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Objectification of people and thoughts: An attitude change perspective

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Many objectification phenomena can be understood from a mind–body dualism perspective in which the more people focus on their bodies, the less they focus on their minds. Instead of viewing mind and body in opposition to each other, we advocate for a more reciprocal view in which mind and body work in conjunction. Consistent with an integrated mind–body approach, we begin our review by describing research on *embodied persuasion* revealing that focusing on our own body can reduce but also increase thinking (elaboration), as well as affecting the use of thoughts in forming evaluations (validation). Next, we extend our integrated view to a new domain and suggest that physical objects can influence thoughts and that one's thoughts can also be objectified. The first portion of this section focuses on research on enclothed cognition revealing that wearing physical objects can operate through the same processes of elaboration (increasing and decreasing thinking) and validation (increasing and decreasing thought usage) as the body. The second portion reveals that thoughts can be understood and treated *as if* they were physical objects affecting evaluative processes by influencing elaboration and validation processes. The final section provides some practical guidance relevant to campaigns designed to reduce the objectification of women and the infrahumanization of stigmatized groups.

Part I: Body–mind

Objectification and mind–body dualism

Objectification refers to seeing and treating people as physical objects. A mind–body dualism perspective suggests that the more we focus on the body, the less we focus on the mind. Specifically, when we focus on the physical aspects of a person (e.g., external appearance), we are less likely to focus on more internal, psychological states. This trade-off can appear when perceiving others, when being perceived by others, and when perceiving oneself. In this study, we focus mostly on cases of self-objectification, although the principles are likely more widely applicable.

In a now classic study, Fredrickson and colleagues randomly assigned both male and female participants to wear either a swimsuit (high-objectification condition) or a sweater (low-objectification condition) while taking a math test. When wearing the swimsuit,

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women were more likely to experience body shame and performed worse than men (Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; see Martins, Tiggemann, & Kirkbride, 2007; for a replication in a male population wearing speedos). Subsequent work suggests that the mechanism for this effect is that objectification reduces one's cognitive resources. For example, women were slower to identify the colour of words in a Stroop task when wearing a one-piece swimsuit compared to a V-neck sweater (Quinn, Kallen, Twenge, & Fredrickson, 2006).

In another study on self-objectification, female participants completed a letter–number sequencing task in which they had to sort and report randomly ordered letters and numbers in alphabetical/ascending order after a self-objectification induction (completing a video for a male vs. a female researcher). Participants who made the video for the male researcher experienced more self-objectification and took significantly longer to complete the difficult task relative to those who did not experience this state (Gay & Castano, 2010). Thus, focusing on one's own body can increase cognitive load and reduce the emphasis placed on one's mind.

Being perceived as a physical object by the self or by others not only reduces thinking but also feels bad. For example, being treated as a physical object has been related to negative affective states (e.g., shame, anxiety; Fredrickson & Roberts, 1997), reduced subjective well-being (Breines, Crocker, & Garcia, 2008), increased rates of depression (Tiggemann & Kuring, 2004), and increased likelihood of self-harm (Muehlenkamp, Swanson, & Brausch, 2005). Additionally, objectified individuals receive less moral concern (Loughnan *et al.*, 2010), receive harsher punishments (Rudman & Mescher, 2012), and feel morally unclean (Chen, Teng, & Zhang, 2013).

In sum, previous work on mind–body dualism suggests that there is a trade-off between a focus on the body and a focus on the mind. As these initial examples illustrate, being treated and treating others (for reviews, see Heflick & Goldenberg, 2014; Vaes, Paladino, & Puvia, 2011) as physical objects is typically associated with negative interpersonal consequences (e.g., stereotyping, prejudice, infrahumanization, stigmatization, discrimination, aggression), and also with negative intrapsychic processes, ranging from negative feelings to reduced elaborative thinking.[1] These undesirable effects are based on a dualistic conception in which body and mind are viewed in opposition. However, body and mind do not need to be seen as separate, opposing forces. Instead, body and mind can be integrated and work in conjunction.

In this review, we advocate for a reciprocal influence between processes traditionally defined as 'body' (i.e., embodied) and 'mind' (i.e., cognition). Consistent with an integrated mind–body approach, the review begins by describing recent research on *embodied persuasion* (Briñol & Petty, 2008). This work has considered the role that the posture, movement, and the actions of one's body can have not only on how much people think, but also on judgements. As we describe in the first section, focusing on the body can reduce but also increase thinking (elaboration), as well as the use of thoughts in forming evaluations (validation). The next portion of the review describes how recent work on situated, embodied, and enclothed cognition can operate through the same processes of

[1] *Objectification can sometimes have positive consequences. For example, Nussbaum (1999) suggested that objectification might be useful to the extent that it allows people to see others as instrumental for their goals. Objectification may thus allow people to be more likely to achieve their goals, such as when people in positions of power think of subordinates as means to the company's ends (Gruenfeld, Inesi, Magee, & Galinsky, 2008; Kipnis, 1972; see also Inesi, Lee, & Rios, 2014). Additionally, objectification can sometimes serve a psychological function by increasing self-esteem in the face of mortality salience (Goldenberg, Cooper, Heflick, Routledge, & Arndt, 2011).*

elaboration and validation that have been used to explain the impact of traditional persuasion variables (e.g., source credibility, emotion) on evaluative judgements (Petty & Briñol, 2012; Petty & Wegener, 1999). Then, we extended our integrated mind–body view to a new domain and suggest that one's thoughts can also be objectified. We describe recent research revealing that thoughts can be understood and treated as if they were physical objects affecting evaluative outcomes by influencing elaboration and validation processes. Furthermore, we demonstrate that the effects of thought objectification are meaning dependent. The final section provides a summary along with some practical guidance relevant to campaigns designed to reduce the objectification of women.

Mind and body work in conjunction – multiple roles for embodiment

We argue that research on embodiment can be informative about how the body and mind interact. Body postures, body movements, and facial expressions can sometimes distract us from what is going on, but they can also prompt more thinking under other circumstances. For example, because people tend to think less when they are happy, secure, and confident rather than sad or doubtful (e.g., Tiedens & Linton, 2001), people might think less when engaged in bodily responses related to these states such as when smiling or nodding their heads than when frowning or shaking their heads (Briñol, Petty, & Barden, 2007; for a review, see Petty & Briñol, 2015; see also Huntsinger, Isbell, & Clore, 2014).

In an early demonstration that body posture can affect susceptibility to a persuasive communication, Petty, Wells, Heesacker, Brock, and Cacioppo (1983) asked undergraduate students to try new headphones to rate their qualities. Some participants were told to stand whereas others were told to lie down while testing the headphones, which played a persuasive message containing strong or weak arguments in favour of a tuition increase at their university. Consistent with the idea that posture can affect thinking, this study showed that although reclining participants were differentially persuaded by the strong and weak arguments (i.e., suggesting that they paid careful attention to the message), standing participants were not.

Research on confident postures provides another illustration revealing that bodily responses can influence how much people think during persuasion when elaboration is not already constrained to be very high or low by other variables. This is likely because the feelings of confidence that emerge from body postures can signal that one's own views are correct. For example, Briñol, Petty, Valle, Rucker, and Becerra (2007, Experiment 2) first randomly assigned participants to feel relatively confident or doubtful using a role-playing task that required one person to be the manager and the other to be the subordinate. The person assigned to play the role of the manager was sitting down in a taller and better-looking chair than the one playing the role of the subordinate. People located in physically higher positions often feel (and are perceived to feel) more powerful and confident than people who are seated in relatively lower positions (Huang, Galinsky, Gruenfeld, & Guillory, 2011; Schubert, 2004). After the induction, the extent to which participants processed information was assessed by varying the quality of the arguments contained within a persuasive message about a new mobile phone, and measuring the impact of the arguments on attitudes, similar to the manipulation used by Petty *et al.* (1983). The attitudes of participants assigned to sit in the chair of the boss were less influenced by the quality of the arguments presented than those of participants assigned to sit in the employee chair, consistent with the notion that feeling confident can reduce information processing. Consistent with the idea that body postures can affect thinking,

this study showed that although participants playing the role of a subordinate were differentially persuaded by the strong and weak arguments, participants playing the role of the boss were not.

Consistent with the Elaboration Likelihood Model of persuasion (ELM; Petty & Cacioppo, 1986; Petty & Briñol, 2012), we argue that the psychological processes relevant to embodied attitude change can be organized into a finite set that operate at different points along an elaboration continuum. In the research just mentioned, nothing was done to constrain thinking to be particularly high or low and thus body posture affected the amount of thinking. When people think more about strong arguments, judgements become more favourable, but when then they think more about weak arguments, judgements become less favourable. If thinking is constrained to be high or low, however, then one's body can affect judgements in ways other than influencing the extent of thinking.

Under low-thinking conditions, bodily responses, like other variables, can influence attitudes via a variety of low-effort processes. For example, Cacioppo, Priester, and Berntson (1993) showed that neutral Chinese ideographs (i.e., irrelevant stimuli for the sample of participants) presented during arm flexion were subsequently evaluated more favourably than ideographs presented during arm extension (for another classic example using facial expressions, see Paredes, Stavraki, Briñol, & Petty, 2013; Strack, Martin, & Stepper, 1988). In these cases, the mere association with bodily responses can serve as a simple valence cue for forming and changing one's attitude. Furthermore, variables such as flexion, smiling, or head nodding can also contribute to simple heuristics (e.g., I am smiling so therefore I like it; Valins, 1966; I am nodding so I agree; Wichman *et al.*, 2010). Thus, the body can serve as a simple cue to persuasion when motivation and ability to think are low. On the other hand, these same bodily responses can serve different roles when the likelihood of thinking is relatively high. For example, the body can affect the direction of the thoughts that come to mind (e.g., vertical head movements encouraging positive thoughts; Wells & Petty, 1980) or serve as a piece of evidence (argument) when it is directly informative to the merits of the object being thoughtfully evaluated (e.g., my bodily skills suggest I'd be good for this job).

We have proposed that people's bodily responses can not only influence how much they think or what they think about attitude objects, but can also impact what people think about their own thoughts (i.e., secondary cognition or meta-cognition). This idea is referred to as the *self-validation hypothesis* (Petty, Briñol, & Tormala, 2002). The key notion is that generating thoughts (primary cognition) is not sufficient for these thoughts to have an impact on judgements. Rather, one must also have sufficient confidence in or liking for one's thoughts (secondary cognition). In *embodied validation*, the feelings of confidence or pleasantness that emerges from people's bodies can magnify the effect of anything that is currently available in their minds, including not only people's thoughts about a persuasive message, but also other cognitions, emotions, goals, and so forth (see Briñol & Petty, 2009, for a review).

In an illustration of the validating role of the body, Briñol, Petty, and Wagner (2009) asked participants to think about and write down their best or worse qualities while sitting with their backs erect, pushing their chests out (i.e., confident posture) or while sitting slouched forward with their backs curved (i.e., doubtful posture). Then, participants completed a number of measures, including self-esteem. In line with the self-validation hypothesis, the thoughts generated about the self only affected self-attitudes in the confident posture. Inducing doubts about possessing positive qualities tended to undermine self-esteem whereas inducing doubts about possessing negative qualities

tended to enhance self-esteem. A similar polarizing effect of thoughts on attitudes was found when people were asked to nod their heads in a vertical manner (yes) compared to nodding their heads in a horizontal (no) manner while listening to a persuasive message (Briñol & Petty, 2003). Thus, bodily movements as well as static postures are able to influence individuals' reliance on their own thoughts. In addition, the work on embodied validation also showed an important limiting condition on the influence of the body on attitudes via the meta-cognitive mechanism of thought validation. That is, in addition to high-thinking conditions being required, the confidence that emerges from the body should be salient either during or following thought generation rather than prior to it.

In sum, the ELM has described a number of finite ways in which our bodies, like any other variable present in the persuasion setting, can affect attitudes by (1) serving as a simple cue when thinking is low, (2) introducing a bias to the ongoing thinking, (3) serving as a piece of substantive evidence (i.e., an argument), (4) validating the thoughts people generate when thinking is high, and (5) affecting how much thinking takes place when it is unconstrained by other variables. Finally, the ELM holds that it is important to understanding how much thinking is involved in persuasion because changes induced by high-thinking processes tend to be more consequential (e.g., persistent, resistant, and predictive of behaviour) than changes induced by low-thinking processes (see Petty, Haugtvedt, & Smith, 1995, for a review).

Part II: Mind–object

Dualism: Mind and physical objects are different

As explained earlier, the dualist philosophy of René Descartes holds that the mind is a non-physical substance and thus mental phenomena are also non-physical. According to this classic dualism notion, a thought cannot literally be treated as an object because it does not have a material or physical nature. Although this framework assumes that thoughts cannot be treated as material objects, our language is replete with metaphorical analogies suggesting that thoughts can be understood and treated as if they were real physical objects (Lakoff & Johnson, 1999). For example, people talk about having, acquiring, borrowing, holding, losing, and abandoning their thoughts. Given all these analogies, it may be reasonable to suggest that thoughts can be understood and treated *as if* they were physical objects (i.e., *thought objectification*). Next, we describe two lines of research that speak to the integration between physical objects and the mind. First, we describe work on enclothed cognition showing that wearing physical objects can influence attitudes by affecting cognitive and meta-cognitive processes. Second, we describe work on objectification of cognition in which thoughts which are treated as physical objects influence attitudes. Our main goal is to provide an overview of some current work on persuasion that connects to the domain of objectification.

Integration: Physical objects influence cognition

In this section, we describe research showing that wearing physical objects can influence attitudes and persuasion. As noted, early work on objectification showed that wearing a bathing suit compared to a sweater led women to perform worse on a test of mathematical ability in the absence of variables that constrained thinking to be either high or low (Fredrickson *et al.*, 1998). Other work on what has been called 'enclothed cognition' has revealed that wearing a white coat labelled as a doctor's coat increased attention on a

visual perception task compared to those who did not wear the coat or when the coat was labelled a painter's coat (Adam & Galinsky, 2012).

Of course, it is important to begin this section by noting that merely wearing a physical object should not be inherently objectifying. That is, wearing a white doctor's coat should not necessarily change the extent to which participants see themselves as an object, as was the case with the classic swimsuit studies that operated by changing objectification perceptions. Nonetheless, wearing the coat could change people's self-perceptions (e.g., I feel smart; Wheeler, DeMarree, & Petty, 2007; for a recent example, see Briñol, DeMarree, & Petty, 2015), and thus, we argue that some of the insights that emerge from persuasion research on wearing physical objects can still be informative and have potential implications for objectification (e.g., feeling objectified might make people feel unintelligent). Next, we describe some examples to illustrate the potential to make connections between these two literatures.

Research conducted in our laboratory recently has shown that wearing non-prescription reading glasses prior to exposure to a persuasive message caused participants to pay more attention to that message than wearing a baseball cap sideways (Belding, Petty, & Briñol, 2013). In this work, participants read a persuasive message about senior comprehensive examinations that contained either strong or weak arguments in a context in which thinking was unconstrained. Those who wore the reading glasses (associated with intelligence in prior research; see Kellerman & Laird, 1982) showed a larger effect of argument quality (indicating greater elaboration) compared to those who wore the cap.

This research revealed that physical objects can be used to induce behaviours associated with intelligence (i.e., enhanced information processing) and thereby affect attitude change. An important aspect of this research was that the impact of the glasses on information processing occurred only for people who did not routinely wear glasses. It is possible that continual exposure to the item may cause the individual to habituate to the meaning associated with the object. Furthermore, for people who usually wear glasses, wearing glasses that are not one's own could be distracting thereby attenuating their impact on elaboration. In addition to prior experience, other factors might moderate the impact of wearing objects, such as fit of the item (e.g., if the object is uncomfortable, it is possible that the object may not operate), or meaning of the item (e.g., wearing a baseball cap backwards could indicate that one is in action mode, ready to begin thinking or writing a paper).

Another aspect relevant to this research is to what extent embodied (worn) objects can be more influential than observed objects. One of our studies on glasses showed that wearing the item led to more information processing than merely looking at the same item, conceptually replicating Adam and Galinsky's (2012) results. This finding opens the possibility that although many different priming strategies can be highly effective, priming via embodiment can sometimes be stronger than other methods of priming. There are several possible reasons for this. First, perhaps embodying an object allows for more precise associations than mere observation of the same object (e.g., disambiguating one meaning among the many possible meanings associated with an object). Second, it is possible that embodying an object leads to more complex representations (with more associations of different kinds) than merely looking at the object (Barsalou, 2003; Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005). Third, perhaps wearing the object influences one's self-concept, whereas observing the object does not. As noted, the active-self account of prime-to-behaviour effects suggests that one reason primes impact behaviour is because of their influence on the self-concept (DeMarree, Wheeler, &

Petty, 2005; Wheeler *et al.*, 2007). A fourth possibility is that enclothed cognition might function as a stronger prime than mere observation, and hence show larger effects (cf. Dijksterhuis & van Knippenberg, 1998).

The examples described so far refer to the influence of physical objects (clothing, glasses) on elaboration. However, wearing objects can also influence attitude change by other roles, such as by affecting validation. For example, Belding, Petty, and Briñol (2012) examined how reading glasses and baseball caps can both validate and invalidate one's thoughts depending on whether a message recipient is in a cognitive mindset or an affective mindset. We hypothesized that wearing reading glasses could validate one's thoughts because they are associated with concepts such as intelligence, but that this should only occur if people are in a cognitive mindset and concerned about cognitive concepts. In contrast, wearing a baseball cap could validate one's thoughts because it is associated with being a partier and cool, but that this should only occur in an affective mindset and people are concerned about their feelings.

To test these hypotheses, on one study all participants read a persuasive message containing strong arguments. To facilitate the conditions required for an adequate test of validation (rather than elaboration), participants were led to believe that the message was personally relevant because their own university was considering implementing senior comprehensive examinations in the near future, which encouraged elaboration to be high for all participants (Petty & Cacioppo, 1979). Furthermore, participants read the message before completing the experimental manipulations, ensuring that differences in attitudes would be due to validation rather than changes in elaboration. After thinking about the proposal, participants were randomly assigned to complete a mindset manipulation involving completing emotion- or cognition-related words, respectively. Specifically, participants completed a mindset induction in which they filled in missing letters in a word completion task using words related to cognition (e.g., brain) or emotion (e.g., heart), and were then asked to wear either the reading glasses, the baseball cap, or no item.

Participants who wore the reading glasses and were in the cognitive mindset condition had more favourable attitudes towards the proposal relative to those who wore the baseball cap in this mindset. However, under the affective mindset, the effect was reversed and those who wore the baseball cap were had more favourable evaluations. Importantly, these effects were mediated by the cognitive and affective mindset manipulation checks, respectively. Thus, wearing reading glasses cognitively validated one's thoughts relative to the baseball cap in a cognitive mindset condition, whereas wearing a baseball cap affectively validated one's thoughts relative to the glasses in the affective mindset condition.

Just as the impact of objects on elaboration is moderated by other variables, so too is the impact of objects on validation. Thus, the impact on wearing objects on thought validation might vary as a function of prior experience with the object, fit of the item, whether the object is worn or merely visualized, and with additional naïve meanings beyond those created by the cognitive–affective mindsets. These factors can influence elaboration and validation processes, as well as other psychological processes relevant to attitude change. Furthermore, moderating variables such as the extent of initial elaboration in the situation and the timing of events could also impact the mechanism by which embodied objects work. As noted, under low-thinking conditions, wearing objects can influence attitudes via a variety of low-effort processes (e.g., heuristic self-perception inferences such as 'I feel smart wearing these glasses and don't need to change'). When the likelihood of thinking is relatively high, these same objects could

potentially impact persuasion by affecting the direction of the thoughts that come to mind, or by serving as a piece of evidence.

These insights can be applied to other domains of work on objectification. For example, cognitive and affective mindsets might make a difference when people wear certain clothes or look at the objects worn by others. Thus, women who wear a bathing suit may be less likely to perform well on a test of mathematical ability primarily when in a cognitive mindset that highlights a subset of associations (e.g., lack of intelligence). In contrast, it is possible that priming participants with an affective mindset may attenuate (or even reverse) the differences between these two conditions if people focus on leisure (e.g., I am relaxed). Although speculative, woman wearing a bathing suit could be more likely to perform well on tasks framed as fun compared to those in the sweater condition.[2]

Integration: Treating products of the mind as objects

After describing how physical objects can influence our thoughts, this section examines how our thoughts can be treated as physical objects. In a recent set of studies on thought objectification, Briñol, Gascó, Petty, and Horcajo (2013) examined this question empirically by studying the extent to which people can move from metaphorical analogies of thought to a more literal view of thoughts as physical objects. We began by asking European participants to write down either positive or negative thoughts about the Mediterranean diet on a piece of paper. Then, participants were randomly assigned to one of three conditions: thought disposal, thought protection, or a control condition. Those in the disposal condition were asked to take the page on which they had objectified their thoughts and place it in a trash can. In the protection condition, participants were asked to take the page on which they objectified their thoughts, fold it up, and keep it in a safe place such as their pocket, wallet, or purse. In the control condition, participants were asked to merely fold the corners of the page where the thoughts were written and leave it on the table. After performing one of these actions, all participants were then asked to rate their attitudes regarding the Mediterranean diet. According to the thought objectification view, physical disposal of one's thoughts would lead to mental disposal as well. Thus, when thoughts were discarded, participants were expected to use their thoughts less in forming their judgements than in the control condition, similar to previously discussed thought invalidation effects from posture (e.g., head shaking, bodily slumping). Furthermore, protecting one's thoughts should lead to more usage in forming judgements than in the control condition.

As expected, results indicate that attitudes reflected the direction of participants' thoughts in the control condition. However, participants who protected their thoughts showed a more pronounced effect of thought direction on attitudes than in the control condition. In contrast, the effect of thought direction on attitudes was attenuated for those in the thought disposal condition compared to the control group. Thus, how people treated their objectified thoughts affected whether they used their thoughts. These same

[2] *As another example, holding or using 'lucky objects' could be particularly influential when people focus on how good they feel (affective mindset) rather than when they focus on how likely it is for outcomes to vary (cognitive mindset). Furthermore, recent research suggests that wearing an object associated with safety (a bicycle helmet) compared to a control object (a baseball cap) can increase risk-seeking behaviour (Gamble & Walker, 2016). We expect these results would be more likely to occur when participants are in a cognitive mindset because of the (conscious or unconscious) association between helmets and safety or protection, but not in an affective mindset condition when fun associations come to mind. Indeed, the researchers' cover story of wearing the object as an anchor for eye-tracking equipment that needed to be calibrated may have primed a cognitive mindset for participants (Gamble & Walker, 2016).*

effects were observed in conceptually similar studies using other attitude objects (e.g., evaluations of one's own body) and other inductions of thought disposal (e.g., moving thoughts to the recycle bin on the computer).[3]

The research described in this section suggests that objectification can be considered a concept that goes beyond perceiving and treating people as physical objects. Indeed, our own thoughts can be also treated as physical objects which can decrease or increase their usage depending on the circumstances. Of course, as we examine in the next section, thoughts can be about many things. This opens the possibility that throwing away a file with someone's name on it may be the equivalent of throwing that person away mentally. This novel perspective suggests that the ways in which we treat objectified thoughts about people might have consequences similar to those already identified in the objectification literature.

Extension: Meaning moderates the impact of objectification

Given that language is filled with metaphors mapping thoughts onto physical things (Lakoff & Johnson, 1999), the studies on thought objectification open the possibility of many other interventions that can vary with the meaning of the behaviour. For example, in another line of work on thought objectification Kim, Duhachek, Briñol, and Petty (2014) varied the meaning of the action taken with objectified thoughts. In one of the studies in this series, participants first had to write positive or negative thoughts about increasing their level of physical exercise. Then, all participants were asked to move what they wrote to a box labelled as a 'trash can' (conceptually similar to Briñol *et al.*, 2013) or as a 'safety box'. The results showed that physically moving objectified thoughts to a trash can led them to be mentally discarded as well, whereas physically moving them to a safety box led them to be relied upon more, even though the physical action was the same in both conditions. Conceptually similar results were obtained when people were told to put their thoughts in their pockets, but in some conditions this was described as 'out of sight' and in other conditions it was described as 'a safe place'. That is, there was less thought use in the former than in the latter condition. Making a thought an object allows people to do things (and to associate meanings with those actions) that might not be as easy to do with thoughts when they are not perceived and treated as physical objects.

Taken together, these results suggest that the perceived meaning of one's actions with objectified thoughts matters. This perspective allows reconciliation of seemingly contradictory results reported by prior research. As described earlier in this section, Briñol *et al.* (2013) showed that the direction of thoughts was more influential in forming evaluations when those thoughts were physically kept safe rather than discarded. In contrast, Sparrow, Liu, and Wegner (2011) found that saving rather than deleting thoughts led those thoughts to be less influential in a memory paradigm. The studies conducted by Kim *et al.* (2014) suggest that the meaning of an action underlies these apparent differences rather than the action itself. That is, in the studies conducted by Briñol *et al.* (2013) saving thoughts increased thought usage presumably because that action was associated with protecting them in a safe place, whereas in Kim *et al.* (2014) the very same action of saving thoughts decreased thought usage presumably because the meaning was

[3] *These finding suggest that techniques involved in some mindfulness treatments that often promote a distance from people's own thoughts (e.g., Luttrell, Briñol, & Petty, 2014) can backfire at least for some people and for some situations, particularly those in which positive thoughts are present. The research by Briñol* et al. *(2013) also suggests a new, simple strategy for magnifying thought impact by having people develop a closer relationship with their positive thoughts (e.g., physically carrying them).*

associated with keeping the thoughts out of sight in a place where they were not needed at the moment (e.g., even though they could be retrieved at some other point in time).

In closing this section, it is important to note that the effects of meaning are relevant not only to physical actions with objectified thoughts, but also to other research more generally. For example, most of the bodily responses described in earlier sections on embodiment had very clear meanings attached to them. For instance, arm flexion tends to be associated with approaching objects. However, the meaning of these behaviours can vary across individuals and situations. For example, arm extension can be seen as approaching in other settings (e.g., extending the arm to reach a desired object). As should be clear from the work we described so far, we argue that if the meaning associated with a behaviour changes, the effect of that behaviour on subsequent attitudes could also change, at least under some conditions (see, e.g., Briñol, Petty, & Tormala, 2006; Briñol, Rucker, & Petty, 2015). For example, the very same physical behaviour (making a fist; Schubert, 2004) has been associated with feelings of power for men but with feelings for frustration for women.

Extension: Mindsets moderate the impact of objectification

Taken together, the several lines of research described in the prior section on objectifying thoughts are consistent with the work described previously on embodied, situated, and enclothed cognition, suggesting that the relationship between body, mind, and environment is multidirectional. In closing this section, we provide an additional example suggesting that treating thoughts as physical objects can be informative in regard not only to the evaluation of objects, habits, and self-evaluations but also to objectifying people and relationships. Specifically, if we change the way we view an objectified partner, that might influence how we use that partner's feedback in evaluating ourselves. To explore this idea, Sawicki, Cancela, Briñol, and Petty (2016) asked participant to objectify their thoughts about another person by creating a clay figure. That is, they were told to construct a clay figure to represent their relationship. Then, participants were randomly assigned to make the object larger or smaller prior to receiving either positive (e.g., 'You look great today') or negative comments (e.g., 'You do not look good today') from their partner. Finally, participants were asked to focus on how they felt about their relationships and to rate their degree of satisfaction and commitment to their partners.

The results of this study demonstrated that increasing versus decreasing the size of the clay object representing their relationship magnified the impact of the direction of the comments made by their relationship partner. Compared to making the object representing their relationship smaller, those who made it larger felt more satisfied and committed to their partner after hearing something positive rather than negative. That is, the valence of the partner comment mattered more when the relationship was made physically larger in clay compared to smaller, perhaps because making the relationship physically larger made it seem more important and thus the comments from one's partner were more consequential.

Part III: Conclusions and interventions

Summary

Many objectification phenomena can be understood from a mind–body dualism perspective in which physical aspects of people are perceived in opposition with their

psychological features. As noted, this trade-off between body and mind has been associated with a large number of negative consequences. Compared to this classic mind–body dualism, in the first part of this review, we have argued that the two concepts are more closely integrated and are capable of influencing each other by processes of primary cognition (e.g., elaboration) and secondary cognition (e.g., validation). Thus, research on embodied persuasion illustrated how complex, yet understandable, this relationship can be.

In the next part of the review, we extended our integrated mind–body perspective even further and suggested that one's thoughts can be affected by physical objects and the thoughts themselves can be objectified. The first domain of research described illustrated that wearing physical objects can operate through the same processes of elaboration and validation as did bodily responses. These insights are particularly relevant to the objectification literature because many of the inductions in this work (e.g., having participants wear clothes associated with sports or clothes associated with academics) are very similar to classic objectification inductions (e.g., having participants wear swimsuits). Then, our research on thought objectification also argues against the classic mind–body dualism perspective. Specifically, our research demonstrated that mental contents can be understood and treated as if they were physical objects affecting evaluative processes by influencing elaboration and validation processes. Furthermore, the research described in this section highlighted the importance of considering how different people interpret in different ways the same physical and social action, and how malleable those perceptions can be depending on the circumstances.

From simple effects to complex effects

It is now clear that objectification (like any other variable relevant to the body) can produce different (even opposite) effects on attitudes and persuasion. The presence of opposite effects in the attitude change domain can lead to some confusion (Briñol & Petty, 2012). It *is* confusing that something which seems as simple as wearing a baseball cup, wearing a swimsuit, or putting the chest out can both increase and decrease evaluation in a persuasion paradigm. It can be also challenging when the same body action (e.g., wearing swimsuits, putting thoughts in a box) can decrease but also increase elaboration, leading to different evaluations as a function of argument quality.

However, evaluating these effects within the framework of the ELM, used throughout this review, explains this complexity and is very consistent with McGuire's (1983) contextualist framework for social psychology. The attitude change research we have presented in this review indicates that any given phenomenon (wearing clothes, body postures, and beyond) can produce multiple effects by operating through multiple processes that work under specific conditions. Although there has been much discussion of duality in persuasion (e.g., body vs. mind, affect vs. cognition, cues vs. arguments, internalization vs. identification; Petty & Briñol, 2008), the ELM presents a guiding framework to organize and comprehend such phenomena.

From single to multiple processes

Understanding the processes by which variables can produce persuasion is important for a number of reasons. First, if body-related inductions can affect attitudes by different processes, then different persuasion outcomes for the same body induction are possible. For example, when thinking is constrained to be low, wearing glasses might lead to more

persuasion because glasses make one seem smart and therefore they can serve as a simple positive cue. But, when thinking is unconstrained, wearing glasses compared to controls might increase processing of the weak arguments in a message thereby reducing persuasion. Furthermore, when thinking conditions are high and wearing glasses precedes processing, it can increase persuasion by biasing the thoughts that come to mind in a positive manner. Furthermore, wearing glasses after thinking about the weak arguments might increase confidence in one's negative thoughts to them thereby reducing persuasion. Finally, if people believe that their judgements are somehow being biased or influenced by glasses and do not want this to occur, they may adjust their judgements in a direction opposite to the expected effect, reducing or reversing the normal effect of the variable (Wegener & Petty, 1997). Thus, the same body-related induction can increase persuasion or decrease persuasion depending on the process by which it operates. Again, the ELM specifies the *a priori* conditions (antecedents) needed for each process to operate, and therefore, it makes concrete predictions about when persuasion increases or decreases.

Second, even if two different processes result in the same extent of persuasion, the consequences of this persuasion can differ. As noted earlier, the ELM holds that the process by which an attitude is formed or changed is consequential for the strength of the attitude (i.e., whether it lasts in the long term; see Cárdaba, Briñol, Horcajo, & Petty, 2014). For example, in a recent study, Mello, Garcia-Marques, Briñol, Cancela, and Petty (2016) found that attitudes predicted behavioural intentions better for those high (vs. low) in perceived attractiveness and that this effect was more likely to be observed for participants high (vs. low) in self-objectification. This work illustrates that attitudes are more consequential when associated with validity cues that people care about, such as attractiveness for those who see themselves as physical objects.

Practical interventions

Although our review focused on theoretical understanding of various kinds of objectification in the domain of attitudes and persuasion, there are a number of practical implications. Objectification researchers have proposed a number of interventions for defusing the literal objectification of women and other stigmatized groups to reduce prejudice and infrahumanization of them. These interventions are often focused on educating people and providing individuals and institutions with more human views of these groups that focus attention on psychological features (their competence, merits) rather than to their physical appearance (e.g., Bernard, Gervais, Allen, Delmee, & Klein, 2015; Cikara, Eberhardt, & Fiske, 2011; Haslam & Loughnan, 2014; Heflick & Goldenberg, 2009; Heflick, Goldenberg, Cooper, & Puvia, 2011; Johnson & Gurung, 2011).

We argue that the success of interventions depends in part on the extent to which anti-objectification messages are effective in changing attitudes and whether these attitudes in turn influence people's behaviour. As we hope is clear from this review, developments in the science of persuasion have proven to be highly useful in addressing how and when people change or resist changing their attitudes and behaviour. For example, despite lay beliefs that all that is required is education, psychological research demonstrates that an individual's idiosyncratic reaction to an intervention (i.e., people's thoughts) and their assessment of their own thoughts can be more important than learning the information itself. Thus, even if a woman is exposed to a communication designed to reduce her potential self-objectification, the campaign will not likely achieve the desired goals if she counterargues the arguments received either because she finds them relatively weak or

because she does not think they are relevant to her. And, even if appropriate positive thoughts are generated, these thoughts will have little impact on judgement if she does not have confidence in those thoughts (i.e., believe they are correct) or come to like them (i.e., feel good about them). For example, if people generate favourable thoughts in response to an anti-objectification intervention but they doubt those thoughts (e.g., because they are in a doubtful posture, or because they wear something that looks stupid), then the intervention is not likely to be successful. Importantly, just as body postures and physical objects associated with doubt can reduce thought validation, other physical features associated with confidence can serve as powerful sources of thought validation, paradoxically opening the possibility of using many embodiment strategies in intervention to reduce self-objectification.

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