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The impact of hope and hopelessness on evaluation: A meta-cognitive approach

Blanca Requero[1] | Pablo Briñol[2] | Richard E. Petty[3]

[1]Department of Psychology, Universidad Villanueva, Madrid, Spain

[2]Department of Psychology, Universidad Autónoma de Madrid, Madrid, Spain

[3]Department of Psychology, Ohio State University, Columbus, OH, USA

Correspondence
Blanca Requero, Department of Psychology, Universidad Villanueva, Calle de la Costa Brava, Madrid, 28034, Spain.
Email: brequero@villanueva.edu

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Abstract

This research provides a novel analysis of the impact of hope and hopelessness on judgment, examining how they influence the use of judgment-relevant thoughts. Hope and hopelessness are two ends of an emotional continuum for which the confidence and pleasantness appraisals are mismatched. That is, hope is appraised as a pleasant state that is associated with uncertainty. In contrast, hopelessness is appraised as an unpleasant state that is associated with confidence. The aim of this research is to show that these appraisals are critical for predicting how these emotions influence the impact of thoughts on attitudes. In three experiments we manipulated these emotions along with their appraisals and examined the impact on thought reliance and attitude change toward healthy and unhealthy foods, people with disabilities, and self-evaluation. It was predicted and found that when a pleasantness appraisal was salient, hope increased the use of thoughts relative to hopelessness. In contrast, when a confidence appraisal was salient, hopelessness increased the use of thoughts compared to hope.

KEYWORDS

appraisal, attitudes, hope, hopelessness, persuasion, validation

1 | INTRODUCTION

1.1 | Valence associated with hope and hopelessness

The current work examines two appraisals that can be made of hope versus hopelessness and how these different appraisals can play a critical role in influencing the attitudes people form in response to a persuasive message. Most prior research on hope and hopelessness has focused on the valence (positive vs. negative) appraisal and outcomes associated with these emotional states (e.g., Elster, 1998; Forgas, 1995; Higgins, 1997). In the case of hope, research has shown that it is experienced as a pleasant emotion that leads individuals to approach and stay committed to achieving their desired outcomes (Lazarus, 1999; Luo et al., 2020; MacInnis & Mello, 2005). This emotion encompasses optimism and positive future expectations (Scioli et al., 1997; Smith et al., 1993). Hope is associated with good health, coping with physical illness, and with overall psychological adjustment (Feldman & Snyder, 2005; Irving et al., 1998; Kwon, 2002; Snyder et al., 2000). Moreover, hope is a key element in many psychological therapies designed to help people feel better (Cheavens et al., 2006; Klausner et al., 2000). Beyond positive health outcomes, higher levels of hope also correspond with better academic performance (Gilman et al., 2006; Snyder et al., 2002) and athletic performance (Curry & Shyder, 2000; Curry et al., 1997). Furthermore, hope is an important factor driving positive change in group conflict resolution processes (Cohen-Chen et al., 2014, 2015; Leshem et al., 2016).

In contrast, hopelessness is experienced as an unpleasant emotion associated with negative beliefs about the self, pessimistic views of the world and the future (Beck et al., 1974), as well as dysfunctional patterns of responding (Beck et al., 1993; Fawcett et al., 1987; McCranie & Riley, 1992). This emotion leads to a large number of negative outcomes, such as motivational deficits (i.e.,

passivity and reduced persistence), cognitive deficits (i.e., difficulty in concentration, inability to perceive an existing opportunity to control outcomes), and lowered self-esteem (Abramson et al., 1978, 1989; Seligman, 1975). Indeed, prolonged exposure to hopelessness creates conditions that promote unhealthy coping mechanisms and the development of mental illnesses of varying degrees of negative affect, ranging from mild dysphoria to depression (see e.g., Alloy et al., 1992, 1997, 1999; Alloy & Clements, 1998; Metalsky & Joiner, 1992, 1997). Furthermore, hopelessness has a detrimental effect on academic performance (Au et al., 2009) and athletic performance (Grove et al., 1991; Gustafsson et al., 2010). Regarding group conflicts, hopelessness is associated with a perception of conflict as irreconcilable and unchanging, meaning that it can never be resolved peacefully (Miller & Roloff, 2006; Miller et al., 2014).

1.2 | Hope and hopelessness: Appraisals beyond valence

Cognitive-appraisal theories propose that emotions vary on appraisal dimensions beyond valence, and each emotion may activate "appraisal tendencies" that predispose individuals to act in specific ways (Ellsworth, 2013; Ellsworth & Smith, 1988; Smith & Ellsworth, 1985). Although as noted, hope is a pleasant emotion, it is also associated with the appraisal dimension of uncertainty. Indeed, to experience hope, individuals must appraise the desired outcome as possible, but not certain (Bury et al., 2016, 2019; MacInnis et al., 2004; Snyder, 2002). That is, the uncertainty factor is a characteristic that differentiates hope from mere desire. More specifically, Averill et al. (1990) found that the most common factor linked to hope was changes in perceptions of uncertainty. Conversely, hopelessness is an unpleasant emotion that is associated with a high degree of certainty about the negative expectations (Alloy et al., 1990). That is, there is a strong belief that aversive outcomes will occur or that highly valued outcomes will not occur (Abramson et al., 1989; Alloy et al., 1990; Andersen, 1990; Mehu & Scherer, 2015; Miranda & Mennin, 2007). In sum, hope, although pleasant in valence, is associated with doubt, whereas hopelessness, although unpleasant in valence, is associated with confidence.[1]

This appraisal-tendency perspective explains why emotions of the same valence (e.g., fear and anger) can have quite different effects on information processing and judgment, whereas emotions with different valence (e.g., anger and happiness) can have similar effects depending on the circumstances (Lerner & Keltner, 2000, 2001). We concur with this appraisal tendency framework (Lerner et al., 2015), which holds that appraisals are important and consequential when comparing different emotions, but we also introduce some important novelties such as arguing that different appraisals can be relevant when varied within the same emotion. In the current research, we focus on the differential role of the pleasantness and confidence appraisals within the emotions of hope and hopelessness and explain how these appraisals can affect thought use and judgment.

1.3 | Pleasantness and confidence appraisals of emotion and thought usage

Our overall validation framework holds that having thoughts is not sufficient for them to have an impact on judgment and behavior. Rather, one must also think that those thoughts are valid in order to *use* them (Petty et al., 2002). Furthermore, our differential appraisals hypothesis (Briñol et al., 2018) holds that hope and hopelessness are likely to produce different effects on thought usage and judgment as a function of the particular appraisal of the emotion that is salient at the time at which one's thoughts are considered. We focus on the pleasantness and confidence appraisal dimensions of these emotions because, according to the self-validation theory, people are likely to use their thoughts when they are perceived to be correct (i.e., high confidence) and when they feel good about them (i.e., high pleasantness). *Affective validation* occurs when people use their thoughts because they feel good about them or like them (see Clore & Huntsinger, 2007; Huntsinger et al., 2014; Petty & Briñol, 2015). *Cognitive validation* occurs when people use their thoughts because they have confidence in them and believe they are valid or correct (e.g., Briñol & Petty, 2003; see Briñol & Petty, 2009). As thought validity increases, so too does the influence of those thoughts on subsequent judgments.

Although self-validation is a comprehensive paradigm that addresses the important distinction between having thoughts and using them (linked to primary vs. secondary cognition; Briñol & DeMarree, 2012; Jost et al., 1998), it is not the only framework emphasizing that difference. For example, Alter and Oppenheimer (2009) brought together a wide array of manipulations related to the fluency/disfluency dimension, and showed how this dimension could affect thought use (i.e., fluent thoughts used more than disfluent ones; e.g., Tormala et al., 2002). Huntsinger et al. (2014) organized a diverse set of treatments related to the positive/negative emotion dimension and showed how they could influence the use of thoughts and thought processes (i.e., positive emotions leading to more thought use than negative ones; e.g., Briñol et al., 2007). Bernstein et al. (2015) integrated a variety of approaches that use mindfulness and distance inductions to reduce the impact of thoughts. We have followed self-validation theory (SVT; Briñol & Petty, 2009; Petty et al., 2002) in making predictions about these and other variables because SVT is an even more general framework that brings together a broad coalition of variables capable of affecting thought reliance, including fluency (Briñol et al., 2013), mindfulness (Luttrell et al., 2014), and embodied inductions (Briñol et al., 2012) under one conceptual, unifying umbrella. Most relevant to the present research, SVT is unique in distinguishing between using thoughts

[1]We use the terms confidence and certainty interchangeably. This equivalence is common in the literatures on attitude strength (Krosnick & Petty, 1995) and self-validation (Briñol & Petty, 2009) where the key issue is how confident, certain, or sure people are in the validity of their thoughts and attitudes.

because they are correct or using thoughts because they feel good (Briñol et al., 2018; Petty & Briñol, 2015).

The present work proposes that people can be induced to appraise the emotions of hope or hopelessness along either a pleasantness or confidence dimension, after which those appraisals (e.g., the emotion feels pleasant or the emotion makes me feel confident) are misattributed to any mental content in mind at the time (I feel good about my thoughts or I feel confident in my thoughts). When the pleasantness appraisal of the emotion is misattributed to the thoughts it results in affective validation. That is, thoughts that are associated with pleasantness (vs. unpleasantness) are liked (vs. disliked) and are more impactful in guiding judgment. If an individual is focused on the appraisal of pleasantness/unpleasantness, then feeling hope is expected to lead to more thought use than hopelessness because the former emotion should enhance perceptions of feeling good about or liking one's thoughts compared to the latter emotion. Similarly, when the confidence appraisal of the emotion is misattributed to the thoughts it results in cognitive validation. That is, thoughts held with confidence (vs. doubt) are also more consequential in determining judgments. Thus, if an individual is focused on the appraisal of confidence/doubt, then experiencing hopelessness is expected to lead to more thought use than hope because the former emotion is associated with more confidence than the latter one and thus should enhance the perception of the validity of one's thoughts. Thus, hope versus hopelessness have opposite effects on thought use depending on whether people appraise the emotions in terms of the pleasantness/unpleasantness dimension or the confidence/doubt dimension.

1.4 | Prior evidence for differential appraisals in thought use

In order to examine whether validation can occur via either cognitive or affective routes, a recent paradigm has examined inductions that have the potential to differentially affect confidence and pleasantness appraisals. Specifically, Briñol et al. (2018) showed that discrete emotions such as anger and surprise can affect the extent to which people rely on the thoughts they have previously generated depending on whether the emotion is appraised along the pleasantness/unpleasantness or confidence/doubt dimension. For example, when individuals were focused on the confidence/doubt appraisal of the emotion, then feeling anger led to more thought use than surprise because experiencing anger induced an appraisal of confidence that was misattributed to feeling sure about the accuracy or correctness of one's thoughts relative to surprise (cognitive validation). In contrast, when individuals were focused on the pleasantness/unpleasantness appraisal of the same emotions, then experiencing surprise led to more thought use than anger because experiencing surprise induced an appraisal of pleasantness that was misattributed to feeling good about or liking one's thoughts relative to anger (affective validation).

Greater use of thoughts was demonstrated by a larger impact of thought valence (positive/negative) on attitudes. For example, when using a confidence appraisal, angry individuals used their thoughts more than surprised individuals, which was demonstrated by a larger impact of thought valence on attitudes for those who were angry rather than surprised. However, when using a pleasantness appraisal, angry individuals used their thoughts less than surprised participants, which was demonstrated by a smaller impact of thought direction on attitudes among those who were angry rather than surprised. This research provided the first demonstration that discrete emotions that are independent of each other can lead to similar attitudes depending on the appraisal of the emotion that is salient. Instead of studying discrete emotions like anger and surprise, the present research examines two emotional states conceptualized as endpoints on a continuum, that is hope–hopelessness, and shows how these can either magnify or reduce thought use depending on the appraisal that is salient. Moving from discrete, independent emotions to this continuum of hope–hopelessness is important given that these affective states are present in many phenomena that are not necessarily considered emotional in nature, such as wishful thinking and pessimistic realism (Harris & Hahn, 2011; Shepperd et al., 2000; Vosgerau, 2010). Therefore, the present research has the potential to extend the differential appraisal paradigm beyond the domain of basic emotions.

1.5 | Extending the differential appraisals paradigm to the continuum between hope and hopelessness

In the present research, we rely on the differential appraisals paradigm to examine the implications of the certainty and pleasantness appraisals on two new emotions: hope and hopelessness. Although these emotions fall along the same continuum, in the present work we manipulated hope and hopelessness to be discrete (in a similar way as the previously described emotions). As in the case of anger and surprise, the emotions of hope and hopelessness are ones for which the confidence and pleasantness appraisal dimensions are mismatched. As noted, feeling hopeless is an unpleasant state associated with confidence (i.e., feeling certain that nothing can be done). Because of this, we reasoned that when a confidence appraisal was made salient, feeling hopeless would ironically enhance the impact of accessible thoughts on social judgments compared to feeling hope, a more pleasant but doubt-inducing emotion (Snyder, 2002). When the pleasantness appraisal is made salient, however, hope is expected to increase thought reliance compared to hopelessness, because hope has a more positive evaluation on this dimension. As noted, this differential appraisal framework has the potential to moderate the impact of psychological states such as hope–hopelessness that can go beyond the discrete emotions previously studied.

1.6 | Overview

In each of the three experiments that follow, we varied whether participants experienced hope or hopelessness following the

generation of positive or negative thoughts, but also manipulated participants' focus on different aspects of their emotions to vary whether they were likely to assess their emotional state via a confidence/doubt appraisal or a pleasantness/unpleasantness appraisal. After listing their thoughts about the attitude object, participants in each study received the emotion induction. Following past literature, we used a procedure that required participants to recall past episodes in which they experienced a specific emotion (e.g., DeSteno et al., 2000; Lerner & Keltner, 2001). This research deals with incidental and transitory emotions (rather than with chronic states of hopelessness that are present in depression or hope that is present in illusory optimism). That is, these emotions can be evoked momentarily by thinking about past experiences in which they were felt. Importantly, our focus was on which particular emotion was induced rather than on how that emotion was induced. Our expectation was that the emotions reported by participants would not vary as a function of the appraisal induction, rather only as a function of the emotion induction.

Finally, participants were exposed to the appraisal manipulation. Different inductions were used to lead people to focus on a specific appraisal of the emotion they were experiencing (i.e., pleasantness or confidence). As noted, after leading people to focus on a particular appraisal of the induced emotions, we did *not* expect to change the experience of the emotions per se, but rather to change whether the induced emotion was associated with reliance on thoughts or not. In sum, our research focuses not on how appraisals determine emotions or on how appraisals affect the amount of thinking, but rather on how appraisals of emotions can affect thought reliance (see the Supporting Information for complete details about the manipulations).

Our hypothesis is that when participants are led to focus on the confidence/doubt appraisal of their emotion, then feeling hopelessness should lead to more thought use than feeling hope. This is because in the confidence appraisal condition, experiencing hopelessness should induce an appraisal of higher confidence than hope, which may lead to feeling more certain about the accuracy or correctness of one's thoughts, thereby enhancing their use (cognitive validation). In contrast, when participants focus on the pleasantness/unpleasantness appraisal of emotion, then experiencing hope should induce an appraisal of more pleasantness than hopelessness, which may result in feeling better about or greater liking of one's thoughts, thereby enhancing their use (affective validation).

2 | EXPERIMENT 1

Experiment 1 was designed to examine whether hopelessness and hope can influence attitudes by validating or invalidating one's thoughts depending on which appraisal (pleasantness or confidence) of the induced emotions was made salient. Participants were first asked to think of positive or negative thoughts about different types of diets. We chose this topic because understanding how attitudes toward diets can be changed is a critical step in developing healthy habits. That is, many initiatives are designed to promote positive attitudes toward healthy diets (Cuschieri & Mamo, 2016; Hebden et al., 2012) while reducing the positive attitudes people hold toward unhealthy foods (Roberto & Kawachi, 2014; Teixeira et al., 2015). Furthermore, people may naturally feel hope or hopelessness following consideration of their diets. In this experiment, participants were requested to generate positive or negative thoughts about one of two diets: a healthy diet (i.e., the Mediterranean diet, Experiment 1a) or an unhealthy diet (i.e., fast food diet, Experiment 1b).

Following the thought valence manipulation, participants were assigned to write about personal episodes in which they felt hopelessness or hope. After completing both inductions, we varied which appraisal was salient. Appraisals were induced in two different ways: indirectly, by priming confidence versus pleasantness (e.g., by completing general words related to a pleasantness appraisal or a confidence appraisal, Experiment 1a) and directly (e.g., by asking questions about one appraisal but not the other, Experiment 1b). We included two versions of the induction to increase generalizability across manipulations. What matters for our research is which appraisal of the emotion dominates when participants are considering their thoughts to guide their evaluations. It was expected that these two types of induction (indirect and direct) would work similarly when making salient the pleasantness or confidence appraisal of the emotions just experienced. Finally, attitudes toward the type of diet were recorded. Given that we did not expect differences as a function of topic or type of induction, we collapsed the data from Experiments 1a and 1b while accounting for experiment as a factor in the analyses. As explained above, we predicted different thought use patterns depending on the emotion induced and its appraisal. In short, we expected a three-way interaction of Thought Valence, Emotion, and Appraisal on attitudes toward the corresponding diet. This effect was expected regardless of whether subjects participated in Experiment 1a or 1b.

In addition to examining thought use by looking at what judgments are formed, another way to examine thought use commonly employed in validation studies is to examine the correlation between valenced thoughts and attitudes (Briñol & Petty, 2009). Specifically, the more people are relying on their thoughts, the larger the correlation should be between valenced thoughts and attitudes. Thus, in addition to looking at what attitudes were formed in the different conditions, we examined the valenced thought–attitude relationship across the predicted validation (i.e., hopelessness in the confidence appraisal condition and hope in the pleasantness appraisal condition) and invalidation (i.e., hopelessness in the pleasantness appraisal condition and hope in the confidence appraisal condition) conditions.

2.1 | Method

2.1.1 | Participants and design

Participants were 340 undergraduate students (42 males, 297 females, and one gender-unidentified participant, M_{age} = 19.98;

SD = 3.03) from a large university from the EU. The design was a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) × 2 (Experiment: 1a vs. 1b) between-subjects factorial. Participants were randomly assigned to the first three variables.[2] We did not expect the three-way Thought Valence × Emotion × Appraisal interaction to be moderated by the experiment. The operationalization of these three variables was varied for generalization purposes.

A power analysis was conducted using G*Power (Faul et al., 2007). We could not look at prior work to obtain an estimated effect size for the predicted interaction between Thought Valence, Appraisal, and Hope/Hopeless emotions because no prior research on self-validation had examined these two emotions. Thus, we planned for a generic relatively small effect (Cohen's $f = 0.15$; Cohen, 1988). Results indicated that the desired sample size across the Experiments 1a and 1b for a two-tailed test ($\alpha = .05$) of the predicted three-way interaction with 0.80 power was $N = 351$ participants. Our final sample was close to that estimation and contained $N = 340$ participants. All subjects, manipulations, and measures are reported.

2.1.2 | Procedure

Upon arrival, participants were told that they were going to be involved in two separate projects. Specifically, they were told that the first study was about eating habits, whereas the second was about the way people remember past personal episodes. For the first part of the session, participants were asked to list either positive or negative thoughts about a diet: the Mediterranean diet (Experiment 1a) or the fast food diet (Experiment 1b). Following this Thought Valence manipulation, participants were assigned to write about a personal episode in which they felt either hopelessness or hope. After writing the emotion-induction essay, participants were assigned to either the pleasantness or confidence appraisal condition as explained below. Finally, participants reported their attitudes toward the corresponding diet, then were debriefed, thanked, and dismissed.

2.1.3 | Independent variables

Type of diet/study

Participants were required to write down thoughts about the Mediterranean diet (Experiment 1a) or the fast food diet (Experiment 1b).

Thought valence

Participants were asked to write up to five either positive or negative thoughts in boxes provided regarding the fast food diet or the Mediterranean diet.

Emotion

After listing their thoughts, in an ostensibly unrelated study, participants were asked to think about a recent occasion when they felt either hopelessness or hope. Specifically, participants were asked to write a brief essay summarizing the hopelessness- or hope-inducing event.

Appraisal

Following the emotion induction, participants were assigned to a direct or an indirect appraisal induction. In Experiment 1a (Mediteranean diet), participants were asked to fill in the missing letters in a word-completion task. This induction was designed to influence the specific aspect of the emotion on which participants would focus (i.e., pleasantness appraisal or a confidence appraisal). Thus, participants were required to fill in the missing letters of words that were related to pleasantness and affect more generally (e.g., pleasant, feel) or words that were related to confidence and cognition more generally (e.g., certainty, thought). In Experiment 1b (fast food diet), participants were asked questions about the personal episode they previously wrote. Those questions were related to how pleasant or confident they had felt. Both inductions of appraisal were intended to isolate the different appraisals we have argued are responsible for the thought validation effects by focusing participants on the appraisal dimension of interest. We expected that the two types of induction (direct and indirect) would work similarly when making salient the pleasantness or confidence appraisal (see the online Supporting Information for full details).

2.1.4 | Dependent measures

Manipulation check for thought valence

Two independent judges coded the valence of participants' thoughts as favorable, unfavorable, or neutral (i.e., irrelevant) regarding the proposal, while blind to experimental conditions (e.g., see Cacioppo et al., 1981; Petty & Cacioppo, 1986; for a description and discussion of the "thought listing" technique). Judges agreed on 80.3% of the thoughts and disagreements (19.7%) were resolved by discussion. Based on the coding assigned by the independent raters, an index of the valence of thoughts was created for each participant.[3] This measure served as a Thought Valence manipulation check (see also, Briñol et al., 2018; Gandarillas et al., 2018; Requero et al., 2020).

Attitudes

Participants were asked to indicate their attitudes toward the diet on a series of three 9-point (1–9) semantic differential scales (i.e., good–bad, like–dislike, and positive–negative). These items have previously

[2]The studies (1a-Mediterranean Diet and 1b-Fast Food) were conducted in sequence. A first block of 215 participants was randomly assigned to the conditions of Experiment 1a. Following this block, a second group of 125 participants was randomly assigned to the conditions of Experiment 1b.

[3]The index was created using the following formula: Thought Favorability = (Number of favorable thoughts − Number of unfavorable thoughts)/Total number of thoughts. Scores on this index ranged from −1 (i.e., all thoughts were unfavorable) to 1 (i.e., all thoughts were favorable).

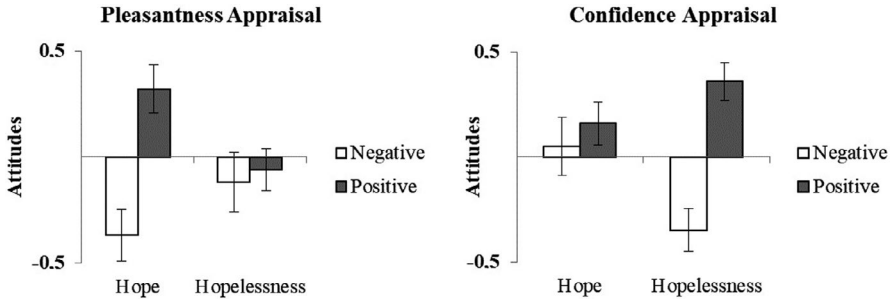

FIGURE 1 Attitudes as a function of Thought Valence, Emotion and Appraisal in Experiments 1a and 1b. Standardized evaluations. Error bars represent 95% confidence intervals.

been used for the same topic (Gascó et al., 2018). Ratings were intercorrelated (α = .82 for the Mediterranean diet; α = .66 for the fast food diet). Thus, attitudes were standardized within each topic and were then averaged to form an overall attitude index toward the corresponding diet. Responses were scored such that higher numbers reflect a more favorable attitude whereas lower numbers reflect a less favourable attitude.

2.2 | Results

2.2.1 | Manipulation check for thought valence

The thought valence index was submitted to a Thought Valence × Emotion × Appraisal × Experiment ANOVA. Results showed a significant main effect of Thought Valence, such that participants' thoughts were perceived as more favorable in the positive (M = 0.95, SD = 0.13) than in the negative thought condition, (M = −0.86, SD = 0.33, F(1, 324) = 3,630.794, p < .001, η_p^2 = 0.918). This confirms the success of the Thought Valence manipulation. As expected, there were no main effects of Emotion, Appraisal, or Experiment, and no additional interactions among these variables (ps > .117).

2.2.2 | Attitudes

Results of a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) × 2 (Experiment: 1a vs. 1b) ANOVA on attitudes revealed a significant main effect of Thought Valence, F(1, 324) = 12.877, p < .001, η_p^2 = 0.038, such that positive thoughts resulted in more favorable attitudes toward the diet (M = 0.20, SD = 0.84) than negative thoughts (M = −0.20, SD = 1.10). Most importantly, we observed a significant three-way interaction on attitudes, F(1, 324) = 8.866, p = 003, η_p^2 = 0.027, graphed in Figure 1.

As expected, decomposition of the three-way interaction showed that the pattern of results varied as a function of the appraisal type manipulation. In the pleasantness appraisal condition, a significant Thought Valence × Emotion interaction emerged, F(1, 324) = 4.187, p = .042, η_p^2 = 0.024, indicating that attitudes were more consistent with the direction of thoughts for hopeful than for hopeless participants. That is, participants in the hope condition had more favorable attitudes toward the corresponding diet when they had written positive thoughts (M = 0.33, SD = 0.80) than negative thoughts (M = −0.38, SD = 1.23), F(1, 324) = 9.904, p = .002, η_p^2 = 0.056. On the other hand, among participants in the hopelessness condition, there was no difference in attitudes between those who listed positive thoughts (M = −0.07, SD = 0.93) and those listing negative thoughts (M = −0.12, SD = 1.16), F(1, 324) = 0.060, p = .807, η_p^2 < 0.001.

In the confidence appraisal condition, a significant Thought Valence × Emotion interaction also emerged, F(1, 324) = 5.014, p = .026, η_p^2 = 0.029, but this interaction pattern was opposite to that in the pleasantness appraisal condition in that attitudes were more consistent with the direction of thoughts for hopeless than for hopeful participants. This interaction demonstrated that among participants in the hopelessness condition, those listing positive thoughts reported more favorable attitudes toward the corresponding diet (M = 0.37, SD = 0.84) than did those listing negative thoughts (M = 0.06, SD = 0.84), F(1, 324) = 13.522, p < .001, η_p^2 = 0.076. On the other hand, in the hope condition there was no significant difference in participants' attitudes between those listing positive thoughts (M = 0.16, SD = 0.74) and those listing negative thoughts (M = 0.05, SD = 0.85), F(1, 324) = 0.274, p = .601, η_p^2 = 0.002. Results did not vary as a function of the Experiment factor. That is, the three-way interaction was equivalent for participants who listed thoughts about the Mediterranean diet and the fast food diet, regardless of whether the procedure to induce appraisals was indirect or direct. For this and the remaining studies, alternative analyses of the key three-way interaction are presented in the online Supporting Information.

2.2.3 | Thought–attitude linkage

We predicted that participants in the validation conditions (i.e., hopelessness in the confidence appraisal condition and hope in the pleasantness appraisal condition) would rely more on their thoughts when expressing their attitudes than participants in the invalidation conditions (i.e., hopelessness in the pleasantness appraisal condition and hope in the confidence appraisal condition). When we regressed attitudes onto the relevant variables,

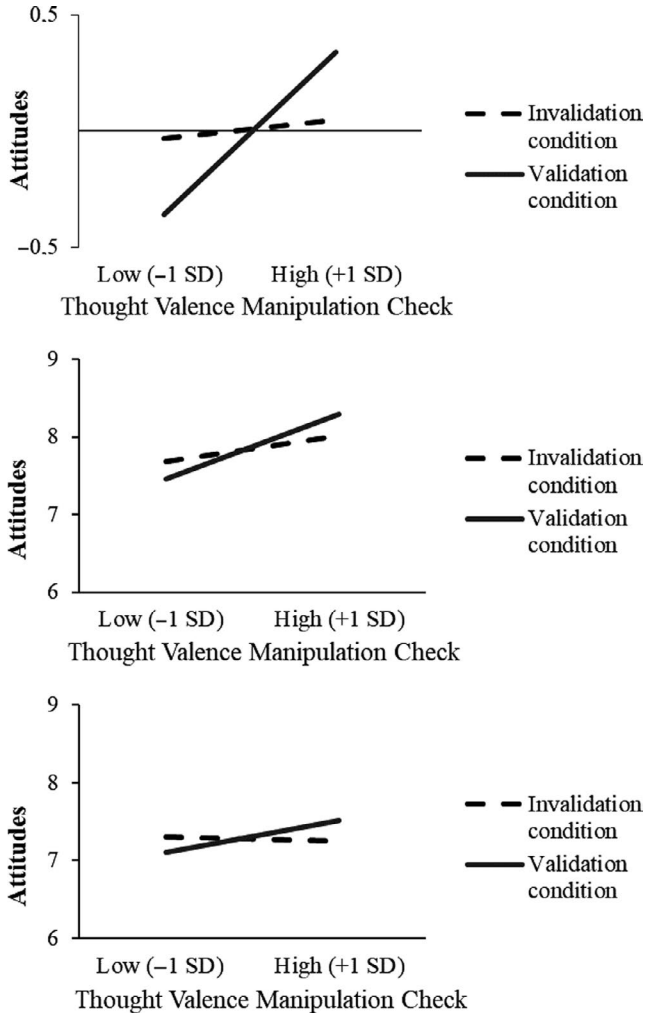

FIGURE 2 Top panel: Attitudes as a function of Validation condition and Thought Valence Manipulation Check in Experiments 1a and 1b. Standardized evaluations. Middle panel: Attitudes as a function of Validation condition and Thought Valence Manipulation Check in Experiment 2. Evaluations ranged from 1 to 9. Bottom panel: Attitudes as a function of Validation condition and Thought Valence Manipulation Check in Experiment 3. Evaluations ranged from 1 to 9.

an interaction emerged between the thought valence manipulation check and thought validation, $B = 0.335$, $t(336) = 3.000$, $p = .003$, 95% CI: 0.115, 0.555 (Figure 2, top panel). The direction of the effect was such that participants' thoughts were more closely associated with their attitudes when they were in the validation conditions ($B = 0.379$, $t(336) = 4.784$, $p < .001$, 95% CI: 0.223, 0.534) than the invalidation conditions ($B = 0.044$, $t(336) = 0.557$, $p = .578$, 95% CI: −0.111, 0.199).

2.3 | Discussion

The results of Experiment 1 supported our hypothesis that feeling hopelessness or hope following thought generation can lead to different (and opposite) effects on the use of thoughts. This effect depended on whether the confidence or the pleasantness appraisal of emotions was made salient. As noted, different inductions for the appraisal manipulation (direct and indirect) were used and, for both, participants were led to focus on one specific appraisal of the emotion (pleasantness or confidence). Regardless of the appraisal that was made salient, the experience of the emotions was not expected to change. This assumption is explicitly checked in Experiment 2.

Most importantly, the same emotional inductions were shown to increase or decrease people's reliance on their thoughts across the different appraisal conditions. The fact that our appraisal manipulation moderated the impact of emotions on judgment in precisely the manner predicted by our differential appraisals hypothesis provides support for our underlying conceptualization (Petty, 1997; Spencer et al., 2005). Specifically, when people were placed in a confidence appraisal condition, hopelessness increased the impact of the valence of thoughts on attitudes relative to hope. This is consistent with our hypothesis that hopelessness is associated with confidence more than hope and confidence should enhance thought use. In contrast, when people focused on the pleasantness appraisal of their emotion, hope increased the impact of thought valence on attitudes relative to hopelessness, consistent with the view that hope is a more pleasant emotion than hopelessness and when this is salient, thought use should be increased.

In short, hopelessness and hope led to an opposite pattern of results (i.e., more or less reliance of thoughts) depending on whether people focused on the confidence or pleasantness appraisal of their emotion. Therefore, this experiment revealed that the emotions of hopelessness and hope can influence reliance on thoughts, which subsequently impact judgments. As noted, this effect occurred regardless of the type of diet (healthy or unhealthy) or method of inducing appraisal (direct or indirect). To enhance the generality of our conceptualization further, the second study examined whether the obtained outcome would hold when people are making judgments about a different (non-diet) topic. That is, in Experiment 1 we used a health-relevant attitude object with implications for oneself, while in the following study we used a social attitude object with implications for a group of people. The aim is to test if this effect can be replicated in evaluation processes related to other issues.

3 | EXPERIMENT 2

In the second experiment we aimed to replicate the moderating role of appraisal found in the previous study by moving from a food-attitudes topic to a social intervention domain. In this experiment, participants were first asked to think about the positive or negative aspects of a proposal to hire people with disabilities in an organization. We chose this social issue because attitudes toward people with disabilities are relatively under-studied compared to attitudes toward race and gender (Beatty et al., 2019; Blanchard &

Crosby, 2012; Bond & Haynes, 2014; Cohn, 2019), and, if people were to naturally think about this topic, they could end up feeling relatively hopeful or hopeless. Furthermore, people with disabilities are sometimes seen as less capable of competing at the same standard of performance as people without disabilities (Cuddy et al., 2007; Rohmer & Louvet, 2018; Stone-Romero et al., 2006). Consequently, this group of people is often subjected to a dehumanization process through which they are perceived as unable to engage in sophisticated mental processes (Haslam, 2006; Loughnan et al., 2010).

Following the thought valence manipulation, participants were assigned to write about personal episodes in which they felt either hopelessness or hope. Naturally, generating positive thoughts about people with disabilities might lead people to feel hopeful regarding this group and have negative thoughts toward feeling hopeless. However, in our paradigm we randomly assign people to feel hopeful or hopeless following thought generation so that the independent effects of thought valence and hope versus hopelessness can be determined. We also included a manipulation check for the hope versus hopelessness induction to ensure that the thought valence induction and emotion induction were independent. In any case, after participants generated their thoughts and received the emotion induction, they responded to questions that contained words related to pleasantness (pleasantness appraisal) or questions that contained words related to confidence (confidence appraisal) as in Experiment 1b. Finally, participants reported their attitudes toward the proposal to hire people with disabilities in an organization and completed the manipulation check for the emotion induction.

In line with Experiment 1, we expected that when people were in the confidence appraisal condition, their attitudes would be influenced by the confidence or doubt that accompanies their emotion. Thus, in the confidence appraisal conditions, we expected that hopelessness would lead people to show greater reliance on their thoughts than hope, conceptually replicating the confidence appraisal condition in Experiments 1a and 1b. In contrast, we hypothesized that when people focused on the pleasantness appraisal, attitudes would be influenced by the pleasantness or unpleasantness associated with their emotion. In this case, we predicted that hope would lead people to show greater reliance on their thoughts than hopelessness, conceptually replicating the pleasantness appraisal condition in Experiments 1a and 1b. Thus, as in the previous studies, we expected the attitude measure to reveal a three-way Thought Valence × Emotion × Appraisal interaction.

3.1 | Method

3.1.1 | Participants and design

Participants were 276 undergraduate students (38 males, 237 females, and one gender-unidentified participant, M_{age} = 19.37; SD = 2.34) from a large university from the EU. Participants were randomly assigned to conditions in a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) between-subjects factorial design, with attitudes toward the proposal about hiring people with disabilities as the main dependent measure. A power analysis was conducted based on the three-way interaction effect size obtained in the prior experiment. Analyses were conducted using G*Power (Faul et al., 2007), entering the interaction effect size from Experiment 1 (Cohen's f = 0.167). Results of this analysis suggested that the desired sample size for a two-tailed test (α = .05) with 0.80 power was N = 284. Our final sample was close to that estimation and contained N = 276 participants. Three participants who failed to complete the Thought Valence manipulation were removed from the final sample.

3.1.2 | Procedure

Upon arrival, participants were told that they were going to be involved in two separate projects. Specifically, they were told that the first study was about the implementation of an initiative to facilitate the incorporation of people with disabilities in an organization, whereas the second was about the way people remember past personal episodes. For the first part of the session, participants were asked to list either positive or negative thoughts about a proposal designed to promote the hiring of people with disabilities in an organization. For the next part of the session (i.e., the "second study"), participants were asked to write about an occasion in which they felt either hopelessness or hope. After writing the emotion-induction essay, participants responded to questions containing words either related to pleasantness/unpleasantness or to confidence/doubt. Finally, participants completed the dependent measure of attitudes, a manipulation check for the emotion induction, and were debriefed, thanked, and dismissed.

3.1.3 | Independent variables

Thought valence

Participants were randomly assigned to list up to five either positive or negative thoughts in boxes provided about a proposal to promote the hiring of people with disabilities.

Emotion

After listing their thoughts, and identical to Experiments 1a and 1b, participants were asked to think about an occasion when they felt either hopelessness or hope. Participants could take as long as they needed and stop whenever they wanted.

Appraisal

Following the emotion induction, participants responded to questions about the personal episode written. These questions were the same as the direct induction in Experiment 1b, and contained either

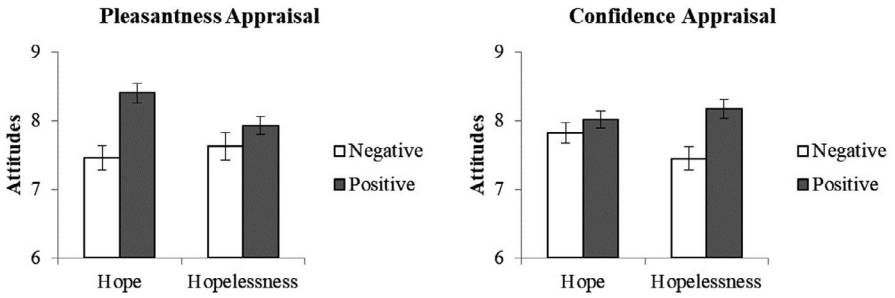

FIGURE 3 Attitudes as a function of Thought Valence, Emotion and Appraisal in Experiment 2. Evaluations ranged from 1 to 9. Error bars represent 95% confidence intervals.

words related to pleasantness/unpleasantness or words related to confidence/doubt.

3.1.4 | Dependent measures

Manipulation check for thought valence

Similar to the previous studies, two independent judges—unaware of experimental conditions—coded the valence of participants' thoughts (−1 = negative, 0 = neutral, 1 = positive). Judges agreed on 86.8% of the thoughts, and disagreements (13.2%) were resolved by discussion. An index of thought valence was created following the same procedure as before (Cacioppo & Petty, 1981).

Manipulation check for emotion

After the attitude measure, participants completed a manipulation check for the Emotion induction. Specifically, participants were asked to report how they felt on a 9-point semantic differential scale anchored with hopeless–hopeful.

Attitudes

Participants' attitudes toward the proposal about hiring people with disabilities were assessed using the same three items as in Experiments 1a and 1b (9-point scales). Item-ratings were intercorrelated ($\alpha = .80$) and were averaged to create a composite attitude index.

3.2 | Results

3.2.1 | Manipulation check for thought valence

External ratings of the positivity of the thoughts listed by participants were submitted to a Thought Valence × Emotion × Appraisal ANOVA. Results showed a significant main effect of Thought Valence on the thought valence manipulation check (thought favorability index), such that participants' thoughts were perceived as more favorable in the positive ($M = 0.97$, $SD = 0.11$) than in the negative ($M = -0.88$, $SD = 0.27$) thought condition, $F(1, 265) = 5{,}279.484$, $p < .001$, $\eta_p^2 = 0.95$. This confirms the success of the Thought Valence manipulation. As expected, there were no main effects of Emotion or Appraisal, and no additional interactions among these variables ($ps > .538$).

3.2.2 | Manipulation check for emotion

We submitted the emotion manipulation check to the same three-way ANOVA. Participants reported feeling more hopeful in the hope condition ($M = 6.22$, $SD = 2.57$) compared to those in the hopelessness condition ($M = 4.31$, $SD = 2.18$), $F(1, 264) = 43.693$, $p < .001$, $\eta_p^2 = 0.142$. This confirms the success of the Emotion induction manipulation. No other significant main or interaction effects on reports of hopelessness–hope emerged ($ps > .085$). Thus, emotions were comparable as intended across the different appraisal conditions.

3.2.3 | Attitudes

Results of a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) ANOVA on attitudes revealed a significant main effect of Thought Valence, $F(1, 265) = 16.426$, $p < .001$, $\eta_p^2 = 0.058$, such that positive thoughts resulted in more favorable attitudes ($M = 8.14$, $SD = 0.91$) than negative thoughts ($M = 7.60$, $SD = 1.27$). Most importantly, we observed a significant three-way interaction on attitudes toward the proposal in the predicted direction, $F(1, 265) = 4.748$, $p = .030$, $\eta_p^2 = 0.018$, replicating Experiments 1a and 1b (see Figure 3).

Decomposition of this interaction showed that the pattern of results varied as a function of the Appraisal manipulation. In the confidence appraisal condition, the interaction between Thought Valence and Emotion, although not significant, $F(1, 265) = 1.853$, $p = .174$, $\eta_p^2 = 0.006$, was in the predicted direction. That is, the pattern of results indicated that attitudes were consistent with the valence of the thoughts more for hopeless than for hopeful participants. Specifically, participants in the hopelessness condition had more favorable attitudes toward the proposal after listing positive thoughts ($M = 8.17$, $SD = 0.86$) than after listing negative thoughts ($M = 7.46$, $SD = 1.11$), $F(1, 265) = 7.286$, $p = .007$, $\eta_p^2 = 0.026$. In the hope condition, there was no difference in attitudes between those who listed positive thoughts ($M = 8.03$, $SD = 0.93$) and those who listed negative thoughts ($M = 7.82$, $SD = 1.25$), $F(1, 265) = 0.588$, $p = .444$, $\eta_p^2 = 0.002$.

In the pleasantness appraisal condition, the interaction between Thought Valence and Emotion was also not significant, $F(1, 265) = 2.512$, $p = .114$, $\eta_p^2 = 0.009$, although again it was in the predicted direction and opposite to that in the confidence appraisal condition. These opposite two-way interaction patterns are what resulted in the significant three-way interaction overall. In the pleasantness appraisal condition, Thought Valence influenced attitudes more in the hope than in the hopelessness condition. That is, hopeful participants had more favorable attitudes toward the proposal after listing positive thoughts ($M = 8.41$, $SD = 0.73$) compared to negative thoughts ($M = 7.46$, $SD = 1.48$), $F(1, 265) = 10.644$, $p = .001$, $\eta_p^2 = 0.039$. In contrast, among participants in the hopelessness condition, there was no difference in attitudes between those who listed positive thoughts ($M = 7.93$, $SD = 1.06$) and those listing negative thoughts ($M = 7.64$, $SD = 1.27$), $F(1, 265) = 1.245$, $p = .265$, $\eta_p^2 = 0.004$.

3.2.4 | Thought–attitude linkage

We predicted that participants in the validation conditions (i.e., hopelessness in the confidence appraisal condition and hope in the pleasantness appraisal condition) would rely more on their thoughts in expressing their attitudes than participants in the invalidation conditions (i.e., hopelessness in the pleasantness appraisal condition and hope in the confidence appraisal condition). When we regressed attitudes onto the relevant variables, the interaction between the thought valence manipulation check and thought validation was not significant, $B = 0.265$, $t(269) = 1.887$, $p = .060$, 95% CI: −0.011, 0.542, although it was in the predicted direction (Figure 2, middle panel). That is, participants' thoughts were more closely associated with their attitudes when they were in a validation condition ($B = 0.433$, $t(269) = 4.325$, $p < .001$, 95% CI: 0.236, 0.631) than when they were in an invalidation condition ($B = 0.168$, $t(269) = 1.707$, $p = .089$, 95% CI: −0.026, 0.362).

3.3 | Discussion

The results of Experiment 2, although somewhat statistically weaker overall, provided a conceptual replication of Experiment 1, extending our contribution from attitudes toward diets to a social topic (hiring of people with disabilities in an organization). When participants were in the confidence appraisal condition, hopelessness led attitudes to be more closely associated with participants' valenced thoughts than hope, consistent with what would be expected from a confidence appraisal of the emotions elicited. In contrast, when participants were in the pleasantness appraisal condition, hope led attitudes to be more closely associated with participants' thoughts than hopelessness, consistent with a pleasantness appraisal of the emotions. These results are in accord with Experiment 1, suggesting that the same emotion can lead to more or less reliance on one's thoughts depending on the appraisal of the emotion that is salient. To enhance the generality of our conceptualization still further, the third experiment examined whether our results would also extend to the validation of self-relevant thoughts.

4 | EXPERIMENT 3

After demonstrating that the differential appraisals perspective on hopelessness and hope can be extended to evaluations of various external topics and proposals, we examined whether our approach would produce similar results for changing self-evaluations. First, participants were asked to think about either their best or worst qualities as job candidates in order to produce positive or negative self-related thoughts. Following this thought valence manipulation, participants were assigned to write about personal episodes in which they felt hopelessness or hope. Next, we introduced the appraisal manipulation using the indirect word competition task similar to Experiment 1a. Finally, participants reported their self-attitudes, which served as the main dependent variable, and then a manipulation check for the emotion induction. Despite all of the changes, we expected the self-attitude measure to reveal the same three-way interaction observed in the previous studies.

4.1 | Method

4.1.1 | Participants and design

Participants were 433 undergraduate students (48 males, 383 females and two gender-unidentified participants, $M_{age} = 19.35$; $SD = 1.53$) from a large university in the EU. Participants were randomly assigned to the cells of a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) between-subjects factorial design.

A power analysis was conducted using G*Power (Faul et al., 2007). Given that the interaction effect obtained in the first study was larger (Cohen's $f = 0.167$) than in the second study ($f = 0.135$), we took a conservative approach and assumed an effect size similar to Experiment 2. Results of this analysis suggested that the desired sample size for a two-tailed test ($\alpha = .05$) with 0.80 power was $N = 433$. Thus, our final sample recruited the exact number of participants required.

4.1.2 | Procedure

As in the previous studies, participants were told that they were going to be involved in two separate projects. Specifically, they were told that the first study was about professional performance, whereas the second was about the way people remember past personal episodes. For the first part of the session, participants were asked to list three positive or negative characteristics they believed they possessed as potential professionals. For the next part of the

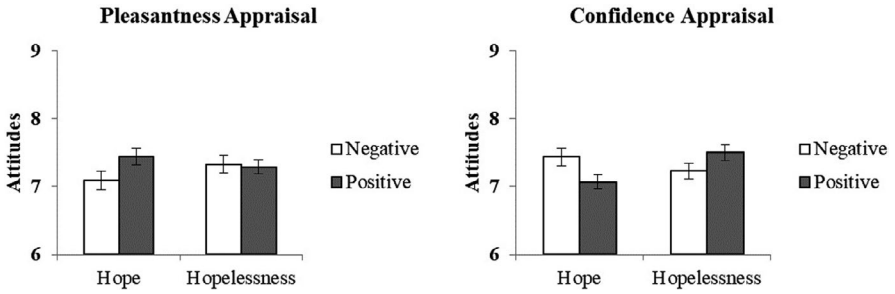

FIGURE 4 Self-attitudes as a function of Thought Valence, Emotion and Appraisal in Experiment 3. Evaluations ranged from 1 to 9. Error bars represent 95% confidence intervals.

session, participants were asked to write about an occasion when they felt either hopelessness or hope. After writing the emotion-induction essay, participants were told that in order to bring all participants back to the same baseline, they would have to engage in a word-completion task similar to that of Experiment 1a. Next, participants completed the dependent measure of self-attitudes, followed by the manipulation check for the emotion induction. Before leaving, all participants were debriefed, thanked, and dismissed.

4.1.3 | Independent variables

Thought valence

Participants were first asked to list either three positive or three negative personal traits relating to their future professional performance.

Emotion

The same emotion induction was used as in the prior Experiments.

Appraisal

Participants were asked to fill in the missing letters in a word-completion task. We employed a similar version of the appraisal manipulation used in Experiment 1a. Participants were asked to fill in the missing letters in words semantically related to either pleasantness or confidence.

4.1.4 | Dependent measures

Manipulation check for thought valence

After writing three positive or three negative traits, participants were asked to rate each trait with respect to whether it was positive or negative using a 3-point scale (−1 = negative, 0 = neutral, 1 = positive). We created an index following the same procedure as the previous studies (Cacioppo & Petty, 1981).

Manipulation check for emotion

As in Experiment 2, participants were asked to report how they felt on a 9-point semantic differential item anchored with hopeless–hopeful.

Attitudes

Participants were asked to indicate their attitude toward themselves as future professionals. Specifically, participants rated the extent to which they believed themselves to be (a) a good candidate for the job market, (b) a good interviewee for a new position, and (c) a good performer on the job. Responses were measured on 9-point scales anchored by 1 (*Not at all*) to 9 (*Very much*). These scales were adapted from a previous study in which rating of the self as a professional was the dependent measure (Briñol et al., 2009). Ratings were intercorrelated ($\alpha = .65$) and were averaged to form one overall attitude index.

4.2 | Results

4.2.1 | Manipulation check for thought valence

The ratings of the positivity of the traits listed by participants were submitted to a 2 (Thought Valence: Positive vs. Negative) × 2 (Emotion: Hopelessness vs. Hope) × 2 (Appraisal: Confidence vs. Pleasantness) ANOVA. Results showed a significant main effect of Thought Valence on the thought valence manipulation check (thought favorability index), such that those in the positive trait condition ($M = 0.92$, $SD = 0.22$) showed greater positivity in traits than did those in the negative trait condition ($M = -0.67$, $SD = 0.42$), $F(1, 425) = 2{,}480.702$, $p < .001$, $\eta_p^2 = 0.854$. This confirms the success of the Thought Valence manipulation. As expected, no main effects of Appraisal, Emotion, or interactions among these variables emerged ($ps > .167$).

4.2.2 | Manipulation check for emotion

We submitted the emotion manipulation check item to the three-way ANOVA. This analysis revealed a successful manipulation of Emotion induction. That is, participants reported feeling more hopeful in the hope condition ($M = 6.53$, $SD = 1.99$) than in the hopelessness condition ($M = 3.56$, $SD = 1.80$), $F(1, 425) = 263.865$, $p < .001$, $\eta_p^2 = 0.383$. No other significant main or interaction effects emerged ($ps > .14$), again indicating that, as intended, the appraisal did not influence the emotion experienced.

4.2.3 | Attitudes

Results of the same three way ANOVA on attitudes revealed no main effect of Thought Valence, $F(1, 425) = 0.378$, $p = .539$, $\eta_p^2 = 0.001$. However, we observed a significant three-way interaction on self-attitudes in the predicted direction, $F(1, 425) = 6.712$, $p = .010$, $\eta_p^2 = 0.016$ (see Figure 4). Decomposition of this interaction showed that the pattern of results varied as a function of the Appraisal manipulation. In the confidence appraisal condition, the interaction between Thought Valence and Emotion was significant in the predicted direction, $F(1, 425) = 5.436$, $p = .021$, $\eta_p^2 = 0.025$. That is, the pattern of results indicated that self-attitudes were more consistent with the valence of the traits for participants in the hopeless than in the hopeful condition. Participants in the hopeless condition did not have more favorable self-attitudes after listing positive traits ($M = 7.51$, $SD = 0.90$) than after listing negative traits ($M = 7.20$, $SD = 1.12$), $F(1, 425) = 2.345$, $p = .127$, $\eta_p^2 = 0.011$, although means were in the predicted direction. Among participants in the hope condition, those who listed positive traits did not report less favorable self-attitudes ($M = 7.08$, $SD = 1.06$) than those listing negative traits ($M = 7.43$, $SD = 1.09$), $F(1, 425) = 3.114$, $p = .079$, $\eta_p^2 = 0.014$.

In the pleasantness appraisal condition, the interaction between Thought Valence and Emotion was not significant, $F(1, 425) = 1.830$, $p = .178$, $\eta_p^2 = 0.009$, although it was in the predicted direction, opposite to the interaction in the confidence appraisal conditions. Hopeful participants did not have more favorable self-attitudes after listing positive traits ($M = 7.44$, $SD = 0.85$) compared to negative traits ($M = 7.09$, $SD = 1.12$), $F(1, 427) = 2.834$, $p = .094$, $\eta_p^2 = 0.013$, although means were in the predicted direction. Among participants in the hopeless condition, there was no difference in self-attitudes between those who listed positive traits ($M = 7.29$, $SD = 0.98$) and those listing negative traits ($M = 7.34$, $SD = 1.32$), $F(1, 427) = 0.053$, $p = .818$, $\eta_p^2 < 0.001$ (see the Supporting Information for another approach to examine the effect).

4.2.4 | Thought–attitude linkage

As in the previous studies, we predicted that participants in the validation conditions would rely more on their thoughts in expressing their self-attitudes than participants in the invalidation conditions. Regressing self-attitudes onto the relevant variables, an interaction emerged between the thought valence manipulation check and thought validation, $B = 0.295$, $t(429) = 2.489$, $p = .013$, 95% CI: 0.062, 0.527 (Figure 2, bottom panel). The direction of the effect was such that participants' traits were more closely associated with self-attitudes when participants were in a validation condition ($B = 0.253$, $t(429) = 2.971$, $p < .005$, 95% CI: 0.085, 0.420) than in an invalidation condition ($B = -0.042$, $t(429) = -0.511$, $p = .610$, 95% CI: −0.204, 0.120).

4.3 | Discussion

The results from Experiment 3 supported the prior studies in showing that hopelessness and hope produce opposite patterns of effects (i.e., more or less reliance on thoughts) depending on whether people are focused on the confidence or pleasantness appraisal of their emotions. When people were placed in a confidence appraisal condition, hopelessness increased the impact of thought valence on self-attitudes relative to hope. In contrast, when people focused on the pleasantness appraisal of their emotion, hope increased the impact of thought valence on self-attitudes relative to hopelessness.

5 | GENERAL DISCUSSION

People can often feel hope or hopelessness after engaging in thought. The current research consistently shows that feeling either hope or hopelessness can lead to different reliance on thoughts depending on the appraisals that are salient at the time one's thoughts are considered. In the predicted validation conditions (hopelessness in the confidence appraisal condition and hope in the pleasantness appraisal condition), participants relied on their thoughts more when forming their attitudes than when they were in the invalidation conditions (hopelessness in the pleasantness appraisal condition and hope in the confidence appraisal condition). As a consequence, among hopeless participants, those who generated positive thoughts about the topic reported more favorable attitudes toward it than those who generated negative thoughts about the topic. Importantly, this pattern of effects emerged whether participants were forming evaluations about a proposal for healthy or unhealthy diets (Experiment 1a or 1b), a proposal for hiring people with disabilities (Experiment 2), or about themselves (Experiment 3). Despite the differences between topics, the pattern of results is maintained for each study. Moreover, these effects appeared regardless of the nature of the procedure used in the appraisal induction; a direct procedure (explicitly mentioning confidence or pleasantness words) or a more indirect procedure (having participants fill in the letters of words related to confidence or pleasantness).

Although all the variations tested in this research converged on the same pattern of results across studies, there are also limitations. For example, although all the effects obtained across studies were in the predicted direction, not all single contrasts within each study reached statistical significance. An analysis on the attitude data for all studies combined showed an overall three-way Thought Valence × Emotion × Appraisal interaction that was unmoderated by study. Furthermore, decomposition of this interaction in the combined data revealed opposite significant two-way Thought Valence × Emotion interactions in the confidence and pleasantness appraisal conditions (see the online Supporting Information for complete results). When confidence appraisals dominate, then hopelessness (associated with a confident but unpleasant appraisal) is the validating emotion. However, when pleasantness appraisals dominate, then hope (associated with a pleasant but doubtful appraisal)

is the emotion that produces validation of thoughts. To our knowledge, these studies provide the first demonstration that hope and hopelessness, often conceptualized as two ends of a continuum, can influence evaluations by affecting reliance on thoughts as a function of their different appraisals. Also, these studies are the first showing that appraisals can moderate the impact of affective states that go beyond basic, discrete emotions, opening the door for appraisals to influence many other psychological experiences unrelated to emotions.

5.1 | Potential moderators

One can imagine a number of potential individual and situational variables that might further moderate the obtained results. Indeed, the natural appraisals that people make are likely to vary among individuals and contexts in real life. For example, those high in need for cognition (Cacioppo & Petty, 1982) might tend to favor confidence appraisals whereas those high in need for affect (Maio & Esses, 2001) might tend to favor pleasantness appraisals in an environment where neither appraisal is made to be salient. Or, it could be that one appraisal is the dominant one across some situations or for some attitude objects whereas another appraisal is more salient in other cases. In fact, these variations might explain why opposite effects are sometimes found for the same emotions (or even no effects for emotions can emerge). We argue that it is not the emotion alone, but it is the emotion as a function of which appraisal is salient that can influence whether people rely on their thoughts when making judgments.

5.2 | Control group

A possible interesting question is whether the effects obtained in this research are due mostly to the manner in which hopelessness affects thought reliance, or to how hope influences the extent to which people use their thoughts when making judgments, or a combination of both. Having a control group with a neutral emotion would contribute to making more precise statements, but ultimately this is not critical for our conceptual contribution. Whether hopelessness or hope would always have greater impact over a neutral emotion group would likely depend on many factors such as the relative intensity of each emotion induced, how confident or pleasant people are feeling prior to the emotion induction, and other factors (see the Supporting Information for details). And, because hope and hopelessness fall along a continuum, the effects of each emotion are relative to each other in any case.

5.3 | Manipulation checks

The manipulation check for emotion (Experiments 2 and 3) demonstrated that the induction of hopelessness and hope worked properly in producing the desired emotions and, most importantly, the emotions reported did not vary as a function of appraisals. However, one remaining concern is that the emotion induction of hope versus helplessness might have activated simultanously other emotions that also have the potential to affect thought usage and evaluation (e.g., anger). Furthermore, another possible limitation of the current research is that no manipulation check for appraisal was included in the individual studies.

In order to address both of these issues empirically, we conducted a separate study varying emotions and appraisals, and measuring the impact of those manipulations on the corresponding manipulation checks. As expected, each manipulation only affected the relevant manipulation check and no other emotions (see Supporting Information for the full study).

5.4 | Applications and future research

Beyond the potential to transform our understanding of the hope–hopelessness continuum, this novel approach based on highlighting different appraisals within the same emotion can be relevant to designing process-based practical applications. Although speculative, we suggest that these results could also be informative for changing attitudes toward other consquential topics. Furthermore, hope and hopelessness with their corresponding appraisals could influence the use of thoughts in guiding evaluations relevant to phenomena such as wishful thinking (pleasant but uncertain, Harris & Hahn, 2011; Vosgerau, 2010) and realistic pessimism (unpleasant but certain, Shepperd et al., 2000).

Given that in this research participants were induced to experience emotions after thinking, one might wonder to what extent these potential applications to real-life situations are likely to occur. We suspect that there are many situations in which emotional reactions could occur or are salient after (rather than before) thinking. For example, consider a situation in which someone makes you feel hopeless after you discussed a given proposal in a meeting (e.g., a new inclusive and egalitarian organizational proposal), or a situation in which the expression of some ideas (e.g., the benefits of a vegetarian diet) is received positively by the recipient, thus eliciting feelings of hope that the recipient will implement your advice. Indeed, there may be many life circumstances in which thinking takes place only to be followed in short order by a state of hope or hopelessness which itself precedes the judgment to be made.

It is noteworthy that the induction of emotions does not necessarily cause or produce certain kinds of thoughts. In fact, in the present research the emotions followed thinking and were designed to be incidental inductions to that thinking. The rationale is that the pleasantness and confidence associated with incidental emotions can be misattributed to anything that is currently available, even if the thoughts are totally unrelated to the validating variable (emotion). Specifically, the appraisals of the emotions (the emotion seems pleasant or the emotion makes me feel confident)

are misattributed to the initial thoughts about the attitude object (I feel good about my thoughts previously generated or I feel confident about my thoughts). This results in cognitive validation (when the emotion results in a confidence appraisal that is misattributed to the thoughts) or affective validation (when the emotion results in a pleasantness appraisal that is then misattributed to the thoughts).

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICAL STATEMENT

This research was conducted in accordance with APA guidelines on the ethical treatment of human participants.

OPEN RESEARCH BADGES

The experiment in this article earned Open Data badges for transparent practices.

DATA AVAILABILITY STATEMENT

Data are available at https://osf.io/t6geq/.

ORCID

Blanca Requero https://orcid.org/0000-0003-0688-9851
Pablo Briñol https://orcid.org/0000-0002-0327-5865
Richard E. Petty https://orcid.org/0000-0002-2870-8575

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

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