



Setting aside mood-biased thoughts and judgements: theory-based bias correction / *Apartar las opiniones y los pensamientos sesgados por el estado de ánimo: la corrección del sesgo basada en teoría*

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Abstract: When people perceive their thoughts and judgements as unduly affected by some biasing factor (in themselves or in the judgement setting), they often attempt to avoid or remove those biases. Theories describe different psychological mechanisms guiding these efforts. We review the primary theories of bias correction and focus on the use of naive theories of bias in attempts to form accurate assessments of judgement targets. One distinguishing feature of the theory-based correction approach is its ability to deal with corrections for contrastive biases (i.e., biases that lead judgements in a direction opposite to the meaning of the biasing factor). Another is that any perceived biasing factor can result in corrections, even when those factors are not easily mapped into the kinds of mental representation mechanisms that form the heart of alternative approaches. We use corrections for mood-based biases to illustrate the utility of the theory-based correction approach, even though many mood-based biases can be conceptualized in ways that fit alternative approaches to bias correction. Implications for correction of many potential types of biases are discussed.

Keywords: mood; emotion; assimilation; contrast; bias correction; naive theories

Resumen: Cuando las personas perciben que sus opiniones y pensamientos podrían verse excesivamente afectados por algún factor de sesgo (propio de sí mismos o del contexto del juicio evaluativo), suelen esforzarse por evitar o eliminar dichos sesgos percibidos. La literatura en este campo describe diversos mecanismos psicológicos para dirigir estos esfuerzos de corrección. En este artículo revisamos las principales teorías de corrección del sesgo y nos centramos en el uso de teorías ingenuas del mismo para tratar de

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formar valoraciones precisas sobre los objetos de juicio evaluativo. Una característica distintiva del enfoque teórico de la corrección del sesgo es su capacidad de predecir la corrección por contraste (es decir, sesgos que producen juicios en una dirección opuesta al significado del factor causante del sesgo). Otra característica es que cualquier factor de sesgo percibido puede llegar a provocar correcciones incluso cuando dichos factores no se corresponden fácilmente con el tipo de mecanismos de representación mental que forman el núcleo de los enfoques teóricos alternativos. Para ilustrar la utilidad de este marco conceptual utilizamos las correcciones del sesgo causado por el estado de ánimo, aunque muchos de estos tipos de sesgo pueden conceptualizarse de manera que encajen también en otros enfoques diferentes a la hora de interpretar la corrección de sesgos. Por último, se discuten las implicaciones para diversos tipos de sesgos posibles.

Palabras clave: estado de ánimo; emoción; asimilación; contraste; corrección del sesgo; teorías ingenuas

People are easily and frequently biased by factors irrelevant to the judgements people are trying to make. For example, past studies have found that judgements can be contaminated by a large number of personal and contextual factors, such as primed concepts (Higgins, Rholes, & Jones, 1977; Martin, 1986; Srull & Wyer, 1979), previously encountered stimuli (Chien, Wegener, Hsiao, & Petty, 2010; Herr, 1989; Tormala & Petty, 2007; Wegener & Petty, 1995) or pre-existing beliefs or attitudes (Allport, 1954; Kaiser & Pratt-Hyatt, 2009). Moreover, past studies have demonstrated that people's judgements are easily affected by their moods or emotions incidental to the judgemental targets (Forgas & Bower, 1987; Gorn, Goldberg, & Basu, 1993; Petty, Schumann, Richman, & Strathman, 1993; Schwarz & Clore, 1983). Interestingly, it has also been found that, under some circumstances, people are able to remove the undue influences of moods from judgements. In some cases, such attempts lead to eliminations of the mood-based bias, but sometimes people 'overcorrect', leading to reversals of the mood effects (e.g., Gorn et al., 1993; Ottati & Isbell, 1996; Schwarz & Clore, 1983). The current article discusses the underlying processes of people's attempts to correct the affective biases in their target judgements. We will note potential mechanisms for creating affective biases, discuss the different bias-correction models and illustrate the utility of a theory-based correction approach to deal with such corrective attempts.

A person's mood has been generally found to produce assimilative biases in judgements such that positive mood leads to more favourable judgements than negative mood (for reviews, see Clore, Schwarz, & Conway, 1994; Gardner, 1985; Petty, Fabrigar, & Wegener, 2003). Early researchers guided by classical conditioning notions suggested that mood could influence attitudes by a relatively simple association with the attitude object (e.g., Janis, Kaye, & Kirschner, 1965; Razran, 1940). That is, repeatedly pairing an attitude object with stimuli that elicit positive feelings creates more favourable attitudes towards the attitude object than when the same object is paired with stimuli eliciting negative feelings. As the cognitive revolution in psychology took hold,

researchers suggested more cognitive mechanisms where mood might prime mood-congruent material in memory and inhibit retrieval of mood-incongruent material from memory (Forgas & Bower, 1987; Isen, Shalke, Clark, & Karp, 1978). From this cognitive viewpoint, the greater accessibility of the mood-congruent information enhances its use in judgements. Later researchers proposed that mood could influence attitudes by treating feelings as informative of the object's qualities (i.e., an 'affect as information' approach; Schwarz & Clore, 1983; for a review, see Clore et al., 1994). According to this approach, people often assess the attitude object by asking themselves, 'How do I feel about it?' When their feelings are consulted in this way, the feelings are misattributed to the attitude object. Accordingly, an experience of positive feelings while thinking about an attitude object is interpreted to mean that the object is likable and attractive, whereas an experience of negative feelings is interpreted to mean that the object is unlikable and unattractive.

Following from this affect-as-information perspective, one of the earliest notions for how 'correction' of mood effects might occur was to undermine the informative value of the feelings. As a result, when a person's mood is not perceived as relevant in assessing the quality of the attitude object, mood would not be used as an input in forming attitudes (e.g., Schwarz & Clore, 1983). In line with this notion, past research has reported that mood's assimilative effects are more pronounced for judgements of hedonic products, for which affective reactions towards the products are regarded as central information in assessing the product quality. However, mood's impacts are eliminated when people judge the quality of utilitarian products, for which affective reactions are perceived as irrelevant information (e.g., Yeung & Wyer, 2004, or the *relevance* principle, Pham, 1998).

One interesting issue arising from such 'discounting' (ignoring) of 'uninformative' mood is that lack of use of mood should decrease mood-congruent effects but should not reverse them. For 'uninformativeness' of feelings to lead to overcorrection, it would imply that there has been some kind of 'over-subtraction' of reactions that were attributed to the feelings when those reactions had not actually stemmed from the feelings per se. Such processes are perhaps best described in later, more general models of correction that went beyond mood (i.e., the Set-Reset Model, Martin, 1986, and the Inclusion-Exclusion Model, Schwarz & Bless, 1992). A number of studies demonstrate such overcorrections (e.g., Berkowitz & Troccoli, 1990; Ottati & Isbell, 1996), but those researchers have tended to explain those corrections by suggesting that people hold naive theories or beliefs about the mood-based bias (cf. Petty & Wegener, 1993; Wegener & Petty, 1995, 1997). In the following sections, we discuss the various approaches to correction of perceived affective biases, especially identifying some contexts in which there might be greater utility of the theory-based approach.

Bias-correction models and research

In some settings, people may suspect that their judgements are being inappropriately influenced by irrelevant factors, and therefore, they attempt to adjust

their judgements in order to reach more accurate judgements. Over the past 25 years, various theories of bias correction have developed to address these types of situations. Bias-correction theories are generally categorized into two types. Partialling approaches suggest that ‘biased’ reactions are partialled out (subtracted) from reactions to the target when particular reactions are deemed as reactions to the context instead of to the target. A more recent and somewhat more general alternative is that corrections could be based on naive theories of bias that guide assessments of potential bias and efforts to control those perceived biases. In the sections to follow, we review the different types of theories and the affect-related empirical research that has used each type of theory as the backdrop for that research.

Partialling approaches

Early research on bias correction focused on the partialling or subtraction of reactions viewed as responses to the context rather than to the target. This type of correction process is primarily addressed by the set-reset (Martin, 1986; Martin, Seta, & Crelia, 1990) and inclusion-exclusion models (Schwarz & Bless, 1992, 2007). These models were initially designed to deal with biases created by primed concepts or categorization processes, respectively. They could also be applied to affective biases in that affective reactions to the target or evaluations of the target that are part of the target representation could be viewed as a reaction to the mood-related context instead of a reaction to the target per se. If so, these approaches would predict that people remove such reactions from the target representation, and if they overcorrect by removing reactions that are really reactions to the target itself, that could create contrast to mood rather than the typical (default) assimilation.

The set-reset model

In the set-reset approach, *setting* refers to the default treatment of reactions to both the target and context as if they were reactions to the target. Thus, affective reactions to a context like pleasant music would, by default, be attributed to the target (e.g., a consumer product; Gorn et al., 1993). Such default processes are hypothesized to take place when people are relatively unmotivated or unable to think carefully about the target. However, when motivation and ability are sufficiently high, then *resetting* can occur. That is, if the social perceiver identifies specific reactions (e.g., affective reactions) as being reactions to the context (e.g., the music) rather than to the target, s/he will ‘reset’ (i.e., partial out or remove) the reactions from the representation of the target. Thus, resetting also depends on the perceiver identifying their reactions as reactions to the context stimuli rather than the target (Martin, 1986). For example, in corrections for mood-based biases, some studies have brought attention to the mood (e.g., by being asked to rate the contextual stimuli), thereby prompting correction (e.g., Gorn et al., 1993). Because people can be confused over which reactions are reactions to the context versus the target, resetting can result in overcorrection when

some real reactions to the target are mistakenly attributed to the context and removed.

The inclusion-exclusion model

The inclusion-exclusion model (Schwarz & Bless, 1992, 2007) shares some features with the set-reset approach. Both models focus on one's representation of the target in memory and describe assimilation as resulting from a representation that contains elements of the target and the context. Both models also conceptualize subtraction of part of the representation as a mechanism to reduce assimilation or create contrast. According to the inclusion-exclusion approach, *including* context information into one's representation of the target results in assimilation, whereas excluding context information from one's target representation leads to contrast (Bless & Schwarz, 2010). Information can be excluded from one's representation of the target when the information fails to pass the relevance filter (i.e., when information is perceived as coming from a source other than the target, e.g., Strack, Schwarz, Bless, Kübler, & Wänke, 1993), the representativeness filter (i.e., when the information is perceived as atypical or not representative of the target) or the conversational norms filter (i.e., when the information is perceived as conversationally inappropriate to use, e.g., Schwarz, Strack, & Mai, 1991).

The inclusion-exclusion approach also differs from the set-reset approach in that excluded contextual information can be used as a standard of comparison against which the target is judged. When the excluded information is sufficiently extreme, judgemental contrast can result. This might be one possible mechanism for some previously observed contrastive effects of mood. For example, Dermer, Cohen, Jacobsen, and Anderson (1979) asked research participants to imagine themselves experiencing a series of negative life events (such as being severely burned). Afterward, ratings of their life satisfaction were more positive than those made by people who imagined a series of positive life events (such as imagining they were multimillionaires). If reactions to the hypothetical life events were excluded from their representations of their own lives and served as extreme standards of comparison, such exclusion could have created the contrast effects (cf., Chien et al., 2010; Herr, 1989; Herr, Sherman, & Fazio, 1983).

Theory-based correction

Researchers focusing on theory-based corrections assert that people tend to form lay beliefs about bias and use such beliefs or theories to guide their corrective attempts (Petty & Wegener, 1993; Strack, 1992; Wegener & Petty, 1997; Wilson & Brekke, 1994). The Flexible Correction Model (FCM) suggests that corrective processes are driven by social perceivers' use of naive theories. It proposes that people generate perceptions of the bias(es) at work, and they adjust their assessments in a direction opposite to the perceived direction of bias and in an amount commensurate with the perceived amount of bias (Wegener & Petty, 1995,

1997). The FCM posits that, for bias corrections to take place, ‘people should (1) be motivated and able to identify potentially biasing factors, (2) possess or generate a naïve theory about the magnitude and direction of the bias, and (3) be motivated and able to make the theory-based correction’ (Petty & Wegener, 1999, p. 59).

This approach differs from the partialling/subtraction theories in a number of respects. First, the FCM specifies different mechanisms. For example, the FCM relies on the impact of naive theories of the bias at work, whereas the partialling theories do not specify any role for such perceptions or beliefs. Also, the partialling theories focus assessments of individual reactions or pieces of information that are attributed to the context or fail a specific filter for that information. Such specific assessments might sometimes come into play, but the fact that people often encounter similar contexts repeatedly in their lifetime suggests that they might often form more general beliefs about how their perceptions and actions are influenced. Third, the partialling theories assume that the default (uncorrected) context effects are assimilation biases, whereas the FCM notes that the default biases can be either assimilation or contrast and can be generated by any of a number of processes. Fourth, the partialling approaches suggest that corrections (resetting or exclusion) move judgements away from the context (to reduce assimilation or create contrast). However, the FCM posits that corrections can move judgements either away from or towards the context, depending on whether people perceive the initial biases as assimilative or contrastive. In other words, the FCM assumes greater flexibility in both the direction of the initial bias and in the direction of the correction. Although recent discussions indicate that the exclusion process can sometimes become rather automatic, meaning that contrast can sometimes seem like a default context effect (Bless & Schwarz, 2010), the inclusion-exclusion model does not provide any explanation for how such default contrast effects might be corrected. In comparison, a key part of the theory-based corrections in the FCM were that they can account for corrections for both assimilative and contrastive biases (Petty & Wegener, 1993; Wegener & Petty, 1995, 1997).

A number of types of results support a role for theory-based correction (Wegener & Petty, 1995). For example, people correct when they hold a relevant theory of bias; however, they do not correct when no such theory exists (Szesny & Kühnen, 2004). It is important to note, however, that naive theories need not reflect the direction or magnitude of the actual bias (Wegener & Petty, 1997, 2001); inaccurate theories can lead to corrections that fail to remove the prevailing bias or that could even create the opposing bias (Wegener & Petty, 1997). Though less studied than the role of theories of bias in bias correction, the FCM also specifies that corrections can be motivated by goals other than accuracy (such as a goal to uphold the law, Fleming, Wegener, & Petty, 1999, or to enhance one’s self esteem, McCaslin, Petty, & Wegener, 2010) and that judgements based on more effortful corrections might last longer over time, resist change and guide later judgements and behaviours better than judgements based on less effortful corrections (Wegener & Petty, 1997; for a recent review of theory-based correction, see Chien, Wegener, Petty, & Hsiao, 2014).

Mood correction and the relevance of theory-based corrections

Many previous studies reporting people's corrections for mood-based bias are potentially consistent with the partialling/subtraction models or with theory-based correction. That is, if corrections reduce or remove default assimilative mood effects in contexts where assimilative theories of bias might be held, either type of theory could potentially account for the effect. For example, McFarland, White, and Newth (2003) put participants in either a positive mood or a negative mood, and then participants' attention was either drawn to their mood (by selecting four mood adjectives from a list of 11 adjectives) or their attention was drawn away from their moods (by generating shorter words from longer words). Then participants were asked to judge target persons with ambiguous behavioural descriptions. Their judgements showed that mood-inattentive participants revealed mood's typical assimilative effects; however, mood-focused participants revealed no mood effects on judgements (see also Gorn et al., 1993; Schwarz & Clore, 1983).

In such studies, the reason for reduced or eliminated mood-based bias could be because participants subtracted affective reactions from the target representation (consistent with the partialing/subtraction approaches) or because participants perceived their mood as potentially producing biases in judgements and they corrected judgements in a direction opposite to their perceived biasing directions (consistent with the theory-based correction approach).

Theories of bias predicting corrections

The potential for either type of theory to account for such results makes it all the more important to produce data uniquely consistent with one correction approach or another. Fortunately, some research has especially examined the relevance of the theory-based correction approach to these domains. For example, Liu (2004) conducted a pair of studies in which potential corrections for mood-based bias were examined in persuasion settings. In both studies, in an initial session, attitudes towards the focal issue and theories of bias were measured (regarding impact of negative mood on persuasiveness of a message). A week later, participants were placed in a negative mood, and negative music was played in the background while the persuasive message was encountered. All participants read a persuasive message containing two weak and two strong arguments in order to encourage the possibility of mood-based biases even if message processing was relatively high (cf. Chaiken & Maheswaran, 1994; Petty et al., 1993).

In one study, an explicit warning about possible mood-based bias was provided before the message, after the message or not at all, whereas in the second study, all participants received the warning before the persuasive message. Across both studies, results showed a significant negative relation between theories of bias and attitude change (i.e., more negative perceived mood-based bias related to more positive attitude change) only when warned about mood-based bias before the message and experiencing a strong negative mood prior to reading the message. No such relation occurred when not warned

of mood-based bias or when warned only after the message. Also, theories of mood-based bias either did not predict attitude change or related positively with attitude change when experiencing a weaker version of the negative mood (consistent with lack of theory-based correction when the experience did not fit the theory of bias). The significant negative relations between theories of bias and resulting attitude change would only be predicted by the theory-based approach to correction. The sample sizes in the Liu (2004) studies were small by today's standards, so additional research is clearly needed, but they suggest that theories of mood-based bias may play a key role in at least some attempted corrections for mood-based biases.

Corrections for shifts in mood

In addition, recent research by Chien, Hsiao, Wegener, and Petty (2019) has examined implications of theory-based correction not only for potentially biasing mood states but also for potentially biasing shifts in mood. Shifts in mood set up potentially interesting contexts where perceived biases might diverge from the states people experience when making target judgements. For example, if current feelings are neutral, the various mechanisms described earlier would predict little if any effect of feelings on target judgements. Yet, the shift itself might be viewed as associated with its own bias. Similar to removal of electric shock being rewarding (Zanna, Kiesler, & Pilkonis, 1970), if mood shifts from negative to neutral prior to viewing a target advertisement, social perceivers might view the positive shift in feelings as creating a potential positive bias on judgements. Recent research by Chien et al. (2019) suggests that people do, in fact, perceive such mood shifts as potentially biasing in the direction of the shift. That is, when made aware of potential feelings-related bias (e.g., by a tagline in the ad; cf. Chien & Hsiao, 2015) corrections shifted judgements in a direction opposite to the direction of the shift (i.e., corrections towards more negative judgements if the shift in mood went from negative to neutral; corrections towards more positive judgements if the shift in mood went from positive to neutral).

As mentioned earlier, previous research has identified incidental moods as having greater impact on judgements of hedonic products rather than utilitarian products (Adaval, 2001; Avnet, Pham, & Stephen, 2012; Yeung & Wyer, 2004). Consistent with perceiving feelings as more appropriate inputs to relatively hedonic judgements but perceiving feelings as relatively inappropriate inputs for more utilitarian judgements, Chien et al. (2019) also predicted and found that corrections for mood-related bias were consistently greater for relatively utilitarian rather than hedonic judgements. This pattern was true regardless of whether the more utilitarian judgements reflected evaluations of relatively utilitarian products, reflected evaluations of relatively utilitarian features of a target product or reflected evaluations of a target product after being primed to consider mostly utilitarian rather than hedonic criteria for judgement.

Stronger corrections when making utilitarian-oriented assessments (for which people might perceive affective reactions as irrelevant and biasing) than when

making hedonically oriented assessments (for which affective reactions were often regarded as relevant to making the judgement) create some interesting comparisons. For instance, such a pattern is somewhat ironic in that the greatest corrections might be most likely for judgements that generally show the least default biasing influence of mood. Consistent with the theory-based approach, these results reflected that people are more motivated to correct for influences that are viewed as illegitimate or inappropriate (Petty & Wegener, 1999; Wegener & Petty, 1997). For a given biasing factor being made salient, people might generate different theories about its potential biasing impact depending on different types of judgements or situations. Perceiving substantial assimilative biases and correcting them in settings where default judgements which are actually free from bias is likely to produce contrast effects (due to overcorrection).

To the extent that the partialling/subtraction models of bias correction would rely on affective reactions that overlap with current mood states, it would become difficult for those theories to account for corrections for shifts in mood that end in neutral states. If people view the shifts in feelings as having implications for judgement (similar to shifts in states being rewarding or punishing), however, a theory-based correction perspective would have little difficulty mapping the perceived biases into the observed corrections. Another interesting open question concerns whether corrections for current mood states reflect perceived biases of those moods per se or biases from a shift out of the typical (neutral) mood and into the state in place at the time of judgement. One way to examine such corrections might be to separately measure theories of bias for current states and for mood shifts and use both to predict observed corrections.

Future research on corrections for mood-related biases

Investigating corrections for affective biases represents a promising and interesting avenue for future research, because affective biases come in different forms and in different types of judgements and judgement settings. These different types of mood effects might place interesting limits on what kinds of corrections take place and are effective.

The different forms of mood effects might be arrayed along an elaboration continuum (determined by social perceivers' levels of motivation and ability to think carefully about judgement-relevant information). Under low levels of elaboration (when either motivation or ability to think is lacking), people might use their moods as heuristic cues (using a 'How do I feel about it?' heuristic or more directly associating feelings with the judgement target: Petty et al., 1993; Schwarz & Clore, 1983; Zanna et al., 1970). In contrast, under high levels of elaboration (i.e., high motivation and ability to think), feelings can serve as arguments (if the central merit of the object is to create particular feelings in the perceiver: e.g., Martin, Abend, Sedikides, & Green, 1997). In such high-elaboration settings, feelings can also bias processing of judgement-relevant information. For example, positive feelings can create more positive

thoughts (Petty et al., 1993; cf. Forgas' 1994 notion of 'affect infusion') and, ultimately, more persuasion than negative feelings when a message suggests that an advocated action will result in desirable consequences (Wegener, Petty, & Klein, 1994). Interestingly, similar mechanisms can also lead to greater persuasion when experiencing negative feelings when a message suggests that failing to act will bring about undesirable consequences (Wegener et al., 1994) or specifically angering or saddening consequences (DeSteno, Petty, Rucker, Wegener, & Braverman, 2004). In addition, when mood or emotion is experienced after judgement-relevant thoughts have been generated, positive mood can validate those thoughts, leading to greater use of the thoughts in forming summary judgements (e.g., Briñol, Petty, & Barden, 2007). It is not only positive feelings, however, as anger or disgust can also validate thoughts given the proper focus on appraisals of confidence or on appraisals of pleasantness (i.e., liking of thoughts, Briñol et al., 2018).

Though not previously addressed in corrections for mood- or emotion-related biases, some previous research suggests that corrections might occur more for relatively non-thoughtful biases than for more thoughtful (high-elaboration) biases (Wegener, Clark, & Petty, 2006). Even outside of affective (mood- or emotion-based) biases, little attention has been given to different types of processes that might underlie high-elaboration biases. Yet, it could be that different mechanisms potentially responsible for biases created by moods or emotions might create different levels of susceptibility to efforts to correct for those biases. We look forward to future research examining when and how people perceive their affective reactions as biasing and engage in attempts to correct those biases. Such research may provide fruitful insights to mood effect as well as bias-correction literature.

In addition to the various thoughtful or non-thoughtful mechanisms potentially responsible for effects of moods or emotions, there are also various mechanisms that might be responsible for effects of feelings on where people fall on the elaboration continuum itself. When background levels of elaboration are not constrained to be high or low, people might process information in a way to attempt to manage their moods (Wegener, Petty, & Smith, 1995), or mood-based expectancies might increase processing of mood-incongruent material because of surprise at the valence of the information (e.g., Ziegler, 2013; see Ziegler, Schlett, & Aydinli, 2013 for data on proper domains for effects of mood management versus mood-based expectancies). Also, perceiving affect as informative about the qualities of current mental contents or mental processes can lead to continued use of those mental contents or processes (Huntsinger, Isbell, & Clore, 2014; Isbell, Lair, & Rovenpor, 2013). Little work has examined whether or when such influences of feelings on amount of thinking are viewed as creating mood-related biases, and efforts at correction of such effects might take rather different forms than corrections aimed more directly at valenced/directional biases per se.

Even within the directional biases, much can be done to distinguish theory-based corrections from other kinds of corrections. For example, because most

mood bias-correction studies to date have focused on examining corrections for assimilative biases and few studies have included measures of naive theories of bias to account for the observed corrections, it has been hard to disentangle which findings might involve partialling of specific thoughts or reactions out of target representations and which might involve theory-based corrections. Future research investigating corrections for contrastive biases or those that measure theories of bias and link such theories with observed corrections will help to further demonstrate the relevance of theory-based correction mechanisms.

To date, studies examining corrections for mood-based biases have not distinguished between motivation and ability to identify the bias from motivation and ability to make corrections. Partly, this is because experimenter-provided instructions not to be biased would likely confound motivation to identify bias and motivation to make corrections (see Wegener & Petty, 1995, 1997). Although some previous studies found corrections without using such explicit instructions, they generally examined only the high versus low motivation to make corrections or to think carefully about the target, given that participants were exposed to blatant biasing factors (e.g., Kang & Herr, 2006; Martin et al., 1990). Whether increasing motivation or ability to make corrections (or to think more carefully) also increases the motivation to identify the bias or vice versa remains unclear. Future research can focus on examining the distinctiveness of bias identification and the actual corrections by simultaneously manipulating and examining the effects of motivation (or ability) to identify the bias as well as the motivation (or ability) to make corrections.

It will also be useful and interesting to explore the possible moderators for the activation of correction processes. Under some circumstances, it seems possible that people, even though being reminded of the potential bias and holding high motivation to make decisions, do not engage in any corrections because they perceive the bias as a 'legitimate bias' (Petty & Wegener, 1999). For example, as in the study by Chien et al. (2019), when mood was perceived as a central, diagnostic piece of information (when making hedonic-oriented assessments), people did not correct even though they had been reminded of the potential of mood-related bias prior to target assessments. Future research can focus on investigating under which conditions people perceive a potential biasing factor (such as mood) as biasing and when they do not. For example, possession of related knowledge supporting the biased view might make the view seem more legitimate and, therefore, less 'biased'.

Though correcting for potential bias has been generally regarded as a controlled, conscious process that requires sufficient cognitive resources to take place (like many forms of meta-cognition; see Petty, Briñol, Tormala, & Wegener, 2007 for a review), it seems that, under some conditions, corrections can become less effortful, more automatic and more routinized (e.g., Chartrand, Dalton, & Fitzsimons, 2007; Glaser & Banaji, 1999; Maddux, Barden, Brewer, & Petty, 2005). For example, when people acquire richer knowledge and experiences with persuasive tactics, it is possible that a once conscious correction process could be activated automatically upon exposures to the tactics. For

instance, Laran, Dalton, and Andrade (2011) reported that although encountering brand names caused priming effects such that consumers behaved in consistency with the implications of the brand name, slogans caused reversed priming effects such that consumers behaved as opposed to those implied by the slogans. This is presumably because consumers perceived slogans, which have been frequently used by marketers, as persuasion tactics and automatically activated correction processes to remove their influences. Previous research has also found that flattery in sales contexts is generally met with resistance and can even produce automatic negative evaluations (Campbell & Kirmani, 2000; Chan & Sengupta, 2010). Future research would benefit from exploring the many conditions under which corrections might be activated or even operate in a non-conscious manner.

Finally, as briefly discussed by Wegener and Petty (1997, p. 152), corrections might also be 'preemptive', in that people might anticipate a bias and seek to avoid it. When dealing with mood, this idea would suggest that people might attempt to strategically alter their mood (or their shifts in mood) if they wish to avoid an anticipated and undesired bias. Little research directly addresses such possibilities, but some research does suggest that people strategically regulate their moods to match the demands of an upcoming task (e.g., choosing to get out of a negative mood if an upcoming task required creativity; Cohen & Andrade, 2004). To the extent that mood-linked creativity or analysis (or avoidance of mood-based impulsivity; Cohen & Andrade, 2004) can be viewed as mood-based biases, this research is consistent with potential 'preemptive' corrections for anticipated biases. The motives potentially underlying such effects might also be linked to performance-based motives for mood regulation (e.g., if avoiding mood-based bias is viewed as improving performance) or to epistemic motives for mood regulation (e.g., if mood-based biases are viewed as reducing epistemic accuracy; Tamir, 2016). We look forward to greater future attention to potential anticipatory instances of bias correction.

de ánimo de manera estratégica (o sus cambios de estado de ánimo) si desean evitar ciertos sesgos anticipados no deseables. Se han realizado muy pocos estudios sobre esta posibilidad, pero algunos de ellos sugieren que las personas regulan su estado de ánimo estratégicamente para responder a las exigencias de la tarea (e.g., decidiendo deshacerse de un estado de ánimo negativo si la tarea requiere creatividad; Cohen & Andrade, 2004). En la medida en que la creatividad o el análisis vinculados al estado de ánimo (o el evitar la impulsividad relacionada con el estado de ánimo; Cohen & Andrade, 2004) pueden considerarse sesgos relacionados con el estado de ánimo, esta investigación es coherente con las posibles correcciones ‘preventivas’ por los sesgos anticipados. Los motivos que podrían subyacer tras estos efectos también podrían estar relacionados con motivaciones vinculadas al rendimiento (e.g., si evitar los sesgos relacionados con el estado de ánimo se percibe como una mejora del rendimiento) o con motivos epistémicos (e.g., si se considera que los sesgos relacionados con el estado de ánimo reducen la precisión epistémica; Tamir, 2016). Esperamos que en el futuro se preste mayor atención a las correcciones debidas a la anticipación de posibles sesgos.

Disclosure statement

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