Journal of Experimental Social Psychology 49 (2013) 106–112

Contents lists available at SciVerse ScienceDirect

Journal of Experimental Social Psychology

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

Report

Hope to be right: Biased information seeking following arbitrary and informed predictions

Aaron M. Scherer [a,*], Paul D. Windschitl [a], Andrew R. Smith [b]

[a] University of Iowa, USA
[b] Appalachian State University, USA

HIGHLIGHTS

- We test four explanations of selective exposure (SE) to confirming information.
- Information seeking was measured following predictions of varying arbitrariness.
- Participants engaged in SE following arbitrary and informed predictions.
- Anticipated positive affective reactions predicted information selections.
- The positive affect associated with being correct can drive post-prediction SE.

ARTICLE INFO

Article history:
Received 1 February 2012
Revised 23 July 2012
Available online 14 August 2012

Keywords:
Selective exposure
Confirmation bias
Information searches
Cognitive dissonance
Overconfidence
Positive-test strategy

ABSTRACT

Five studies tested when and why individuals engage in confirmatory information searches (selective exposure) following predictions. Participants engaged in selective exposure following their own predictions, even when their predictions were completely arbitrary (Studies 1 and 3). The selective exposure was not simply the result of a cognitive bias tied to the salience of a prediction option (Study 2). Instead, it appears that making a prediction—regardless of how ill-informed a person is while making the prediction—can cause the person to anticipate enjoyment from being right (Studies 4 and 5) and to select new information consistent with that outcome. The results establish a desirability account that can explain post-prediction selective exposure effects even in cases when defense motivations, pre-existing differences, or positive-test strategies can be ruled out as explanations.

Introduction

People frequently make predictions about outcomes in various domains (e.g., business, sports, politics). By definition, people making predictions do not have complete knowledge and therefore cannot be certain of the outcome. Often, additional information that is potentially relevant to the prediction becomes available after the prediction is made but before the true outcome is learned. How people attend to and use this additional information is important because new information can shape confidence in one's prediction (Windschitl, Scherer, Smith, & Rose, 2012) and influence subsequent decision-making (e.g., Kray & Galinsky, 2003).

Research on post-choice information selection has shown that after making a choice between options—say Vacation A and Vacation B—people prefer to read information that supports their choice rather than conflicts with it (for reviews see Hart et al., 2009; Jonas, Schulz-Hardt, Fischer, & Frey, 2006; Smith, Fabrigar, & Norris, 2008). Recent work from our lab revealed a related result for *post-prediction* information selection. That is, after having made a prediction about which of two outcomes/answers is correct, participants tended to select additional information that supported rather than conflicted with their prediction (Windschitl et al., 2012).

The studies in the present paper address the questions of when and why people exhibit a post-prediction information selection bias. Regarding the *when* question, we tested whether the amount of information that people have at the point of making a prediction moderates the extent to which they exhibit a bias in their post-prediction information selections. In an extreme case, we tested whether a purely arbitrary prediction triggers selective exposure. We believe that it is both interesting and important to examine how even highly arbitrary predictions might trigger a bias in subsequent information processing. People often appear to be willing to offer speculative predictions about events for which they know next to nothing, and we suspect they do this with the comfort of knowing it is "just a prediction" or "just a guess." Yet, it is possible that even with arbitrary predictions, the act of picking one outcome rather than another

* Corresponding author at: Department of Psychology, University of Iowa, Iowa City, IA 52242, USA. Fax: +1 319 335 0191.
E-mail address: aaron-scherer@uiowa.edu (A.M. Scherer).

0022-1031/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
http://dx.doi.org/10.1016/j.jesp.2012.07.012

(or others) could trigger changes in how subsequent information is searched and used.

By varying level-of-information and other task variables, our studies also provide answers to the *why* question. This paper discusses four main accounts for why people might exhibit a post-prediction selection bias. While all of these accounts are plausible under general conditions, they differ in what they posit regarding selection biases after people have made purely arbitrary predictions (and under other conditions that we explore).

Before discussing the particular accounts, we wish to comment on the relationship between information selection following choice (about which there is a large literature) and prediction. A prediction between possible outcomes is a type of choice, so there is clearly a degree of conceptual overlap for understanding post-choice and post-prediction information selection. This overlap is reflected in the discussion of accounts below. However, we note that the post-prediction context is importantly distinct from the general case of choice, because it involves uncertainty about an objectively correct answer. When a person searches for additional information after a prediction, there is an objective reality looming. That is, the person will learn that they made the right or wrong prediction, and this ultimate determination is not flexible. Biased information searching after a prediction cannot change whether the prediction is right or wrong. Alternatively, biased searching after other types of choices has the potential to shape the determination/evaluation of the outcome (e.g., finding additional fun things to do at the chosen rather than rejected vacation destination can lead one to conclude that a good choice was made). In short, it seems important to directly study post-prediction information selection, rather than merely assuming it is fully understood through studies that involve other forms of choice.[1]

Four accounts

Defense motivation

The *defense-motivation account* incorporates ideas from cognitive dissonance and related theories of defense motivation (Chen & Chaiken, 1999; Jonas et al., 2006) and is the primary account offered for post-choice selective exposure (Hart et al., 2009). Applied to a case of a non-arbitrary prediction, the account would posit that individuals engage in selective exposure as a means of reducing or avoiding concern that they might be wrong. After evaluating all available information and making a prediction, reading new information that conflicts with one's prediction could arouse dissonance or other negative affective responses, so that information is avoided.[2]

Whereas defense motivation could be compelling as an account for non-arbitrary predictions, what about entirely arbitrary predictions? Cognitive dissonance theory and various empirical findings suggest that when a strong external justification for a dissonance-provoking action is available, the justification is readily used to diffuse or avoid such dissonance (e.g., Festinger & Carlsmith, 1959; Joule & Azdia, 2003). Therefore, a defense motivation account might suggest an absence of selective exposure after arbitrary predictions. More specifically, people would not feel threatened by disconfirming information, because they have a compelling justification for being wrong—the lack of information forced them to simply guess. Also, defense theorists often assume that commitment to a decision is important before dissonance triggers compensatory effects (Hart et al., 2009), but with an entirely arbitrary prediction, people would likely have little sense of commitment to a prediction. Nevertheless, in principle, one could argue that even after an entirely arbitrary prediction, people have a sense of concern or perhaps just a negative affective reaction when encountering information suggesting they might be wrong, motivating people to be biased in the information they select after the prediction. In short, whereas a classic interpretation of dissonance theory might suggest no selective exposure after arbitrary predictions, there are interpretations of what might still be called dissonance or defense accounts that could be used to explain the existence of selective exposure after even an arbitrary prediction.

Pre-existing differences

The *pre-existing differences account* posits a much different explanation. It starts with the assumption that, even at the start of a study, participants vary in their pre-existing beliefs, attitudes, and preferences. It further posits that participants' predictions and information selections within the study covary as a function of these pre-existing differences. Critically, then, this account suggests that making a prediction does not *cause* individuals to engage in selective exposure. Instead, selective-exposure effects (and predictions) are driven by pre-existing beliefs, attitudes, and/or preferences. For example, a person who likes mountains more than oceans might be more likely to predict that Colorado is rated as a more beautiful state than Florida and find information that highlights the natural beauty of Colorado's mountains more interesting and informative than information that highlights the natural beauty of Florida's beaches. Predicting Colorado would not cause the person to engage in selective exposure for Colorado, the person's existing preference would determine the prediction and information selection. The pre-existing differences account shares features with Chen and Risen's (2010) recent critique of cognitive dissonance explanations of spreading-of-alternatives effects, with Sears and Freedman's (1967) notion of de facto selective exposure, and with a biased-evaluation process described by Fischer, Jonas, Frey, and Schulz-Hardt (2005). The account is an important one because it challenges the routinely accepted idea that the choice process truly triggers post-choice selective exposure.

Whereas pre-existing differences could account for selective exposure that coincides with a non-arbitrary prediction, what about cases involving entirely arbitrary predictions? If the prediction is so arbitrary as to be essentially random (see Study 1), this means there is no systematic link between predictions and pre-existing differences or information selections. Consequently, the pre-existing differences account could not account for observed selective exposure effects after fully arbitrary predictions.

Positive-testing

The *positive-test account* posits that post-prediction selection biases reflect a generic cognitive strategy. This account is related to the positive-test strategy for hypothesis testing (see Klayman & Ha, 1987; Snyder & Swann, 1978). The account suggests that, after people make a prediction and while they are assessing whether their prediction was correct, they check on evidence that is consistent with it being correct (i.e., confirming evidence). As a generic process, this tendency/strategy to check on confirming evidence does not reflect nor is fueled by a motivation to be correct; it would presumably be applied to testing any focal hypothesis. Consequently, even if person's prediction was entirely arbitrary, this account still predicts that they

[1] A reviewer noted that previous studies have involved information selection following choices that could be characterized as somewhat arbitrary. We agree, but wish to note that our paradigm investigates arbitrary predictions in a way that other post-choice paradigms have not. Commonly used post-choice selective exposure paradigms, such as one in which respondents decide whether the contract of "Mr. Miller" should be extended, (Frey, 1981), are explicitly hypothetical and have no objectively correct response (see also Fischer, Greitemeyer, & Frey, 2008). Additionally, unlike the arbitrary predictions we solicit in some of our studies, participants in those post-choice paradigms are given substantial (albeit not definitive) information on which to make their initial choice.

[2] People might also process decision-inconsistent information in a defensive manner or assume the decision-inconsistent information is of low quality, which could fuel selective exposure effects (e.g., Fischer, Greitemeyer, & Frey, 2008).

would check on evidence that is consistent with the hypothesis that their prediction is correct.

Desirability

Finally, we introduce the *desirability account*. Without this account, it would be difficult to explain the full set of findings reported in this paper. The account assumes that people hope that they are right in their predictions. Because being right is affectively rewarding, finding information that suggests one might be right is also affectively rewarding, and this can cause people to select confirming information over disconfirming information. We believe that, even when a prediction is entirely arbitrary, people still hope to be right. We suspect that readers can recall personal experiences of feeling or witnessing satisfaction following a correct guess about the outcome of a purely chance event—even when the outcome itself was mundane, such as accurately predicting the outcome of a coin flip. In short, we propose that even after an arbitrary prediction, people's desire to be right can shape their affective responses to, and selection of, information.

Paradigm/overview

Again, our aim was to investigate when and why people exhibit post-prediction selection biases. The paradigm we used involved soliciting a prediction from participants (about artworks) and then giving them an opportunity to select pieces of information that either supported or conflicted with that prediction. All four accounts discussed above offer plausible explanations for selection biases following well-informed predictions (i.e., predictions from participants who had a full view of the artworks). Yet, the accounts differ regarding what would happen after arbitrary or uniformed predictions (i.e., predictions made without any view of the artworks).

Study 1

Study 1 tested how reductions in the amount of information that individuals had while making a prediction influenced the magnitude of the post-prediction selection bias. There were three possible levels of information—full, partial, and none (operationalized by whether they had a full, partial, or no view of the artwork when making their predictions). We also crossed this with an instruction manipulation that proved inconsequential (see below).

As a reminder, all four accounts anticipate that individuals would exhibit a post-prediction selection bias when making a fully informed prediction. However, when there is no information on which a person can base a prediction, the pre-existing differences account predicts an elimination of the selection bias, the defense-motivation account is not definitive on the matter, and positive-test and desirability accounts both anticipate selective exposure effects.

Participants and design

The participants for our studies ($N = 41$ for Study 1) were University of Iowa students from an introductory psychology course. The design was a 2 (extra instructions: yes, no) × 3 (view: full, partial, no view) × 3 (artwork type: painting, sculpture, photograph) mixed factorial, with the last two factors manipulated within-subject.

Materials and procedure

Participants were told that they would be making predictions about the aesthetic preferences of college students under conditions of uncertainty. Participants in the extra instructions condition were explicitly informed that they would find out whether their predictions were right or wrong. All participants then saw their first artwork pair and made predictions regarding which of the artworks was preferred by more college students nationwide. In the full-view condition, participants were given a full view of the artworks. In the partial-view condition, participants made their predictions from largely monochromatic color samples from the two artworks. In the no-view condition, participants made their prediction without seeing the artworks or any labels revealing characteristics of the artworks; they simply selected a box labeled "A" or a box labeled "B" on the screen where the artworks would otherwise appear (see Fig. 1). In the partial-view and no-view conditions, participants were informed that although they could not see the full artworks when making predictions, the nationwide sample of college students always had a full view of the artworks. After each prediction, all participants were always given full views of both artworks (which appeared in counterbalanced locations) in a pair.

Next, participants were presented with an *information buffet*—i.e., eight titles to comments purportedly written by other University of Iowa students. Each title foreshadowed a positive or negative evaluation of one of the artworks (e.g., "Mountain Photo is a well detailed photo."). A buffet always contained two positive and two negative titles towards each of the two artworks, and the titles were randomly ordered. Participants were told to select three to seven titles of the comments that they would like to read later (in their full form).[3] All of these procedures were repeated for a total of three artwork pairs.

Participants also indicated their confidence in their prediction—once after the information buffet and once after reading the selected comments. While confidence was measured in our studies (except Study 4), it is not of primary interest in this paper, and will not be discussed further (but see Tables S1 and S2 in the online supplementary materials).

Results and discussion

We indexed the selection bias by computing the proportion of titles a participant selected from a buffet that were consistent with his or her prediction (i.e., positive towards the selected artwork or negative towards the non-selected artwork).[4] Therefore, values significantly greater than 50% indicate a bias towards selecting confirming information. The grand mean on this index was 67.3% ($SD = 19.9\%$), representing a significant selection bias, $t(40) = 5.55$, $p < .001$. Artwork type (painting, sculpture, or photo) and the extra instructions had no reliable effects.

More important was whether there was a significant selection bias in each view condition. Contrary to what the pre-existing differences account predicted, there was no main effect of view, $F(2,28) = .734$, $p = .49$. In fact, participants demonstrated a significant selection bias regardless of whether their predictions were based on a full ($M = 71\%$, $SD = 30.1\%$), $t(40) = 4.46$, $p < .001$, partial ($M = 68.2\%$, $SD = 33.4\%$), $t(40) = 3.49$, $p < .001$, or no view of the artworks ($M = 62.6\%$, $SD = 27.5\%$), $t(40) = 2.93$, $p < .01$ (see Fig. 2).

The effect in the no-view condition is especially interesting and important. It reveals that even when individuals make an entirely arbitrary prediction, they still engage in selective exposure. We verified this result in a follow-up study in which participants (N = 35) made all three predictions under a no-view condition. The average selection bias (61.8%) was again significant ($p < .01$). This follow-up study also included a measure that helps rule out some conceptually plausible alternative mechanisms mentioned by a reviewer: that participants selected confirming information about the predicted artwork because they came to like that artwork after learning they had predicted it (Gawronski, Bodenhausen, & Becker, 2007; Rydell & Gawronski, 2009). After the main task, participants indicated how

[3] Across our studies in which participants were asked to select between 3 and 7 comments, the average number selected ranged from 3.38 to 3.62 (see Study 5 for different instructions).

[4] We also analyzed difference scores between the number of confirmatory titles selected and disconfirmatory titles selected. Results were the same so we reported percentages for ease of interpretation.

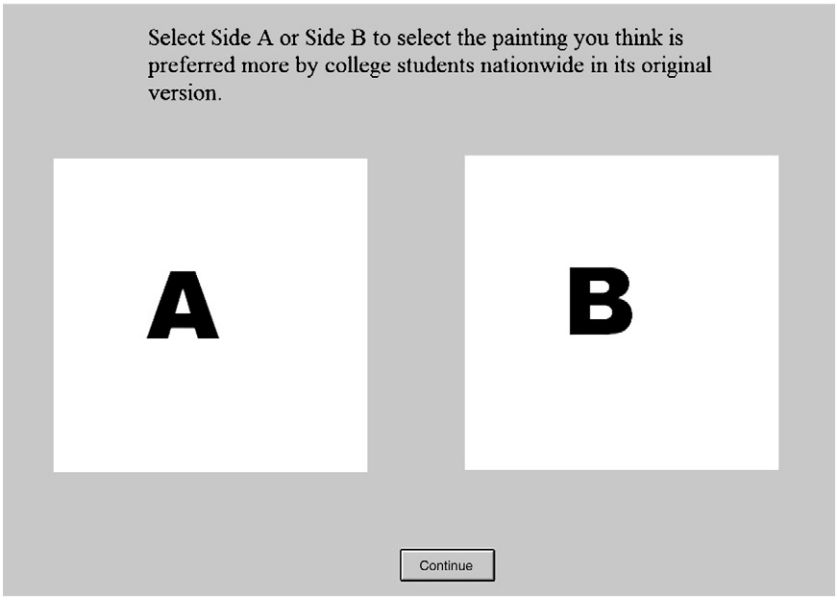

Fig. 1. Black and white screenshot of the prediction phase for a no-view condition in Study 1.

much they liked each artwork. There were no significant differences between ratings of artworks that did and did not appear as the participants' arbitrary prediction (which again were randomly determined by the computer), ruling out this alternative explanation.

With the results of Study 1 and the follow-up, we can rule out the pre-existing differences account. Recall that the account would suggest that selective exposure occurs because people's pre-existing preferences, beliefs, or attitudes relevant to the two artworks would drive both their predictions and their information selections, not because predictions somehow drive information selections. However, in the no-view condition, predictions were formally random (i.e., participants predicted artwork "A" or "B" without seeing them, and then saw what they had "picked," which was randomly determined). In other words, pre-existing differences could not have affected which artwork they "predicted."[5] This finding is important because it means that the act of predicting an artwork did indeed trigger (i.e., have a causal impact on) selective exposure.

All of the other three accounts we discussed (defense motivation, positive-test, and desirability) could account for the observed patterns of selective exposure.

Study 2

Study 2 is important for evaluating the positive-test account as an explanation for the observed findings. This account suggests that the selection bias reflects a generic, nonmotivated strategy that people apply when testing any hypothesis or prediction. Therefore, the account predicts that if people were given a prediction to consider—rather than asked to generate the prediction themselves—they would exhibit the same selection biases as seen in Study 1. Since the defense-motivation and desirability accounts both assume that people have some motivated stake in whether their prediction was wrong/right, both accounts would anticipate that a selection bias would not be triggered if people were simply given a prediction to consider.

Study 2 used procedures essentially identical to the full-view condition of Study 1, except for one key difference. When participants initially viewed an artwork pair, no predictions were solicited. Instead, the computer randomly selected one of the two artworks by placing a red box around it. Participants ($N = 70$) were told that they would soon judge the likelihood that the selected artwork was the one that was preferred by college students nationwide. If participants were simply employing a positive-test strategy, they should check on information consistent with that possibility.

The average selection bias was only 52.6% ($SD = 17.3$), which was not significantly different from 50%, $t(69) = 1.23$, $p = .22$. None of the selection biases for the individual artwork pairs approached significance (all t's < 1.2). This result is inconsistent with the positive-test account, yet if fits with expectations from the defense-motivation and desirability accounts.

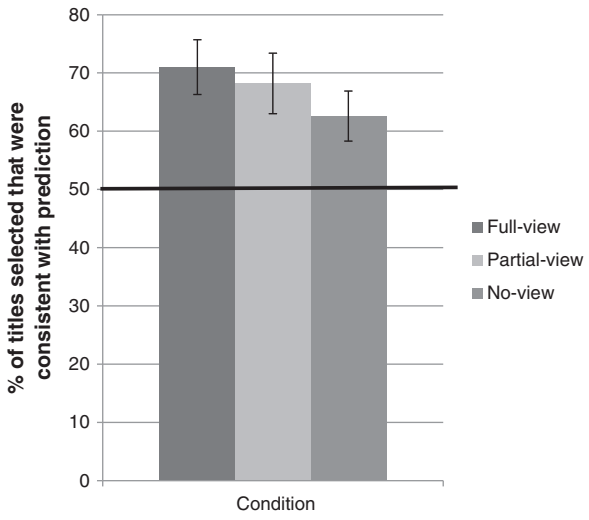

Fig. 2. Selection bias for each of the viewing conditions in Study 1. Values significantly greater than 50% indicate a bias towards confirming information. Error bars represent *SE*.

[5] Participants might have had other pre-existing tendencies, such as a tendency to pick "A" rather than "B." However, this tendency would not, *a priori*, be linked to a tendency to favor positive information about a particular artwork (e.g., a mountain photo) or information about that artwork.

Study 3

There is an alternative version of the positive-test account that could still be viable after Study 2. Perhaps after a person makes a prediction, there is a stronger focus on "could it be right?" rather than "could it be wrong?" (Gilovich, 1991; Hoch, 1985; Koriat, Lichtenstein, & Fischhoff, 1980). This differential focus could, in part, be fueled by the fact that, while making the prediction, there is naturally a focus on making the right prediction. While this tendency might carry over from a prediction generation process, it is obviously not present when the prediction is provided rather than generated (as in Study 2). To test this version of the positive-test account, we implemented a manipulation that would break any mindset tendencies to focus primarily on "could it be right?" Specifically, half of the participants knew they would indicate the likelihood that their prediction was *wrong*.

The design was a 2 (expected likelihood question: Were you right?, Were you wrong?) × 3 (view: full, partial, no view) × 3 (artwork type) mixed factorial. The procedures were identical to those from Study 1, except as follows. After their prediction, participants in the "Were you wrong?" ("Were you right?") group were instructed: "Soon you will be asked to indicate the likelihood that your prediction is incorrect (correct). In other words, you will judge the probability that you were wrong (right) in your prediction." Participants then selected information from the information buffet—which included another reminder that they would be asked to indicate the likelihood they were wrong (right) in their prediction. Finally, they made their likelihood judgment. As in Study 1, this series was repeated (through the three artwork types).

See Fig. 3 for the main findings. The selection biases did not meaningfully vary as a function of view, artwork type, or interactions, so we focus here on the results for the new manipulation. Contrary to the positive-test account, the selection biases were not significantly different between the "Were you right?" ($n = 33$) and "Were you wrong?" (n = 33) groups, $F < 1$. The average selection biases were 66.6% ($SD = 21.5\%$) and 66.2% ($SD = 18.9\%$) respectively, and both were greater than 50% ($ps < .001$).

One might question whether participants in the "Were you wrong?" condition really recognized that they would be indicating the probability that they were wrong. The likelihood results indicate that participants did attend to the question wording. The mean likelihood estimates of participants in the "Were you right?" and "Were you wrong?" conditions were 60.2 ($SD = 10.2$) and 43.4 ($SD = 13.5$), reflecting a clear difference in focus, $t(64) = 5.72$, $p < .001$. We also did a separate analysis of the selection bias for the second and third rounds—after participants had already provided a likelihood judgment (about being right or wrong) in the first rounds. Even within these rounds, the selection biases for the "Were you right?" (M = 65.6%; $SD = 26.5$) and "Were you wrong?" (M = 68.7%; $SD = 22.5$) groups were both significant ($ps < .001$). In other words, even participants who anticipated having to judge the likelihood that they were wrong (and had done so on the previous round) still preferred to read buffet information that suggested they were right. This result does not bode well for a positive-test account, but it is consistent with both the defense-motivation and a desirability accounts.

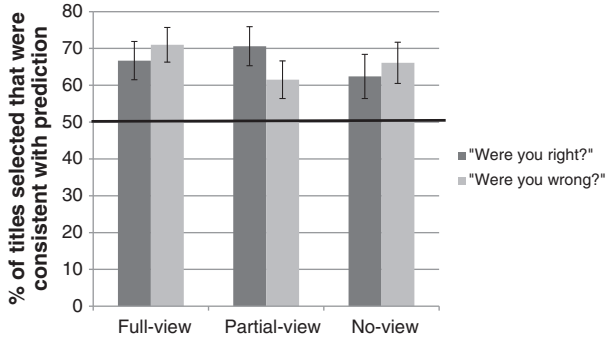

Fig. 3. Selection bias for each of the viewing conditions and "Were you right/wrong?" conditions in Study 3. All selection bias measures were significantly greater than 50%. Error bars represent *SE*.

Study 4

The defense-motivation and desirability accounts are both motivated accounts, and some readers may question whether they are distinguishable. This presents a key question: Within the context of post-prediction information selections, is hoping to be right meaningfully different from worrying about being wrong? Although other areas of psychology have drawn distinctions between constructs such as promotion and prevention (Higgins, 1998; Molden, Lee, & Higgins, 2008) or gain and loss framing (Levin, Schneider, & Gaeth, 1998; Tversky & Kahneman, 1981; for discussion of related distinctions see Dijksterhuis & Aarts, 2003; Larsen, Berntson, Poehlmann, Ito, & Cacioppo, 2008), a similar distinction has not gained traction in explanations of post-choice selective exposure. The literature focuses primarily on how the potential for defense motivation shapes information selection (Hart et al., 2009). There is little reason to question the important role of defense motivation concerns in many selective-exposure effects. However, in the next two studies, we looked for initial evidence that, among participants making predictions, their hope to be right is not negligible, and it does indeed play a role in information selection.

In Study 4, we examined two key issues. First, are participants actually interested in being right, even about strictly arbitrary predictions? Second, is an interest in being right distinct and greater than a concern about being wrong? Participants ($N = 60$) indicated how they would feel upon learning their prediction was right or wrong. More specifically, after making a prediction about an artwork pair (same pairs as Study 1 under full, partial, or no-view conditions), participants faced two questions in a counterbalanced order. One asked how good they would feel if their prediction was right (0 = *Wouldn't Care*, 100 = *Would Feel Pretty Good*) and one asked how bad they would feel if their prediction was wrong (0 = *Wouldn't Care*, 100 = *Would Feel Pretty Bad*). We recognize that interpreting differences on these two scales must be done with great caution. However, the empirical results were strong enough to assuage major concerns.

Responses were similar across the three view conditions (see Table 1). The average response on the "If right" question was 60.0 ($SD = 25.8$), which is far from the *Wouldn't Care* anchor and confirms that participants had a notable interest in being right. The average response to the "If wrong" question was only 24.4 ($SD = 17.0$). Hence, participants were more interested in being right than they were concerned about being wrong, $t(59) = 10.55$, $p < .001$. Importantly, this was true even when participants made an arbitrary prediction with no useful information.

While individuals in this study showed some concern about being wrong, indicating that there may have been a small amount of defense motivation, this concern was clearly dwarfed by individuals'

Table 1
Anticipated positive and negative affect by view condition in Study 4.

View condition	How good would you feel if your prediction was correct?		How bad would you feel if your prediction was incorrect?	
	M	SD	M	SD
Full-view	60.2	26.2	24.9	18.5
Partial-view	62.0	27.3	24.0	18.9
No-view	57.8	28.8	24.3	21.2

Note: 0 = "Wouldn't Care" and 100 = "Would Feel Pretty Good/Bad".

interest in being right, suggesting that desirability was the primary motivation. These results lend initial support to the notion that hoping to be right could be important for post-prediction information selection, and they suggest that the desirability account should not necessarily be subsumed by a defense motivation account.

Study 5

In Study 5, we delved deeper into the role of anticipated affective reactions to new, post-prediction information. The desirability account suggests that anticipated affective reactions to buffet comments should differ for confirmatory and disconfirmatory comments, and these anticipated reactions should thereby influence buffet selections. The procedures for Study 5 were nearly identical to the partial-view condition of Study 1—with one key addition. Immediately following their prediction, participants (N = 29) sequentially viewed the comment titles that would soon appear on the information buffet. For each title, participants indicated their anticipation of how they would feel if they read the full comment (from −5 = *Extremely Bad* to +5 = *Extremely Good*). Next, participants saw the buffet and made their selections—this time with no restrictions on amount.

Participants selected an average of 2.56 items, and we again observed a significant selection bias ($M = 58.9\%$, $SD = 22.1\%$, $t(28) = 2.16$, $p < .05$). More critical, however, are the findings involving the anticipated-affect measures. First, participants reported higher anticipated affect for comments that, given their prediction, were confirmatory ($M = 1.01$, $SD = 1.26$) rather than disconfirmatory ($M = -0.32$, $SD = 1.29$), $t(28) = 3.21$, $p < .01$. The former mean is significantly greater than zero ($p < .01$), whereas the latter mean is not significantly different from zero ($p = .17$). In other words, participants clearly anticipated feeling good about reading information that supported their prediction (even though their prediction was based on almost no information), whereas their anticipated reactions to disconfirming information were less strong if not neutral.

Second, participants' anticipated-affect ratings were predictive of what items they selected from the buffet. To determine this, we calculated idiographic correlations (separately within each buffet and person) between how the eight buffet titles were rated for anticipated affect and whether they were selected for reading. The overall average of these correlations was .26, which was significantly greater than zero, $t(28) = 4.49$, $p < .001$.

Additional idiographic correlations between selection biases and ratings of the anticipated affect for *confirmatory* comments revealed that participants tended to exhibit larger selection biases on the rounds for which their average anticipated affect from reading those confirmatory comments was high ($M_r = .32$, $t(21) = 2.15$, $p < .05$). However, comparable analyses involving anticipated affect for disconfirmatory comments were not significant ($M_r = -.05$, $t(21) = 0.37$, $p = .71$). In other words, participants' anticipations of how they would feel about confirmatory comments were predictive of selection biases, whereas participants' anticipations of how they would feel about disconfirmatory comments were not predictive.

Between the defense-motivation account and the desirability account, the results of Study 5 lend clearer support for the latter. Again, we are not claiming the defense motivations are unimportant for selective exposure, but we do believe the results lend notable support to the notion that hoping to be right can be important for post-prediction information selection.

General discussion

The current studies suggest two novel and important conclusions. First, participants are often biased in their post-prediction information selections, even when their predictions are entirely arbitrary and made with no real information. Second, the selection biases that follow such arbitrary predictions may best be attributed to a desirability account—people hope to be right and favor supportive information even if their prediction is based on little or no information.

The idea that a desire to be right would shape post-prediction selective exposure might not seem surprising given work on related issues (see Kunda, 1990). However, desire has not been explicitly identified as a major factor in selective exposure research. The defense-motivation account has largely dominated that literature (Hart et al., 2009), with some alternatives receiving limited attention (Klayman & Ha, 1987; Sears & Freedman, 1967). We note that some findings from post-choice selective-exposure studies might be better understood if a desirability account is considered. For example, research on framing effects and selective exposure has demonstrated that gain frames, where individuals might be focused on the desirability of outcomes, leads to selective exposure, while loss frames, which tend to elicit increased concern about being wrong, lead to a reduction or elimination of selective exposure (Fischer, Jonas, Frey, & Kastenmüller, 2008; Kastenmüller et al., 2010).

It is important to highlight that we tested cases in which, prior to a prediction, the possible outcomes themselves are hedonically neutral. That is, participants initially did not have a stake in whether one or the other artwork was the true answer. This allowed us to test the impact of a desire that arose once the prediction was made (i.e., the desire to be correct). In some contexts, people make predictions about outcomes that already have a hedonic value (e.g., whether one will be hired or not; whether a skin abnormality is cancerous or not). In these cases a desire to be correct in one's prediction is likely to be overshadowed by the desirability or undesirability of the outcomes themselves.

We do not think that the desirability account uniformly explains all post-predictive selective exposure effects. There are a variety of potential moderators for post-prediction selective exposure—both in terms of magnitude of the effects as well as what accounts are most applicable. The post-choice literature provides some guidance as to what might be the most likely moderators. For example, increased accountability for a prediction might shift an individual's focus to a concern about being wrong and result in increased selective exposure (Jonas, Schulz-Hardt, & Frey, 2005). Future research should examine under what contexts the primary mechanisms of selective exposure might shift from one type (e.g., desirability) to another (e.g., defense motivation).

Our findings have implications for the recent debate regarding classic post-choice effects in which chosen options appear to become increasingly favored and unchosen options increasingly disparaged (e.g., Chen & Risen, 2010; Sagarin & Skowronski, 2009). These effects are often assumed to be triggered by a motivation to avoid dissonance about a bad choice. However, Chen and Risen contend that better measurement of people's *a priori* preferences reveals that those preferences influence both choices and post-choice evaluations, which is critically different from assuming that choices trigger changes in evaluations (because of dissonance concerns). We find merit in their critique of the existing literature. However, we also note that we have ruled out the possibility that pre-existing differences could account for selection biases after *arbitrary* predictions. The biases, therefore, provide a clear example that choices (or predictions) can play a causal role in post-choice responses.

Conclusion

Receiving new information after a prediction should give us a chance to correct an errant prediction or at least begin to doubt it. However, when there is an assortment of new information available, we are likely to attend to the information that supports our prediction rather than information that might help correct it. Apparently, it does not take much of a commitment to an initial prediction in order to trigger this bias. In sum, whether a prediction is a completely uninformed guess about the weather or a well-informed forecast about a political outcome, there is a danger

than our "hope to be right" might squelch our chance to learn we were wrong.

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.jesp.2012.07.012.

Acknowledgements

This work was supported by Grant SES 07-20349 and 09-61252 to Paul D. Windschitl from the National Science Foundation.

References

Chen, S., & Chaiken, S. (1999). The heuristic-systematic model in its broader context. In S. Chaiken, & Y. Trope (Eds.), *Dual-process Theories in Social Psychology* (pp. 73–96). New York, NY: Guilford Press.

Chen, M. K., & Risen, J. L. (2010). How choice affects and reflects preferences: Revisiting the free-choice paradigm. *Journal of Personality and Social Psychology*, *99*, 573–594, http://dx.doi.org/10.1037/a0020217.

Dijksterhuis, A., & Aarts, H. (2003). On wildebeests and humans: The preferential detection of negative stimuli. *Psychological Science*, *14*, 14–18, http://dx.doi.org/10.1111/1467-9280.t01-1-01412.

Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology*, *58*, 203–210, http://dx.doi.org/10.1037/h0041593.

Fischer, P., Greitemeyer, T., & Frey, D. (2008). Self-regulation and selective exposure: The impact of depleted self-regulation resources on confirmatory information processing. *Journal of Personality and Social Psychology*, *94*, 382–395, http://dx.doi.org/10.1037/0022-3514.94.3.382.

Fischer, P., Jonas, E., Frey, D., & Kastenmüller, A. (2008). Selective exposure and decision framing: The impact of gain and loss framing on confirmatory information search after decisions. *Journal of Experimental Social Psychology*, *44*, 312–320, http://dx.doi.org/10.1016/j.jesp. 2007.06.001.

Fischer, P., Jonas, E., Frey, D., & Schulz-Hardt, S. (2005). Selective exposure to information: The impact of information limits. *European Journal of Social Psychology*, *35*, 469–492, http://dx.doi.org/10.1002/ejsp. 264.

Frey, D. (1981). Postdecisional preference for decision-relevant information as a function of the competence of its source and the degree of familiarity with this information. *Journal of Experimental Social Psychology*, *17*, 51–67, http://dx.doi.org/10.1016/0022-1031(81)90006-8.

Gawronski, B., Bodenhausen, G. V., & Becker, A. P. (2007). I like it, because I like myself: Associative self-anchoring and post-decisional change of implicit evaluations. *Journal of Experimental Social Psychology*, *43*, 221–232, http://dx.doi.org/10.1016/j.jesp.2006.04.001.

Gilovich, T. (1991). *How we know what isn't so: The fallibility of human reason in everyday life*. New York: Free Press.

Hart, W., Albarracín, D., Eagly, A. H., Brechan, I., Lindberg, M. J., & Merrill, L. (2009). Feeling validated versus being correct: A meta-analysis of selective exposure to information. *Psychological Bulletin*, *135*, 555–588, http://dx.doi.org/10.1037/a0015701.

Higgins, E. T. (1998). Promotion and prevention: Regulatory focus as a motivational principle. *Advances in Experimental Social Psychology*, *30*, 1–46.

Hoch, S. J. (1985). Counterfactual reasoning and accuracy in predicting personal events. *Journal of Experimental Psychology. Learning, Memory, and Cognition*, *11*, 719–731, http://dx.doi.org/10.1037/0278-7393.11.1-4.719.

Jonas, E., Schulz-Hardt, S., Fischer, P., & Frey, D. (2006). Biased information seeking after decisions: Cognitive and motivated bases. In D. Frey, H. Mandl, & L. Von Rosenstiel (Eds.), *Knowledge and Action* (pp. 23–51). Ashland, OH, US: Hogrefe & Huber Publishers.

Jonas, E., Schulz-Hardt, S., & Frey, D. (2005). Giving advice or making decisions in someone else's place: The influence of impression, defense, and accuracy motivation on the search for new information. *Personality and Social Psychology Bulletin*, *31*, 977–990, http://dx.doi.org/10.1177/0146167204274095.

Joule, R. -V., & Azdia, T. (2003). Cognitive dissonance, double forced compliance, and commitment. *European Journal of Social Psychology*, *33*, 565–571, http://dx.doi.org/10.1002/ejsp. 165.

Kastenmüller, A., Fischer, P., Jonas, E., Greitemeyer, T., Frey, D., Koppl, J., et al. (2010). Selective exposure: The impact of framing information search instructions as gains and losses. *European Journal of Social Psychology*, *846*, 837–846, http://dx.doi.org/10.1002/ejsp.

Klayman, J., & Ha, Y. -won (1987). Confirmation, disconfirmation, and information in hypothesis testing. *Psychological Review*, *94*, 211–228, http://dx.doi.org/10.1037/0033-295X.94.2.211.

Koriat, A., Lichtenstein, S., & Fischhoff, B. (1980). Reasons for confidence. *Journal of Experimental Psychology. Human Learning & Memory*, *6*, 107–118, http://dx.doi.org/10.1037/0278-7393.6.2.107.

Kray, L. J., & Galinsky, A. D. (2003). The debiasing effect of counterfactual mind-sets: Increasing the search for disconfirmatory information in group decisions. *Organizational Behavior and Human Decision Processes*, *91*, 69–81, http://dx.doi.org/10.1016/S0749-5978(02)00534-4.

Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin*, *108*, 480–498, http://dx.doi.org/10.1037/0033-2909.108.3.480.

Larsen, J. T., Berntson, G. G., Poehlmann, K. M., Ito, T. A., & Cacioppo, J. T. (2008). The psychophysiology of emotion. In M. Lewis, J. M. Haviland-Jones, & L. F. Barrett (Eds.), *Handbook of Emotions* (pp. 180–195). (3rd ed.). New York, NY, US: Guilford Press.

Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational Behavior and Human Decision Processes*, *76*, 149–188, http://dx.doi.org/10.1006/obhd.1998.2804.

Molden, D. C., Lee, A. Y., & Higgins, E. T. (2008). Motivations for promotion and prevention. In J. Y. Shah, & W. L. Gardner (Eds.), *Handbook of Motivation Science* (pp. 169–187). New York: Guilford Press.

Rydell, R. J., & Gawronski, B. (2009). I like you, I like you not: Understanding the formation of context-dependent automatic attitudes. *Cognition & Emotion*, *23*, 1118–1152, http://dx.doi.org/10.1080/02699930802355255.

Sagarin, B. J., & Skowronski, J. J. (2009). The implications of imperfect measurement for free-choice carry-over effects: Reply to M. Keith Chen's (2008) "Rationalization and cognitive dissonance: Do choices affect or reflect preferences?". *Journal of Experimental Social Psychology*, *45*, 421–423, http://dx.doi.org/10.1016/j.jesp.2008.08.024.

Sears, D. O., & Freedman, J. L. (1967). Selective exposure to information: A critical review. *Public Opinion Quarterly*, *31*, 194, http://dx.doi.org/10.1086/267513.

Smith, S. M., Fabrigar, L. R., & Norris, M. E. (2008). Reflecting on six decades of selective exposure research: progress, challenges, and opportunities. *Social and Personality Psychology Compass*, *2*, 464–493, http://dx.doi.org/10.1111/j.1751-9004.2007.00060.x.

Snyder, M., & Swann, W. B. (1978). Hypothesis-testing processes in social interaction. *Journal of Personality and Social Psychology*, *36*, 1202–1212, http://dx.doi.org/10.1037/0022-3514.36.11.1202.

Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, *211*, 453–458.

Windschitl, P.D., Scherer, A.M., Smith, A.R., & Rose, J.P. (2012). Why so confident? The effects of outcome desirability on selective exposure and likelihood judgments. Unpublished manuscript. Department of Psychology, University of Iowa, Iowa City, IA, United States.