SHIFTING PERSPECTIVES: POINT OF VIEW IN VISUAL IMAGES AFFECTS ABSTRACT AND CONCRETE THINKING

DISSertation

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

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The Ohio State University
2009

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ABSTRACT

Visual images can depict the same action or event from multiple points of view. Images from a first-person perspective depict events as seen through the actors’ own eyes, whereas images from a third-person perspective depict events through the eyes of an observer who is watching an action take place. This dissertation examines how varying this aspect of images affects level of abstraction, which then leads to different interpretations of the same event. Four experiments tested whether visual perspective is related to thinking abstractly or concretely about actions. Across these studies, actions depicted in third-person images were described abstractly more often than were first-person images, and actions described abstractly were more often paired with third-person depictions of those actions. Two additional experiments tested whether point of view in visual images causes one to adopt either an abstract or a concrete mindset. In these studies, people who had been briefly exposed to third-person images were more likely to describe unrelated actions abstractly and to think that abstract descriptions fit Aesop’s fables than people exposed to first-person images. These findings suggest that third-person images are more strongly associated with adopting an abstract processing style. Together, these studies attest to the significance of visual perspective in images and highlight the broader role of perspective in human cognition.
To Andrea, for her unending encouragement and dedication,
and the Shaeffer and Douglass families for their enthusiastic support.
This dissertation would not have been possible without the guidance and support of Lisa Libby. I am grateful for her mentorship on these projects and for her encouragement to do the type of research that got me interested in social psychology in the first place. The research in this dissertation grew out of ideas that we developed together during many enjoyable discussions. Her work on visual perspective in mental imagery served as an invaluable starting point for the ideas discussed herein and shaped the research methodologies employed in these experiments.

I am grateful for the input of Richard Eibach, whose collaboration helped guide the direction of these studies. In addition, I wish to thank the other members of my dissertation committee, Ken Fujita and Rich Petty, for their valuable feedback, as well as the members of the Social Cognition Research Group who gave helpful comments on a presentation of this work.

I am indebted to the members of Libby lab group for their many useful suggestions and their friendship and support over the years. And these studies would not have been possible if not for the tireless efforts of the many undergraduate research assistants who helped collect this data, in particular Alex Finnarn, Jessica Ramey, Larry Koren, and Erika Price.
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CHAPTER 1

INTRODUCTION

The Director

Filmmaker Julian Schnabel faced a daunting task. He was chosen to direct a film about the life of Jean-Dominique Bauby who, at the age of 43, suffered a massive stroke that left him paralyzed and unable to speak. Bauby was robbed of all but the ability to blink his left eyelid; his mind, however, remained entirely intact, trapped in a body he could no longer control and without a voice to communicate to the outside world. His condition, known as locked-in syndrome, was irreversible. Bauby would live out his remaining days locked into the shell of his once able body, contemplating the thoughts, feelings, and physical sensations that defined his existence. In a miraculous feat of patience and perseverance, Bauby wrote a memoir; his words, blinked one letter at time, told the story of what it was like to experience life as he did, trapped like a butterfly in a diving bell. It was this phenomenological experience that director Julian Schnabel wanted to convey in his film. But, how could he depict this story so that viewers would focus on Bauby’s momentary subjective experiences, rather than broadly reflecting on the brokenness of his body and the hopelessness of his condition? In *The Diving Bell and the Butterfly* (2007), Schnabel used what is called a subjective camera or point of view
(POV) shot, in which the camera captures situations as they would have appeared to Bauby. The camera sees what he sees as he experiences the profound challenges and changes in his life. Over the course of the film, the camera viewpoint gradually shifts so that the audience begins to see Bauby as he appeared to others. In these moments, the sight of the once vibrant man, now helplessly confined to a wheelchair, forces one to reflect on the full extent of his adversity.

The Marketing Gurus

In the summer of 2007, Apple Inc. debuted one of the most anticipated products in the company’s history. The iPhone combined the features of numerous gadgets with a revolutionary multi-touch screen and a sleek product design. It could play music like an iPod, take pictures and make phone calls like a camera phone, and check e-mail and browse web pages like a portable computer. And it did so without a physical keyboard and only one button. The product was so original and so minimalist in its design that it posed an interesting challenge to the TBWA/Media Arts Lab marketers tasked with creating the advertising campaign for it. How could they make this innovative product seem familiar and accessible, and get people feeling comfortable with the idea of using it? The advertising group created an iconic series of television spots in which the camera simulates the first-person visual perspective of someone using the product. The ad shows the product close-up, held in an anonymous left hand against a black background. As a single right hand finger taps and glides its way across the screen, demonstrating the product’s features, the ad viewer feels engaged in the experience. No doubt, this simulated hands-on interaction boosted traffic to Apple stores where people could experience the product in person. Interestingly, as consumers became accustomed to the
product, later television spots for the iPhone focused less on its usability and concrete features and more on the broad benefits it afforded one’s lifestyle. Accompanying this change in message was a change in the visual perspective depicted in the ads: the camera now adopted the perspective of a third-person observer, looking on as someone else interacted with the product.

The Killing Game

In 1993, id Software released *Doom*, a computer game that would go on to be one of the most popular video games titles of all time. In the game, the player takes on the role of a soldier who navigates levels of monsters by blasting them with an arsenal of deadly weapons. This game was notable for both its level of extreme violence and its use of the first-person visual perspective. This “first-person shooter” foreshadowed an entire genre of games that would imitate this style, in which the player assumes the visual perspective of the combatant. One of the likely appeals of first-person shooter games is that a player can simulate the visual and visceral experience of committing brutal violence without the responsibility of realistic consequences. Players laud these games as harmless fun, but critics argue that they desensitize players to violent actions and subvert the process of deliberative consideration that inhibits aggressive behavior. *Doom*, in particular, sparked controversy when it was discovered that Eric Harris and Dylan Klebold, perpetrators of the Columbine High School massacre, were avid players of the game. There is now an abundance of experimental evidence showing that exposure to violent video games increases aggressive thoughts, feelings, and behavior (e.g., Anderson et. al, 2004). But, could it be that the experience of playing a first-person shooter game is so qualitatively different from other types of violent games that it compels people to kill?
Point of View in Visual Images

As these opening examples illustrate, point of view in visual images is more than an incidental detail included for artistic effect. It is an important element in the non-verbal language of visual communication. It shapes the experience of visual displays of information. And it can be intentionally manipulated to convey ideas or create a desired response. In the same way that rhetorical devices can be used to craft powerful words, there are devices of visual rhetoric that can be employed to give influence to images. Visual point of view is one of those rhetorical devices.

In this dissertation, I will explore how point of view influences the way in which people make sense out of what they see. I will also examine the reverse relationship and show that the way that people understand events affects people’s preferences for seeing the events in first-person or third-person images. And I will discuss the measurable influence that visual perspective has in broadly affecting cognition and report a pair of experiments in which point of view in visual images is shown to affect people’s mindset, which has consequences for subsequent judgments about unrelated events.

Visual point of view or visual perspective is generally categorized as one of two different types. The first-person perspective is looking out through one’s own eyes. When actions are depicted from a first-person perspective, the viewer embodies the perspective of the actor. The first-person perspective in visual images can be conveyed in several ways. Static first-person images often show hands or other body parts in a manner that makes it seem as though they belong to the viewer. Moving images can establish the first-person perspective by using camera movement to simulate human motion. The video
game Doom combines both of these techniques: a weapon wielding hand extends from off screen and the view changes as the character looks around.

The third-person perspective is looking out through the eyes of someone who is watching an event take place. When actions are depicted from a third-person perspective, the viewer is a passive observer of the situation. The majority of images in art and entertainment media are depicted from a third-person perspective. When we look at paintings of still life, flip through a friend’s vacation photos, or watch television sitcoms we generally experience those situations as a third-person observer. At times, we know the identity of the observer whose perspective has been co-opted (e.g., the artist, the family photographer). But, it can also be unclear who is observing a scene, and in some cases the perspective may not even belong to a person at all (this third-person omniscient perspective is the figurative “fly on a wall” or “God’s eye view”).

Visual perspective is a characteristic of an image as opposed to its subject matter. The same object or event can be depicted from both the first-person and third-person visual perspectives. In that respect, it is not unlike other properties of images such as angle of view, framing, focus and depth of field, color and lighting, and viewing distance (Zettl, 2005). What is particularly fascinating about these image properties is how important they are in shaping the subjective meaning that people derive from what they see. Even a slight change in one of these properties can alter our understanding of what the image represents and influence our reactions to it (e.g., Arnheim, 1974). Take, for instance, the associations between light and good and dark and bad (Meier, Robinson, & Clore, 2004). A person cast in bright white light seems honorable and kind, whereas that same person cloaked by shadows seems untrustworthy and potentially dangerous. Angle
of view is associated with perceptions of power. Looking up at someone or something makes it seem more powerful than when one is looking down at it (Kraft, 1987; Schubert, 2005). And perceived physical distance is linked with feelings of safety (Mobbs et al., 2007; Williams & Bargh, 2008). For example, a horror movie villain feels far more threatening when depicted up close than when far away. It is hard not to be terrified watching Jack Nicholson’s character in The Shining (1980) pop his head through the broken bathroom door and shout, “Here’s Johnny!”

The effect of perspective shifts in visual images is less well understood, however. Despite the fact that visual perspective is a prominent and often defining element in film, advertising, videogames, fine art, news and sports broadcasting, and virtual reality environments, there is relatively little empirical research on how point of view shapes the way people understand and react to images. Thus, investigations of this topic could inform fields as diverse as film theory, aesthetics, consumer behavior, visual communication, and computer visualization. Additionally, I believe this topic is of particular importance to cognitive and behavioral science.

In a normal day, people find themselves in the roles of both a first-person actor and a third-person observer. Research in social psychology has demonstrated that this actor/observer distinction is crucial to judgments that people make (Pronin, 2008). For example, the egocentric judgments that people make about their own actions often contradict the judgments made by observers (Jones & Nisbett, 1972). I believe that investigations into the effects of perspective in visual media can be useful for understanding the cognitive processes in real-world perception that bring about these actor/observer differences. Human visual perception is often strikingly similar,
regardless of whether a person is seeing the world as it presently is or viewing an image that depicts the world as it once was or could be (Cutting, 2005). For example, perceptual inferences resulting from normal vision, such as the continuity of events despite incomplete information, also occur when people make sense of images such as motion pictures (Levin & Simons, 2000). This suggests that if there is an effect of visual perspective on how people make sense out of images, then it may indicate a broader role of perspective in the perceptual process. Therefore, experiments that manipulate point of view in images may shed light on the impact of visual perspective, in general, on people’s thoughts, feelings, and behavior.

**Predictions about Visual Perspective and Cognition**

In order to understand the effects of shifting visual perspectives it is important to consider some characteristics that differ between experiencing first-person and third-person points of view. The first-person perspective is the point of view of an actor. From this vantage point, one may have greater feelings of personal agency and ownership for perceived actions (such feelings are linked to a basic awareness of one’s self being present at a particular moment in time; Gallagher, 2000). Actions, most likely happening in front of the actor, may feel psychologically close. The third-person perspective is an observers’ point of view. Actions viewed from this perspective are perceived as stemming from someone else; one is simply a bystander that cannot affect the outcome. For this reason, one is free to view actions from a multitude of angles including from the front, side, and behind. The observer may be located near an action or far away from it. Regardless of one’s spatial distance, the third-person observer may feel more detached or psychologically distant from the event.
I believe that these differences in the phenomenological experience of the first and third-person perspectives predispose people to think about the world in different ways. Specifically, visual perspective leads people to adopt either an abstract or a concrete mindset that affects how they make sense out of actions and events. For this reason, two people with different visiospatial perspectives on the same event can walk away from it with two different understandings of what occurred. The person with the first-person actor’s perspective is likely to think of the event in terms of its concrete details and consider the specific steps involved in carrying out the actions in that particular context. The person with the third-person observer’s perspective, on the other hand, is likely to consider the broader meaning of the actions and speculate as to what goals, beliefs or personal traits compelled the actor to behave in this way. I will argue that for this difference in cognitive style to occur, one need not be an actual actor or observer of a real world event. To the extent that first-person and third-person images create the same phenomenological experience as actually being an actor or observer, then these differences will similarly shape judgments and behavior.

The idea that features of one’s self or one’s environment can affect abstract and concrete thinking is not new. In Chapter 2, I review some of these factors and discuss the different consequences resulting from abstract and concrete thinking. In Chapter 3, I review the differences between the first-person and third-person visual perspectives and discuss how perspective relates to level of abstraction. Additionally, I explain how my predictions about the role of perspective in visual images are consistent with research on perspective in mental images, specifically memories of one’s self in the past and mental simulations of one’s self in the future. Then, I present a series of six experiments that
demonstrate how perspective in visual images is related to how people identify and make sense out of actions, as well as the broader mindset that one is in. I will show that perspective affects whether people think concretely or abstractly about what they see and demonstrate that shifting perspectives can even shape people’s judgments about actions and events unrelated to the content of images. Together, these experiments provide strong evidence that perspective is an important feature of visual images and plays a significant role in shaping cognition.
CHAPTER 2

ABSTRACT AND CONCRETE THINKING

A Multitude of Understandings

One of the most robust findings to come from research on social psychological phenomena is that people’s interpretation of objects and events is subjective and that ambiguity in our environments leads to a multitude of individual understandings (Griffin & Ross, 1991). This fact underlies how the simple action of “sitting on the bus” could be seen by so many in the civil rights movement as “standing up for equal rights.” It explains how the first moonwalk could be both a “small step for a man” and a “giant leap for mankind.” And it explains how the “exchange of rings,” when viewed through the eyes of Western culture, can also be seen as “making a lasting promise” to one’s partner.

This process of making sense of ourselves, others, and our surroundings is influenced by a host of individual and situational forces, including many that often go unrecognized (e.g., Nisbett & Wilson, 1977). One such force is the mindset a person is in—the cognitive orientation or mode of thinking that predisposes a person towards particular interpretations, evaluations, and actions (Gollwitzer, 1990). In this chapter, I will discuss one particular mindset: whether people are thinking concretely or abstractly. I will review some of the many consequences of varying level of abstraction as well as
highlight factors that influence thinking on this dimension. In the next chapter, I will explain why visual perspective in imagery should be considered another one of these factors.

Abstract and Concrete Mindsets

Levels of Abstraction

The dimension of abstraction is a continuum characterized by thinking about low-level, local concerns on the concrete end of the spectrum and high-level, global concerns on the abstract end. Put another way, abstract thinking is associated with thinking about the “forest,” whereas concrete thinking is about the “trees” (Trope & Liberman, 2003). More specifically, abstract processing of information is top-down and schema driven, meaning that the information deemed most central is fit into existing knowledge structures. Concrete processing is bottom-up and piecemeal, and involves attention to secondary features of objects or events.

Differences in the types of information attended to in abstract and concrete mindsets are one reason that people’s interpretations can differ. Construing events abstractly or concretely, however, also involves differences in the extent to which people look for and find meaning in situations. Whereas people in a concrete mindset are more likely to focus on features of an immediate experience, such as emotional and physiological reactions to the event, people in an abstract mindset are more likely to think broadly about how actions are an expression of goals, values, or identities (Freitas, Gollwitzer, Trope, 2004; Torelli & Kaikati, 2009). When thinking abstractly, people are also more likely to consider how an event fits with others like it in the course of their lives or the lives of others. They look for lessons that can be learned from events and may
incorporate those lessons into a broader narrative about themselves or others (McAdams, 1997, 2001). The shift from concrete thinking, in one’s first few years of life, to abstract thinking, in adolescence and beyond, is characterized by the emergence of these higher-level cognitive processes (Inhelder & Piaget, 1958).

In sum, abstract thought makes one more likely to fit information into general categories and reflect on its larger significance than does concrete thought. Because of these qualitative differences in cognitive processing, the mindset one is in can influence a wide range of important judgments, decisions, and behaviors. The following are just some of the many psychological processes affected by level of abstraction.

Processes Affected by Abstract and Concrete Thinking

Object categorization. How objects are categorized is consequential because it affects a variety of decisions including how the objects are used. A person who identifies and categorizes an object as a “brick” may not notice its potential usefulness as a doorstop if the more general category “things that are heavy” is not also accessible. Rosch and colleagues (Mervis & Rosch, 1981; Rosch, 1978; Rosch, Mervis, Gray, Johnson, Boyes-Braem, 1976) have noted that objects can be mentally represented at various levels of abstraction. While people very often categorize objects at an intermediate level of construal (e.g., dog), they may also think about objects at more general (e.g., animal) and specific (e.g., poodle) levels. The level of abstraction that is chosen depends on a variety of factors. For example, an airplane mechanic would likely note a far greater number of features of an airplane than a non-mechanic since that person has the expertise to consider the object on a more concrete level (Rosch et al., 1976). Because thinking about an object abstractly involves choosing a representation from a
number of possible alternatives, the context and one’s broader goals are also consequential. A dog may be thought of as a “pet” if one is browsing a pet store, but considered a “sure bet” if one is placing a wager at the dog track. In either instance, the person is moving from a more concrete representation to one that is more schematic, simple, and inclusive.

Action identification. How actions are identified can also differ based on level of abstraction. As the examples at the beginning of this chapter illustrate, actions can be thought about both concretely (e.g., exchanging rings) and abstractly (e.g., making a promise). Identifying actions concretely is associated with thinking about how actions are done, including the specific steps involved in carrying out the action (e.g., putting the ring on her finger). Abstract identifications of actions are associated with thinking about why an action is done, in particular the actor’s motives and goals responsible for the action (e.g., getting married; Vallacher & Wegner, 1985, 1987). The abstractness of action identifications is hierarchical with actions having multiple superordinate and subordinate levels of identification. Linguistic differences map on to these variations in action identification level (Semin & Fiedler, 1988). Language that describes an action abstractly omits features that are less important (e.g., “getting married” omits that rings were exchanged) while retaining central features. This suggests that people’s ability to think about actions abstractly and concretely is invariably linked with the availability of broad and narrow linguistic categories.

Causal attribution. The causes of actions are generally attributed to either the actor’s personal disposition or features of the situation. Inferences that a behavior is due to the actor’s disposition are necessarily more abstract than situational inferences because
dispositions are more general and decontextualized than situational factors (Nussbaum, Trope, & Liberman, 2003). Once a person makes a judgment about an actor’s disposition, that person may feel confident in his or her ability to predict the actor’s behavior across a variety of situations. For example, Henry Ford reportedly interviewed prospective employees over dinner in order to observe their behavior at the table (Seltz, 2000). If the aspiring worker salted his food before tasting it, he would no longer be considered for the position—by reacting so quickly, the person revealed that he was “hasty” and Ford likely reasoned that such a trait could prove too costly in situations important to his business. If one reasoned instead that aspects of the situation were the cause of the person’s behavior, then it would make less sense to extrapolate from the observed event to other situations in which the person might behave.

Whether one is thinking concretely or abstractly can influence the types of inferences drawn about behavior. Since it is necessary to first identify an action before inferring its cause (Gilbert, Pelham, & Krull, 1988; Trope, 1986), one way that level of abstraction can affect inferences is by influencing the outcome of action identification. Abstract action identifications are linked to thinking about an actor’s goals and identities (Vallacher & Wegner, 1985); therefore, identifying an action at this level of abstraction may predispose people to making dispositional attributions. Concrete action identifications, on the other hand, may lead to greater focus on contextual factors and an increased willingness to perceive that the causes of one’s behavior are complex.

Stereotyping. Though the persistence of stereotypes can be attributed to multiple factors, several of these factors are influenced by level of abstraction. One of the hallmarks of group perception is that people detect greater variation among individuals
within their ingroup than among outgroup members (Ostrom & Sedikides, 1992). This is evident in the frequently heard complaint that outgroups members “all look alike.” One explanation for this phenomenon is that people think more schematically about outgroup members and focus more on individuals’ shared features that they deem primary. In contrast, a person is more likely to focus on secondary features when perceiving members of one’s ingroup on which people more likely differ (Park & Rothbart, 1982).

This tendency may shift, however, depending on one’s motivations. The desire to value one’s ingroup and devalue outgroup members can motivate a person to think abstractly or concretely depending on whether an attribute is positive or negative. In particular, socially desirable ingroup behaviors and undesirable outgroup behaviors are represented at higher levels of abstraction, whereas socially undesirable ingroup behaviors and desirable outgroup behaviors are represented at lower levels of abstraction (Maass, 1999). Over time, as the positive ingroup and negative outgroup stereotypes that result from this process become more abstract, the harder they are to disconfirm and the more resistant they are to change (Maass, Montalcini, & Biciotti, 1998).

Interestingly, abstraction can also diminish stereotypes. By compelling individuals across multiple groups to conceive of themselves as belonging to an inclusive superordinate group, intergroup bias may be reduced (Gaertner & Dovidio, 2000; Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993). But, this is most likely to be the case when one’s ingroup is viewed as being prototypical of the superordinate group (Wenzel, Mummendey, & Waldzus, 2007). When recategorization is perceived as a threat to the initial ingroup identity, people will see the superordinate group as
illegitimate and attempts at greater inclusion may increase intergroup bias (Hornsey & Hogg, 2000).

*Self-control.* Exerting self-control involves resisting low-level temptations and focusing instead on one’s high-level goals and objectives. In order to have the willpower to forgo the slice of office birthday cake one may need to recall the desire to lose weight before an upcoming class reunion. Despite the allure of the cake on a concrete level (e.g., “that frosting looks amazing”), focusing on superordinate concerns (e.g., “I need to get in better shape”) is a way to navigate potential obstacles to goal progress (e.g., Trope & Fishbach, 2000). Because consideration of superordinate goals requires abstract thinking, individuals in an abstract mindset evaluate temptations less positively, show decreased preference for immediate over delayed outcomes, and report stronger intentions to exert self-control (Fujita, Trope, Liberman, & Levin-Sagi, 2006). Failure of self-control, on the other hand, is associated with succumbing to concrete, momentary urges and thinking less about the broader consequences of one’s actions.

*Preference and decision-making.* The preferences that people form and the decisions that they make are affected by level of abstraction because abstraction cues people to consider different aspects of objects and events. Abstract thinking leads people to focus on primary features of objects, whereas concrete thinking leads to focusing on secondary features (Trope and Liberman, 2000). When thinking abstractly, a person may be content to dine at a restaurant that excels at its core features (e.g., delicious food, exceptional service) even if its surface features are relatively less desirable (e.g., outdated décor). When thinking concretely, these surface features are likely to loom larger in the
decision-making process, causing the person to prefer alternatives that are stronger on these dimensions (e.g., a trendy establishment with mediocre food).

Similarly, people in a concrete mindset focus on the practical, whereas people in an abstract mindset focus on the possible—they are more likely to consider whether something is feasible than if it is desirable (Liberman & Trope, 1998). Abstract thinking may cause one to discount the fact that a restaurant is far away if it is highly desired. This focus on desirability and feasibility extends to decisions made under conditions of uncertainty. Since the likelihood of an outcome is a subordinate feature and the utility of an outcome is superordinate, abstract thinking can cause one to emphasize utility over probability (Sagristano, Trope, & Liberman, 2002). For that reason, a person thinking abstractly might embark on a Sunday afternoon for a highly desired, out-of-the-way restaurant, even knowing there is a chance that it might be closed on Sundays.

Creativity. Shifting from a lower level of abstraction to a higher level is also linked with greater creativity and cognitive flexibility. Abstract thinking increases one’s likelihood of generating new ideas, insights, and creative solutions to problems (Förster, Friedman, & Liberman, 2004). The reason for this is that thinking in terms of broad, inclusive categories reduces cognitive barriers to “aha” moments, such as functional fixedness and mental sets (De Dreu, Baas, & Nijstad, 2008). These flashes of insight that characterize creative problem-solving are less likely to occur when people are thinking concretely about objects or events, particularly when answers to those problems require unconventional interpretations or novel ideas. Therefore, tasks that call for originality or “thinking outside the box” are best suited to individuals who are thinking abstractly—exactly the sort of people inclined to heed this advice figuratively rather than literally.
Factors that Affect Abstract and Concrete Thinking

There are a number of individual and situational factors that have been shown to affect abstract and concrete thinking. Of these factors, three have been broadly investigated across multiple conceptualizations of abstraction.

Distance. There is now an abundance of evidence in support of the idea that distance, in multiple forms, is related to level of abstraction. Greater temporal, spatial, and social distance is associated with higher levels of abstraction: increasing distance causes more abstract construals of persons, objects, and events and thinking abstractly increases perceived distance (for a review, see Liberman, Trope, & Stephan, 2008).

For example, objects and experiences are categorized into broader categories and expected to be more prototypical in the distant future than in the near future (Liberman, Sagristano, & Trope, 2002). People are more likely to think that actions will happen in the distant future after thinking about why those actions are performed as opposed to how they are performed (Liberman, Trope, McCrea, & Sherman, 2007). And future behaviors are seen as more characteristic of one’s primary traits (Wakslak, Nussbaum, Liberman, & Trope, 2008).

When an event is spatially distant, people are more likely to structure the behaviors involved into fewer, broader units and attribute the behaviors to dispositional factors than that if the event was near (Henderson, Fujita, Trope, & Liberman, 2006). And actions occurring at a distant location are more often conceptualized as ends (e.g., securing a house) rather than as means (e.g., putting a key in a lock), in comparison to actions occurring nearby (Fujita, Henderson, Eng, Trope, & Liberman, 2006).
Interpersonal similarity decreases social distance. Therefore, when a person is thought to be similar, people are more likely to describe that person’s actions concretely and see those actions as motivated by lower-level concerns (Liviatan, Trope, & Liberman, 2008). Power increases social distance. Consequently, greater power is associated with more abstract thinking (Smith & Trope, 2006) and abstract thinking is associated with perceiving greater power (Smith, Wigboldus, & Dijksterhuis, 2007).

Even probability can be conceptualized as psychological distance. Lower probability events, which are seen as more remote, are more strongly associated with thinking in broad, inclusive categories (Wakslak, Trope, Liberman, & Alony, 2006). And less probable outcomes cause people to attach greater weight to primary features when making judgments and decisions (Todorov, Goren, & Trope, 2007).

**Mood.** Mood states also influence how people process information. In general, people in happy moods are more likely to think abstractly about objects and events than people in sad moods (for a review, see Bless & Fiedler, 2006). They process information more globally and are more likely to use schemas (Gasper & Clore, 2002), scripts (Bless et al., 1996), and stereotypes (Bodenhausen, Kramer, & Susser, 1994). Compared to people in sad moods, happy people are also more likely to attribute actions to dispositions (Forgas, 1998) and show intergroup discrimination (Forgas & Fiedler, 1996). In addition, people in happy moods use broader, more inclusive categories to mentally organize information (Isen, 1984; Isen & Daubman, 1984), show greater cognitive flexibility (Murray, Sujan, Hirt, & Sujan, 1990), and are better at solving problems that require novel, creative answers (Isen, Daubman, & Nowicki, 1987; De Dreu, Baas, & Nijstad, 2008).
Culture. It is becoming increasingly clear that culture plays an important role in cognition. One cultural distinction that is particularly influential is whether one is from an individualistic culture, such as those in Western Europe and North America, or a collectivistic culture, such as those in Asia and South America (Markus & Kitayama, 1991). People from individualistic and collectivistic cultures differ markedly in how they construe themselves, others, and the world around them. In many ways, these differences are analogous to differences resulting from concrete and abstract thinking.

For example, people from individualistic cultures think of the self as independent, autonomous, and driven by internal traits and motivations; the self in a collectivistic culture is viewed as interdependent, tied to relationships with others, and bound by the situation (Markus & Kitayama, 1991). Because of this difference people in collectivistic cultures are less likely to make dispositional attributions and more likely to consider lower-level aspects of the situation as possible causes of behavior (Morris & Peng, 1994). This attention to context extends to non-social stimuli as well. People from individualistic cultures are more likely to distinguish between focal objects and the background in a visual field; people from collectivistic cultures use fewer general rules to categorize the focal object and instead draw meaning from the object’s relationships to peripheral features of the situation (Nisbett, Peng, Choi, & Norenzayan, 2001). Experiments that explicitly manipulated whether people thought of themselves in independent or interdependent terms have produced similar results (Kühnen & Oyserman, 2002).

Summary of Abstract and Concrete Thinking

Level of abstraction is related to a wide variety of important social psychological phenomenon. Where one’s thinking is on this dimension affects what information is
processed, how it is processed, and how one responds to it. For this reason, two people can walk away from an event with two entirely different perceptions of what took place. These multiple understandings can arise simply because one person was closer to the event when it occurred or because one was in a sad mood that day. With such important differences in cognition resulting from such seemingly incidental features it is not surprising that people find it difficult to accurately predict the future for themselves and others (Gilbert, 2006). In the next chapter, I discuss another seemingly incidental feature that also affects cognition and explain why visual perspective should be considered both a cause and consequence of abstract and concrete thinking.
CHAPTER 3

VISUAL PERSPECTIVE

Shifting Perspectives

Henry Ford reportedly said that "if there is any one secret of success, it lies in the ability to get the other person's point of view and see things from that person's angle as well as from your own" (Carnegie, 1981, p. 35). If Ford was a follower of his own advice, it may not be a coincidence that he was a person of big ideas and broad vision.

It is interesting that Ford chose to mention “seeing” things from another person’s perspective, as it is not possible to literally step outside of oneself and take a look. Rather, “seeing” in this statement was meant metaphorically. But, metaphors found in common speech do sometimes directly map on to the ways in which people actually process information (cf. Lakoff & Johnson, 1980). In this instance, mounting evidence shows that Ford’s lay theory was essentially correct—shifting perspectives does cause significant changes in the way that people think. In this chapter, I will review those changes and, in particular, highlight how perspective in imagery relates to abstract and concrete thought. These connections offer strong conceptual and methodological support for the predictions tested in my own experiments, which I describe at the end.
Perspective in Visual Imagery

One’s own perspective differs from that of an outside observer on numerous dimensions, including access to internal thoughts and feelings, knowledge of the past, and visual point of view. Across these dimensions, perspective has emerged as an important variable that affects a wide variety of psychological processes. Visual point of view is no exception—visual perspective, in both mental images and everyday visual perception, is closely linked to people’s thoughts, feelings, and behaviors.

First and Third-Person Imagery Perspective

When people remember the past or imagine the future they often picture those events in their mind’s eye.1 In doing so, people may visualize an event from a first-person perspective and see the event as if looking out through their own eyes. But, they can also picture an event from a third-person perspective and see themselves in the image the way an observer would if the events were actually happening (Nigro & Neisser, 1983). This ability is an obvious departure from everyday perception in which a person can be either an actor or an observer of a particular event, but never both for the same event at the same time. First-person imagery is generally more common, but people report using both visual perspectives and can deliberately switch between them (Nigro & Neisser, 1983; Robinson & Swanson, 1993). Thus, memories can be recollected from a different visual perspective than the one experienced when the events took place.

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1 The cognitive processes that produce these mental images are quite similar, regardless of whether people project themselves backwards or forwards in time (Schacter, Addis, & Buckner, 2007; Suddendorf & Corballis, 2007).
Imagery plays an important role in people’s lives. It is used in the representation and manipulation of visual information (Kosslyn, Thompson, & Ganis, 2006), and it functions to create and maintain a temporally extended self. Imagery allows one to relive moments from the past and fantasize about events in the future, processes central to the development of a personal self-narrative (McAdams, 1997; Pillemer, 1998). Because of the significance of imagery to cognition, characteristics of images, such as visual perspective, can influence a wide range of important psychological processes. There is now a growing body of evidence that demonstrates this influence, and, in particular, suggests that visual perspective in imagery is linked to abstract and concrete thinking.

Processes Affected by Imagery Perspective

Emotion. First-person and third-person autobiographical memories differ in the extent to which people relive the sensory and emotional experiences of the original event. Third-person observer memories are associated with recalling fewer details about affective reactions, physical sensations, and psychological states (McIsaac & Eich, 2002). This difference has been demonstrated in studies of naturally occurring memory perspective (Berntsen & Rubin, 2006; Nigro & Neisser, 1983) and in studies where participants were instructed to switch from picturing first-person images to third-person images (Berntsen & Rubin, 2006; McIsaac & Eich, 2002; Robinson & Swanson, 1993). Other research has shown that when people contemplate the reasons for their feelings in response to some event (i.e., by thinking about why an interpersonal experience elicited anger) from a third-person perspective, they are better able to make sense out of the event and experience significantly less rumination and reliving of negative emotions (Kross, Ayduk, & Mischel, 2005). These findings are consistent with the notion that first-person
memories involve greater attention to concrete, low-level concerns, and less attention to the broader significance or abstract meaning of events.

Because the third-person perspective is associated with greater self-reflection, people are more likely to use their self-knowledge to make sense out of and react to events pictured from this perspective. For example, the amount of shame that people experience after picturing shame-inducing events from a first-person perspective does not depend on their level of self-esteem, but it does when the same events are pictured from a third-person perspective (Libby, Pfent, Valenti, & Eibach, 2009). People with low self-esteem feel significantly more shame, and people with high self-esteem feel significantly less shame, when picturing events from a third-person perspective, as compared to when low and high self-esteem individuals picture the events from a first-person perspective. This suggests that rather than considering events in isolation, people who form third-person images think about whether the situations reveal information that is consistent with their beliefs about themselves (e.g. “I am a good person” or “I am a screw-up who makes dumb mistakes”). Whether or not the event seems consistent with these self-views is what determines people’s emotional reactions.

Causal attribution. The attribution a person makes about the causes of behavior often depends on whether the person was the actor or an observer. Observers are more likely to infer that an action was the result of internal, dispositional factors, and less a function of the situation, than the actors themselves (Jones & Nisbett, 1972). This actor-observer difference occurs even when perspective is experimentally manipulated by filming an action from multiple camera angles (Storms, 1973). A pair of studies by Frank and Gilovich (1989) demonstrated analogous results for first-person and third-person
memories of past behavior. People who recalled an earlier event from the third-person observer perspective (either spontaneously or because they were instructed to do so) attributed their actions to more dispositional factors. Since dispositional attributions are associated with more abstract thinking, these results suggest a connection between level of abstraction and visual perspective.

_Self-construal._ Visual perspective also plays an important role in defining the self. As a way to understand oneself in the present a person may form an image of him or herself in the past. The extent to which a person feels different from this past self is an indication of how much one has changed. For example, the successful dieter who looks back on a much larger self, the recovering addict who looks back on hard times and the religious convert who remembers moments of disbelief all may see themselves to be quite different today as compared to the past—so much so that the individual in the image feels like a different person.

The amount that one has changed is difficult to quantify, which makes these self-judgments susceptible to influence by outside factors. One influential factor is visual perspective. People who use a third-person perspective to picture actions that conflict with their current self-concept perceive greater change in themselves than people who imagine the actions from a first-person perspective (Libby, Eibach, & Gilovich, 2005). In one study demonstrating this effect, people who had reported being socially awkward in high school recalled an event from that time in which they acted this way from either a first-person or third-person perspective. People who used the third-person perspective to form their image not only judged themselves as being more socially skilled, but also acted more sociable in an interpersonal situation compared to those people who had used
the first-person perspective (Libby, Eibach, & Gilovich, 2005, Study 2). The inverse of this relationship is also true. People who recalled actions that conflicted with their self-concepts were more likely to form third-person memories than people who recalled actions consistent with their self-concepts (Libby & Eibach, 2002).

One explanation for these findings is that the third-person perspective functions to create psychological distance from past selves that contradict one’s current self-perceptions (e.g., Broemer, Grabowski, Gebauer, Ermel, & Diehl, 2008; Sanitioso, 2008). However, this view is inconsistent with evidence that suggests if people are inclined to look for similarities people perceive less self-change when imagining themselves in the past from the third-person perspective (Libby, Eibach, & Gilovich, 2005). This evidence demonstrates that the third-person perspective can increase or decrease perceptions of self-change depending on people’s self-theories about change and continuity. These findings instead favor the explanation that the third-person perspective is linked to thinking abstractly about the self (Libby & Eibach, 2009). By this account, third-person imagery facilitates the use of existing self-knowledge (e.g., goals, values, beliefs) to make sense out pictured events, a process that is characteristic of higher levels of abstraction.

*Goal-relevant behavior.* People working toward a goal are often told to imagine themselves in the future. The assumption underlying this statement is that picturing a desired outcome will motivate one to make the outcome a reality. There does seem to be some truth to this advice—evidence suggests that imagining one’s self performing an action does make one more likely to actually do it (Gregory, Cialdini, & Carpenter, 1982). One factor that moderates the likelihood of the action occurring, however, is
visual perspective. If the third-person perspective makes one more likely to think about how a pictured event fits into one’s self-concept, then the third-person perspective should do more to motivate behaviors consistent with one’s goals. Indeed, evidence suggests that this is the case (Vasquez & Buehler, 2007).

Further, this increased motivation appears to cause people to follow through on their good intentions. Registered voters who imagined voting in the 2004 presidential election the night before the polls opened were significantly more likely to actually go out and vote the next day if they imagined themselves from a third-person, as opposed to first-person, perspective (Libby, Shaeffer, Eibach, & Slemmer, 2007). This difference in turnout was accounted for by differences in voters’ self-perceptions: people who imagined themselves from a third-person perspective felt more positive, in general, about voting and believed it to be more important. Since simply thinking about one’s attitude towards a desirable object can cause it to become more positive (Millar & Tesser, 1986), and since abstract thinking causes greater reflection on one’s beliefs, attitudes, and values, these results are consistent with the proposed perspective-abstraction link.

People also sometimes imagine feared scenarios in which they picture what they wish to avoid. For example, a dieter may imagine binging on sweets in a moment of failed self-control. Does forming this mental image make this feared event more or less likely to occur? The answer to this question depends on how one’s imagined actions are perceived. When people think about behavior in terms of how little progress they have made, a self-control failure promotes actions that will further one’s progress. But, when people judge their behavior by whether it shows commitment to a larger goal, a self-control failure demonstrates a lack of commitment. Awareness of this waning
commitment then makes people more likely to disengage from the goal (Fishbach & Dhar, 2005; Fishbach, Dhar, & Zhang, 2006).

Since the third-person visual perspective elicits thinking about how actions relate to broader goals and identities, picturing a self-control failure from an observer’s viewpoint should spur reflection on one’s commitment to the larger goal. Picturing the same event from the first-person visual perspective should cause a person to view this action in isolation, and instead focus more on the amount of progress made. In a study testing these predictions, people with the goal to not overeat, who pictured themselves overeating at Thanksgiving from the third-person visual perspective, thought it would be more difficult to control future eating, and did, in fact, show less restraint in eating, both in a laboratory “taste test” and on Thanksgiving Day, than people who had formed first-person images (Shaeffer & Libby, 2008). These results suggest that individuals who formed third-person images were more likely to think abstractly about the imagined event and perceive a lack of commitment to the goal to not overeat, which caused them to disengage (and instead do what felt good).

Action identification. Visual perspective in mental imagery also affects the level at which actions are identified. A pair of studies by Libby (2003) support the idea that third-person mental images of actions are identified on a higher-level of abstraction than first-person images and that actions described more abstractly are more likely to be imagined from the third-person perspective. In one study, participants were asked to imagine performing a variety of actions (e.g., locking a door) from Vallacher and Wegner’s (1989) Behavior Identification Form (BIF) using either a first-person or third-person visual perspective (see Appendix D). For each action, participants chose between
a concrete (e.g., putting a key in a lock) and an abstract (e.g., securing the house) description of the action. On average, across the range of actions tested, actions imagined from a third-person perspective were more likely to be described in abstract terms. A second study confirmed that the inverse relationship was true: actions that were described abstractly were more likely to be pictured from a third-person perspective than when described concretely.

The Present Research

The research presented here draws on this past work showing a connection between visual perspective in mental imagery and level of abstraction. This series of experiments tested predictions about the relationship between these variables using photographs rather than mental pictures. Since visual mental images depict information in a manner that is quite similar to visual perception (e.g., Borst & Kosslyn, 2008), properties of images that influence cognition should have similar effects, regardless of whether they are part of a mental image or a characteristic of a visual scene. For this reason, one can investigate the role of image properties experimentally without having to rely on participants to generate the images themselves from the correct visual perspective. This situation allows far greater control over the representation of images because an experimenter can isolate and manipulate a single image property. This method was employed in the following studies. Across six experiments, visual perspective was manipulated or measured using photographs of actions that varied on this dimension.

Rationale and Outline of Experiments

Perspective and social judgment. Research on visual perspective in mental imagery has generally kept the identity of the actor constant. The person creating the
mental image looks out through his or her own eyes regardless of whether that person adopts the perspective of the actor or the observer. In the studies reviewed earlier, participants were not told to imagine the point of view of a particular person (such as someone else present at the remembered scene). Therefore, even when people imagine seeing themselves the way an observer would, they can simultaneously feel like both the perceiver and the perceived. These past studies have revealed interesting effects of perspective on self-judgment, but have offered less insight into the question of how perspective affects judgments about others. This question is explored in the present research.

A person who is looking at a first-person photograph is aware that he or she is not actually the actor in that moment, in the same way that a person viewing a third-person photograph realizes that he or she is not an actual observer of the pictured event. The actor in both of these cases is someone else. Does this important difference change the relationship between visual perspective and abstract thinking? Or, does visual perspective affect cognition in a similar fashion when point of view varies across visual images of other people? In the present research, perspective is manipulated in photographs of other people performing common actions. Experiment 1 examines whether visual perspective in photographs of actions affects the level of abstraction at which those actions are identified. Experiment 2 examines the reverse relationship by investigating whether describing actions concretely or abstractly affects people's preferences for seeing those actions depicted in first-person or third-person photographs.

*Perspective and experimental control.* The procedures used in previous research on perspective in mental imagery have been unable to entirely rule out possible
alternative explanations for observed results. Experiments 3 and 4 employed novel methodologies to test, and ultimately reject, these competing ideas. Experiment 3 used a new measure of people’s thoughts about actions that helps to rule out the claim that results are an artifact of how abstraction was measured. Experiment 4 used a different set of photographs that controlled for spatial distance. In mental imagery studies, people who adopt a third-person perspective on themselves may do so from a greater distance away than people using a first-person perspective. Because of the link between spatial distance and level of abstraction, experimentally controlling for this factor permits a much stronger test of the effects of visual perspective.

*Perspective and shifting mindsets.* The link between visual perspective and level of abstraction is thought to be due to the fact that shifting perspectives affects whether one is thinking abstractly or concretely. Indeed, there is evidence to suggest that shifting perspectives shapes how people interpret information on this dimension that is contained within the image. But, if perspective actually influences the mindset that one is in, then this shift in abstract/concrete processing style should also affect judgments unrelated to the initial images. So far, this prediction has not been explicitly tested. Experiments 5 and 6 tested this proposition. In these studies, participants were briefly exposed to either first-person or third-person images and then asked to make unrelated judgments that should vary based on participants’ momentary level of abstraction.

*Predictions*

These experiments were designed to test three related hypotheses. In Experiments 1 and 3, I predicted that actions photographed from the third-person perspective would be more likely to be described abstractly than actions photographed from the first-person. In
Experiments 2 & 4, I predicted that third-person photographs of actions would be more often preferred when actions were described abstractly, rather than concretely. And in Experiments 5 & 6, I predicted that people exposed to third-person photographs would be more likely to adopt an abstract mindset that affects later judgments than people exposed to first-person photographs.
CHAPTER 4

PERSPECTIVE IN VISUAL IMAGES AFFECTS ACTION IDENTIFICATION

Four experiments were conducted to determine if visual perspective in images is related to the level of abstractness at which actions are described. In Experiments 1 and 3, I manipulated visual perspective (first-person vs. third-person) in photographs of actions and measured whether people thought about those actions concretely or abstractly. In Experiments 2 and 4, I examined the reverse relationship by manipulating whether people thought about actions concretely or abstractly and measuring people’s preference for seeing those actions depicted in first-person or third-person photographs.

Experiments 3 and 4 were conducted to replicate the findings of the first two experiments using different ways of manipulating and measuring abstraction and, in Experiment 4, using novel pairs of photographs to rule out alternative explanations for the previous results. Together these four experiments provide strong evidence for a bidirectional perspective-abstraction link.

Experiment 1

This experiment employed procedures similar to those that have been used to test the effect of visual perspective in mental imagery (Libby, 2003). Visual perspective was manipulated between participants using pairs of first-person and third-person
photographs of familiar actions. For each action, participants chose between an abstract and a concrete description of that action. Actions that were depicted in third-person photographs were predicted to be more likely described in abstract terms than when depicted in first-person photographs.

**Method**

**Participants.** Eighty-eight (34 females and 54 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit.

**Materials and Procedure.** This experiment used 30 pairs of color photographs of people performing a variety of actions. One photograph in each pair was taken from a first-person visual perspective and the other was from a third-person visual perspective. The photographs were obtained from a variety of internet sources, including stock photography and image hosting websites. I created a concrete description and an abstract description of each action (borrowed from Vallacher and Wegner’s BIF when possible; see Appendix B for the list of actions and descriptions). Participants were randomly assigned to view either the first-person perspective \(n = 45\) or third-person perspective \(n = 43\) photographs, with the stipulation that there be an approximately equal number of participants in each condition. Participants were given both the concrete and abstract description of each action and they chose the phrase they thought best described the action depicted in the accompanying photograph.

Participants arrived in the lab in groups of up to five before being seated at individual computer stations. The instructions explained that behaviors can be described in many ways. As an example, they were told that the behavior one person describes as
“greeting someone” might be described by others as “saying hello” or “showing friendliness.” Though these descriptions varied in their level of abstractness or concreteness, this distinction was not explicitly noted. They were then told that they would be seeing pictures of various actions being performed and then choosing between pairs of descriptions for each one. For example, they were told that a picture of a student attending class might have the following options: “sitting in a chair” and “listening to a teacher.” Their task was to choose the phrase that they thought best described the behavior depicted in the photograph.

Participants were informed that all of the pictures would be depicted from the same visual perspective. The perspective that was described was manipulated across conditions. Participants in the first-person condition were told, “The pictures that you will be looking at depict behaviors from the perspective of the person who is doing the behavior. That is, you will be seeing each behavior through the eyes of another person who is performing it.” Participants in the third-person condition read, “The pictures that you will be looking at depict behaviors from the perspective of an outside observer. That is, you will be seeing each behavior being performed by another person.” No reference was made to the fact that photographs can be taken from multiple perspectives or that others would be seeing pictures that differed on this dimension.

The photographs appeared on the computer screen one at a time along with the corresponding pair of concrete and abstract action descriptions. Participants chose the description they felt best fit the action in the photograph. The order of the concrete and abstract descriptions was counterbalanced across participants.
At the end of the session participants indicated their past experience with each action on scales ranging from never (0) to always (5), and they rated their expected future experience with each action on scales ranging from not at all likely (0) to extremely likely (4). The wording of these questions was kept the same across the two conditions by using mid-level descriptions of the actions. Lastly, participants answered a series of demographic questions, were probed for suspicion about the experiment, and were debriefed.

Results and Discussion

I predicted that photographs depicting actions from a third-person perspective, as opposed to a first-person perspective, would cause those actions to be more likely described in abstract rather than concrete terms. For 20 of the 30 actions the percentage of participants that chose the abstract action description was greatest when the participants saw third-person depictions of those actions, with an average difference of 7% between conditions (see Table 1).

I conducted a binary logistic regression for each action, predicting action identification level from visual perspective and participants’ past and likely future experience with each action.\(^2\) Table 3 (column 1) lists the regression coefficients for each action. The effect was in the predicted direction for 22 of the 30 actions (binomial \(p < .05\)) and, on average, the coefficient for visual perspective was significantly different from zero in the predicted direction (\(M = .34, SD = .68; t(29) = 2.69, p < .05, d = .50\)).

\(^2\) Greater experience with actions in Experiment 1 tended to be associated, on average, with choosing abstract as opposed to concrete descriptions (future experience: \(t(29) = 1.65, p = .11\); past experience: \(t(29) = 1.77, p = .09\)).
The average log odds for visual perspective indicated that actions were 1.76 times as likely to be described abstractly when they were photographed from the third-person, as opposed to first-person, perspective.

Experiment 2

This next experiment was conducted to examine the reverse of the relationship tested in the first experiment. This experiment again employed procedures similar to those used by Libby (2003). Whether actions were described concretely or abstractly was manipulated between conditions. For each action, participants decided whether a first-person or a third-person action photograph best fit the description. Describing actions in abstract, as opposed to concrete, terms was predicted to cause third-person photographs depicting those actions to be more likely preferred.

Method

Participants. Fifty-one (31 females and 20 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit.

Materials and Procedure. Experiment 2 used the same photographs and action descriptions that were used in Experiment 1. This experiment manipulated whether participants were given concrete or abstract action descriptions and measured whether first-person or third-person perspective photographs were thought to better depict the actions. Participants were randomly assigned to either the concrete \( (n = 25) \) or abstract \( (n = 26) \) condition with the stipulation that each condition have an approximately equal number of participants.
Participants arrived in the lab in groups of up to five before being seated at individual computer stations. The instructions explained that photographs can depict behaviors in many ways and described the first-person and third-person perspectives:

Sometimes photographs are taken from the *perspective of the person who is doing the behavior*. That is, they capture the behavior as seen through the eyes of the person who is performing it. Other times, photographs capture the behavior from the *perspective of an outside observer*. That is, the photographs capture the behavior of another person as seen by someone else.

They were then told that they would be reading descriptions of various behaviors and choosing between two photographs that depicted each behavior. As an example, participants were given the description “mailing a letter” and shown a first-person image and a third-person image of that action. They were instructed to choose the photograph from each pair that best illustrated the action described at the top of the screen. No reference was made to the fact that actions can be described both abstractly and concretely or that others would be given action descriptions that differed on this dimension.

The action descriptions appeared one at a time along with the corresponding pair of first-person and third-person photographs. Participants chose the photograph they felt best fit the action description. The order of the photographs was counterbalanced across participants.

At the end of the session, participants indicated their past and expected future experience with each action using the same question wording and response options as in
Experiment 1. Participants answered demographic questions, were probed for suspicion, and were debriefed.

Results and Discussion

Describing actions abstractly was predicted to cause third-person depictions of those actions to be more likely preferred than when actions were described concretely. For 22 of the 30 actions the percentage of participants that chose the third-person photographs was greatest when participants read abstract descriptions of those actions, with an average difference of 19% between conditions (see Table 1).

This hypothesis was tested using the same analytic strategy as in Experiment 1; a binary logistic regression was conducted for each action, predicting action identification level from visual perspective and participants’ past and likely future experience with each action. Table 3 (column 2) lists the regression coefficients for action identification level for each action. The effect was in the predicted direction for 22 of the 30 actions (binomial p < .05). Two actions were excluded from the parametric analyses because their coefficients were outliers in the distribution (dialing a phone, \( z = 3.76 \); toothbrushing: \( z = -3.61 \)). On average, the coefficient for action identification level was significantly different from zero in the predicted direction (\( M = 1.03, SD = 1.48; t(27) = 3.66, p < .01, d = .70 \)). Describing actions abstractly made participants 8.62 times more likely to prefer third-person photographs than if the actions were described concretely.

\[ \text{3 Greater experience with actions in Experiment 2 was associated, on average, with first-person as opposed to third-person imagery, though not at conventional levels of significance (future experience: } t(29) = 1.72, \ p = .10; \text{ past experience: } t(29) = .28, n.s. \text{).} \]
Experiment 3

One potential explanation for the results observed in the two previous experiments is that the relationship between visual perspective and action identification is a methodological artifact of the way abstract and concrete thinking was measured. Since first-person and third-person images did not contain the same information, it is possible that people’s choice of concrete or abstract action descriptions depended on the information present in the image, rather than on visual perspective. For example, the first-person photograph of the action “voting” clearly showed the election ballot, whereas the third-person photograph did not. Therefore, when presented with the choice between “marking a ballot” and “influencing an election” people may have thought less about the difference between “marking” and “influencing” (verbs that differ in level of abstractness) and focused instead on the words “ballot” and “election.” Since the ballot was visually salient in the first-person photograph, individuals who saw first-person photographs may have selected the concrete action description for that reason.

In order to rule out this alternative explanation, Experiment 3 did away with the action descriptions used in the first two studies, and employed a different approach. Concrete action descriptions are associated with thinking about how actions are performed, whereas abstract action descriptions are associated with thinking about why actions are performed. In this experiment, visual perspective was manipulated between participants using the same pairs of action photographs used in Experiments 1 and 2. Action identification was measured by asking participants whether each pictured action better showed how the action is performed or why the action is performed. The same continuous scale (from “shows how a person does the action much better” to “shows why
a person does the action much better) was used for every action. Photographs were predicted to be rated as relatively better at communicating why actions are performed as opposed to how they are performed when those photographs depicted the actions from the third-person as opposed to first-person perspective.

**Method**

**Participants.** Eighty-nine (54 females and 35 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit. The responses of two participants (one in each condition) suggested that they did not understand the distinction between the process of how one does an action versus the reasons why one does an action, so they were dropped from the sample ($n = 87$).  

**Materials and Procedure.** Experiment 3 used the same color photographs as Experiments 1 and 2 did. Participants were randomly assigned to view either the first-person ($n = 40$) or third-person ($n = 47$) photographs, with the stipulation that there be an approximately equal number of participants in each condition.

Participants arrived in the lab in groups of up to five before being seated at individual computer stations. The instructions explained:

Photographic images are a common part of modern life. We see photographs everywhere - newspapers, magazines, billboards, web pages, news reports, product packaging, instruction manuals, personal albums, and even art galleries. Photographs can depict many different things and can be used for many different reasons. Today's study involves photographs of people doing actions. We are

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4 Including data from these two participants does not change the pattern of results.
interested in how photographs of actions might be used to convey different types of information about actions.

They then read that for every action there is a process of how people do the action and reasons why people do the action. Three examples illustrating this distinction were provided. For instance, they read that a person might participate in a psychology experiment “by sitting at a computer, reading instructions, and pressing keys on the keyboard.” That person might do so in order to “get credit, pass a course, and earn a college degree.” Participants were asked to briefly describe how and why a person might cook a meal to illustrate that they grasped this distinction.

Participants were told that they would see a series of photographs of people performing different actions. For each photograph they would indicate whether they thought the photograph better showed how a person does the action or why a person does the action. An example first-person or third-person photograph (depending on condition) was provided, along with a six-point rating scale ranging from “shows HOW a person does the action MUCH BETTER than why a person does the action” (1) to “shows WHY a person does the action MUCH BETTER than how a person does the action” (6). Participants then rated each of the 30 photographs, one at a time, using this scale. Above each photograph was a mid-level description of the action (e.g., The action in this photograph is VOTING) and the question, “To what extent does this photograph show HOW a person does the action versus WHY a person does the action?”

Participants, lastly, indicated their past and expected future experience with each action using the same question wording and response options as in Experiments 1 and 2. They answered demographic questions, were probed for suspicion, and were debriefed.
Results and Discussion

Third-person photographs were predicted to be relatively better at communicating why actions are performed than first-person depictions of those same actions. For 20 of the 30 actions the mean how-why rating was greater (indicating that the photograph better showed why an action is done rather than how) when participants saw third-person photographs, with an average difference of .30 between the two conditions (see Table 2).

The hypothesis was tested with an analytic strategy similar to that used in the previous two experiments; however, linear regression was used rather than binary logistic regression since the dependent variable in this experiment was continuous rather than dichotomous. How/why ratings were predicted from visual perspective and participants’ past and likely future experience with each action.\(^5\) Table 3 (column 3) lists the regression coefficients for imagery perspective for each action. The effect was in the predicted direction for 21 of the 30 actions (binomial \(p < .05\)) and, on average, the coefficient for visual perspective was significantly different from zero in the predicted direction (\(M = .12, SD = .27; t(29) = 2.56, p < .05, d = .44\)).

\(^5\) Consistent with the results of Experiments 1, greater past experience with actions in Experiment 3 tended to be associated with a bias towards abstract identification of actions (mean \(r = .04, t(29) = 1.96, p = .06\)). However, there appeared to be no association in Experiment 3 between expected future experience and abstraction (mean \(r = .002; t(29) = .08\)). For the sake of consistency with the other experiments reported here, both past and expected future experience were used as covariates in the main analyses of Experiment 3. However, the effects of imagery perspective in Experiment 3 remain significant at the same levels if only past experience and not expected future experience is used as a covariate.
Experiment 4

Experiment 3 helped to rule out the explanation that the effects of visual perspective were due to different information being present in first-person and third-person images. A related explanation is that it is not visual perspective, per se, that is affecting concrete and abstract thinking; rather, since first-person action photographs were close to the action and third-person photographs were farther away, it was actually spatial distance that was changing the way people thought. Since spatial distance is related to abstract and concrete thinking (Liberman, Trope, & Stephan, 2008), it was necessary to rule out this plausible explanation in order to be confident that visual perspective is the critical variable.

New action photographs were created for this experiment that differed only on visual point of view. Pairs of action photographs were shot from the same distance away and at approximately the same angle of view. By specifically isolating visual perspective and holding all other image properties constant, this experiment provided the most rigorous test yet of the perspective-abstraction link.

Participants were asked to choose between first-person and third-person photographs of actions based on which image they thought would best accompanying text either explaining how the action is performed or why the action is performed. This focus on how versus why was manipulated between participants. If third-person images represent actions on a more abstract level than first-person images do, then photographs depicting actions from a third-person perspective should be more likely chosen when text describes why the action is performed as opposed to how it is performed.
Method

Participants. One hundred seventy-two (113 females and 59 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit.

Materials and Procedure. Experiment 4 used 11 pairs of first-person and third-person black and white photographs of various actions. These images were created so that visual perspective was the only difference between each pair of action photographs (see Appendix C). Each pair of photographs depicted the same person doing the action in exactly the same way, and care was taken to shoot each picture from approximately the same distance away and at approximately the same angle (see Figure 1). The arms and hands of two female volunteers and one male (myself) were depicted in the various photographs.

Participants arrived in the lab in groups of up to ten before being seated at individual computer stations. Participants were randomly assigned to either the how condition \((n = 84)\) or the why condition \((n = 88)\), with the stipulation that there be an approximately equal number of participants in each. Depending on the condition, participants read that we were interested in the use of photographs to accompany text that describes either how or why different actions are performed. As an example, participants read about a situation in which the editor of a cooking magazine needed to choose a photograph to accompany an article that described either how or why someone would crack an egg. Participants in the how condition read: “Imagine that you are the editor of a cooking magazine and need to pick a photograph of a person cracking an egg to accompany an article that describes a particular method for neatly cracking an eggshell.”
Participants in the why condition read: “Imagine that you are the editor of a cooking magazine and need to pick a photograph of a person cracking an egg to accompany an article that explains why eggs are necessary for cakes to rise.” Participants were given both a first-person and a third-person photograph of someone cracking an egg and were asked which photograph best fit the type of article that was just described.

On each of the next ten screens, participants were asked to choose the photograph from each pair that they thought would better fit with text explaining either how or why (depending on condition) someone would do the action. Each action was identified by a mid-level description that was consistent across conditions (see Table 4 for action descriptions). The left-to-right order of the first-person and third-person photographs was counterbalanced across actions and participants.

Participants then indicated their past and expected future experience with each action on scales ranging from never (0) to all the time (4). As in the previous experiments, the wording of these questions was kept the same across the two conditions by using mid-level descriptions of the actions. Lastly, participants answered a series of demographic questions, were probed for suspicion about the experiment, and were debriefed.

Results and Discussion

Third-person photographs were predicted to be more likely chosen when the photograph was expected to accompany text explaining why a person does the action than when explaining how a person does the action. For 10 of the 11 actions the percentage of participants that chose the third-person photographs was greater when the
photographs would be paired with text explaining why, with an average difference of 20% between conditions (see Table 4).

Results were consistent with predictions at both the level of the participant and the level of the action. Participants in the why condition chose third-person photographs \((M = 5.95, SD = 2.59)\) significantly more often that participants in the how condition \((M = 3.71, SD = 2.45; t(170) = -5.82, p < .001)\). In addition, a binary logistic regression was conducted for each action predicting visual perspective from how/why condition and participants’ past and likely future experience with each action.\(^6\) Table 5 lists the regression coefficients for condition for each action. The effect was in the predicted direction for 10 of the 11 actions (binomial \(p < .05\)) and, on average, the coefficient for action identification level was significantly different from zero in the predicted direction \((M = 1.00, SD = .67; t(10) = 4.95, p < .001, d = 1.49)\). Choosing photographs to go with text about why actions occur made participants 3.26 times more likely to prefer third-person photographs than if choosing photographs for text about how actions occur.

Experiments 1-4 Conclusions

Across four experiments, visual perspective in photographs of familiar actions was related to the way that those actions were described. Third-person photographs were associated with abstract descriptions of actions and greater thinking about why actions are performed relative to how they are performed. These studies are further evidence of the important role that perspective plays in the process of identifying actions. In addition, \(^6\) Greater experience with actions in Experiment 4 tended to be associated, on average, with first-person as opposed to third-person imagery, although the difference was not as reliable for past experience \((t(24) = 1.26, p = .26)\) as for future experience \((t(24) = 4.92, p < .01)\).
they use a novel methodological approach to provide evidence in support of a
bidirectional perspective-abstraction link.

This relationship was demonstrated when visual perspective was specifically
manipulated in photographs and spatial distance was held constant. Previous studies of
mental imagery that looked at the connection between visual perspective and action
identification did not experimentally control spatial distance. Therefore, this experiment
provided one of the most stringent tests to date of the predicted relationship between
perspective and thinking abstractly about actions.

These studies also offer insight into how visual perspective relates to identifying
the actions of others. Whereas past studies of mental imagery looked at how visual
perspective relates to identifying actions that people imagined themselves performing, the
present research examined the role of perspective in social judgment. What these studies
show is that even though a person is consciously aware that he or she is not actually the
person doing an action, seeing a first-person visual depiction of an action leads one to
make judgments as if one really were the actor, relative to if one saw a depiction of an
observer’s perspective on that same action. This evidence suggests that perspective in
visual displays of information may influence cognition outside of conscious awareness.

The experiments presented so far are consistent with the theory that third-person
visual images are more likely to produce abstract thinking and thinking abstractly makes
people more likely to prefer third-person images. In the next chapter, I explore this
relationship further and test whether perspective induced changes in level of abstraction
affect a broader range of judgments than those having to do with actions in the images.
CHAPTER 5

PERSPECTIVE IN VISUAL IMAGES AFFECTS
ABSTRACT AND CONCRETE MINDSETS

The consequences of visual perspective in mental imagery that were reviewed earlier, and the effects of point of view observed in the previous four experiments, can all be explained by perspective induced changes in abstract/concrete thought. If such changes are, in fact, responsible for these different consequences, then they should theoretically influence other judgments unrelated to the content of the image. Schooler (2002) has described what he calls a “processing shift,” in which the effects of a previous experience on one’s way of thinking carry over to affect unrelated judgments. The next two experiments described here look for evidence that such a processing shift occurs after being exposed to photographs of actions, and that the nature of this shift depends on whether people see first-person or third-person images.

Experiment 5

In this experiment, participants were randomly assigned to view either first-person or third-person photographs of familiar actions. These photographs, which controlled for spatial distance and angle of view, varied only on whether they depicted an actor or an observer’s perspective. After briefly seeing several of these images,
participants were asked to decide whether abstract or concrete descriptions best fit various actions that were unrelated to any of the events they had previously seen. This process was repeated several times until participants had made decisions about 25 different actions. Participants who had been primed with third-person photographs were predicted to describe more of these actions abstractly than participants who had been primed with first-person photographs.

Method

Participants. Fifty-eight (44 females and 14 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit.

Materials and Procedure. Participants arrived in the lab in groups of up to ten before being seated at individual computer stations. Participants were randomly assigned to either the first-person perspective \( (n = 28) \) or the third-person perspective \( (n = 30) \) condition, with the stipulation that there be an approximately equal number of participants in each condition.

Participants were informed that they would be alternating between two tasks: forming impressions of images and making judgments about behaviors. They would be presented with a series of images and their task was to look at each one and form an impression of it. They were told that they would later be asked questions about the images, but that they would not need to remember specific details about them. They were also told that at several points during the study, they would also be asked to make decisions about how various behaviors should be described. They read that behaviors can
be identified in multiple ways and that their task was to choose between pairs of
descriptions of behaviors (instructions from Vallacher & Wegner, 1989).

This experiment used nine pairs of first-person and third-person color
photographs of actions that were used previously in Experiment 4. Depending on
condition, first-person or third-person photographs were presented briefly (3500 ms), one
at a time, centered on a black background. Each photograph was 1200 x 800 pixels in
dimension and they were displayed on 20-in. computer monitors set to a resolution of
1600 x 1200. Three photographs appeared in sequence and then participants completed
the first eight questions from the BIF. Participants then saw three more photographs and
completed the next eight BIF questions. Then, three final photographs appeared and
participants completed the remaining nine BIF questions (see Appendix D for all 25
questions).

At the end of the session, participants were asked to recall as many of the actions
depicted in the photographs as they could and indicate whether the pictures were shot
“from the visual perspective of the person who was doing the actions” or “from the visual
perspective an observer would have if the observer were watching someone else do the
actions.” The session concluded after participants indicated their past and expected future
experience with each action, answered demographic questions, and were probed for
suspicion and debriefed. Experience with each action was measured using the questions
and response options from Experiment 4.

Results and Discussion

Participants who had seen third-person photographs were predicted to choose the
higher level action descriptions on the BIF more often than those who had seen first-
person photographs. This prediction was supported by the data (see Figure 2). Responses to the BIF items ($\alpha = .89$) were combined into a single variable representing the total number of times a participant chose the higher level action description out of 25 total actions. Participants who saw the third-person photographs were significantly more likely to choose the higher level action description ($M = 15.47, SD = 5.05$) than participants who saw the first-person photographs ($M = 12.21, SD = 6.8; t(56) = -2.071, p < .05$).

**Experiment 6**

This next experiment was conducted to provide a conceptual replication of Experiment 5 with a different measure of abstract/concrete mindset. Participants were primed with either first-person or third-person photographs of different actions and then read three different Aesop’s fables. Participants judged how well a series of descriptions fit each story they had just read. Some of these descriptions were relatively concrete, and focused on the specific behaviors done by characters in the story, and some of the descriptions were relatively abstract, and focused on broader morals or lessons illustrated by the story’s events. On average across the three fables, participants who had been exposed to third-person images were predicted to show a greater preference for the abstract story descriptions than participants exposed to first-person images.

**Method**

*Participants.* One hundred eleven (47 females and 64 males) Ohio State University undergraduates enrolled in Introductory Psychology participated in exchange for course credit. Seventeen participants reported that English was not their first language. Since this experiment required participants to read short stories and evaluate descriptions of these stories that differed in their level of concreteness/abstractness it was
important that participants be proficient at comprehending written English. Therefore, the responses of these participants were dropped from the final sample, leaving a total of 94 participants.  

*Materials and Procedure.* This experiment used twelve pairs of first-person and third-person color photographs of actions (i.e., the 11 photograph pairs used in Experiment 4 and one new pair depicting the action “lighting a candle”). It also used adaptations of three short *Aesop’s Fables* (Jacobs, 1894): “The Ant and the Grasshopper,” “The Lion and the Mouse,” and “The Goose with the Golden Eggs”. Six descriptions of each fable were created: three relatively concrete, low-level descriptions and three more abstract, high-level descriptions (see Appendix E for the fables and descriptions). Concrete descriptions focused on the specific behaviors done by characters in the story. Abstract descriptions summarized broader morals or lessons illustrated by the story and focused on the symbolic nature of the events.

Participants arrived in the lab in groups of up to ten before being seated at individual computer stations. Participants were randomly assigned to either the first-person perspective (*n* = 33), third-person perspective (*n* = 31), or no-prime condition (*n* = 30), with the stipulation that there be an approximately equal number of participants in each condition. Participants in the first-person and third-person perspective conditions were informed that they would be alternating between two tasks: forming impressions of

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7 Including these participants does not change the pattern of results.

8 In pre-testing, participants were given pairs of these descriptions (one low-level and one high-level) and asked to choose the one that described the fable most abstractly. Nearly all participants chose the descriptions initially thought to be more abstract, thus supporting this classification.
images and thinking about stories. Images would appear and their task was to look at each image and form an impression of it. They were told that they would later be asked questions about the images, but that they would not need to remember specific details about them. Participants in all three conditions were told that they would be given short stories to read and questions about them to answer.

Participants in the two priming conditions saw either first-person or third-person photographs, presented briefly (3750 ms), one at a time, centered on a black background. Initially, four photographs were presented and then participants read the first fable (either “The Ant and the Grasshopper” or “The Lion and the Mouse,” determined randomly). Next, they responded to three questions asking them to choose the description from pairs of descriptions that they thought best fit the story. These three pairs were matched so that one description was low level and one description was high level (See Appendix E for the description pairings). The order of the three questions was randomized. Participants then saw each of the six descriptions again, one at a time in a random order, and they were asked to rate how well each statement described the story on a fully labeled five-point scale ranging from “Not well at all” (1) to “Extremely well” (5).

This whole process was repeated twice more, with participants in the two perspective conditions each time seeing more four more photographs, reading another fable, and answering questions about how well each of the descriptions fit the story. By the end, participants saw all 12 photographs and answered questions about all three fables. All participants read “The Goose with the Golden Eggs” last. Participants in the no-prime condition read the same three fables and answered the same questions as participants in the perspective conditions, but did not see any of the photographs.
At the end of the session, participants completed the BIF, then recalled as many of the actions depicted in the photographs as they could and indicated whether the pictures were shot from a first-person or a third-person perspective. The session concluded after participants indicated their past and expected future experience with each action, answered demographic questions, and were probed for suspicion and debriefed.

Results and Discussion

Participants who had seen third-person photographs were predicted to prefer higher level descriptions of the three fables than those who had seen first-person photographs. This prediction was tested two different ways. First, the number of times participants picked the high level description from the pairs of descriptions was counted for each fable, and these values were added to create a composite variable representing choices for all three fables (range 0-9). The effect was in the predicted direction (first-person: \(M = 7.52, SD = 1.39\) vs. third-person: \(M = 7.87, SD = 1.25\)), though the difference between conditions was not statistically significant \((t(61) = -1.05, p = .30)\). However, people in the third-person perspective condition did choose significantly more high level descriptions, on average, than did people in the control condition \((M = 7.10, SD = 1.54; t(59) = -2.14, p < .05)\), whereas, the difference between the first-person perspective and control conditions was not significant \((t(62) = 1.14, p = .26)\).

A second approach was to compute mean ratings for all individual low level (\(\alpha = .85\)) and high level (\(\alpha = .84\)) descriptions across the three fables. These averages for the two perspective conditions are depicted in Figure 3. On average, participants rated the low level descriptions similarly, regardless of perspective condition (first-person: \(M = 2.94, SD = .57\) vs. third-person: \(M = 2.82, SD = .77; t(61) = .69, p = .49\), though
people in both perspective conditions gave significantly less favorable ratings to these
descriptions than people did in the control condition ($M = 3.30, SD = .89$). In contrast,
ratings of the high level descriptions were consistent with predictions. Participants in the
third-person perspective condition rated the high level descriptions more favorably
($M = 4.13, SD = .55$) than did participants in the first-person condition ($M = 3.74,
SD = .55; t(61) = -2.80, p < .01$). People in the first-person condition gave marginally
significantly less favorable ratings to the high level descriptions than did participants in
the control condition ($M = 4.03, SD = .70; t(62) = -1.90, p = .06$), whereas people’s
ratings in the third-person condition were no different than in the control ($t(59) = -.56,
p = .58$). Additionally, the difference between ratings of the high level and low level
descriptions was significantly greater in the third-person condition ($M = 1.31, SD = .84$)
than in the first-person ($M = .80, SD = .65; t(61) = -2.68, p < .01$) and the control
conditions ($M = .73, SD = .76; t(59) = -2.80, p < .01$). The difference between the first-
person and control conditions was not significant ($t(62) = .40, p = .70$).

Given these results, there appear to be two sensible explanations for how the
action photographs influenced level of abstraction, both of which are consistent with
predictions. One possibility is that the third-person photographs caused people to think
more abstractly than the individuals in the first-person perspective and control conditions.
Another possibility is that the task instructions (i.e., for an impression of the images)
caused people to think more abstractly than they would have in the control condition, but
this increase what inhibited for some people after they were exposed to first-person
images, which caused them to think more concretely.
Responses on the BIF were not related to whether people were in the first-person or the third-person perspective condition. This is not surprising since it was completed at the end of the study, after participants had read and answered questions about three different fables. Further, these questions did not immediately follow the photograph primes as was the case in Experiment 5. Therefore, this should not be viewed as a failure to replicate the previous results.

The BIF was originally designed to measure chronic difference in people’s tendency for abstract or concrete thought. Therefore, having participants complete the BIF made it possible to examine the relationship between photograph perspective and ratings of the abstract fables descriptions, controlling for participants’ natural tendencies to think abstractly or concretely. A linear regression was conducted predicting mean ratings of the abstract fable descriptions from perspective condition (first-person vs. third-person) and behavioral identification scores. The relationship between perspective condition and abstract description ratings was significant ($b = .26$, $p < .01$), but the relationship between scores on the BIF and abstract description ratings was not ($b = .02$, $p = .11$, $n = 64$). When condition was removed from the regression analysis, the relationship between scores on the BIF and abstract description ratings was marginally significant ($b = .02$, $p < .10$, $n = 94$), consistent with the assumption that both are measures of abstract thinking.

Experiments 5 & 6 Conclusions

Across two different ways of measuring mindset, people who had been previously exposed to third-person photographs showed evidence of greater abstract thought than people who had seen first-person photographs. This evidence supports the idea of a
perspective induced “processing shift” on the dimension of abstraction. These effects occurred even though the photographs were of no particular personal relevance to viewers and were not at all related to the ways in which abstraction was measured. Since spatial distance and angle of view were controlled in the images, only differences in visual perspective can account for these effects. In contrast to Experiments 1 and 3, these two experiments also did not explicitly draw participants’ attention to the visual perspective that was depicted in the photographs. This suggests that sensitivity to this property of images is part of the spontaneous process of making sense out of visual information.

While the mindset that people adopted in these studies was no doubt temporary, it did notably persist over multiple judgments. This was true whether people identified familiar actions or made sense out of stories. In addition, the latter study showed that thinking abstractly after seeing third-person images involves more than just broader categorization of actions and events—it also involves thinking allegorically and constructing meaning out of narratives that have implications for the self. Together, these studies attest to the power of visual perspective in images to broadly affect cognition.
CHAPTER 6

GENERAL DISCUSSION

The Power of Images

We are exposed to so many visual images on a daily basis that it easy to forget about the power of images to speak to us—to move us emotionally, to make us think, and to compel us to act. The most powerful images go beyond just being a pictorial representation of some object or event. They affect us personally and change us in meaningful ways. For instance, the image of a frightened child running naked down the street after being burned by a South Vietnamese napalm attack shaped public opinion about an increasingly unpopular war.9 The image of the lone protester in Tiananmen Square standing in front of a line of Chinese tanks emboldened dissenters everywhere who faced seemingly insurmountable odds.10 And the graphic images of inmate abuse at the Abu Ghraib prison at the hands of American soldiers in Iraq shocked the world and spurred a conversation about the heart of a nation. These powerful images did more than capture a moment in history—they sparked outrage, admiration, shame and humiliation.

9 Photograph by Nick Út. ©1972 The Associated Press.

10 Photograph by Jeff Widener. ©1989 The Associated Press.
The research presented here identifies a property of images, visual perspective, which may help explain why these famous photographs have had such an enduring impact on the public’s conscience. In these photographs, each taken from a third-person perspective, the camera lens is the eye of the impartial observer who sees, but does not act. As a result, people who view them are spurred to think abstractly and reflect on the events. Viewers draw on their existing knowledge to try and make sense out of the images and imbue them with meaning. And they form impressions of the people involved in these events, reducing them to understandable character types: the helpless victim, the unflinching rebel, and the sadistic soldier.

One can only wonder what these events looked like through the eyes of the actors. What were these individuals thinking and feeling in these extraordinary moments? What fleeting sensations and pressing concerns occupied their minds as these actions took place? Trying to answer these questions makes me wonder how different our understanding of historic events would be if the visual record included not only the snapshots and video recordings of outside observers, but also the first-person perceptions of the actors involved in making that history. Would images depicting this personal perspective ground people more in the reality of the moment? Would they help people see these happenings as tangible events rather than as an abstraction? The research discussed here suggests that this is likely to be the case.

The Perspective-Abstraction Link

In the opening chapters of this dissertation I began by reviewing consequences of abstract and concrete thought and highlighting factors known to influence people’s thinking on this dimension. I then described how visual perspective, particularly in
mental imagery, has emerged in the research literature as another factor that relates to abstraction. Drawing on this past work, I offered several predictions about the relationship between visual perspective in photographic images and level of abstract thinking, which were tested across a series of six experiments.

Chapter 4 presented four studies showing that visual perspective is related to whether people identify actions concretely or abstractly. In Experiments 1 and 3, visual perspective was manipulated between participants in photographs across a series of familiar actions. In these studies, actions were associated with greater abstraction when depicted from the third-person, as opposed to first-person, visual perspective. In Experiments 2 and 4, the level at which these actions were described was manipulated between participants. Describing actions concretely or asking people to focus on why the actions are done caused people to prefer third-person photographs over first-person depictions of those actions. These studies used two sets of photographs, including one set that controlled for spatial distance, and employed two methods for manipulating and measuring abstraction, which helped to rule out other potential explanations for the results. Together, these studies offer strong evidence for a bidirectional link between visual perspective and level of abstraction in the process of action identification.

In Chapter 5, I examined whether the influence of perspective-induced changes in abstract/concrete thought would carry over to judgments unrelated to the images. Experiments 5 and 6 tested this proposition by manipulating visual perspective between participants in briefly viewed photographs and then measuring judgments that reflected abstract thinking. People who had seen third-person images were more likely to describe unrelated actions abstractly and to think that abstract descriptions of fables appropriately
fit these stories. Together, these studies show that the influence of visual perspective is not limited to the images in which it appears. Rather, perspective can temporarily shift one’s mindset, which then affects later judgments. These studies not only confirm the existence of a perspective-abstraction link, but also suggest that perspective affects a greater number of thoughts and behaviors than perhaps previously considered.

**Implications for Visual Media**

*Cinema and Visual Art*

In *The Diving Bell and the Butterfly*, the director used a first-person POV shot to draw viewers into the mental and physical experience of the character after his life-changing accident. These moments are bookended in the film by third-person images of his exciting life up until that tragic event and the final days of his life arduously spent blinking his autobiography. It seems reasonable to assume that the filmmaker intuitively knew how to use visual perspective to shift viewers’ mindsets in ways that served the narrative. The research presented here suggests that point of view, in mediums such as film and television, is about more than revealing visual information—perspective also shapes how people understand and react to that information. Therefore, shifting perspectives is a way to visually communicate to viewers that they should broadly reflect on what they see or focus on and experience the subtle details of the moment.11

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11 In the same way that an entirely third-person film may fail to get viewers to consider concrete details, an entirely first-person film may fail to get viewers to contemplate broader concerns. The 1947 motion picture *Lady in the Lake* was the first instance of an entire story being told from a single character’s first-person visual point of view. It was also critically panned, in large part because of the limitations in storytelling inherent in using the subjective camera technique (Brinton, 1947).
This lesson extends to fine art, such as paintings and photographs, as well. Most visual art is third-person in nature. But, the first-person is occasionally employed to interesting effect. For example, *Hand with Reflecting Sphere* (1935) by Dutch artist M. C. Escher creates a different visual experience than Leonardo da Vinci’s *Study of Hands* (c. 1474) because of the novel use of a first-person perspective. Instead of feeling like a detached observer of the Escher image, the first-person perspective draws viewers in and makes them feel involved. One has the feeling of not only viewing the image, but also participating in it. As the examples that opened this chapter illustrate, visual perspective is also central to how people react to photographic images and make sense out of pictured events. For this reason, photographs depicting the same event from different perspectives can lead people to draw different conclusions about the significance of what they see. In sum, visual perspective remains a tool that can be put to use by visual artists and storytellers to shape how people experience and appreciate their work.

*Advertising*

The early advertisements for the Apple iPhone helped people learn about the concrete features of the product by utilizing the first-person visual perspective. Further, the voiceovers heard during these spots were compatible with the visuals because they explained *how* the product should be used (e.g., “This is how you turn it on.”). The present research suggests that a first-person perspective is associated with adopting a concrete mindset; therefore, the first-person images in these advertisements should have made people more receptive to the information presented at that level of abstraction.

A large body of evidence in social psychology suggests that matching features of messages to the characteristics of message recipients results in increased persuasion (see
Petty, Wheeler, & Bizer, 2000, for a review). By this logic, first-person photographs should be most persuasive in a message when paired with concrete arguments, and third-person photographs should be most persuasive when paired with abstract arguments. I have conducted some preliminary research to test this very prediction.

In one experiment, people saw two different advertisements for consumer products (i.e., compact fluorescent light bulbs, daily multivitamins). These appeals depicted the products from either a first-person or a third-person visual perspective and contained text that focused on either the product’s desirability (e.g., “lasts ten times longer than standard bulbs”) or feasibility (e.g., “made to fit in all your current light fixtures”; see Appendix F). People reported their attitudes toward each of these products on a series of seven-point semantic differential scales. At the end of the study, they completed the BIF (Vallacher & Wegner, 1989). Mean attitude ratings were computed for each participant by averaging their semantic differential scores across the two products.

The basic results were not as predicted. There were no significant main effects of either perspective or argument level on product attitudes and the interaction of these variables was not significant. However, when people’s scores on the BIF were included in regression analyses, an interesting pattern emerged. There was a statistically significant three-way interaction between visual perspective, argument level, and BIF scores on mean attitudes. Among participants with the lowest scores on the BIF (those with a chronic tendency for concrete thought) the predicted relationship between perspective and construal was observed. Messages that highlighted product feasibility were most persuasive when paired with first-person images, and messages framed in terms of product desirability were most persuasive when paired with third-person images.
(see Figure 4). Among participants scoring highest on the BIF (those with a chronic tendency for abstract thought), the predicted pattern was absent, and actually slightly reversed (see Figure 5).

These results suggest that the impact of visual perspective and abstractness of message arguments on consumer product attitudes depends on people’s chronic tendency for abstract or concrete thought. One potential explanation for these effects is that this individual tendency may be related to people’s likelihood of thinking carefully about persuasive messages. If people who generally think concretely are also more likely to focus on peripheral cues in a message, rather than weigh the strength of the arguments, then it makes sense that these individuals would be particularly responsive to these manipulated variables. A feeling of fluency is likely experienced when visual perspective is consistent with the message’s level of abstractness. And past research has shown that feelings of fluency resulting from matching can persuade message recipients who process messages less thoughtfully (e.g., DeBono, 1987). By this reasoning, the perceived fit between visual perspective and argument type creates positive feelings, which then spread to the advertised product. People with a chronic tendency to think abstractly may be less likely to pay attention to these affective cues and instead evaluate the product based on its perceived strengths and weaknesses.

Further research is necessary to fully explain how perspective and level of abstraction interact to affect consumers’ thoughts and behaviors. However, these preliminary results do provide some early evidence that advertisements integrating these features, like those for the iPhone, can shape people’s product evaluations.
The present research also suggests a possible reason why playing violent first-person video games increases hostility and aggression. Thinking abstractly, such as by contemplating one’s goals and values, is likely to inhibit aggressive tendencies. In contrast, not focusing on broader concerns may lead to greater aggression because actions that can cause harm are identified at a lower level. A person may view an action as simply “throwing a punch” rather than “being a bully,” or as “pulling a trigger” rather than “taking a life.” Despite the enormous popularity of first-person shooter games there are relatively few studies that have investigated whether first-person video games lead to greater aggressive tendencies than third-person games. One study by Farrar, Krcmar, and Nowak (2006) showed no effect of point of view on measures of aggressive affect or behavioral intentions. However, these measures may not have been sufficient to capture the effects of perspective. An alternate approach that might be more sensitive to these effects would be to construct a modified BIF that includes abstract and concrete descriptions of aggressive actions. I predict that people who played a violent game in first-person mode would be more likely to select concrete descriptions of the aggressive actions than people who played the same game in third-person mode. Such a result would not demonstrate aggression, per se, but could elucidate the cognitive process that leads to aggressive acts.

The findings presented here are also relevant to virtual realities, either in the form of immersive virtual environments (IVEs) or online worlds inhabited by personal avatars. Virtual environments are being used more frequently in behavioral research (e.g., Bailenson, 2006; Blascovich et al., 2002) and in clinical treatment (e.g., Murray et al.,
2006). And as more people substitute ersatz social interactions for ones in the real world (e.g., Green & Brock, 1998, 2008) it has become clear that further research is necessary to understand human behavior in these digital settings. Visual point of view is a central feature of these interactive experiences; therefore, the present research offers some insight as to how visual perspective might affect cognition in these environments. For instance, explanations for one’s own behavior in a virtual environment may depend on whether a person has adopted a first-person or third-person perspective. People might make more global trait attributions for their actions in a virtual environment when experiencing situations from a third-person, as opposed to a first-person, point of view. Also, people adopting an observer perspective may be more likely to reflect on what their virtual actions say about them as a person to the extent that they identify with their representations in the digital world. As these technologies become cheaper and more accessible to researchers they become ever more appealing tools to test these sorts of theories about cognition and behavior.

Visual Perspective and Social Cognition

Visual Perspective and Other Factors that Influence Abstraction

One interesting question raised by this research is why visual perspective is related to abstraction. Does shifting visual perspective influence another psychological factor already known to relate to abstract and concrete thinking or does this relationship depend on some other mechanism? The current data are not sufficient to fully address this question, but some elaboration on these issues is still possible. Though there are many factors that correlate with abstraction, none seem to completely explain the effects of visual perspective.
One intuitive conclusion is that visual perspective is a manipulation of psychological distance. By this account, the third-person perspective feels more psychologically distant than the first-person perspective. Experiments 4-6 ruled out the possibility that visual perspective effects are dependent on variations in spatial distance. By using pairs of first-person and third-person photographs that were taken from the same distance away from the pictured actions it was possible to isolate visual perspective as the only dimension on which the images differed. Psychological distance is related to factors other than spatial distance, however, so it is still possible that first-person and third-person images feel either near and far away. To the extent that actor and observer perspectives vary people’s perceptions of personal ownership and agency, it is possible that an active first-person view creates feelings of closeness and a passive third-person view creates feelings of distance. However, it is difficult to reconcile this reasoning with research on visual perspective in mental imagery. This work has shown that the third-person perspective can make one feel both nearer or farther away from past and future selves depending on one’s current motivations and self-theories (Libby, Eibach, & Gilovich, 2005; Libby & Eibach, 2009). Therefore, if there is a link between psychological distance and visual perspective, it is not straightforward.

Another possible explanation is that visual perspective is directly related to mood. One might reason that the third-person perspective is associated with positive affect and the first-person perspective with negative affect. Though this is possible, this explanation seems unlikely and some preliminary evidence suggests that this is not the case. In Experiment 6, I asked participants to report their current mood at the end of the study (after they had been exposed to either first-person or third-person images). Participants’
self-reported moods did not differ between conditions. This does not suggest, however, that perspective is not at all related to affect. As was reviewed earlier, visual perspective influences both the experience of recalled emotions as well as emotions that result from people’s interpretations of pictured events. It just does not appear that the effects of visual perspective can be explained entirely by differences in mood, as the relationship between perspective and positive/negative affect is not direct.

Recent theorizing by Förster and colleagues suggests that approach versus avoidance behaviors are related to processing style (Förster & Higgins, 2005; Förster, Friedman, Özelsel, & Denzler, 2006). Experimental evidence supports the premise that avoidance behaviors are characterized by more local processing of information and approach behaviors are associated with more global processing. If visual perspective was related to approach and avoidance behaviors, then the third-person perspective would be associated with approach behaviors and the first-person perspective would be associated with avoidance behaviors. The work reviewed earlier about the role of visual imagery perspective in goal pursuit provides some support for this idea. People who pictured voting from a third-person perspective were more likely to vote (Libby, Shaeffer, Eibach, & Slemmer, 2007) and people who pictured overeating from a third-person perspective were more likely to eat unhealthy foods (Shaeffer & Libby, 2008) than when people pictured these same events from a first-person perspective. However, the voting study included only registered voters and the overeating study only showed the effect of perspective among those with the goal to eat healthy. This suggests that the effects of perspective are likely contingent on pre-existing goals, which are not required in current approach-avoidance explanations of abstraction effects (Förster et al., 2006).
If the effects of visual perspective on abstraction are not due to differences in psychological distance, mood, or approach-avoidance tendencies, then what is the underlying mechanism? At this point, this answer is not entirely clear. However, growing interest in visual perspective-taking as it relates to embodied cognition (e.g., Lozano, Hard, & Tversky, 2007; Tversky & Hard, 2009) and cognitive neuroscience (e.g., Jackson, Meltzoff, & Decety, 2006; Vogt, Taylor, & Hopkins, 2003) may lead to new research that more directly tests this phenomenon.

**Other Consequences of Visual Perspective**

The majority of the experiments presented here focused on the effects of visual perspective on the process of action identification. These experiments replicated the results of previous studies that had examined the role of mental imagery perspective in this process. Demonstrating that visual perspective functions similarly across different modalities and replicating previously observed effects on self-judgment with social judgments has provided a much fuller understanding of this important variable. However, this is not to suggest that the influence of perspective in images is constrained to simply thinking about actions. As Experiment 6 showed, visual perspective is related to people’s general tendency to think abstractly or concretely. This result suggests that perspective in visual images is likely to influence many important processes.

As I noted in Chapter 2, abstract and concrete thinking is linked to a variety of cognitive and behavioral outcomes. How might visual perspective in images relate to some of these other processes? One possibility is that point of view in pictures of objects affects the way in which people categorize what they see. First-person images should be more likely to cause people to view objects in isolation and fit them into narrow mental
categories. Third-person images should lead to construing objects more abstractly and fitting them into broader, more inclusive categories. This difference may be important in the development of signs promoting specific behaviors meant to curb health risks. For example, a person may want to communicate that specific, concrete steps must be followed and that these steps are not interchangeable with others that may seem similar at a higher level of abstraction. Disposing of needles and other sharp objects in a designated container would not be the same as tossing them in the garbage can even though both actions involve “throwing away.” Using soap to prevent disease is not the same as simply rinsing one’s hands with warm water even though both actions are related to “getting clean.” In these instances, first-person images may be better at highlighting the concrete features of the particular objects involved in these events.

Another possibility is that visual perspective is important to learning. The research presented here demonstrated that first-person images are associated with thinking about how actions are performed, whereas third-person images are associated with thinking about why actions are performed. If one’s goal is to learn how to do a particular behavior, then first-person images may be more useful. Many television cooking shows use third-person images to illustrate how to make a meal. But, these images may cause people to process these events globally, rather than focus on the concrete steps involved. Many aspiring cooks, in moments of honesty, will attest to the difficulties they faced in the kitchen as they tried to replicate a meal they saw prepared by a television chef. Indeed, the way observers parse a stream of action into meaningful events depends on whether they focus on a teacher’s perspective or on their own third-person learner’s perspective (Lozano, Hard, & Tversky, 2006). This reasoning suggests
that materials such as instruction manuals, cookbooks, and educational resources could be made more effective by using first-person images.

One other possibility is that visual perspective in images relates to the choices that people make. People generally make decisions in two different ways: either in joint evaluation mode, where a decision is made by comparing multiple options at once, or separate evaluation mode, where alternatives are considered one at a time in isolation (Hsee, Loewenstein, Blount, & Bazerman, 1999). Because the first-person perspective is associated with thinking about objects and events in isolation, first-person images may predispose one to a separate evaluation mode. Since the third-person perspective is associated with thinking about broader categories, third-person images may make one more likely to see that multiple alternatives are relevant to a decision and predispose one to a joint evaluation mode. The evaluation mode that one is in can lead to reversals of preferences (e.g., Bazerman, Loewenstein, & White, 1992); therefore, perspective may very well be crucial in determining the outcomes of the choices people make.

Conclusion

In this dissertation I have provided evidence that visual perspective is more than just an incidental feature of images. In addition to shaping what information we see, visual point of view also influences how we make sense of that information. It affects whether we think about the “big picture” or focus on small details. And this tendency for concrete and abstract thought carries over to affect later judgments, most likely without our conscious awareness.

Thus, the research presented here suggests that stepping outside of ourselves and adopting a different perspective—by shifting point of view in our mental pictures, by
identifying with characters in stories or film, by examining a painting or photograph, or
by transporting ourselves into a digital reality—changes the way we think about
ourselves and the world around us. It helps open our eyes to a multitude of
understandings. In this way, shifting perspectives is fundamental in creating the richness
of the human experience.
APPENDIX A

TABLES AND FIGURES
<table>
<thead>
<tr>
<th>Action</th>
<th>Experiment 1</th>
<th>Experiment 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Third (n = 43)</td>
<td>First (n = 45)</td>
</tr>
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<td>Voting</td>
<td>19</td>
<td>18</td>
</tr>
<tr>
<td>Toothbrushing</td>
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<td>22</td>
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<tr>
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<td>76</td>
</tr>
<tr>
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<td>42</td>
</tr>
<tr>
<td>Reading a watch</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Driving a car</td>
<td>79</td>
<td>78</td>
</tr>
<tr>
<td>Eating a peach</td>
<td>7</td>
<td>7</td>
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<tr>
<td>Taking a test</td>
<td>21</td>
<td>16</td>
</tr>
<tr>
<td>Flying a kite</td>
<td>42</td>
<td>44</td>
</tr>
<tr>
<td>Reading the newspaper</td>
<td>91</td>
<td>87</td>
</tr>
<tr>
<td>Painting a room</td>
<td>33</td>
<td>27</td>
</tr>
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<td>Playing piano</td>
<td>74</td>
<td>87</td>
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<td>Potting a plant</td>
<td>44</td>
<td>18</td>
</tr>
<tr>
<td>Playing poker</td>
<td>67</td>
<td>60</td>
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<td>Getting proposed to</td>
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<td>67</td>
</tr>
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<td>Pumping gas</td>
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<td>Riding a rollercoaster</td>
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<td>44</td>
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<td>93</td>
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<td>Typing on a computer</td>
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<td>38</td>
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<tr>
<td>Using an ATM</td>
<td>77</td>
<td>51</td>
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<tr>
<td>Reading help wanted ads</td>
<td>88</td>
<td>91</td>
</tr>
<tr>
<td>Dialing a phone</td>
<td>77</td>
<td>60</td>
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<tr>
<td>Weighing oneself</td>
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<td>31</td>
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<tr>
<td>Paying the rent</td>
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<td>18</td>
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<tr>
<td>Grocery shopping</td>
<td>91</td>
<td>69</td>
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<tr>
<td>Ringing a doorbell</td>
<td>49</td>
<td>51</td>
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<td>Washing hands</td>
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<td>36</td>
</tr>
<tr>
<td>Picking up mail</td>
<td>86</td>
<td>82</td>
</tr>
<tr>
<td>Average</td>
<td>55</td>
<td>48</td>
</tr>
</tbody>
</table>

*Note.* Difference scores in bold indicate effect is in the predicted direction.

Table 1: Percentage of participants for each action that chose the abstract action description in Experiment 1 and the third-person perspective photograph in Experiment 2.
<table>
<thead>
<tr>
<th></th>
<th>Third (n = 47)</th>
<th>First (n = 40)</th>
<th>Diff.</th>
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</thead>
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<td>1.6</td>
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<tr>
<td>Toothbrushing</td>
<td>2.4</td>
<td>1.9</td>
<td><strong>0.5</strong></td>
</tr>
<tr>
<td>Donating blood</td>
<td>2.4</td>
<td>1.7</td>
<td><strong>0.7</strong></td>
</tr>
<tr>
<td>Flying on a plane</td>
<td>3.2</td>
<td>3.8</td>
<td>-0.6</td>
</tr>
<tr>
<td>Riding a bike</td>
<td>2.9</td>
<td>2.6</td>
<td><strong>0.3</strong></td>
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<td>2.9</td>
<td><strong>0.2</strong></td>
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<tr>
<td>Driving a car</td>
<td>2.3</td>
<td>2.8</td>
<td>-0.4</td>
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<td>2.3</td>
<td>2.9</td>
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<td>1.9</td>
<td><strong>0.9</strong></td>
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<td>2.8</td>
<td>2.4</td>
<td><strong>0.4</strong></td>
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<td>3.6</td>
<td>-0.7</td>
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<td>2.1</td>
<td><strong>0.1</strong></td>
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<td>2.0</td>
<td><strong>0.6</strong></td>
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<td>2.1</td>
<td><strong>0.8</strong></td>
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<td>Playing Poker</td>
<td>3.7</td>
<td>3.4</td>
<td><strong>0.3</strong></td>
</tr>
<tr>
<td>Getting proposed to</td>
<td>3.9</td>
<td>3.4</td>
<td><strong>0.5</strong></td>
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<td>Pumping gas</td>
<td>2.5</td>
<td>2.5</td>
<td>0.0</td>
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<td>Using an ATM</td>
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<td><strong>0.3</strong></td>
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<td><strong>Average</strong></td>
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<td>2.6</td>
<td><strong>0.3</strong></td>
</tr>
</tbody>
</table>

*Note.* Greater numbers mean the image shows why an action is done better than how. Difference scores in bold indicate effect is in the predicted direction.

Table 2: Mean how/why ratings for each action in Experiment 3.
Table 3: Regression coefficients for the effect of perspective on action identification level (Experiment 1), action identification level on perspective (Experiment 2), and perspective on how/why ratings (Experiment 3), controlling for past and expected future experience, for each action.
Table 3

<table>
<thead>
<tr>
<th>Activity</th>
<th>Experiment 1</th>
<th>Experiment 2</th>
<th>Experiment 3</th>
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<td>Voting</td>
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<td>.49</td>
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<td>-19.40</td>
<td>.27</td>
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<td>.78</td>
<td>.37</td>
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<td>-.36</td>
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<td>Reading a watch</td>
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<td>.14</td>
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<td>.48</td>
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<td>Potting a plant</td>
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<td>Playing poker</td>
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<td>1.18</td>
<td>.14</td>
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<tr>
<td>Getting proposed to</td>
<td>.56</td>
<td>2.55</td>
<td>.23</td>
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<tr>
<td>Pumping gas</td>
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<td>.03</td>
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<td>.23</td>
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<td>Snorkeling</td>
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<td>Weighing oneself</td>
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<td>1.16</td>
<td>-.10</td>
</tr>
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<td>Washing hands</td>
<td>.16</td>
<td>-.47</td>
<td>.16</td>
</tr>
<tr>
<td>Picking up mail</td>
<td>.37</td>
<td>.87</td>
<td>.26</td>
</tr>
<tr>
<td>Average coefficient</td>
<td>.34</td>
<td>1.03*</td>
<td>.12</td>
</tr>
</tbody>
</table>

*Calculation of mean excludes outliers (dialing a phone, z = 3.76; toothbrushing: z = - 3.61).

Note: Numbers in bold indicate effect is in the predicted direction. Coefficients in Experiments 1 and 2 were computed using logistic regression; coefficients in Experiment 3 were computed using linear regression.
### Experiment 4

<table>
<thead>
<tr>
<th>Action</th>
<th>Abstract (n = 88)</th>
<th>Concrete (n = 84)</th>
<th>Diff.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack an egg</td>
<td>77</td>
<td>42</td>
<td>36</td>
</tr>
<tr>
<td>Wrap a gift</td>
<td>56</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>Stamp an envelope</td>
<td>34</td>
<td>21</td>
<td>13</td>
</tr>
<tr>
<td>Lay out silverware</td>
<td>26</td>
<td>5</td>
<td>21</td>
</tr>
<tr>
<td>Chop vegetables</td>
<td>77</td>
<td>65</td>
<td>12</td>
</tr>
<tr>
<td>Install flashlight batteries</td>
<td>63</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>Iron a shirt</td>
<td>53</td>
<td>20</td>
<td>33</td>
</tr>
<tr>
<td>Use a can opener</td>
<td>82</td>
<td>87</td>
<td>5</td>
</tr>
<tr>
<td>Staple papers</td>
<td>30</td>
<td>20</td>
<td>9</td>
</tr>
<tr>
<td>Wipe up a spill</td>
<td>61</td>
<td>36</td>
<td>26</td>
</tr>
<tr>
<td>Cut up a credit card</td>
<td>36</td>
<td>24</td>
<td>13</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>54</strong></td>
<td><strong>34</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

*Note.* Difference scores in bold indicate effect is in the predicted direction.

Table 4: Percentage of participants that chose the third-person perspective photograph for each action in Experiment 4.
<table>
<thead>
<tr>
<th>Action</th>
<th>Experiment 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crack an egg</td>
<td>1.64</td>
</tr>
<tr>
<td>Wrap a gift</td>
<td>1.24</td>
</tr>
<tr>
<td>Stamp an envelope</td>
<td>0.63</td>
</tr>
<tr>
<td>Lay out silverware</td>
<td>1.97</td>
</tr>
<tr>
<td>Chop vegetables</td>
<td>0.58</td>
</tr>
<tr>
<td>Install flashlight batteries</td>
<td>1.63</td>
</tr>
<tr>
<td>Iron a shirt</td>
<td>1.43</td>
</tr>
<tr>
<td>Use a can opener</td>
<td>-0.34</td>
</tr>
<tr>
<td>Staple papers</td>
<td>0.54</td>
</tr>
<tr>
<td>Wipe up a spill</td>
<td>1.06</td>
</tr>
<tr>
<td>Cut up a credit card</td>
<td>0.59</td>
</tr>
<tr>
<td><strong>Average coefficient</strong></td>
<td><strong>1.0</strong></td>
</tr>
</tbody>
</table>

*Note: Numbers in bold indicate effect is in the predicted direction.*

Table 5: Logistic regression coefficients indicating the effect of condition (how vs. why) on visual perspective, controlling for past and expected future experience, for each action in Experiment 4.
First-Person Visual Perspective  

Third-Person Visual Perspective

Figure 1: Illustration of first-person and third-person visual perspectives as operationalized in distance controlled photographs used in Experiments 4-6.
Figure 2: The effect of visual perspective on the number of abstract identifications chosen on the Behavior Identification Form in Experiment 5.
Figure 3: The effect of visual perspective on mean ratings of abstract and concrete fable descriptions in Experiment 6.
Figure 4: The effect of visual perspective and message type on attitudes toward consumer products plotted at one standard deviation below the sample mean on the BIF.
Figure 5: The effect of visual perspective and message type on attitudes toward consumer products plotted at one standard deviation above the sample mean on the BIF.
APPENDIX B

LIST OF ACTIONS DEPICTED IN PHOTOGRAPHS IN EXPERIMENTS 1-3

AND ACTION DESCRIPTIONS USED IN EXPERIMENTS 1-2
<table>
<thead>
<tr>
<th>Action</th>
<th>Low Level Action</th>
<th>High Level Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voting</td>
<td>Marking a ballot</td>
<td>Influencing the election</td>
</tr>
<tr>
<td>Toothbrushing</td>
<td>Using a toothbrush</td>
<td>Preventing tooth decay</td>
</tr>
<tr>
<td>Donating blood</td>
<td>Getting stuck with a needle</td>
<td>Donating blood</td>
</tr>
<tr>
<td>Flying on a plane</td>
<td>Sitting on a plane</td>
<td>Taking a trip</td>
</tr>
<tr>
<td>Riding a bike</td>
<td>Peddling a bike</td>
<td>Getting exercise</td>
</tr>
<tr>
<td>Reading a watch</td>
<td>Checking one’s watch</td>
<td>Making sure one is on time</td>
</tr>
<tr>
<td>Driving a car</td>
<td>Keeping a car on the road</td>
<td>Traveling to a destination</td>
</tr>
<tr>
<td>Eating a peach</td>
<td>Eating a peach</td>
<td>Getting nutrition</td>
</tr>
<tr>
<td>Taking a test</td>
<td>Answering questions</td>
<td>Showing one’s knowledge</td>
</tr>
<tr>
<td>Flying a kite</td>
<td>Holding a kite string</td>
<td>Enjoying a windy day</td>
</tr>
<tr>
<td>Reading the newspaper</td>
<td>Reading lines of print</td>
<td>Learning about the news</td>
</tr>
<tr>
<td>Painting a room</td>
<td>Rolling paint onto the wall</td>
<td>Making the room look fresh</td>
</tr>
<tr>
<td>Playing piano</td>
<td>Pressing keys</td>
<td>Making music</td>
</tr>
<tr>
<td>Potting a plant</td>
<td>Potting a plant</td>
<td>Enjoying a hobby</td>
</tr>
<tr>
<td>Playing Poker</td>
<td>Looking at playing cards</td>
<td>Hoping to win a gamble</td>
</tr>
<tr>
<td>Getting proposed to</td>
<td>Accepting a ring</td>
<td>Agreeing to marry him</td>
</tr>
<tr>
<td>Pumping gas</td>
<td>Filling a tank</td>
<td>Fueling a vehicle</td>
</tr>
<tr>
<td>Riding a rollercoaster</td>
<td>Sitting in a coaster</td>
<td>Seeking a thrill</td>
</tr>
<tr>
<td>Snorkeling</td>
<td>Kicking one’s feet</td>
<td>Exploring underwater</td>
</tr>
<tr>
<td>Taking a shower</td>
<td>Standing in a shower</td>
<td>Becoming clean</td>
</tr>
<tr>
<td>Typing on a computer</td>
<td>Pressing keys</td>
<td>Getting work done</td>
</tr>
<tr>
<td>Using an ATM</td>
<td>Putting a card in a machine</td>
<td>Withdrawing funds</td>
</tr>
<tr>
<td>Reading help wanted ads</td>
<td>Following lines of print</td>
<td>Searching for a job</td>
</tr>
<tr>
<td>Dialing a phone</td>
<td>Pressing buttons</td>
<td>Getting in touch with a friend</td>
</tr>
<tr>
<td>Weighing oneself</td>
<td>Standing on a scale</td>
<td>Measuring progress</td>
</tr>
<tr>
<td>Paying the rent</td>
<td>Writing a rent check</td>
<td>Maintaining a place to live</td>
</tr>
<tr>
<td>Grocery shopping</td>
<td>Pushing a cart</td>
<td>Buying food for one’s family</td>
</tr>
<tr>
<td>Ringing a doorbell</td>
<td>Pressing a doorbell</td>
<td>Checking if someone is home</td>
</tr>
<tr>
<td>Washing hands</td>
<td>Using a bar of soap</td>
<td>Killing germs</td>
</tr>
<tr>
<td>Picking up mail</td>
<td>Reaching into a mailbox</td>
<td>Getting the mail</td>
</tr>
</tbody>
</table>
APPENDIX C

FIRST-PERSON AND THIRD-PERSON VISUAL PERSPECTIVE

PHOTOGRAPHS OF ACTIONS USED IN EXPERIMENTS 4-6
First-person visual perspective photographs of actions used in Experiments 4-6.
Third-person visual perspective photographs of actions used in Experiments 4-6.
APPENDIX D

VALLACHER & WEGNER’S (1989) BEHAVIOR IDENTIFICATION FORM
1. Making a list
   a. Getting organized
   b. Writing things down

2. Reading
   a. Following lines of print
   b. Gaining knowledge

3. Joining the Army
   a. Helping the Nation's defense
   b. Signing up

4. Washing clothes
   a. Removing odors from clothes
   b. Putting clothes into the machine

5. Picking an apple
   a. Getting something to eat
   b. Pulling an apple off a branch

6. Chopping down a tree
   a. Wielding an axe
   b. Getting firewood

7. Measuring a room for carpeting
   a. Getting ready to remodel
   b. Using a yard stick

8. Cleaning the house
   a. Showing one's cleanliness
   b. Vacuuming the floor

9. Painting a room
   a. Applying brush strokes
   b. Making the room look fresh

10. Paying the rent
    a. Maintaining a place to live
    b. Writing a check

11. Caring for houseplants
    a. Watering plants
    b. Making the room look nice

12. Locking a door
    a. Putting a key in the lock
    b. Securing the house

13. Voting
    a. Influencing the election
    b. Marking a ballot

14. Climbing a tree
    a. Getting a good view
    b. Holding on to branches

15. Filling out a personality test
    a. Answering questions
    b. Revealing what you're like

16. Toothbrushing
    a. Preventing tooth decay
    b. Moving a brush around in one's mouth

17. Taking a test
    a. Answering questions
    b. Showing one's knowledge

18. Greeting someone
    a. Saying hello
    b. Showing friendliness

19. Resisting temptation
    a. Saying "no"
    b. Showing moral courage

20. Eating
    a. Getting nutrition
    b. Chewing and swallowing

21. Growing a garden
    a. Planting seeds
    b. Getting fresh vegetables

22. Traveling by car
    a. Following a map
    b. Seeing countryside

23. Having a cavity filled
    a. Protecting your teeth
    b. Going to the dentist

24. Talking to a child
    a. Teaching a child something
    b. Using simple words

25. Pushing a doorbell
    a. Moving a finger
    b. Seeing if someone's home

*Higher level alternative. Total score is the sum of higher level alternative choices.
APPENDIX E

AESOP’S FABLES AND DESCRIPTIONS USED IN EXPERIMENT 6

**The Ant and the Grasshopper**

In a field one summer's day a Grasshopper was hopping about, chirping and singing to its heart's content. An Ant passed by, bearing along with great toil an ear of corn he was taking to the nest. "Why not come and chat with me," said the Grasshopper, "instead of toiling and moiling in that way?" "I am helping to lay up food for the winter," said the Ant, "and recommend you to do the same." "Why bother about winter?" said the Grasshopper; we have got plenty of food at present." But the Ant went on its way and continued its toil. When the winter came the Grasshopper had no food and found itself dying of hunger, while it saw the ants distributing every day corn and grain from the stores they had collected in the summer.

**The Lion and the Mouse**

Once when a Lion was asleep a little Mouse began running up and down upon him; this soon wakened the Lion, who placed his huge paw upon him, and opened his big jaws to swallow him. "Pardon, O King," cried the little Mouse: "forgive me this time, I shall never forget it: who knows but what I may be able to do you a turn some of these days?" The Lion was so tickled at the idea of the Mouse being able to help him that he lifted up his paw and let him go. Some time after the Lion was caught in a trap, and the hunters, who desired to carry him alive to the King, tied him to a tree and went in search of a wagon to carry him on. Just then the little Mouse happened to pass by, and seeing the sad plight in which the Lion was, went up to him and soon gnawed away the ropes that bound the King of the Beasts. "Was I not right?" said the little Mouse.

**The Goose with the Golden Eggs**

One day a countryman going to the nest of his Goose found there an egg all yellow and glittering. When he took it up it was as heavy as lead and he was going to throw it away, because he thought a trick had been played upon him. But he took it home on second thoughts, and soon found to his delight that it was an egg of pure gold. Every morning the same thing occurred, and he soon became rich by selling his eggs. As he grew rich he grew greedy; and thinking to get at once all the gold the Goose could give, he killed it and opened it only to find nothing.
Descriptions of *The Ant and the Grasshopper* from most concrete to most abstract:

A. A grasshopper sings and hops about while an ant carries an ear of corn.

B. A grasshopper has fun while an ant stores food for the winter.

C. A grasshopper enjoys the present while an ant prepares for the days ahead.

A. A grasshopper squanders the occasion to prepare for the future and ends up hungry.

B. A grasshopper fails to understand the reasons for an ant’s labors and suffers the consequences.

C. A grasshopper learns that days of leisure are foolish if one doesn’t prepare for days of necessity.

Descriptions of *The Lion and the Mouse* from most concrete to most abstract:

A. A mouse chews through ropes that tied up a lion.

B. A mouse sets a lion free that was caught in a trap.

C. A mouse saves the life of a lion captured by hunters.

A. A lion is saved by a mouse whose life he had spared.

B. A lion’s mercy is repaid by a mouse he thought didn’t matter.

C. A lion learns that those seen as small may prove to be great friends.

Descriptions of *The Goose with the Golden Eggs* from most concrete to most abstract:

A. A man cuts open a goose that laid golden eggs.

B. A man kills a goose that had brought him riches.

C. A man kills a goose that had made him wealthy thinking it would make him richer.

A. A man loses the source of his wealth when he chases after greater fortune.

B. A man ruins his good fortune when he isn’t satisfied with the treasure he has.

C. A man learns that grasping for more than is needed causes him to lose what he has.

*Note:* Descriptions sharing the same letter were paired responses in the dichotomous choice questions for each fable.
APPENDIX F

EXAMPLES OF ADVERTISEMENTS MANIPULATING VISUAL PERSPECTIVE AND ABSTRACTNESS OF MESSAGE ARGUMENTS
First-Person Perspective with Feasibility Arguments

Brilliant Color.
Fills your room with soft, bright white light

Compatible.
Made to fit in all your current light fixtures

Easy to install.
Screws in effortlessly with one hand

Convenient.
Available today at all major retailers

Nothing burns brighter than a BEACON.

Third-Person Perspective with Desirability Arguments

Brilliant Color.
Fills your room with soft, bright white light

Long-Lasting.
Lasts 10 times longer than standard bulbs

Energy Efficient.
Uses 75% less energy than standard bulbs

Cool and Safe.
Keeps rooms cooler and is safer to operate

Nothing burns brighter than a BEACON.
First-Person Perspective with Desirability Arguments

Vitalis
One Daily Multivitamins

Balanced nutrients. Essential ingredients for daily nutrition
Improves daily functioning. Supports sound body and mind
Boosts immunity. Helps your body fight off illness
Promotes health. Increases overall wellness

Third-Person Perspective with Feasibility Arguments

Vitalis
One Daily Multivitamins

Balanced nutrients. Essential ingredients for daily nutrition
Only one a day. All day supplement in a single pill
Easy to swallow. Small comfort coated tablets
Opens easily. Simple screw-off safety cap
LIST OF REFERENCES


