for the Alaskan crab is winter, not summer. If it were winter now, the dish would taste even better. The guest finishes the dish and is about to leave. You are not sure whether the guest will come to your restaurant again in the future.

Then, we asked the presenters, "To give the guest the best possible impression of your restaurant, which of the following would you say to the guest?" The presenters chose between two statements (one without UCI and the other with UCI):

> Statement A: The main ingredient in this dish is the famous Alaskan crab.
>
> Statement B: The main ingredient in this dish is the famous Alaskan crab. Unfortunately, it is summer now. The best season for Alaskan crab is winter. If it were winter now, the dish would taste even better.

Participants in the experiencer conditions read the following:

> One summer day, you step into a famous local seafood restaurant that you have never been to before, and you order one of their signature dishes: the secret crab claw. You finish the dish and are about to leave. The restaurant owner comes to tell you the following: "[without-UCI condition: Statement A; with-UCI condition: Statement B]."

Then, the experiencers were asked three questions: "What is your impression of the restaurant?" (1 = "not very good," and 9 = "extremely good"), "How would you rate the restaurant on Yelp?" (from "one star" to "five stars" in one-star increments), and "How much tip would you leave at the restaurant?" (from "$1" to "$5" in $1 increments).

Results and Discussion

Again, the results supported H_{1a} and H_{1b}. Most presenters (80.1%) conveyed UCI ($\chi^2(1, N = 151) = 54.84$, $p < .001$, $\varphi = .60$, compared with 50%), yet the UCI worsened the experiencers' impression of the restaurant ($M = 5.75$, $SD = 2.16$ vs. $M = 6.68$, $SD = 1.66$; $t(277.28) = 4.16$, $p < .001$, $d = .48$). Moreover, experiencers with the UCI also reported that they would give a lower Yelp rating and a smaller tip than those without the UCI (Yelp rating: $M = 3.60$, $SD = .94$ vs. $M = 4.10$, $SD = .74$; $t(280.14) = 4.68$, $p < .001$, $d = .48$; tip: $M = 2.99$, $SD = 1.28$ vs. $M = 3.53$, $SD = 1.34$; $t(294.22) = 3.56$, $p < .001$, $d = .41$).

The results suggest that UCI not only worsens customers' impressions of a restaurant but also has potential behavioral consequences, here in the form of intentions to give worse online ratings and smaller tips.

Study 5: Northern Lights

Study 5 had two purposes. First, we designed the study to test the presenter–experiencer discrepancy in another important marketing context—giving and taking tours—in which UCI is relevant. Moreover, instead of asking presenters to choose between two prewritten statements (one with UCI and one without UCI), Study 5 asked presenters to give a free-text response. In this way, we could explore whether presenters naturally choose to generate and share UCI with experiencers. Correspondingly, the experiencers in Study 5 received statements that had been generated by the presenters in the same experiment, further increasing the external validity of our effect.

Method

Presenters. We requested 150 workers from Prolific as participants in the presenter condition, yielding 150 workers (66 women, $M_{age} = 26.95$ years) who completed the study. Participants read the following:

> Imagine that you are a tour guide for aurora (northern light) tours in Alaska. You are taking a group of tourists to see auroras. You want to give them the best possible impression of Alaska's auroras. You wait a long time, and eventually you see the aurora. Unfortunately, there are clouds tonight and the aurora is not bright. The aurora would be much brighter if there were no clouds. The picture on the left below is what the aurora looks like tonight and the picture on the right below is what the aurora would look like if there were no clouds.
>
> [Picture of the current aurora: Figure 4, left; picture of the upward-counterfactual aurora: Figure 4, right]

We asked participants, "Given tonight's situation, what would you say to the tourists?" They wrote their answers freely in a text box. These free responses serve as our key dependent variable, such that they naturally vary on the use of UCI (to be coded by blind research assistants; details discussed subsequently), and constitute what we will show to experiencer participants.

Experiencers. We recruited another set of 300 unique workers from Prolific (the same population as the presenters), yielding 300 workers (139 women, $M_{age} = 28.03$ years) serving as experiencers in the study. They were randomly assigned to an experiencer-without-UCI or an experiencer-with-UCI condition. All of them read the following:

> Imagine that you are traveling in Alaska, and you hope to see Alaska's auroras (northern lights). You are among a group of tourists on an aurora tour tonight. You wait a long time, and eventually you see the aurora. The following is what you see:
>
> [Picture of the current aurora, see Figure 4, left]
>
> Your tour guide says, "xxx."

The "xxx" was a statement that had been generated by a presenter. In advance, we categorized the generated statements as

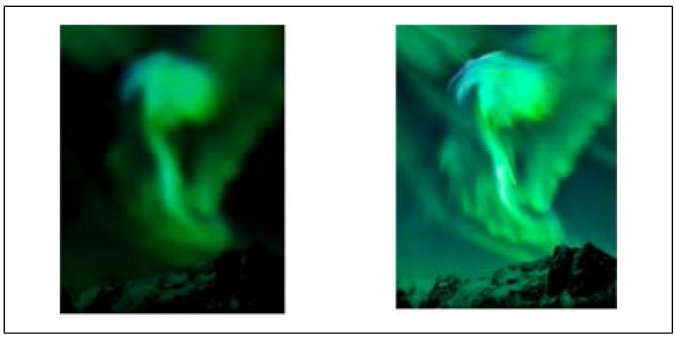

Figure 4. Study 5 Stimuli.
Notes: Left image: current; right image: upward counterfactual.

either containing or not containing UCI (details discussed subsequently). Then, for each experiencer, we randomly selected a statement from the appropriate category (depending on the experiencer's assigned condition). Finally, the experiencers were asked, "How good of an impression do you have of Alaska's auroras?" They answered on a nine-point scale ranging from 1 = "not very good" to 9 = "extremely good."

Results and Discussion

We excluded 8 of the 150 responses submitted by the presenters: one for not writing in English, and seven for writing to the experimenter instead of to the experiencer (e.g., "I would offer a refund to the tourists that are not 100% satisfied, or give them the option to choose another day for a free tour guide"). We therefore yielded 142 unique communications to be used in our analyses.

Presenters spontaneously conveyed UCI. We assessed whether the presenters spontaneously shared UCI. We recruited two independent coders, unaware of the hypotheses, who saw all the original study prompts and then coded each presenters' written response for whether it contained or implied UCI (yes vs. no). The coders agreed on 87.9% of codes; discrepancies were reconciled by a third coder who was also unaware of the hypotheses.

In support of H_{1a} (here via natural, open-ended communication), 83.8% of presenters' responses (119 of 142) were coded as containing UCI ($\chi^2(1, N = 142) = 64.90$, $p < .001$, $\varphi = .68$, compared with 50%); thus, the remaining 16.2% (23 of 142) were coded as not containing UCI. See Web Appendix B for UCI messages and non-UCI messages, which were coded as such by the external coders.[5]

[5] After writing the messages, the presenters also self-coded their own response by indicating which of the following options better captured what they had written: "Look at the aurora!" (i.e., did not use UCI) versus "Look at the aurora! Unfortunately, there are some clouds. The aurora would look brighter if there were no clouds" (i.e., did use UCI). The self-coded result was consistent with the externally coded result: 77.5% of presenters self-categorized their responses more similar to the prewritten statement containing UCI ($p < .001$), adding further support for our hypothesis about presenters.

Experiencers had worse impressions with UCI. We assessed the effects of presenters' spontaneous messages on actual experiencers. Experiencers were randomly assigned to read a UCI message (randomly drawn with replacement from our battery of 119 responses as coded by the outside raters) or a non-UCI message (randomly drawn with replacement from our battery of 23 responses as coded by the outside raters). All messages were displayed verbatim.

In support of H_{1b}, the experiencers who saw a statement with UCI actually had a *worse* impression of Alaska's aurora ($M = 6.83$, $SD = 1.67$) than the experiencers who saw a statement without UCI ($M = 7.35$, $SD = 1.66$; $t(298) = 2.71$, $p = .007$, $d = .31$). The strategy that most presenters spontaneously adopted proved to be the less effective strategy.

Study 5 replicated the results of previous studies in a tour context by using statements that had been freely generated by the presenters. In this way, we verified H_1 in a paradigm with higher external validity.

Study 6: Business Presentation

Study 6 fulfilled two purposes. First, we tested our proposed mechanism underlying the presenter–experiencer discrepancy by manipulating the obviousness of the imperfection and testing whether the presenter–experiencer discrepancy attenuates when the current target has an obvious imperfection (H_2). If an imperfection is so obvious that experiencers already clearly notice it and can easily tell what went wrong and how the stimulus should have appeared instead, then our framework predicts that the undermining effect of presenters' decisions to communicate UCI should be attenuated.

Second, we tested how the presenters predicted the responses of the experiencers. According to our theory, the presenter–experiencer discrepancy arises because the presenter mispredicts the experiencer's responses. To directly test this theory, Study 6 asked presenters not only to indicate whether they would communicate UCI but also to predict the response of the experiencers if they communicated UCI versus if they did not. We expected to find a preference reversal such that presenters predict more positive reactions when sharing (vs. not sharing) UCI, whereas experiencers would report more positive reactions when UCI was not shared (vs. was shared).

Method

The study adopted a 3 (role: presenter vs. experiencer without UCI vs. experiencer with UCI) × 2 (imperfection: nonobvious vs. obvious) between-subjects design. We requested 900 participants on Prolific, yielding 904 workers (383 women, $M_{age} = 27.32$ years) who completed the study.

Participants in the presenter condition read the following:

> You are a business consultant, and you have been hired by a businessperson to do a market research project for him. One day, your client visits your city and asks you for an update on the progress of the project. You have prepared a PowerPoint presentation for the

project. You meet the client in a restaurant and show the client the PowerPoint on your laptop computer. However, your laptop does not work properly today. As a result, your slides look distorted. The picture on the left below is what your slides would look like if your laptop worked properly, and the picture on the right below is what your slides actually look like now.

[Picture of the current slide and "correct" slide. Nonobvious condition: Figure 5, left; obvious condition: Figure 5, right; upward-counterfactual condition: Figure 5, middle]

Participants in the presenter-nonobvious condition and the presenter-obvious condition read the same description, saw the same picture for the upward-counterfactual slide, and saw different pictures for the current slide. Then, we asked all presenters, "In order to give your client a good impression of your project, which of the following statements would you make?" They read the following two statements (without and with UCI) and answered on a six-point scale ranging from 1 = "definitely Statement A" to 6 = "definitely Statement B."

Statement A: I have worked hard on this project and I want to present the best to you.

Statement B: I have worked hard on this project and I want to present the best to you. However, my laptop does not work properly today and therefore my slides look distorted. My slides would look better if the laptop worked properly.

After indicating their communication preference, the presenters were asked, "Please separately predict how good of an impression your client would have of your project if you make Statement A versus if you make Statement B"; for each prediction, presenters answered on two nine-point scales ranging from 1 = "not that good" to 9 = "extremely good."

Participants in the experiencer conditions read the following:

You are a businessperson, and you have hired a business consultant to do a market research project for you. One day, you visit the city where the consultant lives, and you ask the consultant for an update on the progress of the project. The consultant has prepared a PowerPoint presentation for the project. You meet the consultant in a restaurant, and the consultant shows you the PowerPoint on his/her laptop computer. The following is what the slides look like:

[Picture of the current slides. Nonobvious condition: Figure 5, left; obvious condition: Figure 5, right]

The consultant says, "[Statement A in the without-UCI condition; Statement B in the with-UCI condition]."

Participants in the experiencer-nonobvious condition and the experiencer-obvious condition read the same description but saw different pictures of the current slides (i.e., Figure 5, left, in the nonobvious condition and Figure 5, right, in the obvious condition). No experiencer saw the upward-counterfactual slide (Figure 5 middle). Finally, the experiencers were asked, "How good of an impression do you have of the consultant's project?" They answered on the same nine-point scale as the presenters used to make their predictions.

Results and Discussion

UCI backfired when the imperfection was nonobvious (basic effect replicated). First, we unpack the nonobvious condition, which corresponds to the kinds of stimuli that we have used in all studies so far and therefore should replicate the basic effect. This was the case: presenters preferred to communicate UCI (i.e., Statement B; $M = 4.68$, $SD = 1.41$; $t(150) = 10.29$, $p < .001$, $d = .84$), significantly above the midpoint of the six-point scale. Corresponding to their choice preferences, presenters also directly predicted that experiencers would have a better impression of the project when given UCI ($M = 5.88$, $SD = 1.74$) than without UCI ($M = 3.93$, $SD = 2.02$; $t(150) = 7.81$, $p < .001$, $d = .64$). In reality, presenters were again mistaken: experiencers who received UCI had a *worse* impression of the project ($M = 5.15$, $SD = 1.96$) than experiencers who did not receive UCI ($M = 6.08$, $SD = 1.86$; $t(303) = 4.29$, $p < .001$, $d = .49$).

UCI no longer backfired when the imperfection was obvious (the basic effect disappeared). Next, we unpack the obvious condition. Like the presenters in the nonobvious condition, the presenters in the obvious condition preferred to communicate UCI ($M = 4.97$, $SD = 1.33$; $t(148) = 13.57$, $p < .001$, $d = 1.11$), significantly above the midpoint of the six-point scale. Likewise, these presenters also directly predicted that experiencers would have a better impression of the project when given UCI ($M = 5.70$, $SD = 1.76$) than without UCI ($M = 3.61$, $SD = 2.10$; $t(148) = 8.44$, $p < .001$, $d = .69$). Critically, however—unlike presenters in the nonobvious condition (and unlike presenters in all studies so far)—they were *right*: experiencers who received UCI really did have a better impression ($M = 3.82$, $SD = 1.89$) than experiencers who did not receive UCI ($M = 2.97$, $SD = 2.03$; $t(297) = 3.74$, $p < .001$, $d = .43$). In this context, when the imperfection was obvious, presenters' decisions to communicate UCI paid off. For a visual comparison between the presenters' predictions of the experiencers' impressions and the experiencers' actual impressions across the obvious and nonobvious conditions, see Figure 6.

All told: Imperfection obviousness moderated the basic effect. Putting these findings together, we tested whether the obviousness of the imperfection indeed moderated the presenter–experiencer discrepancy (H_2). We ran a mixed linear model with evaluation as the dependent variable and role (presenters' predictions of experiencers' evaluations vs. experiencers' actual evaluations), UCI (evaluations of the business presentation when paired with UCI vs. without UCI), and imperfection (nonobvious vs. obvious) as predictors. The analysis found a significant three-way interaction ($F(2, 1{,}034.91) = 82.86$, $p < .001$), suggesting that the presenter–experiencer discrepancy was attenuated when the imperfection in the current target was

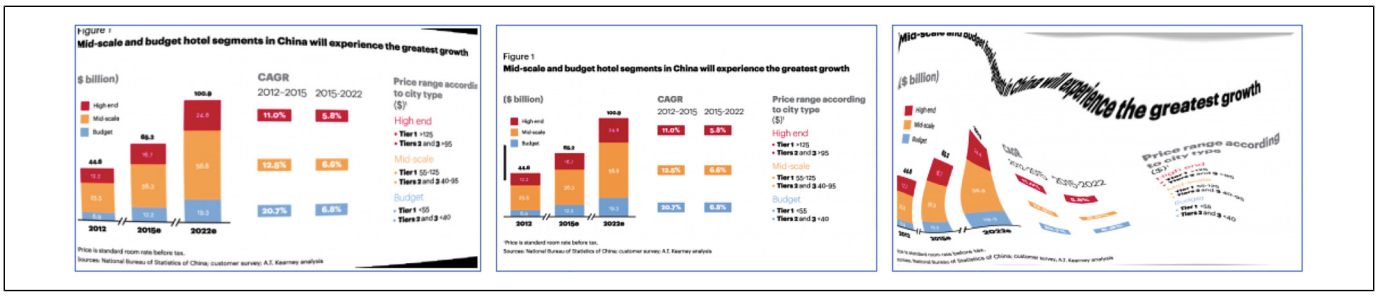

Figure 5. Study 6 Stimuli.
Notes: Left image: nonobvious imperfection; middle image: no imperfection (i.e., upward counterfactual); right image: obvious imperfection.

obvious. Presenters predicted that experiencers would respond similarly positively to UCI regardless of whether the imperfection was obvious (two-way analysis of variance [ANOVA] interaction among presenters: $F(1, 298) = 82.86$, $p = .667$, $\eta^2 = .001$), yet experiencers benefited from UCI only when the imperfection was obvious; for nonobvious imperfections, UCI worsened rather than improved their impressions (two-way ANOVA interaction among experiencers: $F(1, 600) = 32.14$, $p < .001$, $\eta^2 = .051$).

The results of Study 6 showed that the presenters preferred to convey UCI and believed that UCI would have positive effects on experiencers' evaluation regardless of whether the imperfection was obvious. However, the effect of the UCI on the experiencers' impression was contingent on obviousness; if the imperfection was not obvious, the UCI hurt the experiencers' evaluation, but if the imperfection was obvious, the UCI improved their evaluation.

Study 7: Indoor Plant

The main purpose of Study 7 was to test H_3—whether the experiencers' ability to envision the upward counterfactual would reduce the adverse effect of UCI on their own impressions of the target and thereby reduce the presenter–experiencer discrepancy.

Method

The study adopted a 3 (role: presenter vs. experiencer without UCI vs. experiencer with UCI) × 2 (envisioning: without vs. with) between-subjects design. We requested 900 participants on MTurk by using CloudResearch-approved participants, yielding 907 workers who completed the study. Four responses came from duplicate IP addresses with the same demographic information, leaving us with 903 valid participants (452 women, $M_{age} = 38.49$ years).

The without-envisioning condition was a hypothetical version of Study 1, with two key differences. First, experiencers indicated their impressions of the indoor plant rather than choosing between the indoor plant and the decoy. Second, presenters not only chose whether to convey UCI but also predicted whether experiencers' impressions of the indoor plant would be better with or without UCI.

The with-envisioning condition was the same as the without-envisioning condition except that the experiencers could vividly envision the upward counterfactual, and presenters were aware of that. Specifically, the presenters were told that they happened to have a picture of the plant in its recovered state to show to the experiencers; correspondingly, experiencers viewed the picture of the plant in its recovered state beside the picture of the plant in its current state. Please see Web Appendix C for the detailed stimuli.

Results and Discussion

UCI backfired when experiencers could envision (basic effect replicated). First, we unpack the without-envisioning condition, which corresponds to our previous studies and therefore should replicate the basic effect. This was the case: presenters preferred to communicate UCI ($M = 4.79$, $SD = 1.52$; $t(148) = 10.37$, $p < .001$, $d = .85$), significantly above the midpoint of the six-point scale. As suggested by their choice preferences, presenters also predicted that experiencers would rate the indoor plant more highly with UCI ($M = 6.12$, $SD = 2.01$) than without UCI ($M = 4.70$, $SD = 2.40$; $t(148) = 4.51$, $p < .001$, $d = .37$). Yet again, presenters were mistaken: the experiencers who received UCI rated the indoor plant as worse ($M = 5.34$, $SD = 1.77$) than the experiencers who did not receive UCI ($M = 7.20$, $SD = 1.43$; $t(301) = 10.05$, $p < .001$, $d = 1.16$).

UCI still backfired when experiencers could envision (basic effect continued). Next, we unpack the with-envisioning condition. Like the presenters in the without-envisioning condition, the presenters in the with-envisioning condition preferred to communicate UCI ($M = 4.44$, $SD = 1.70$; $t(148) = 6.72$, $p < .001$, $d = .55$), significantly above the midpoint of the six-point scale. Likewise, these presenters predicted that experiencers would have a better impression of the indoor plant when given UCI ($M = 5.76$, $SD = 1.88$) than when not given UCI ($M = 5.21$, $SD = 2.42$; $t(148) = 1.83$, $p = .007$, $d = .15$). Again, presenters erred by choosing to share UCI: experiencers who received UCI ($M = 6.36$, $SD = 1.65$) rated the indoor plant higher than those who did not receive UCI ($M = 7.03$, $SD = 1.52$; $t(300) = 3.63$, $p < .001$, $d = .42$). For a visual comparison between the presenters' predictions of the experiencers'

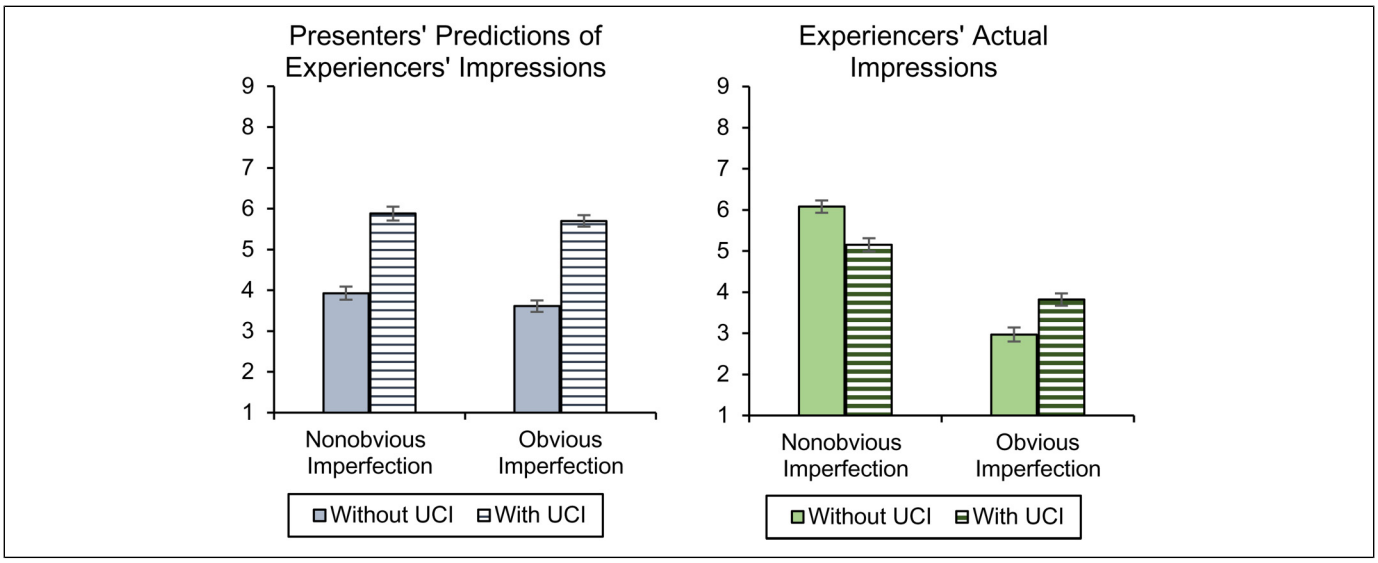

Figure 6. A Comparison of Presenters' Predictions of Experiencers' Impressions and Experiencers' Actual Impressions in Study 6.

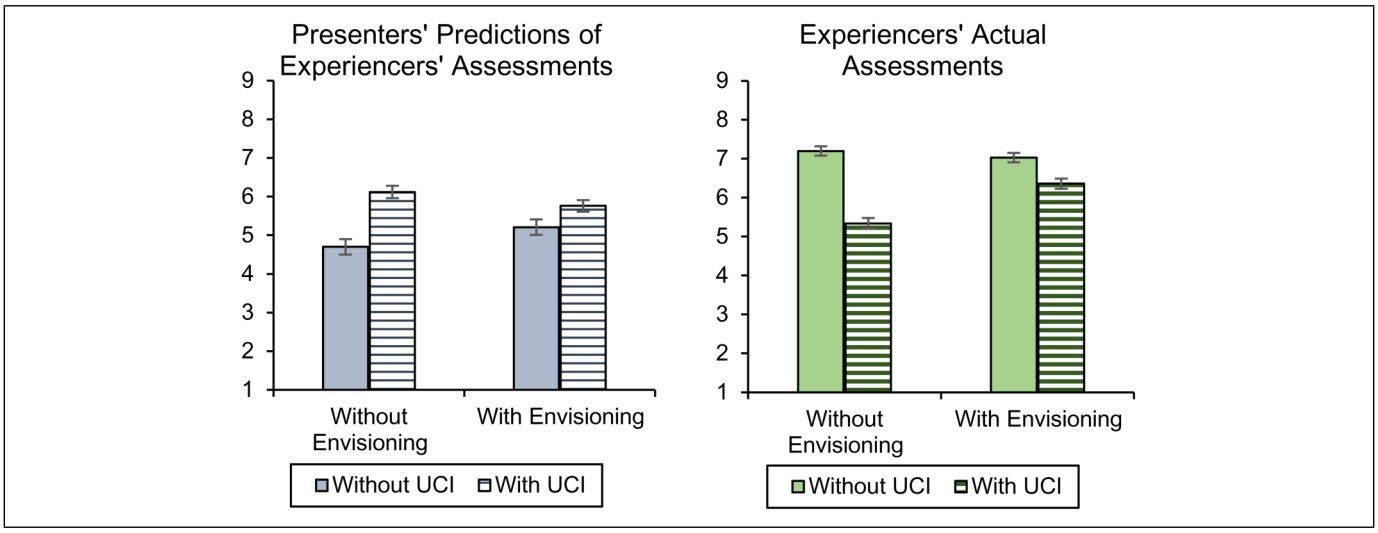

Figure 7. A Comparison of Presenters' Predictions of Experiencers' Assessments and Experiencers' Actual Assessments in Study 7.

assessments and the experiencers' actual assessments across the without-envisioning and with-envisioning conditions, see Figure 7.

…But this latter backfiring effect was weaker (moderation by experiencer's envisioning). However, we found evidence of significant moderation, indicating that these two sets of basic effects differ in strength from each other (H_3). Specifically, we ran a mixed linear model with evaluations as the dependent variable and with role (presenters' predictions of experiencers' evaluations vs. experiencers' actual evaluations), UCI (evaluations of the business presentation when paired with UCI vs. without UCI), and envisioning (without vs. with) as predictors. The analysis found a significant three-way interaction ($F(2, 1{,}064.70) = 5.11$, $p = .006$), confirming that the presenter–experiencer discrepancy was attenuated when the experiencers could vividly envision the upward-counterfactual indoor plant. Presenters predicted that UCI would be more helpful for experiencers who *could not* envision the upward counterfactual (two-way ANOVA interaction among presenters: $F(1, 296) = 4.00$, $p = .046$, $\eta^2 = .013$), yet the opposite proved to be true in reality: UCI was less harmful for experiencers who *could* envision the upward counterfactual (two-way ANOVA interaction among experiencers: $F(1, 601) = 21.00$, $p < .001$, $\eta^2 = .034$).

Study 7 provides converging support for our account of the presenter–experiencer discrepancy regarding UCI. Presenters typically have broader information about a target than experiencers do. However, when experiencers are similarly knowledgeable about the variation in the target—either because the

current imperfection is obvious (Study 6) or because the experiencers can vividly envision the upward-counterfactual target (Study 7)—then the narrower knowledge gap between presenters and experiencers attenuates the discrepancy. Note that the presenter–experiencer discrepancy did not fully disappear in the with-envisioning conditions, suggesting that other factors also contribute to the discrepancy (e.g., the effect could have persisted due to negative feelings about "missing out"; for further discussion of possible drivers and boundaries, see the "General Discussion" section). However, the significant moderation effect of envisioning suggests that these other explanations alone cannot fully explain the effect, highlighting the central contribution of envisioning. In addition, Studies 6 and 7 showed that when deciding whether to share UCI, presenters were insensitive to how knowledgeable experiencers were about the presented target and thus how costly UCI would be, consistent with the theory that many biases and mispredictions are caused by insufficient sensitivity to situational variables (Hsee, Yang, and Li 2019; Li and Hsee 2021; Yang, Hsee, and Li 2021).

Study 8: Oriental Pearl Tower

In Study 8, we again aimed to replicate the basic effect (H_{1a} and H_{1b}) while further testing our proposed process via H_4. So far, it is unclear whether presenters specifically overshare UCI or whether presenters overshare any kind of information (e.g., due to desires for transparency or to convey expertise). Our theorizing predicts that presenters uniquely choose to communicate upward, but not downward, counterfactual information because they tend to share positive information, but not negative information, about self-relevant experiences.

Method

The study adopted a 3 (role: presenter vs. experiencer without CI vs. experiencer with CI) × 2 (valence of CI: upward [UCI] vs. downward [DCI]) between-subjects design.[6] We requested 900 participants on MTurk, yielding 907 workers who completed the study. Two responses came from duplicate IP addresses with the same demographic, leaving us with 905 valid participants (547 women, $M_{age} = 37.28$ years).

Participants in the presenter condition read the following (italicized text differed between conditions):

> You live in Shanghai, China, and are familiar with the city. A friend from the US is visiting Shanghai for the first time. It is Sunday night, and the friend will leave tomorrow. You take the friend to see the Oriental Pearl Tower.
>
> *[UCI condition]: Unfortunately, the Oriental Pearl Tower is not well lit tonight. It would be more beautiful if it were well lit.*
>
> *[DCI condition]: Fortunately, the Oriental Pearl Tower is well lit tonight. It would be less beautiful if it were not well lit.*
>
> The picture on the left is what your friend sees, and the picture on the right is what the Oriental Pearl Tower looks like when it is not well lit.
>
> [Picture of the current Oriental Pearl Tower: Figure 8, left. Picture of the counterfactual Oriental Pearl Tower, UCI condition: Figure 8, middle; DCI condition: Figure 8, right]

Then, we asked the presenters, "In order to give your friend a good impression of the Oriental Pearl Tower, which of the following would you say?" The presenters read two options, one without counterfactual information and the other with either UCI or DCI, and indicated their preference on a six-point scale ranging from 1 = "definitely Statement A" to 6 = "definitely Statement B."

> Statement A: The Oriental Pearl Tower is 1535 feet tall and is a major landmark in Shanghai.
>
> [UCI condition] Statement B: The Oriental Pearl Tower is 1535 feet tall and is a major landmark in Shanghai. Unfortunately, the Oriental Pearl Tower is not well lit tonight. It would be more beautiful if it were well lit.
>
> [DCI condition] Statement B: The Oriental Pearl Tower is 1535 feet tall and is a major landmark in Shanghai. Fortunately, it is well lit tonight. If it were not well lit, it would be less beautiful.

After indicating their communication preference, the presenters were asked, "Please separately predict how good of an impression your friend would have of the Oriental Pearl Tower if you make Statement A versus Statement B"; they answered on a nine-point scale ranging from 1 = "an OK impression" to 9 = "the best possible impression (i.e., can't be better)."

Participants in the experiencer conditions read the following:

> You are visiting Shanghai from the US for the first time. It is Sunday night, and you will leave tomorrow. A friend, who lives in Shanghai and is familiar with the city, takes you to see the Oriental Pearl Tower. The following is what you see.
>
> [Picture of the current Oriental Pearl Tower: Figure 8, left]
>
> The friend tells you, "[Statement A in the without-CI condition; Statement B in the with-CI condition]."

Finally, the experiencers were asked, "How good of an impression do you have of the Oriental Pearl Tower?" They answered on the same nine-point scale as the presenters used to make their predictions.

Results and Discussion

Presenters mistakenly communicated UCI (basic effect replicated). Within UCI conditions, the basic effect again replicated: presenters strongly favored communicating UCI (i.e., Statement

[6] The experiencer-without-CI/upward and experiencer-without-CI/downward conditions were effectively the same because the experiencers did not receive any counterfactual information.

Figure 8. Study 8 Stimuli.
Notes: Left image: current; middle image: upward counterfactual; right image: downward counterfactual.

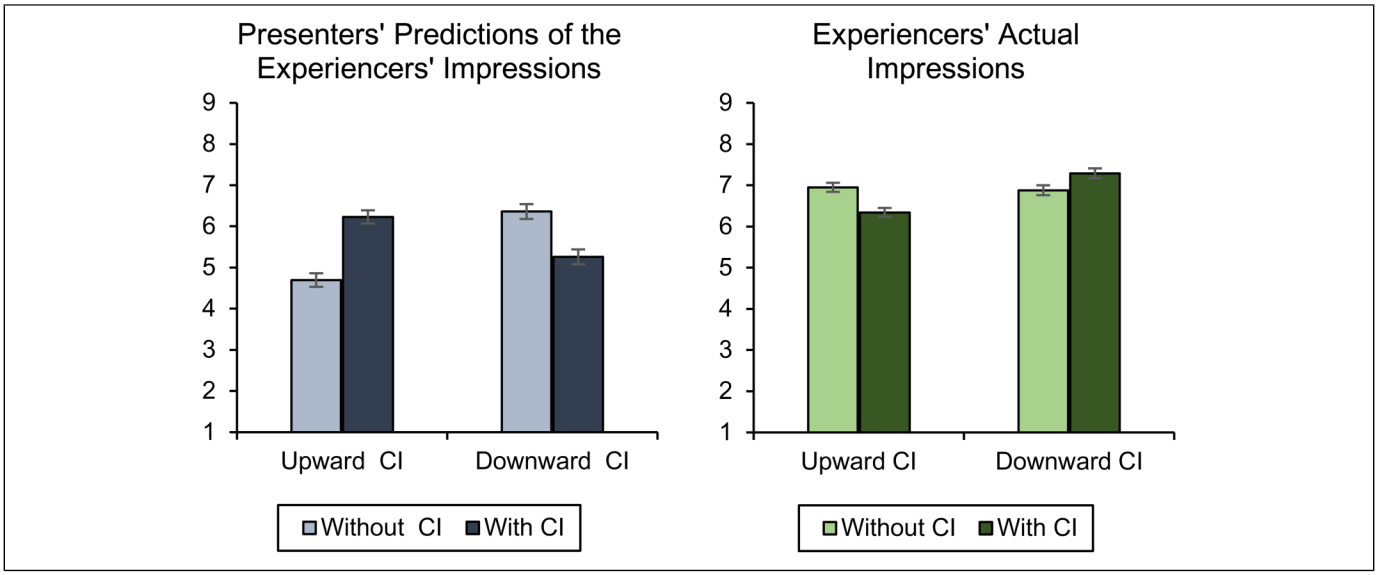

Figure 9. A Comparison of Presenters' Predictions of Experiencers' Impressions and Experiencers' Actual Impressions in Study 8.

B: M = 4.71, SD = 1.64; t(144) = 8.90, $p < .001$, d = .74), significantly above the midpoint of the six-point scale. They also predicted that experiencers would have a better impression of the Oriental Pearl Tower with UCI (M = 6.23, SD = 1.91) than without UCI (M = 4.69, SD = 2.11; t(144) = 5.91, $p < .001$, d = .49). Again, however, they were wrong: experiencers who received UCI had a *worse* impression (M = 6.34, SD = 1.43) than experiencers who did not receive UCI (M = 6.95, SD = 1.36; t(302) = 3.80, $p < .001$, d = .44).

Presenters mistakenly omitted DCI (basic effect reversed). Unlike presenters in the UCI conditions, presenters in the DCI conditions strongly favored communicating no counterfactual information (i.e., Statement A: M = 2.90, SD = 1.98; t(153) = 3.75, $p < .001$, d = .30), significantly below the midpoint of the six-point scale. Likewise, they predicted that experiencers would have a worse impression of the Oriental Pearl Tower with DCI (M = 5.26, SD = 2.26) than without DCI (M = 6.36, SD = 2.18; t(153) = 3.72, $p < .001$, d = .30). In reality, however, experiencers who received DCI had a better impression (M = 7.29, SD = 1.54) than experiencers who did not receive DCI (M = 6.88, SD = 1.53; t(300) = 2.33, $p = .020$, d = .27). For a visual comparison between the presenters' predictions of the experiencers' impressions and the experiencers' actual impressions, see Figure 9.

The results of Study 8 found a presenter–experiencer discrepancy for both UCI and DCI, but in opposite directions. Presenters were more likely to share UCI, yet UCI hurt experiencers' impressions of the target; in contrast, presenters were more likely to omit DCI, yet DCI improved experiencers' impressions of the target. Study 8 supports H_4 by suggesting that people specifically share UCI (often mistakenly) rather than share *any* additional information, consistent with our theorizing.

General Discussion

Eight studies across diverse domains reveal a presenter–experiencer discrepancy regarding the communication of upward counterfactual information (UCI): presenters tend to convey UCI, believing that it will improve experiencers' impressions, but in reality, UCI tends to worsen experiencers' impressions. This discrepancy appears to be driven by a basic difference in knowledge between presenters and experiencers (e.g., as opposed to a more general desire to share *any* privileged information): presenters fail to fully account for experiencers' more naive perspective in their ability to detect the imperfection and to envision the upward counterfactual "on their own." Accordingly, the discrepancy attenuates when the imperfection is so obvious that experiencers already notice it on their own and when experiencers are able to vividly envision the upward counterfactual version.

Insights and Implications

First, our findings extend the literature on sharing (seemingly) positive information by introducing UCI, which advances this literature in important ways. Marketers, advertisers, and everyday people in such kinds of contexts often choose to communicate UCI in an attempt to impress clients and make sales (see, e.g., our three pilot studies), yet to date these communication decisions (and their effects) have not been empirically studied; our research fills this gap. Moreover, whereas UCI appears to be domain-general, many of the previously documented effects in this literature have been constrained to specific contexts (e.g., trying to impress a potential employer at a job interview). UCI significantly expands the scope of such effects, suggesting that this literature may be downplaying the pervasiveness of self-presentation errors both large and small. Indeed, one unique feature of UCI is that it contains factually negative information (the acknowledgment of an imperfection) that presenters apparently are more than willing to share—to their own detriment, unbeknownst to them. Another notable feature of our studies is that they directly assess the (mis)communication of self-relevant content (e.g., selling a product, giving a tour) as opposed to one's literal self (e.g., trying to act in ways that convey a desirable personality), which (to our knowledge) is the typical focus of the past effects in this literature, rendering our studies especially relevant for marketing and consumer contexts, in which presenting self-relevant content is a core behavior of interest (see also Weaver, Garcia and Schwarz 2012).

Second, our research yields various other practical implications for consumers and marketers alike. Consumers should be made aware that receiving UCI might distort their evaluation of a product, especially when they lack knowledge about variation in the product. This is important for consumer welfare because UCI might undermine consumers' judgments about a product and even prevent them from enjoying the upward counterfactual version in the future. Meanwhile, marketers should be cautious about communicating UCI with consumers when promoting and advertising a product. At the same time, our findings highlight that communicating UCI often has a cost but is not always bad—but unfortunately, this does not seem easily intuited. Our findings suggest that marketers should be sensitive to both the consumers' knowledge and the severity of the current imperfection when deciding whether to share UCI. A naive consumer (i.e., unaware of variation in the product) may be deterred by UCI, whereas a sophisticated consumer (i.e., with rich knowledge about variation in the product) may be less affected. If an imperfection is negligible, communicating UCI might be avoided, but if an imperfection is obvious, UCI should not hurt consumers' evaluations much, and the marketer's honesty might even be beneficial (Reich, Kupor, and Smith 2018). Marketers should do their best to judge whether the imperfection is negligible or obvious from the consumers' perspective rather than from their own, which may exaggerate its obviousness. Finally, if marketers accidentally share UCI about a product, our findings suggest they can reduce its negative impact by providing consumers with a vivid simulation of the upward version, perhaps with detailed verbal descriptions, images, or virtual simulations.

Future Directions

In addition to expanding on these contributions, our findings invite fruitful questions for further research. We highlight the eight most exciting directions next.

How can presenters be discouraged from communicating UCI?

Presenters may (mistakenly) choose to share UCI for one of two underlying reasons: a lack of knowledge versus a lack of deliberation. By lack of knowledge, we mean that the presenter does not know that the experiencer is unfamiliar with the evaluation target. By lack of deliberation, we mean that even if the presenter knows that the experiencer is naive about the evaluation target, they nevertheless "mindlessly" treat the experiencer as if they were sophisticated. This difference is important because a lack of knowledge cannot be corrected without additional information about the experiencer, whereas a lack of deliberation can be corrected by prompting the presenter to deliberate in the absence of additional information. We suspect that in many situations, a lack of deliberation is the main contributor to one's decision to communicate UCI; in most cases, people likely hold some basic knowledge about their audiences. Given this speculation, we propose that prompting the presenter to deliberate on the experiencer's perspective, even without providing any new information about the experiencer, could help discourage the presenter from communicating UCI (in cases when discouragement is desirable). Study S1, reported in Web Appendix D, tested this conjecture. We found that participants were less likely to convey UCI if they were prompted to think about either (1) whether the experiencer would notice the imperfection in the current target or (2) whether the experiencer could vividly envision the upward counterfactual.

Will presenters share UCI even if they themselves caused the imperfection? Our studies assessed imperfections due to uncontrollable external factors, as presenters presumably never want to create imperfections themselves. That said, some imperfections are more "actively" caused. In the business presentation scenario (Study 6), for example, the slide was distorted because the laptop did not work well, but what if the slide were distorted because the presenter accidentally forgot to format it? In this case, we speculate that the presenter might not share the UCI because doing so would expose the their personal shortcomings, and people tend to hide self-relevant negative information (John, Barasz, and Norton 2016).

What happens if the presenter only admits the imperfection or only portrays the upward counterfactual? As noted previously, we operationalize UCI as containing two components: an admission of an imperfection in the current target, and a description of a counterfactual target without the imperfection. What if presenters shared just one of these elements? UCI that only contains the imperfection will likely exacerbate its negative effects, but we suspect that presenters rarely mention imperfections in isolation (thus creating no presenter–experiencer discrepancy). UCI that contains only the upward-counterfactual element may be more common and likely creates the same presenter–experiencer discrepancy documented in our studies, as stating the upward-counterfactual element necessarily implies the imperfection. Another intriguing consideration is what happens when presenters mention neither the imperfection nor the specific upward-counterfactual but instead comment more generally on current circumstances (e.g., "It's foggy outside"). Although this information might still spoil experiencers' evaluations since it presumably implies imperfection, it may be less problematic than explicit UCI to the extent that experiencers cannot identify which element is imperfect based on such information alone (consistent with our mental simulation account).

How might UCI affect experiencers' attitudes toward the presenter? Our studies assessed the impact of UCI on the experiencer's evaluation of the target, but we suspect that UCI may also affect the experiencer's attitude toward the presenter. On the positive side, the experiencer who receives UCI may perceive the presenter as more honest, knowledgeable, and professional, and such factors are found to help build brand loyalty (Chaudhuri and Holbrook 2001). On the negative side, the experiencer may feel more resentful toward the presenter for spoiling their immediate experience (John, Blunden, and Liu 2019). In promotion situations, a salesperson's persuasion intentions are salient to consumers, so a salesperson who conveys UCI about a product might be perceived as inauthentic and strategic. Given this context, we suspect that conveying (vs. not conveying) UCI may tend to lower consumers' trust in the salesperson and induce persuasion reactance.

How might the commonness of a target item interact with our effects? The target items in some of our studies are rare and unique, such as the Oriental Pearl Tower (Study 8), but the target items in other studies are common in real life, such as a household pet (Study 3). Experiencers might be more likely to notice an imperfection about a target item and simulate the upward counterfactual if the target item is common rather than unique. This is because experiencers might be more familiar with a commonplace item and more likely to notice an imperfection in the item even without UCI. However, it is also true that even commonplace targets have considerable heterogeneity in appearance and performance in real life (e.g., different dogs have different personalities). Consistent with our theorizing, this heterogeneity should make it difficult for experiencers to notice imperfections and simulate the upward counterfactual of one specific item. If the target item belongs to a category with little heterogeneity, then experiencers should more easily compare the current target item with other similar items and thus notice imperfections in the current target item.

How might other sources of ease of simulation interact with our effects? As our framework centers on people's ability to mentally simulate the upward counterfactual, other factors that influence ease of mental simulation should influence our effects accordingly. For example, to the extent that people have an easier time thinking about additive changes versus subtractive changes (Adams et al. 2021), additive UCI might attenuate the basic effect more so than subtractive UCI. A tour guide who conveys UCI that includes the message "Just imagine if some dolphins were swimming across your gorgeous ocean view" might not hurt their customers' impressions so much, as it may be relatively easy for them to mentally "add in" dolphins; but conveying UCI that includes the message "Just imagine if that crane over there weren't blocking your gorgeous ocean view" may hurt more, as customers do not know what exactly to imagine on the other side. This example more broadly highlights that outside knowledge of the target in question likely acts as a superordinate moderator across such factors (e.g., customers may struggle to mentally "add" dolphins into the view if they have never seen dolphins before, thus triggering negative effects [consistent with our mental simulation account]).

Does the occurrence probability of an upward-counterfactual target influence the effect of UCI on experiencers? An upward counterfactual could happen at different probabilities: it can happen at a high probability and thus is a usual state (e.g., "It is sunny 90% of the time, but today, on the day you visit, it happens to be rainy"), or it can happen at a low probability and thus is an unusual state of the target (e.g., "It is almost never sunny here, and indeed, today it is also nasty and rainy"). Likewise, one could run UCI studies with zero-probability stimuli (e.g., "There used to be exotic animals that sunbathed here, but they are now extinct"). Will upward-counterfactual targets with different occurrence probabilities have different effects on experiencers' evaluations? According to norm theory (Kahneman and Miller 1986), the higher the probability of an upward alternative to the current outcome, the more frustrated

people should feel about the current state. Thus, we predict that UCI might hurt experiencers' evaluation more if the upward counterfactual happens at a high probability than at a low probability.

What other factors contribute to why UCI worsens experiencers' impressions of a target? In the current research, we proposed that UCI worsens the experiencer's impressions of the target because the UCI reveals an imperfect attribute in the target (e.g., that the dog is currently lethargic) that the experiencer would otherwise not notice. More research could further explore how such a mechanism manifests in attention and behavior, such as by assessing which specific attributes the experiencer compares (Levin and Gaeth 1988). Or, the mere act of sharing UCI might "leak" other information to the experiencer; perhaps experiencers infer that the presenter must not be confident in the product (and thus infer that, e.g., the dog is *always* lethargic or otherwise high maintenance) (McKenzie and Nelson 2003).

Until these possibilities are tested, the present research shines light on the communication of upward counterfactual information—a prevalent feature of many everyday consumption contexts, albeit one that has been undocumented in the consumer psychology literature. We find robust evidence for a discrepancy in the value of UCI between presenters (e.g., sellers) and experiencers (e.g., prospective buyers), including evidence for when and why this discrepancy will emerge. Marketers looking to impress are wise to take note: an intuitive urge to announce "It could be better!" may make it worse.

Associate Editor

Darren Dahl

Author Contributions

The second and third authors contributed equally.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Christopher K. Hsee https://orcid.org/0000-0002-8391-7847

References

Adams, Gabrielle S., Benjamin A. Converse, Andrew H. Hales, and Leidy E. Klotz (2021), "People Systematically Overlook Subtractive Changes," *Nature*, 592 (7853), 258–61.

Camerer, Colin, George Loewenstein, and Martin Weber (1989), "The Curse of Knowledge in Economic Settings: An Experimental Analysis," *Journal of Political Economy*, 97 (5), 1232–54.

Campbell, Troy, Ed O'Brien, Leaf Van Boven, Norbert Schwarz, and Peter Ubel (2014), "Too Much Experience: A Desensitization Bias in Emotional Perspective Taking," *Journal of Personality and Social Psychology*, 106 (2), 272–85.

Capraro, Anthony J., Susan Broniarczyk, and Rajendra K. Srivastava (2003), "Factors Influencing the Likelihood of Customer Defection: The Role of Consumer Knowledge," *Journal of the Academy of Marketing Science*, 31 (2), 164–75.

Chaudhuri, Arjun and Morris B. Holbrook (2001), "The Chain of Effects from Brand Trust and Brand Affect to Brand Performance: The Role of Brand Loyalty," *Journal of Marketing*, 65 (2), 81–93.

Epley, Nicholas, Boaz Keysar, Leaf Van Boven, and Thomas Gilovich (2004), "Perspective Taking as Egocentric Anchoring and Adjustment," *Journal of Personality and Social Psychology*, 87 (3), 327–39.

Epstude, Kai and Neal J. Roese (2008), "The Functional Theory of Counterfactual Thinking," *Personality and Social Psychology Review*, 12 (2), 168–92.

Gilbert, Daniel T., Carey K. Morewedge, Jane L. Risen, and Timothy D. Wilson (2004), "Looking Forward to Looking Backward: The Misprediction of Regret," *Psychological Science*, 15 (5), 346–50.

Gilovich, Thomas and Kenneth Savitsky (1999), "The Spotlight Effect and the Illusion of Transparency: Egocentric Assessments of How We Are Seen by Others," *Current Directions in Psychological Science*, 8 (6), 165–68.

Hsee, Chrisopher K., George F. Loewenstein, Sally Blount, and Max H. Bazerman (1999), "Preference Reversals Between Joint and Separate Evaluations of Options: A Review and Theoretical Analysis," *Psychological Bulletin*, 125 (5), 576–90.

Hsee, Christopher K., Yang Yang, and Xilin Li (2019), "Relevance Insensitivity: A New Look at Some Old Biases," *Organizational Behavior and Human Decision Processes*, 153, 13–26.

Hsee, Christopher K. and Jiao Zhang (2004), "Distinction Bias: Misprediction and Mischoice Due to Joint Evaluation," *Journal of Personality and Social Psychology*, 86 (5), 680–95.

Hsee, Christopher K. and Jiao Zhang (2010), "General Evaluability Theory," *Perspectives on Psychological Science*, 5 (4), 343–55.

John, Leslie K., Kate Barasz, and Michael I. Norton (2016) "Hiding Personal Information Reveals the Worst," *Proceedings of the National Academy of Sciences*, 113 (4), 954–59.

John, Leslie K., Hayley Blunden, and Heidi Liu (2019), "Shooting the Messenger," *Journal of Experimental Psychology: General*, 148 (4), 644–66.

Kahneman, Daniel and Dale T. Miller (1986), "Norm Theory: Comparing Reality to Its Alternatives," *Psychological Review*, 93 (2), 136–53.

Kardas, Michael and Ed O'Brien (2018), "Easier Seen Than Done: Merely Watching Others Perform Can Foster an Illusion of Skill Acquisition," *Psychological Science*, 29 (4), 521–36.

Kassam, Karim S., Carey K. Morewedge, Daniel T. Gilbert, and Timothy D. Wilson, "Winners Love Winning and Losers Love Money," *Psychological Science*, 22 (5), 602–06.

Klein, Nadav and Ed O'Brien (2017), "The Power and Limits of Personal Change: When a Bad Past Does (and Does Not) Inspire

in the Present," *Journal of Personality and Social Psychology*, 113 (2), 210–29.

Levin, Irwin and Gary Gaeth (1988), "How Consumers Are Affected by the Framing of Attribute Information Before and After Consuming the Product," *Journal of Consumer Research*, 15 (3), 374–8.

Li, Fuan, Paul W. Miniard, and Michael J. Barone (2000), "The Facilitating Influence of Consumer Knowledge on the Effectiveness of Daily Value Reference Information," *Journal of the Academy of Marketing Science*, 28 (3), 425–36.

Li, Xilin and Christopher K. Hsee (2019), "Beyond Preference Reversal: Distinguishing Justifiability from Evaluability in Joint Versus Single Evaluations," *Organizational Behavior and Human Decision Processes*, 153, 63–74.

Li, Xilin and Christopher K. Hsee (2021), "The Psychology of Marginal Utility," *Journal of Consumer Research*, 48 (1), 169–88.

Lovett, Mitchell J., Renana Peres, and Ron Shachar (2013), "On Brands and Word of Mouth," *Journal of Marketing Research*, 50 (4), 427–44.

Marett, Kent and Kshiti D. Joshi (2009), "The Decision to Share Information and Rumors: Examining the Role of Motivation in an Online Discussion Forum," *Communications of the Association for Information Systems*, 24, 4.

Markman, Keith D. and Matthew N. McMullen (2003), "A Reflection and Evaluation Model of Comparative Thinking," *Personality and Social Psychology Review*, 7 (3), 244–67.

McKenzie, Craig and Jonathan Nelson (2003), "What a Speaker's Choice of Frame Reveals: Reference Points, Frame Selection, and Framing Effects," *Psychonomic Bulletin & Review*, 10 (3), 596–602.

Morewedge, Carey K., Meng Zhu, and Eva C. Buechel (2019), "Hedonic Contrast Effects Are Larger When Comparisons Are Social," *Journal of Consumer Research*, 46 (2), 286–306.

O'Brien, Ed (2022), "The 'Next' Effect: When a Better Future Worsens the Present," *Social Psychological and Personality Science*, 13 (2), 456–65.

O'Brien, Ed and Phoebe C. Ellsworth (2012), "More Than Skin Deep: Visceral States Are Not Projected onto Dissimilar Others," *Psychological Science*, 23 (4), 391–96.

Park, C. Whan, David L. Mothersbaugh, and Lawrence Feick (1994), "Consumer Knowledge Assessment," *Journal of Consumer Research*, 21 (1), 71–82.

Pronin, Emily (2009), "The Introspection Illusion," in *Advances in Experimental Social Psychology*, Vol. 41. Academic Press, 1–67.

Reich, Taly, Daniella M. Kupor, and Rosanna K. Smith (2018), "Made by Mistake: When Mistakes Increase Product Preference," *Journal of Consumer Research*, 44 (5), 1085–1103.

Roese, Neal J. (1997), "Counterfactual Thinking," *Psychological Bulletin*, 121 (1), 133–48.

Roese, Neal J. and Kai Epstude (2017), "The Functional Theory of Counterfactual Thinking: New Evidence, New Challenges, New Insights," in *Advances in Experimental Social Psychology*, Vol. 56. Academic Press, 1–79.

Scopelliti, Irene, George Loewenstein, and Joachim Vosgerau (2015), "You Call It 'Self-Exuberance'; I Call It 'Bragging': Miscalibrated Predictions of Emotional Responses to Self-Promotion," *Psychological Science*, 26 (6), 903–14.

Sedikides, Constantine, Lowell Gaertner, and Yoshiyasu Toguchi (2003), "Pancultural Self-Enhancement," *Journal of Personality and Social Psychology*, 84 (1), 60–79.

Sezer, Ovul, Francesca Gino, and Michael I. Norton (2018), "Humblebragging: A Distinct—and Ineffective—Self-Presentation Strategy," *Journal of Personality and Social Psychology*, 114 (1), 52–74.

Weaver, Kimberlee, Stephen M. Garcia, and Norbert Schwarz (2012), "The Presenter's Paradox," *Journal of Consumer Research*, 39 (3), 445–60.

Yang, Yang, Christopher K. Hsee, and Xilin Li (2021), "Prediction Biases: An Integrative Review," *Current Directions in Psychological Science*, 30, 195–201.