

across different experimental situations. Balcetis concedes that “to best predict perceptions of distance, it may be necessary to specifically measure the activation of underlying approach or avoidance motives” (2016, p. 120). However, two issues arise concerning measurement. First, how do we measure motivation at the moment that participants give their estimates of distance? We know that emotions change over time due to situational characteristics and length of exposure to emotion-inducing stimuli (Witherington & Crichton, 2007). If we measure motivation either prior to or after distance estimates, then we risk not capturing the (allegedly explanatory) motivational direction experienced at the moment that one perceives the distance. Although Balcetis suggests ways to measure motivational direction, such as anterior cortical lateralization or through the behavioral avoidance system (BAS), these are unlikely to capture precise measures of the motivation at the time viewers are estimating distances. Brain recordings are difficult to obtain in the types of environments where one has sufficient cues for estimating distance. The BAS scale (Carver & White, 1994) takes a significant amount of time to complete in the context of making perceptual estimates and it is a trait measure, whereas a state measure of avoidance might be more appropriate. So, for a variety of relevant perceptual circumstances, measurement techniques may be insufficiently precise, and accordingly it will be unclear whether a measured effect is one on perception or rather on judgment or memory. Furthermore, we should also consider whether motivational direction is consciously accessible to participants. In the case of patient populations, participants are sometimes unable to identify the cause of their experienced symptoms (e.g., those having a panic attack often attribute their symptoms to physical problems rather than anxiety). These limitations in experimental method might be partly mitigated, we again suggest, by comparing experimental results concerning factors like arousal and valence, in addition to motivational direction.

Finally, the scope of the motivated distance perception approach is presented by Balcetis (2016) as limited to distance perception. But why? Certainly other aspects of perception are plausibly influenced by motivation. For instance, the perception of hill slants and size are affected by different emotions that also may activate approach or avoidance (Riener, Stefanucci, Proffitt, & Clore, 2011; van Ulzen, Semin, Oudejans, & Beek, 2008). In addition, Balcetis and Dunning (2006) showed that visual categorization of object shape may be influenced by motivation. Moreover, expanding the approach would allow for tests of perception in other sense modalities that indicate

distance, such as audition (Siegel & Stefanucci, 2011). Further, if Balcetis or others hope to extend this approach to testing whether behaviors are adaptive in response to manipulations of motivation, then this will necessitate gauging more than just distance. Action execution involves many aspects of visual experience. For example, if one is walking along a path and sees a friend with whom one would like to chat, then one must calculate the perceived speed and heading direction needed to alter one’s path in order to intercept the friend.

To conclude, we applaud Balcetis’s ambitious motivational direction approach, while maintaining that a broader and more holistic explanatory approach would plausibly better organize the existing data and, simply, be better motivated.

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## Comment: The Paradox of Parsimony in Motivated Distance Perception

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## Abstract

The motivated distance perception theory (Balcetis, 2016) paradoxically is too parsimonious to account for a variety of findings, including those of the author. The theory poorly defines the features of eliciting situations, which fails to constrain the theory making it nonfalsifiable and allows for post hoc interpretation of the effects. Finally, the theory ignores the complexity of the motivational system and the automaticity of motivations.

## Keywords

Distance, emotion, motivation, perception

The motivated distance perception theory is quite parsimonious (approach = closer; avoidance = farther); however, there are several concerns that limit its utility. First, there is a lack of clarity in defining the eliciting features that shift perceivers' motivational direction. Second, the theory fails to recognize the complexity of the motivational systems and their core principles. Third, the theory ignores the importance of assessing both relative and absolute measures of distance to stimuli. Overall, the theory has limited predictability, it is not falsifiable, and more importantly it fails to account for and explain perceptual biases.

## Parsimony and Predictability

Why is it important to provide a more comprehensive theory that clearly identifies the features of eliciting situations? Because it can lead to post hoc interpretation as exhibited by the author. For instance, Cole, Balcetis, and Dunning (2013) argued that spiders evoke avoidance tendencies, but in the present review when discussing the same data the author suggests that spiders evoke approach-oriented tendencies. Thus, the data, rather than the theory, seem to determine the motivational direction. The theory, unfortunately, allows for this convenient switch in motivation by having the "features of eliciting situations" precede the motivation stage, which implies that the situation governs motivation. This implication, however, ignores a core principle of motivation: emotions, such as fear and disgust, *automatically* evoke a motivation tendency (Cisler, Olatunji, & Lohr, 2009). A person who sees a spider will automatically activate an avoidance tendency, thus how does avoidance become approach? To resolve this paradox, the model should incorporate an appraisal mechanism that either runs parallel to or after the automatic activation of the motivational tendency. Otherwise, eliciting features of situations will drive motivation, which contradicts the authors' own theoretical argument.

Limiting motivation to the global behaviors of approach and avoidance is too simplistic and fails to capture the complexity of the motivational system. Given the data in the review and using a simplistic motivational model, the theory cannot account for why disgust and fear, two avoidant motivations, produced proximal and distal biases and accurate perception. But, the theory could account for the data better if perception was influenced by sub-behaviors of avoidance (fight, flight, freezing; Corr & McNaughton, 2012), which can

increase the flexibility of the model, but maintain predictability. Avoidance behaviors that evoke fight, flight, or freezing could bias perception proximally, distally, and accurately, respectively. Moreover, the theory lacks a clear prediction for conflict between the two motivational systems even though motivational theories suggest that conflict produces cautious approach. Unfortunately, the author uses conflict to justify nonpredicted results (i.e., disgust).

## Eliciting Features

Greater clarity is required when defining features of eliciting situations and how those features bias motivation and perception. For instance, the author presents contradictory results for how the availability of resources influence perception. Specifically, threat without the ability to escape leads to proximal estimates when resources are depleted (Cole et al., 2013; Harber, Yeung, & Iacovelli, 2011) and when resources are ample (Cesario & Navarrete, 2014). Elsewhere in the review, individuals threatened and who have available resources evoke both accurate (Harber et al., 2011) and proximal (Cesario, Plaks, Hagiwara, Navarrete, & Higgins, 2010) estimates. Thus, a lack of clarity allows for all situational factors to be freely interpreted creating a nonfalsifiable theory.

## Measurement Issues

The motivated perception theory fails to provide recommendations for how perceptual estimates should be measured, which impacts the reliability and validity of the results. When identifying motivated perception effects, there should be at least two analyses conducted. First, the "motivated" stimulus must be compared to a control stimulus. Second, the "motivated" stimulus must be compared to the motivated stimulus' actual distance. In much of the work reported, the motivated stimulus was never compared to the actual distance. If the comparison point was the actual distance to the motivated stimulus, then sometimes perceptions were proximal and sometimes perceptions were accurate (Balcetis & Dunning, 2010; Cole & Balcetis, 2013). How should these effects be interpreted? Was a confounding variable present in one situation, but not the other? Failure to provide clarity for how to reconcile these inconsistencies reduce the validity and reliability of the effects and the underlying theory.

## Concluding Remarks

The motivated distance perception theory provides less clarity and understanding for why motivation influences perception than other functional accounts of perception (e.g., Proffitt, 2006).

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## Comment: Emotion, Goals, and Distance: A View From the Study of Adult Development and Aging

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### Abstract

In this commentary, we consider how Balcetis's proposals may interface with the study of motivation and emotion in lifespan developmental psychology, pointing to open questions regarding the distance perception of long-term chronic goals as well as age-related shifts from informational to emotional goals.

### Keywords

aging, long-term goals, motivation

As lifespan developmental psychologists interested in emotion–motivation links, we agree with Balcetis's (2016) assertion that goals generally, and approach/avoidance specifically, are important for understanding emotion. In our commentary, we offer some thoughts from viewing the work through the lens of adult development and aging (e.g., Freund, Hennecke, & Mustafić, 2012; Isaacowitz, 2012). Our overarching theme is that the framework applies well to short-term, situational goals, but seems less well suited to the long-term, chronic goals investigated in lifespan development research.

### What Kind of Goals?

The article focuses on relatively short-term motivational states—for example, wanting to approach something appealing

or avoid something disgusting. Clearly, these short-term motivational states are relevant to transient emotional experiences, making it interesting to know how they influence emotions and motivated cognition (i.e., distance perception).

In contrast to such short-term goals, the goals most relevant in adult development are highly abstract, closer to life goals or developmental tasks (e.g., Freund, 2007) rather than very concrete goals specific to a situation. Such goals are establishing a family in young adulthood, caring for the next generation in middle adulthood, and maintaining independence in daily living in older adulthood. These goals—both the means involved and the ends that people want to attain or avoid—are typically not located in space. To be affected by the processes laid out by Balcetis, they need to be broken down into more concrete subgoals. For instance, the goal to maintain independence might best be achieved by staying healthy; this might encompass the subgoal of eating healthily with the means of not eating chocolate. The goal to avoid chocolate might lead to the perception of chocolate as being placed further away which might help to ward off the temptation triggered by the “hot” visceral aspects associated with chocolate. However, only by breaking down goals to a very concrete level does Balcetis's framework connect with developmental goals. Higher order goals such as being healthy are not located in space.

At the same time, the view from adult development suggests that longer term, chronic goals may be especially important in terms of distance perception and emotion, in particular maintenance