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How Often Does Currently Felt Emotion Predict Social Behavior and Judgment? A Meta-Analytic Test of Two Theories

C. Nathan DeWall
Department of Psychology, University of Kentucky, USA

Roy F. Baumeister
Department of Psychology, The Florida State University, USA
Department of Psychology, King Abdulaziz University, Saudi Arabia

David S. Chester
Department of Psychology, University of Kentucky, USA

Brad J. Bushman
School of Communication and Department of Psychology, The Ohio State University, USA
Department of Communication Science, VU University Amsterdam, The Netherlands

Abstract

Emotions play a prominent role in social life, yet the direct impact of emotions on behavior and judgment remains a point of disagreement. The current investigation used meta-analysis to test two theoretical perspectives. The emotion-as-direct-causation perspective asserts that *current* emotions guide behavior and judgment, whereas the emotion-as-feedback perspective asserts that *anticipated* emotions guide behavior and judgment. Although the emotion-as-direct-causation perspective was frequently tested, only 22% of tests were significant. Although the emotion-as-feedback perspective was rarely tested, 87% of tests were significant. Our findings suggest that empirical evidence is weak for the default assumption that emotion is the proximal cause of behavior and judgment. Our preliminary findings also suggest that anticipated emotion reliably impacts social behavior and judgment.

Keywords
anticipated emotion, behavior, experienced emotion, judgment

Combat presents an emotional dilemma. Soldiers receive orders to attack under fire, which requires them to run toward people who are trying to kill them. Soldiers naturally experience fear because they don't want to die, which should prompt an avoidant behavioral response to run away. Opposing that impulse is the anticipation of guilt and humiliation if they abandon their comrades and flee rather than fight. Guilt often guides behavior (Baumeister, Stillwell, & Heatherton, 1994). But, in this scenario, the soldiers have not done anything wrong that would make them feel guilty. They have simply simulated a future behavior and subsequent emotional reaction.

What happens? Most soldiers move forward until they reach the point at which a consensus for retreat spontaneously emerges, whereupon the group retreats together (e.g., Holmes, 1970; Keegan, 1983). Thus, anticipated guilt overrules currently felt fear, and soldiers only flee when the group consensus nullifies the deterrent effect of anticipated emotion.

Now consider a poor farming family who has only one cow, which they use to plow the fields. Last fall's harvest was meager and the food has run out. Some of the children are starving. Guilt and love impel the parents to do anything to save their children, but the only food available is the one large animal that

Corresponding author: Brad J. Bushman, School of Communication, The Ohio State University, 3016 Derby Hall, 154 North Oval Mall, Columbus, OH, 43210-1339,USA.
Email: bushman.20@osu.edu

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they use to plow the field. If they kill and eat it, they cannot replace it, and so the future will be bleak for all. Under these circumstances, many families let the animal live even while some of their children starve to death, though the difficulty of this choice is attested by the fact that in many places, religious commands (e.g., based on the idea that the cow is sacred) are needed to bolster the resolve (Harris, 1974).

These examples illustrate conflict between current felt emotion and future, anticipated emotion on behavior. In these cases, some people act from current emotion, whereas others act from anticipated emotion. The present investigation began with a survey of research findings in social psychology's premier journal for primary research, *Journal of Personality and Social Psychology* (*JPSP*), on the direct influence of currently felt and anticipated emotion on subsequent behavior and judgment.

The theory that behavior follows from current emotional state is backed by long tradition, common sense, evolutionary logic, and frequent assertion. This perspective is illustrated with the frequently invoked example of fear and fleeing: A creature that neglected to flee when confronted by a ferocious predator would have been killed, whereas the fearful skedaddlers survived to later reproduce. We refer to this view as the emotion-as-direct-causation theory. This review will present evidence that articles in *JPSP* have quite commonly assumed that emotion is the direct, proximal cause of many behaviors, often serving as the crucial mediator between situations and behaviors. The main purpose of this article is to examine how often this perspective is correct.

As an exploratory aim, this manuscript will also test the emotion-as-feedback theory, which proposes that *anticipated* emotion is the direct, proximal cause of behavior. Not surprisingly, this theory has been slower to attract attention from researchers, because possible future emotions are almost by definition less dramatic and less salient than currently felt emotions. We ourselves have long embraced the standard assumption that current emotion will usually be the direct cause of behavior, though we eventually explored the second theory (Baumeister, Vohs, DeWall, & Zhang, 2007). The following section outlines each perspective, which is followed by a meta-analytic test. We predict that both perspectives will receive empirical support. This article describes how often each perspective is tested and supported.

Two Theories of Emotion and Behavior

According to the direct cause perspective, emotions give rise to impulses that lead to behavior. Fear causes fleeing, anger causes aggression, love causes affection and sex, guilt causes reparation, shame causes withdrawal, and so forth. The behavior is thus implicit in the emotion itself, and indeed the adaptive function and purpose of the emotion may be precisely to stimulate that specific behavior. As one scholar argued, the emotional state of anger itself contains the implicit motor movements of aggressive attack (Berkowitz, 1989). Similarly, another scholar noted "everyone knows that fear brings flight and anger brings fight" (Russell, 2003, p. 161), thus asserting that both laypersons and professional researchers embrace the assumption that action flows directly from emotional state. Many theorists have proposed that people judge and behave on the basis of their current emotions (Frijda, 1986; Izard & Ackerman, 2000; Loewenstein, Weber, Hsee, & Welch, 2001).

The intuitive appeal, parsimonious simplicity, and elegance of this theory may preclude any need to entertain a different theory. One goal of the present investigation was to compile a large body of empirical tests. To be sure, several authors have already offered the impression that emotion may not reliably cause behavior. Schwarz and Clore (1996) noted that they could find relatively little evidence linking emotions to behavior, in contrast to a great many studies linking emotions to cognition. They also pointed out some potential flaws in the theory that emotions directly cause behavior. For example, there are more different behaviors than different emotions. It would be difficult that emotions could contain the impulses for all those different behaviors. Sometimes fear makes people run away, but sometimes it makes people sell stocks, use condoms, support wars, install locks and security systems for their house, buy guns, listen to weather forecasts, or engage in other behaviors. The diversity of fear-induced behaviors might make it difficult for fear to produce a specific and reliable behavioral impulse.

The emotion-as-feedback system theory has proposed that the link between emotion and behavior is genuine but indirect. Full-blown conscious emotion serves mainly as a feedback system that highlights evaluative reactions to behaviors after the fact and drives retrospective cognitive processing, such as counterfactual replays and the extraction of useful lessons for future occasions. (Automatic affective responses, however, are fast enough to influence current behavior online, and indeed they may arise as residues of past emotional reactions.) Moreover, the theory emphasizes that people learn to anticipate what actions will result in which emotions. This anticipation enables them to choose their behaviors in order to bring about desired emotional outcomes. Thus, instead of emotion driving behavior, behavior may seek and pursue emotional outcomes (Baumeister, Vohs, DeWall, et al., 2007).

Some of the limited evidence that emotion directly drives behavior can fit the feedback and anticipation model. Mood-freezing procedures enabled researchers to tease apart these theories (Manucia, Baumann, & Cialdini, 1984). Using this procedure, researchers investigated the reasons behind the well-documented finding that sadness increases helping. They gave some participants a placebo pill and told them that this pill had the side effect of rendering their current emotional state temporarily impervious to change. In that condition, sad participants were not helpful. The implication is that sad people only help in order to cheer themselves up in the future. If the emotional state of sadness itself contained or stimulated the impulse to help (as in the direct causation theory), then helping would have occurred regardless of mood-freezing expectancies. But it did not. Thus, sad people help less as a direct result of sadness than as a strategic attempt to induce an anticipated emotional outcome.

Subsequent studies using mood-freezing procedures have questioned other ostensible evidence that emotion causes behavior directly. The links between emotional distress and

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such behaviors as impulsive eating of sweets, taking immediate rather than delayed gratification, and procrastination are based on anticipated emotion rather than direct causation (Tice, Bratslavsky, & Baumeister, 2001). Even the abundantly replicated finding that anger causes aggression appears to be less a matter of angry emotion driving behavior than of angry people anticipating that aggression will make them feel better (Bushman, Baumeister, & Phillips, 2001).

Thus, there is empirical precedent for hypothesizing that emotion can be guided by the anticipation of emotion. Meanwhile, ostensible evidence for the direct causation theory is sparse and often confounded. Hence it seems worth taking a fresh look at how emotion influences behavior.

Mediation and Proximal Causation

The present investigation sought to evaluate the emotion-as-direct-causation and emotion-as-feedback system theories of emotion by means of a meta-analysis of mediation studies in *JPSP*. We elected to meta-analyze mediation studies because mediation analyses are based on strong assumptions about proximal causation. In principle, social psychologists manipulate situational variables and measure behavioral and judgment outcomes as dependent variables. In recent decades, that basic research strategy has largely been augmented by a quest to elucidate the inner processes that lead from the situational condition to the behavior or judgment (Spencer, Zanna, & Fong, 2005).

Emotion is one candidate for an inner process that can mediate between situation and behavior (or judgment). Successful mediation would indicate that the process is a matter of a person encountering some situation, feeling an emotion, and then behaving on the basis of that emotion. Hence the felt emotion or the anticipated emotion would be the immediate, proximal cause of behavior. Anecdotally, we have found that such emotional mediators are a staple of reviewer comments and suggestions for alternative interpretation of various empirical findings.

Our approach did not necessarily pit one theory against the other. It was entirely possible both theories could be valid (or that both would be invalid, or that one would be valid and the other would be invalid). We sought to test them separately in order to evaluate the correctness and effectiveness of each. Given the scarcity of tests of the emotion-as-feedback theory, we view tests of that theory as an exploratory step in understanding the role of anticipated emotion on behavior.

Method

Literature Search

We searched every article published in the *Journal of Personality and Social Psychology* (*JPSP*) from 1986 to 2013. (Note that the search was later extended to a broader base, to rectify the paucity of studies of anticipated emotion; see *Supplementary Analyses* section.) We began our search in 1986 because that was the year Baron and Kenny published their seminal article in *JPSP* on moderation and mediation.

We focused our searches on published articles in *JPSP* for three reasons. First, published articles are likely to have more significant effects than unpublished reports due to prejudice against the null hypothesis (Greenwald, 1975). Null results are inherently ambiguous and therefore less likely to appear in high-impact journals (such as *JPSP*) compared to lower tier journals. Thus, including only published findings would provide a reasonable but likely high estimate of the proportion of independent studies published between 1986 and 2013 that investigated the mediating effects of current or anticipated emotions on behavior or judgements. Second, *JPSP* is regarded as the premier journal in social and personality psychology. Hence focusing on studies that were published in *JPSP* provided an accurate assessment of research that is cutting-edge and methodologically rigorous. The direct cause perspective has achieved such widespread acceptance that leading journals may question the reliability and validity of findings that fail to support it. The result would be more frequent tests of the direct cause perspective compared to the emotion-as-feedback system perceptive. More frequent testing may offer the direct cause perspective a greater number of opportunities for success or failure. But it is also possible that the emotion-as-feedback system perspective, compared to the direct cause perspective, may receive a greater percentage of supportive results because they must pass a higher bar for conceptual and methodological rigor typically required for less fledgling theoretical perspectives. Third, *JPSP* articles are sufficiently long to report mediation analyses with some regularity. Thus, analyzing published *JPSP* articles provided a method for testing these two perspectives because the articles offer a body of cutting-edge and methodologically rigorous research, an adequate number studies, and a submission format that would enable researchers to report mediation analyses even if those results were not the main focus of research.

Inclusion Criteria

To be included in the analysis, a study had to: (a) measure participants' current or anticipated emotional state, (b) include as the dependent variable a behavior or a judgment, (c) include naturally occurring emotions, and (d) measure participants' current or anticipated emotional state prior to the dependent variable. Studies that assessed how participants felt toward other people, for example, did not qualify for inclusion. Studies that measured emotion in response to an experimental manipulation not designed to produce a particular emotion were included, whereas studies that specifically manipulated an emotional state were not included.

We originally set out to focus on the role of current emotion mediating behavioral effects (thus not including studies of judgment), but the dearth of published studies that measured actual behavior caused us to reconsider our decision to focus exclusively on behavior (see Baumeister, Vohs, & Funder, 2007, on the decline of measuring behavior in psychology). As a result, we also included studies that included judgment as the dependent variable.

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Analytic Strategy

Our analytic strategy focused on estimating the proportion of significant results showing that current or anticipated emotion mediated behaviors and judgments. For example, if 100 mediation tests were conducted at the α = .05 level, one would expect five to be significant by chance alone. We used the sign test to determine whether the number of studies that found significant mediation was greater than what would be expected by chance (Bushman & Wang, 2009).

The sign test is simply the binomial test with probability π = .05, if one is testing for significant results at the α = .05 level (Conover, 1980, p. 122). If *U* equals the number of significant results in *n* independent studies, the estimate of π is given by:

$$\hat{\pi} = \frac{U + \kappa^2}{n + \kappa^2},$$

where $\kappa \equiv Z_{\alpha/2} = \Phi^{-1}(1 - \alpha/2)$. If α = .05, then κ = 1.96.

We also computed the 95% confidence interval for π. The general formula for a (1-α)% confidence interval is given by:

$$\left(\frac{\left(U + \frac{\kappa^2}{2}\right)}{\left(n + \kappa^2\right)} - \frac{\left(\kappa\sqrt{n}\right)}{\left(n + \kappa^2\right)} \times \left(\hat{p}\hat{q} + \frac{\kappa^2}{4n} \right), \right.$$
$$\left. \frac{\left(U + \frac{\kappa^2}{2}\right)}{\left(n + \kappa^2\right)} + \frac{\left(\kappa\sqrt{n}\right)}{\left(n + \kappa^2\right)} \times \left(\hat{p}\hat{q} + \frac{\kappa^2}{4n} \right) \right)$$

where $\kappa \equiv Z_{\alpha/2} = \Phi^{-1}(1 - \alpha/2)$, $\hat{p} = \frac{U}{n}$ and $\hat{q} = 1 - \hat{p}$ (see Brown, Cai, & Dasgupta, 2001).

Mediating Role of Current Emotion on Behavior and Judgment

We first tested the emotion-as-direct-causation theory, which asserts that current emotion mediates behaviors and judgments at a rate that exceeds chance levels. A total of 245 studies (based on 30,366 participants) tested whether current emotion mediated a behavioral response. Of these studies, 52 yielded significant results. The estimate of π is .22, with a 95% confidence interval ranging from .20 to .24. Because the confidence interval excludes the value .05, the proportion of studies with significant mediational results is greater than what would be expected by chance alone.

A total of 158 studies (14,883 participants) tested whether current emotion mediated a judgment. Of these, 36 studies found significant results. The estimate of π is .23 with 95% confidence interval [.21, .26]. Again, the confidence interval does not contain the value .05, indicating that the number of studies finding significant mediational results is greater than what would be expected by chance alone.

Because the results did not differ significantly between the behavioral and judgment dependent variables ($z = 0.24$, $p > .81$), we conducted an additional analysis in which we combined the results for the two types of dependent variables. Of the 403 studies (45,249 participants), 88 provided significant results. The estimate of π is .22 with a 95% confidence interval [.20, .24]. Again, the confidence interval excludes the value .05. The results from all three analyses showed that current emotion played a significant mediating role on behavior and judgment in 22% of reported tests.

Mediating Role of Anticipated Emotion on Behavior and Judgment

We next tested the emotion-as-feedback theory, which argues that anticipated emotion mediates behaviors and judgments. Very few studies tested this perspective. A total of seven studies involving 800 participants tested whether anticipated emotion mediated a behavioral response, of which six studies reported significant results. Thus, the estimate of π was .73 with a 95% confidence interval ranging from .61 to .85. Because the confidence interval excludes the value .05, we conclude that the number of studies showing significant mediation results is greater than one would expect due to chance alone. A total of three studies (involving 380 participants) tested whether anticipated emotion mediated a judgment. All three studies provided significant results, which yielded an estimate π of .72 and a 95% confidence interval ranging from 0.56 to 0.88. Again, the confidence interval excluded the value 0.05, indicating significant mediation for judgment dependent variables.

We also combined studies that used a behavioral dependent variable with those that used a judgment dependent variable (because the results did not significantly differ for the two types of dependent variable, $z = 0.033$, $p > .97$). Of the 10 studies (involving 1,180 participants across six different articles), nine reported significant mediational results (see Table 1). Therefore, the estimate of π is .79 and the 95% confidence interval is [.71, .87]. Again, the confidence interval excludes the value .05. The results from all three analyses showed that anticipated emotion played a significant mediating role on behavior and judgment. These findings support the emotion-as-feedback system theory. These positive results should be tempered by the qualification that the results were based on a small sample of studies.

Supplementary Analyses

To supplement the small number of studies testing anticipated emotion as a mediator in our initial search, we conducted another search to identify additional articles. We used the search terms (*anticip** and *emotion*) and (*expect** and *emotion*) from PsychINFO over the same years (1986–2013) and found 14 studies that tested for mediation of a behavioral response (N = 4,052). Of these 14 studies, 13 reported significant mediational results. Therefore, the estimate of π is .84 and the 95% confidence interval is [.78, .89]. We found 11 studies that tested for mediation of a judgment (N = 1,813). Of these 11 studies, 10 reported significant mediational results. Therefore, the estimate of π is .80 and the 95% confidence interval is [.73, .88]. The two estimates did not differ significantly, $z = 0.26$, $p > .79$. Combining

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Table 1. List of studies that tested whether anticipated emotion mediated a behavior or judgment.

Year	Study number(s)	*N*	Number of tests	Author(s)
1990	1	123	1	Sacco and Dunn (1990)
1992	1	144	1	Sanna (1992)
1992	2	144	1	Sanna (1992)
1998	1	56	1	Stangor, Carr, and Kiang (1998)
2001	2	510	1	Schopler et al. (2001)
2004	3	250	1	Rudman and Fairchild (2004)
2013	4	139	1	Wiltermuth and Gino (2013)
2013	5	101	2	Wiltermuth and Gino (2013)
2013	6	131	1	Wiltermuth and Gino (2013)

the studies that used a behavioral dependent measure with those that used a judgment dependent measure yielded similar results. Of the 25 studies (N = 5,489), 23 mediation attempts were successful. Therefore, the estimate of π is .86 and the 95% confidence interval is [.83, .90], which again excludes the value .05.

Putting these results with those obtained in the *JPSP* literature search suggests that of the 35 times anticipated emotion was tested as a mediator of a behavior or judgment (N = 6,669) the tests were successful 32 times. Therefore, the estimate of π is .87 and the 95% confidence interval is [.84, .90], which again excludes the value .05. These additional analyses offer converging evidence that anticipated emotion, though rarely tested, is a reliable mediator of behavior and judgment.

Basic and Applied Social Psychology Studies

By focusing almost entirely on *JPSP* articles, it is possible that we neglected studies that demonstrated an effect of current emotion on behavior but did not meet the theoretical contribution threshold at such a prestigious journal. To examine this possibility, we searched for articles published in *Basic and Applied Social Psychology* from 2013–2014. which is a journal that has a much lower impact factor and rejection rate than *JPSP* has. We analyzed the previous 2 years because it provided a reasonable estimate regarding how frequently each theory was tested and supported.

A total of two studies (based on 174 participants) yielded four tests of whether current emotion mediated a behavioral response. Of these studies, one yielded significant results. The estimate of π is .37, with a 95% confidence interval ranging from .16 to .59. Because the confidence interval excludes the value .05, the proportion of studies with significant mediational results is greater than what would be expected by chance alone.

A total of five studies (790 participants) yielded eight tests of whether current emotion mediated a judgment. Of these, one test found significant results. The estimate of π is .25 with 95% confidence interval [.14, .35]. Again, the confidence interval does not contain the value .05, indicating that the number of studies finding significant mediational results is greater than what would be expected by chance alone.

Because the results did not differ significantly between the behavioral and judgment dependent measures (z = 0.43, p > .69), we conducted an additional analysis in which we combined the results for the two types of dependent measures. Of the seven studies (964 participants) that yielded 12 tests of whether current emotion mediated a behavior or judgment, two provided significant results. The estimate of π is .25 with 95% confidence interval [.15, .34]. Thus, the rate of significant mediation by current emotion was nearly identical to that found in the *JPSP* analyses, even though we analyzed a much smaller number of articles.

One study involving 242 participants tested whether anticipated emotion mediated a judgment response, yielding two such tests of mediation. Both tests produced significant results. Thus, the estimate of π was .67 with a 95% confidence interval ranging from .44 to .89, which excludes the value .05.

Discussion

We began by presenting two theories about emotion, one focusing on current emotion, the other on anticipated emotion. The present findings support both theories. The hypothesis based on the emotion-as-direct-causation theory held that current emotional state would mediate between the situational manipulation and behavior. This was supported. Thus, there is truth in the assumption that current emotions can contribute to causing behavior and judgment. Crucially, however, this mediation was found in fewer studies than what one might expect (22%). Meanwhile, anticipated emotion successfully mediated between situational manipulation and behavior or judgment more reliably (indeed 87% of studies). The emotion-as-feedback system perspective was rarely tested compared to those studies that tested the direct cause perspective, and hence these results should only be viewed as preliminary.

The greater popularity of the direct causation theory seems undeniable, based on frequency of analysis. One implication is that the asymmetry is due to the widespread assumption that emotion directly causes behavior. The high rate of null results in these mediation analyses is notable. Some prevailing theories of research design and data analysis insist that null results are generally not meaningful and difficult to interpret, and studies that have all null results are generally not considered publishable. Although approaches to reporting practices have begun to shift in ways that may increase the likelihood of null results being published (Funder et al., 2014), we were surprised by the high rate of published null mediation tests. We think it indicates that the emotion-as-direct-causation theory has gained the status of being the default assumption in the field, so authors, editors, reviewers, and readers expect it to be considered. Some studies may have provided tests of mediation by emotion in order to rule out direct emotional causation so as to justify alternative theoretical views. But that merely confirms the impression that everyone starts with the default assumption that emotion is the direct cause of behavior, and other theories can only be asserted

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after direct emotional causation has been duly considered and rejected.

If we are correct in the impression that the field has treated direct causation by emotion as the default assumption that must be ruled out before any other theory can be advanced, then our results call for reconsideration. We noted that the meta-analytic procedure here would likely yield a high estimate of the success rate of the emotion-as-direct-causation theory, partly because nonsignificant mediation results may sometimes not be reported, and because some ostensible evidence for direct causation may prove to be based on anticipated emotion after all (as the mood-freezing studies showed with multiple different phenomena). Thus, whereas we found significant mediation (at the .05 level) in 22% of the analyses, the true success rate may be even lower. We cautiously suggest at least adopting more tempered expectations regarding the likelihood that emotion is often the direct cause of behavior.

An alternative possibility is that a large number of significant null mediation results exist but they were not deemed novel enough because they confirm the default assumption that emotion directly causes behavior. Scientific journals may pause to publish articles that show a direct link between a current emotional state mediating a behavior because it does not make a sufficient advance in the literature. As a result, our findings may have underestimated the number of significant mediation tests. As psychological journals move toward publishing both significant and null findings, researchers will gain a closer estimation on the success rate of current emotion having a direct influence on behavior.

In contrast to current emotional state, anticipated emotions have only rarely been measured and tested as possible mediators. When they have been tested however, they have performed quite well. Further studies are needed to test the robustness of anticipated emotion's effect on judgments and behaviors. The current findings should be considered as only an initial step in estimating the true impact of anticipated emotion as a mediator of behavior and judgment. Perhaps anticipated emotion has only been tested occasionally because it is only occasionally relevant. Our analyses suggest that anticipated emotion may successfully mediate behavior and judgment at a rate of 87%, which forms an impressive contrast with the lower rate of mediation by currently felt emotion (i.e., 22%). The high rate of successful mediation (especially when contrasted with the glut of failed tests of direct causation by current emotion) suggests that anticipated emotion deserves more research attention.

Research interest in anticipated emotion has increased recently, especially in connection with work on affective forecasting (Dunn, Wilson, & Gilbert, 2003; Wilson, Centerbar, Kermer, & Gilbert, 2005; Wilson & Gilbert, 2003, 2005, 2008). One main finding from that work has been that people often anticipate more emotion than they actually end up feeling. The present findings dovetail with that conclusion, insofar as anticipated emotion, compared with felt emotion, more reliably guided behavior. Indeed, the higher relevance to behavior may help explain why anticipated emotions are greater than actually felt ones. Thus, at least in the pragmatic terms of direct influence on behavior, it is more important that people anticipate emotions than that they actually feel them. Actually feeling emotion may be useful indirectly, such as by facilitating the learning process that enables people to anticipate emotions and thereby guide their behavior effectively. It may be highly adaptive for people to base decisions on a strong sense of anticipated regret, so that they avoid misdeeds. Anticipating long and painful regret may help motivate them to make the right choice. And that process may be facilitated by actually feeling some regret when one chooses badly—but a brief episode may be enough to solidify the lesson, and there may not be much adaptive value in suffering prolonged and painful regret.

To illustrate, one study showed how anticipated emotion helped explain why people engage in behaviors that maintain cultural stereotypes (Rudman & Fairchild, 2004). In this experiment, men and women experienced success at a cross-gendered task, thereby creating an experience of deviance. As a result, participants hid their deviant behavior from others and engaged in more gender-typical behavior. These behavioral responses were mediated by the anticipated fear of backlash that they would experience if others learned of their gender atypical results. To be sure, participants likely committed an affective forecasting error by overestimating the amount of backlash they would experience should others learn of their deviance. Yet their anticipated fear drove them to behave according to expected gender norms.

An important qualification of the present findings is that they are all based on conscious emotion, insofar as the mediation tests were based on self-reports of emotional states. Measuring conscious emotional states can be difficult because they rely on people's subjective evaluations of how they feel rather than an objective indicator of their emotional state. Indeed, some argue that "there are no objective methods of measuring the subjective experience of a person during an emotion episode" (Scherer, 2005, p. 712). Subjective measures of emotion, therefore, introduce tremendous measurement error that will weaken the direct effect an emotion can exert on a behavior or judgment. By reducing this measurement error, researchers will likely increase the likelihood that conscious emotional states mediate behaviors and judgments.

Several authors have suggested that there may be nonconscious, automatic affective responses (e.g., Bechara, Damasio, Tranel, & Damasio, 1997; Damasio, 1994; Winkielman, Berridge, & Wilbarger, 2005). The influence of nonconscious affect on behavior may be quite different from the influence of conscious emotion (see Baumeister, Vohs, DeWall, et al., 2007). Indeed, automatic affect may mediate behavior directly, even when conscious emotion often seems irrelevant to it.

Another limitation is that we did not attempt to decipher whether the reported tests were the central aim of the published studies. Many researchers measure emotion and test for mediation, presumably including some who fully expect emotion to mediate and others who believe they must rule out emotion before they can point to any other causal process. Other researchers include emotion an ancillary measure for no conceptual purpose. In theory, the motivation for including

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measures of current or anticipated emotion in a study should not influence how often that type of emotion mediates a behavior or judgment. Without knowing in advance the motive for testing emotion as a mediator, it is difficult to know whether fully expecting emotion to mediate an outcome would increase the likelihood that successful mediation would occur. Journals that encourage researchers to preregister their hypotheses, if any, regarding current and anticipated emotion as mediators of behavior and judgment will enable future scholars to determine whether the motivation to include these measures of emotion influences how frequently these emotional states mediate behaviors and judgments.

How to Strengthen the Emotion-as-Direct-Cause Perspective

To increase the likelihood that current emotion will mediate behaviors or judgments, researchers may consider how contextual or situational factors modulate the relationship between a felt emotion and a behavioral reaction or judgment. Far more behavioral responses exist than do emotions, which should behoove researchers to understand how specific situation–emotion pairings produce certain behavioral responses.

Constructivist approaches argue that emotions represent situated affective reactions that emerge from more basic psychological processes (Barrett, 2006; Russell & Barrett, 1999). They emphasize the importance of affordances, defined as "what a particular environment feature offers, provides, or furnishes the organism" (Finkel, 2014; see also Gibson, 1966, 1979/1986). For example, an emotion might have an impulse for action (e.g., approach vs. avoidance), but the particular context might alter the behavioral manifestation that the impulse takes. Fear might not produce one behavioral outcome or another. Instead, fear influences behavior according to the types of behaviors that are afforded by a particular situation. Sometimes the situation affords the fearful person to run away from danger (e.g., when the person who makes us afraid is stronger and more dangerous), whereas in other cases the situation affords a less avoidant reaction (e.g., when the person who makes us afraid is weaker and less dangerous). Thus, the direct-cause perspective may benefit from examining how specific emotions produce particular behaviors according to contextual and situational affordances.

Conclusion

Our results suggest that the default assumption in social and personality psychology is that emotion is often the proximal cause of behavior and judgment, even though the empirical evidence for this assumption is weak. How people expect to feel may be an important factor in understanding their behaviors and judgments. We encourage researchers interested in emotion to shift some of their efforts into the study of anticipated emotion.

Declaration of Conflicting Interests

None declared.

Note

1 A list of studies included in the analyses is available from the corresponding author.

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