Journal of Experimental Social Psychology 76 (2018) 81–87

Contents lists available at ScienceDirect

Journal of Experimental Social Psychology

journal homepage: www.elsevier.com/locate/jesp

Circumventing resistance to novel information: Piquing curiosity through strategic information revelation

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ARTICLE INFO

Keywords:
Curiosity
Re-evaluation
Judgment updating
Resistance

ABSTRACT

Individuals are repeatedly exposed to new information over time, yet adjustment is typically insufficient and people are generally unaffected by this type of exposure. To circumvent this resistance to novel information, the current research posits that the mere timing by which the same information is differentially-revealed can prompt re-evaluation by heightening individuals' curiosity in the new information. Three experiments show that strategically-revealing new information promotes re-evaluation by increasing curiosity in the new information. Importantly, the effect of curiosity on the re-evaluation process occurs irrespective of the valence of the new information yet only when the revealed information is diagnostic. Collectively, these results provide a unique lens into the impact of curiosity in circumventing resistance to novel information and, consequently, a novel catalyst for future research on judgment updating, resistance to persuasion, and omission neglect.

> "*The important thing is not to stop questioning. Curiosity has its own reason for existing.*"
>
> Albert Einstein

Individuals are constantly faced with new information (Chernev, Böckenholt, & Goodman, 2015). The question of interest to psychologists for decades is whether this new information alters *initial* judgments and evaluations. In other words, do individuals sufficiently adjust, update, or re-evaluate their initial evaluations to novel information? While one might expect the answer to be a clear yes, prior research rather paradoxically shows that the revelation of diagnostic information exerts a minimal impact on initial judgments (Loewenstein, Sunstein, & Golman, 2014; Walsh & Johnson-Laird, 2009; see Gilbert, 1991). That is, although individuals can integrate novel information into existing judgments (Anderson, 1971; see Petty & Cacioppo, 1986), they often fail to adequately do so (Epley & Gilovich, 2006; Gilbert, 2002). Indeed, one of the more intriguing findings in social psychology is *belief perseverance*, whereby initial judgments persist with minimal or no adjustment despite the original basis for the initial judgments being discredited (Ross, Lepper, & Hubbard, 1975).

Though surprising, the rationale for this insufficient adjustment or re-evaluation centers on the impact of existing information in the face of novel information. For instance, existing information can dilute the impact of new information (Nisbett, Zukier, & Lemley, 1981) and new information is often anchored and distorted by previous information (Russo, Carlson, Meloy, & Yong, 2008). Thus, while one might expect individuals to update their preferences to novel information, individuals instead exhibit a general resistance to re-evaluation (Fransen, Smit, & Verlegh, 2015; Lord, Ross, & Lepper, 1979).

In light of this work, the present research posits an alternative perspective to circumvent this resistance—namely, invoking curiosity in novel information. Specifically, we test the hypothesis that revealing new information *after* an initial evaluation is formed invokes a curiosity toward novel information that heightens re-evaluation. This hypothesis stems from research demonstrating that individuals are motivated to strategically seek out information to satisfy curiosity when they detect a gap in their knowledge (Kashdan, Rose, & Fincham, 2004; Litman, Hutchins, & Russon, 2005; Loewenstein, 1994). Here, we propose that the act of revealing information *after* an initial evaluation has been formed prompts awareness of a knowledge gap in a manner similar to mystery ads that withhold information until the end of the advertisement to increase consumer engagement (Fazio, Herr, & Powell, 1992).

Importantly, this hypothesis presents two key predictions specific to curiosity prompting re-evaluation. First, rather than motivating a confirmatory information bias (Jonas, Schulz-Hardt, Frey, & Thelen, 2001; Lord et al., 1979), individuals are motivated to close this knowledge gap and thus should be open to either positive or negative information. Second, the revelation of diagnostic information should be most likely to abate curiosity, as curiosity motivates individuals to seek out information that resolves their knowledge gap with the most explanatory

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https://doi.org/10.1016/j.jesp.2017.12.010
Received 30 June 2017; Received in revised form 12 December 2017; Accepted 27 December 2017

power (Berlyne, 1966; Loewenstein, 1994) and diagnostic information provides a strong basis for closing this knowledge gap (Herr, Kardes, & Kim, 1991).[1]

1. Overview

This research proposes that the strategic-revelation of novel information impacts re-evaluation through heightened curiosity. Critically, then, this research seeks to provide specific contributions to literatures on curiosity, judgment updating, and resistance. Specifically, this conceptual model: (i) outlines a novel factor that increases individuals' awareness of knowledge gaps, (ii) details the role of information diagnosticity and thus information quality in abating curiosity, (iii) reveals a novel motivator of correction in curiosity, and (iv) identifies a new means to circumvent resistance to novel information and prompt re-evaluation.

To test this model, all experiments consisted of two sessions to assess the process of re-evaluation. Additionally, the information presented to participants remained constant across sessions; only the timing with which part of that information is presented varies. Thus, our hypothesis is tested when information is revealed after the initial formation of an evaluation in comparison to when full information is presented initially. Lastly, to isolate the role of curiosity, we address alternative accounts related to recency bias (Hogarth & Einhorn, 1992), demand effects (Orne, 1962), omission sensitivity (Sanbonmatsu, Kardes, & Herr, 1992), and attitude strength (Petty & Krosnick, 1995). All measures, manipulations, and exclusions are disclosed.

2. Experiment 1

Experiment 1 tested the impact of the strategic revelation of new information on re-evaluation. Specifically, participants received information about a savings account, with one attribute revealed either immediately or following a week delay. Additionally, we varied the valence of the revealed attribute (i.e., positive or negative), as a curiosity perspective predicts that revealed information should influence re-evaluation irrespective of valence. Finally, we attempted to rule out alternative explanations related to recency biases and demand effects as well as attitude certainty or sensitivity to omissions during initial evaluation.

2.1. Method

Two hundred and thirty-eight online recruits completed an initial product evaluation and, a week later, re-evaluated the product. One hundred and twenty-six recruits (68% female; M_{age} = 35.63) completed both evaluations and were thus included in the analysis (a 52.94% retention rate).[2]

Participants were welcomed to a study on decision-making and informed of our interest in their reactions toward a savings account. The description of the savings account consisted of six attributes in total (i.e., insurance, minimum deposit amount, location, account access, annual percentage yield (APY), customer reviews, and cost). To manipulate *information valence*, one of the attributes (i.e., cost) was varied to be either positive (e.g., no annual fees; $100 signing bonus) or negative (e.g., $100 annual fee; No signing bonus).[3] To manipulate *information presentation*, we also varied the timing in which the cost attribute was presented. Specifically, the attribute was either initially presented along with the other five attributes (*control condition*) or presented during a second session following a week delay (*revelation condition*). Importantly, then, participants in both conditions received the same information; only the order in which the cost information was presented varied.

Participants next indicated their initial evaluation by reporting their likelihood to sign up for the savings account on a 7-point scale anchored at *Very unlikely—Very likely*. To address potential differences in sensitivity to missing information or certainty in participants' initial attitude, we also asked participants to indicate the extent to which they needed additional information about the savings account (Muthukrishnan & Ramaswami, 1999; Sanbonmatsu et al., 1992) and their certainty in their initial attitude (Clarkson, Tormala, & Rucker, 2008; Fazio & Zanna, 1978). Participants responded to both items on 9-point scales anchored at *No additional information needed—More information needed* and *Not at all confident—Extremely confident*.

A week following the initial evaluation, participants were contacted to complete a follow-up study on decision-making in which they re-evaluated the savings account. As noted, those in the *control* condition were presented with all six attributes associated with the savings account, whereas those in the *revelation* condition were provided with the five initial attributes as well as the omitted cost attribute. All participants then indicated their evaluation of the savings account on the same 7-pt scale used in the initial evaluation.[4]

Finally, participants reported several demographics before being thanked and compensated for their participation.

2.2. Results

Measures were submitted to a two-way Analysis of Variance (ANOVA), with information presentation and information valence as independent variables. Means for each measure are listed in Table 1.

2.2.1. Preliminary analyses

Analysis of participants' initial evaluation revealed a main effect of information valence ($F(1, 122) = 5.66$, $p = .02$, $\eta^2 = 0.04$) that was qualified by an unexpected information presentation × information valance interaction ($F(1, 122) = 20.93$, $p < .001$, $\eta^2 = 0.15$). In the *positively-valenced* condition, participants' initial evaluations were higher in the control condition relative to the revelation condition ($t(52) = -2.63$, $p = .01$, $d = 0.94$). Conversely, in the *negatively-valenced* condition, participants' initial evaluations were lower in the control condition relative to the revelation condition ($t(70) = 3.96$, $p < .001$, $d = 0.94$).

Additionally, there was no effect of the manipulations on sensitivity to omissions ($ps > .24$) or attitude certainty ($ps > .31$).

2.2.2. Main analysis

We created a change index by subtracting time 1 evaluations from time 2 evaluations and submitted this index to analysis. The analysis revealed a main effect of information valence ($F(1, 122) = 31.89$, $p < .001$, $\eta^2 = 0.21$) that was qualified by the predicted information presentation × information valance interaction ($F(1, 122) = 19.35$, $p < .001$, $\eta^2 = 0.14$; see Fig. 1). In the *positively-valenced* condition, attitudes increased when the attributes were revealed ($M = 1.10$, $SD = 1.87$) relative to the control ($M = 0.00$, $SD = 1.87$; $t(52) = 2.13$, $p = .04$, $d = 0.58$). Conversely, in the *negatively-valenced* condition,

[1] See Appendix A for a direct test of this diagnosticity prediction.

[2] There was no differences in the attrition rate in either the information presentation ($\chi^2(1) = 0.29$, $p = .59$) or the information valence ($\chi^2(1) = 1.16$, $p = .28$) condition.

[3] Attributes were separately rated for valence by a separate sample ($N = 49$) on a 9-pt scale anchored at *Very negative—Very positive*. The positive ($M = 8.48$, $SD = 0.79$; $t(28) = 23.90$, $p < .001$, $d = 9.03$) and negative ($M = 1.65$, $SD = 1.31$; $t(19) = -11.45$, $p < .001$, $d = 5.25$) ratings significantly differed from the scalar midpoint. Relatedly, attributes were separately rated for diagnosticity by a separate sample ($N = 59$) on a 9-pt scales anchored at *Not at all helpful—Very helpful*, *Not at all useful—Very useful*, *Not at all valuable—Very valuable*, *and Not at all beneficial—Very beneficial* ($\alpha = 0.95$; Dubois, Rucker, & Galinsky, 2016). *Both the positive* ($M = 7.93$, $SD = 1.34$) ($t(29) = 12.00$, $p < .001$, $d = 4.46$) *and negative* ($M = 7.68$, $SD = 1.49$) ($t(28) = 9.71$, $p < .001$, $d = 3.67$) *attributes were significantly greater than the scalar midpoint.*

[4] Appendix B presents the materials and a visual flow of procedures for all experiments.