

# GOAL PURSUIT FUNCTIONS: WORKING TOGETHER

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What is motivation and how does it work? The purpose of this chapter is to answer this question by reviewing theories and research on the functions of goal pursuit and by integrating what motivation scientists have discovered by not only discussing each function alone but also considering the relationships among the functions—how goal pursuit functions work together. Given the nature of this handbook, we emphasize work in the social–personality literature in our review of theories and research on goal pursuit functions (for a more comprehensive discussion of the goal pursuit functions and how they work together, see Higgins, 2012). Our take-away message is that what the literature shows is that motivation is less about pleasures and pains, needs satisfaction, or utility than it is about the dynamics of goal pursuit functions working together.

## WHAT IS MOTIVATION?

To answer this general question, which provides the foundation for understanding how motivation works, we must begin by decomposing it into the two basic questions that underlie it: “What does it mean to be motivated?” and “What do people really want?”

### What Does It Mean to Be Motivated?

The most common answer to the first question is that to be motivated means to have high energy or be willing to expend high energy (effort) in the pursuit of goals—to be energized or fired up. In the first half of the 20th century, for example, the three most

highly influential schools of thought in psychology—the psychodynamic school (e.g., Freud’s psychic energy; S. Freud, 1915/1957), the learning or conditioning school (e.g., Hull’s drives as energizers; Hull, 1943, 1952), and the Gestalt school (e.g., Lewin’s system in tension; Lewin, 1951)—all viewed motivation as energy to be directed toward some desired destination or goal.

An alternative answer that does not emphasize energy per se is that to be motivated means to approach or avoid something (e.g., Carver & Scheier’s [1981] self-regulation theory; Miller, Galanter, & Pribram’s [1960] TOTE [test–operate–test–exit] model; Wiener’s [1948] cybernetic model). This answer emphasizes movement, which is the root meaning of the word *motivation*. This answer also captures within it the idea that this movement is in the service of attaining desired end states and avoiding undesired end states.

A third answer is that to be motivated means to have preferences directing choices, where the preferences can be for particular goal pursuit outcomes or for particular strategies or ways of pursuing goals (see Higgins, 2012). The final choices that people make reflect their preferences at multiple levels—their outcome preferences, their strategic preferences, and their tactical preferences (see Scholer & Higgins, 2010). They involve motivations working together. It is this organization of motives that is emphasized by the phrase *preferences directing choices*.

All three of these answers say something useful about what it means to be motivated. We believe

that they complement, rather than compete, with one another. The message they have in common is that motivation is about pursuing goals—about the energy that is directed toward a destination when people pursue goals; about the movements of approaching and avoiding that occur when people pursue goals; and about the choices directed by organized preferences (interrelating outcomes, strategies, and tactics) that are made when people pursue goals.

### What Do People Really Want?

There are many different ways to parse the question of what people really want, from early attempts to outline a comprehensive list of human motives (e.g., Maslow, 1943; H. A. Murray, 1938) to more recent attempts to develop a framework of core social motives (e.g., Fiske, 2004; see also Kenrick, Griskevicius, Neuberg, & Schaller, 2010) or motives unique to the human animal (Higgins & Pittman, 2008). Space constraints do not permit a review of all of the theories and research on people's core motives. What we do is move up a level of analysis to discuss, briefly, a more general version of the question of what it is that people really want (see Higgins, 2012). Historically, there have been three general answers: people want to survive; people want to maximize pleasure and minimize pain; and people want to be effective in their life pursuits.

The idea that people want to stay alive rather than die, surely understood before Darwin (1859) but formalized by his work, was so convincing that in the early 20th century it dominated theories of what humans and other animals wanted. Not surprisingly, it is an answer that remains very influential. In psychology, this answer took a particular form. Survival was translated into “satisfying basic biological needs”—those biological needs considered necessary for the preservation of an individual and species. Indeed, satisfying biological needs was considered so central to motivation that even the value or desirability of something, such as food, water, or social contact was conceptualized in terms of the extent to which it satisfied a biological need. Once again, there was broad support across psychological perspectives—from behavioristic to Gestalt to psychodynamic—for the notion that how much

something is wanted derives from the extent to which it satisfies some need. Survival as the answer to what it is humans really want has additional significance for humans because humans are the only animals who are aware of their own mortality. According to terror management theory (see Becker, 1973; Pyszczynski, Greenberg, & Solomon, 1997), this awareness creates a terror about the inevitability of death that humans are motivated to resolve above all other motives—wanting not only to satisfy the biological necessities of life but also wanting to enhance self-esteem and pursue a meaningful life.

The alternative answer to what people want—that they want to maximize pleasure and minimize pain—also has a long history of advocacy. Indeed, its history goes back as least as far as the early Greeks, who proposed the hedonic principle that people approach pleasure and avoid pain (the term *hedonic* derives from the Greek term for sweet or pleasant). When Sigmund Freud (1920/1950) wrote his book *Beyond the Pleasure Principle*, he was not turning his back on the hedonic principle. In fact, he proposed that people are not only motivated to seek pleasure, such as the desire for immediate gratification that is associated with the id, but are also motivated to avoid pain, such as avoiding punishments from violations of superego demands. In addition to being advocated by psychodynamic theorists such as Freud, the hedonic answer was advocated by behaviorists (e.g., Atkinson, 1964; Mowrer, 1960) and Gestaltists (e.g., Lewin's 1935 description of children learning to produce or suppress their behaviors because of the prospect of reward or punishment, respectively). Indeed, this answer is so convincing that when most people think about how to motivate others (or themselves), they overwhelmingly choose incentives because they believe that everyone wants to maximize pleasure (carrots) and minimize pain (sticks).

The third answer to what people want—that they want to be effective in their life pursuits—has a relatively shorter history than the other two answers. Indeed, it can almost be considered a modern answer in that it began around the middle of the 20th century. One of the most eloquent statements advocating effectiveness as what humans and other animals really want comes from Robert Woodworth in his 1940 book, *Psychology*:

To some thinkers on these matters it appears self-evident that dealing with the environment occurs only in the service of the organic needs for food, etc. They say that the muscles and sense organs have evolved simply as tools for the better securing of food and other organic necessities, and for reproducing the race. Only the organic needs, on this view, are entitled to rank as primary drives; all activity dealing with the environment is secondary. The facts of evolution do not compel us to adopt this view, for motility and responsiveness to the environment are present way down to the bottom of the scale of animal life. There is no more reason for saying that the muscles exist for the purpose of obtaining food than for saying that food is needed to supply energy for the muscles. . . . What we find in the young animal is activity directed toward the environment, along with the organic needs, and with no sign that one is more primitive and unlearned than the other. It is safe to assume dealing with environment as a primitive characteristic of the organism. (p. 374)

This rather radical statement made at the height of behaviorism in the United States—when motivation was about biological need satisfaction and pleasure “stamping in” behavior (see Thorndike, 1911)—is suggesting that rather than action being in the service of attaining food to eat and water to drink, eating food and drinking water could be in the service of taking action. Years later the clinical psychologist Robert White argued something similar. He said that something important was left out when psychologists made drives the motivating force for the behaviors of humans and other animals and proposed competence as an alternative: “an organism’s capacity to interact effectively with its environment” (White, 1959, p. 297).

When considering humans and other mammals, White (1959) felt that the motivation involved in the learning that underlies competence could not

derive solely from drives as the sources of energy. He reviewed evidence that animals are strongly motivated by the opportunity to be active (e.g., rats choosing to run around and around in a wheel), to manipulate objects (e.g., monkeys choosing to persist in solving a mechanical problem), and to explore the environment (e.g., monkeys working to open a window that allows them to see what is happening outside), even when these activities are unrelated to satisfying some organic need. He described the work of Karl Groos (1901/1940) and Jean Piaget (1952), who observed that children have a joy in producing effects, such as making a clatter or jumping up and down in puddles, and find especially interesting those objects that they can manipulate by means of their own movements. They want to have an effect on the environment, deal with it, and change it. Piaget himself in his landmark book *The Origins of Intelligence in Children* (Piaget, 1952) argued that the actions of infants, such as continued sucking after a meal when they are no longer hungry, are not motivated by pleasure or biological needs but by the motivation to exercise the action, to be effective in making it function (see also Hunt, 1961).

White (1959) argued that when people engage in these kinds of activities, they experience a feeling of efficacy to indicate the subjective and affective side of effectance. Years later, Albert Bandura (1982) proposed that perceived self-efficacy is central to human effectiveness. He proposed that people’s dealings with the environment are influenced by their judgments of their capabilities and their thoughts about their ability to manage events in their lives: “Perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations” (Bandura, 1982, p. 122). Notably, in addition to being more contextualized than White’s feeling of efficacy, Bandura’s self-efficacy is broader in its range of applicability. Whereas White’s effectance is restricted to conditions when the motivational system is not concerned with meeting the primary biological needs, Bandura’s self-efficacy also influences decisions about how to meet organic needs, such as whether or how to hunt a particular animal for food (e.g., in a hunter–gatherer society).

For Bandura, self-efficacy judgments are involved in regulating all types of performance (except for habitual, highly routinized behavior patterns).

Another highly influential theory that gives a prominent role to competence and effectiveness motivation is self-determination theory, developed by Edward Deci and Richard Ryan (see Deci, 1975, 1980; Deci & Ryan, 1985, 2000). According to Deci and Ryan (2000), “It is part of the adaptive design of the human organism to engage interesting activities, to exercise capacities, to pursue connectedness in social groups” (p. 229). Self-determination theory argues that to understand human motivation, it is necessary to consider the innate psychological needs for competence, autonomy, and relatedness. Following White (1959), *competence* refers to the need to feel effective and to have control in relation to one’s environment (effectance motivation). *Autonomy* refers to the need to self-endorse one’s own actions and to experience volition, with the opposite of autonomy being excessive external control. Not surprisingly, given its name, self-determination theory is especially concerned with volition in the sense of the power of choosing or determining (for a further discussion of the role of volition in human motivation, see deCharms, 1968).

In sum, there are strong advocates for all three answers to the question “What is it that people really want?” Once again, we believe that all three of these answers provide useful insights into understanding motivation, complementing rather than competing with each other. People engage in goal pursuit functions to survive, to maximize pleasure and minimize pain, and to be effective in life pursuits. For reasons more fully explicated in Higgins (2012), we choose in this chapter to emphasize the third answer because we believe that it captures all of the essential functions of goal pursuit most clearly and completely. In addition, and perhaps most important, this answer most naturally considers how the different goal pursuit functions work together effectively. To appreciate this better, in the next section we describe the three ways to be effective, and how they work together, that are the basis for our organization of the chapter and our integration of previous theory and research on goal pursuit.

## VALUE, TRUTH, AND CONTROL AS THREE WAYS TO BE EFFECTIVE

As we have briefly reviewed, there have historically been strong advocates for the notion that what people really want is to be effective in life’s pursuits. Recently, Higgins (2012) has developed this position even further by distinguishing among three different ways that people want to be effective—value, truth, and control effectiveness.

### Value Effectiveness

*Value effectiveness* refers to actors being successful in ending with the outcomes they desire. Value effectiveness is about success with respect to outcomes, about the consequences of goal pursuit—success in ending with benefits versus costs, pleasure versus pain, biological needs satisfied versus unsatisfied. Simply put, value effectiveness is being successful in having what is desired. We should emphasize that what matters for value effectiveness is ending with the desired outcomes and not how this ending came about, whether through a proxy, through collaboration with others, or through one’s own actions.

Value effectiveness was emphasized by drive theories (e.g., Hull, 1943, 1952) and the hedonic principle. For drive theories, value was derived from the benefits of satisfying primary biological needs, such as reducing hunger (e.g., finding food) or reducing fear (e.g., escaping danger). For the hedonic principle, value was derived from the benefits of making something pleasant happen or something painful not happen. Goal theories have also emphasized value effectiveness—motivation as forces within one that are goal directed or purposive (see Elliott & Dweck, 1988; Elliot & Fryer, 2008; Kruglanski et al., 2002; McDougall, 1914; Pervin, 1989). In social psychology, at least, a major influence on this conceptualization of motivation was Kurt Lewin’s (1935, 1951) work on goal-directed action and goal striving within a field of forces in which positive value relates to a force of attraction and negative valence relates to a force of repulsion. Woodworth (1921), once again, said it clearly: “What persists, in purposive behavior, is the tendency towards some end or goal. The purposeful person wants something he has not yet got, and is striving towards some future result” (p. 70).

## Control Effectiveness

*Control effectiveness* refers to actors experiencing success at managing what is required (procedures, competencies, resources) to make something happen (or not happen). Having control relates to exercising direction or restraint on action, to having power or authority to guide or manage, and to having influence over something (*Compact Edition of the Oxford English Dictionary*, 1971). Control effectiveness is being successful in managing what happens. Whereas value effectiveness relates to outcomes (benefits vs. costs), control effectiveness relates to strength (strong vs. weak influence over something). It is very general. People can have strong versus weak muscles, eyesight, intellect, character, arguments, willpower, teamwork, and so on. Managers, leaders, and administrators can be strong or weak.

Although high control effectiveness increases the likelihood of beneficial outcomes, it is separate from outcomes, as reflected in maxims such as “It’s not whether you win or lose, it’s how you play the game.” Winners and losers alike can play with skill and courage (with strength). Indeed, control effectiveness can even trump value effectiveness at times. Consider, for example, a study with rats that learned that by pressing a lever they could make a food pellet fall into a food tray where they could eat it (see Carder & Berkowitz, 1970). In one experimental condition, a food dish was placed in the cage, which meant that the rats could obtain the same food pellets for free (i.e., without having to work for them). On occasion, a rat would accidentally push the free food dish in front of the food tray. Despite the fact that they could effortlessly attain the food from the free food dish in front of them, the rats actually pushed the food dish out of the way (not eating from it) and then pressed the lever to make a food pellet fall into the food tray where they ate it. Such behavior is about the motive to manage what happens (control effectiveness), not the motive to have a desired outcome (value effectiveness). If it was just about value effectiveness, the rats would eat from the free food dish, thereby maximizing the benefits–costs ratio (the same beneficial food for less cost in effort).

## Truth Effectiveness

*Truth effectiveness* refers to actors being successful in knowing what is real. The root meaning of *truth* (as well as of *trust*) relates to *true*; truth is the quality of being true. Something being true means being in accordance with an actual state of affairs, being consistent with the facts, conforming to or agreeing with an essential reality, being that which is the case, representing things as they are—in brief, knowing what is real, what is reality (*Compact Edition of the Oxford English Dictionary*, 1971). *True* also relates to accuracy; to being correct, right, and legitimate; to being genuine, honest, and faithful. It is contrasted with being imaginary, spurious, or counterfeit. Thus, truth effectiveness is being successful in establishing what is real.

It is clear that value effectiveness—having desired results—is critical for humans and other animals. So, however, is truth effectiveness—knowing what is real in the world, representing things as they are. Without truth effectiveness, people would bump into walls and live in a world that William James (1890/2007) referred to as “one great blooming, buzzing confusion” (p. 462). One of the lessons of social psychology is that reality is subjective; what is reality to one religious group is mere illusion or delusion to another. What is clear, however, is that each individual and each group is strongly motivated to believe that they know what is real—to attain truth effectiveness. This plays out in various ways, including wanting to know what is accurate, or what is correct or incorrect, right or wrong, legitimate or illegitimate, honest or deceitful, and genuine or fraudulent.

Given the dominant position of the hedonic principle within motivation, the difference between truth effectiveness and the hedonic principle needs to be emphasized. It is common knowledge that learning the truth about oneself or those one cares about can be painful, and yet people often seek the truth even when they know it will be painful. When something pleasant but unexpected happens to people, they often want to know why it happened, even though it may disrupt their happiness.

The human desire to seek truth, even at the expense of pleasure, has been well captured in popular culture. A well-known example is *The Matrix*.

In this movie set in the future, the reality perceived by humans is actually a simulated reality—the matrix—that provides people with a hedonically positive life to pacify them. Morpheus is the leader of the rebels against this constructed world. He gives Neo, the central character, a choice between a blue pill that will keep him in this comfortable simulated reality or a red pill that offers only the truth. He tells Neo, “All I’m offering is the truth, nothing more.” Neo chooses the red pill—truth over hedonic pleasure—and is the hero of the movie.

Historically, truth effectiveness has received the least attention within the major psychological models of motivation. Value effectiveness has been given the starring role in many motivational models, such as the classic hedonic principle, but even control effectiveness has often received top billing in several models of motivation, as in self-efficacy theory (e.g., Bandura, 1977, 1982, 1986), self-regulation theory (e.g., Carver & Scheier, 1981, 1998), self-determination theory (e.g., Deci & Ryan, 1985, 2000), action set theory (e.g., Gollwitzer, Fujita, & Oettingen, 2004; H. Heckhausen & Gollwitzer, 1987), and self-discrepancy theory (e.g., Higgins, 1987, 1989). We argue, however, as we develop later in this chapter, that the importance of truth effectiveness to motivation is revealed in several important psychological mechanisms, many of which play a prominent role in the social psychology literature. In contrast to value and control effectiveness, however, these approaches have not been commonly linked under the umbrella of the motive for truth.

Now that we have provided a general introduction and background for thinking about what motivation is and the central role of value, control, and truth effectiveness in motivation, we turn to a review of the goal pursuit functions associated with value, control, and truth effectiveness. Later, we review the motivation literature that illustrates how the value, control, and truth functions work together.

## VALUE IN GOAL PURSUIT

As we have suggested, humans want to be effective in having what is desired. The more an object or activity has value to one, the more one prefers it

over alternative objects or activities. Gordon Allport (1961), a founding father of personality psychology, suggested that value priorities were the “dominating force in life” (p. 543). But what gives an object or activity its value? Where does value come from? In this section, we review, again briefly, what mechanisms function to give objects and activities value, to make goals and end states desirable to begin with. It is important to understand such mechanisms because some models of goal pursuit take for granted as a starting assumption that the goals or end states being pursued have value and are desirable without addressing the issue of where such value or desirability comes from in the first place.

Traditionally, the basic mechanisms described as conferring value are the following: value from need satisfaction, value from shared beliefs about desirable objectives and procedures, value from relating our current selves to personal standards, value from making evaluative inferences, and value from hedonic experience. We briefly review each of these basic mechanisms in this section (see Higgins, 2012).

## Value From Need Satisfaction

At the turn of the 20th century, psychologists with theoretical perspectives ranging from behavioristic to Gestalt to psychodynamic proposed that need satisfaction is the basic mechanism that confers value to objects and activities. Specifically, something has positive value if it contributes to satisfying physical needs, reduces drives or deficiencies, or increases an individual’s survival in the world. If it does the opposite, it has negative value. Behavior is directed toward controlling deficits of specific substances in the body, and value derives from homeostatic responses to tissue deficits and physiological equilibrium (see Weiner, 1972). Drives were manifest in behavior, had physiological correlates, and naturally gave rise to man’s desires (see Woodworth, 1918).

Beginning in the 1950s, social psychological research provided a broader version of the need satisfaction viewpoint in studies that used operant or classical conditioning to change attitudes. In one paradigm, for example, participants talked to the experimenter. While they were talking, the experimenter casually responded positively to one set of

linguistic forms the participants used, such as plural nouns, with approving head movements or expressions such as “mm-hmmm” and did not respond or responded negatively to different linguistic forms the participants used, such as singular nouns. These responses of the experimenter did or did not, respectively, satisfy the participants’ need for approval. Studies using this kind of paradigm found that over time, independent of the participants’ awareness of what was happening, the approved linguistic forms were produced more frequently than the forms that were not approved—as if those linguistic forms had increased in value (for a review of such studies, see Eagly & Chaiken, 1993).

### Value From People’s Shared Beliefs About Desirable Objectives and Procedures

A very different mechanism that confers value is people’s shared beliefs about which ends or objectives are generally desirable (and which are undesirable) and which means or procedures for attaining these ends are generally desirable (and which are undesirable). This is the kind of value that people have in mind when they say that they value freedom or equality. Although these values are personal in the sense of being internalized, they are acquired within a social context and they are shared with others; they are internalized social values (Schwartz, 1994). Milton Rokeach (1980) described values as “shared prescriptive or proscriptive beliefs about ideal modes of behavior and end-states of existence” (p. 262; see also Williams, 1979). Similarly, Robert Merton (1957) noted that “Every social group invariably couples its cultural objectives with regulations, rooted in the mores or institutions, of allowable procedures for moving toward these objectives” (p. 133). The cultural objectives are the things worth striving for, which have outcome value in the culture. The allowable procedures are the acceptable ways to strive for the worthwhile things, which have process value in the culture (see Merton, 1957; see also Rokeach, 1979; Schwartz, 1992).

The shared beliefs mechanism for conferring value includes norms about what goals are worth pursuing and what moral principles or standards of conduct one should live by. As captured in the concept of procedural justice (see Thibaut & Walker,

1975; Tyler & Lind, 1992), for example, people in many societies value the fairness of decision procedures independent of decision outcomes, such as employees wanting their managers to follow fair procedures in determining raises independent of whether they end up with a higher or lower raise themselves (see Brockner, 2010). Given the importance of shared cultural or socialized values as a mechanism that confers value for humans on the objects and activities in their lives, it is not surprising that such values have received special attention in social psychology (e.g., Rokeach, 1973; Schwartz & Bilsky, 1987; C. Seligman, Olson, & Zanna, 1996).

### Value From People Relating Themselves to Standards

Shared beliefs can be considered at more than one level of analysis—at the broader societal level where the values apply to people in general or at the more interpersonal level where significant others apply values to a specific person. Whereas values from shared beliefs at the broader societal level are usually treated as social values, values from a person’s shared beliefs with a significant other (e.g., mother, partner) are usually treated as personal standards. Historically, cybernetic and control process models have treated personal standards in terms of the relation between a current state of the self and some end state functioning as a standard of reference. The value of the current self-state depends on the extent to which it approaches a personally desired end state or avoids a personally undesired end state functioning as a standard or reference point (see Carver & Scheier, 1981, 1990; Miller et al., 1960; Powers, 1973; Wiener, 1948).

For human motivation, the desired and undesired end states that function as reference points or guides for self-regulation are typically acquired from interactions with significant others. Developmentally, children learn their caretakers’ hopes and aspirations for them (their ideals) or their caretakers’ beliefs about their duties and responsibilities (their oughts). When children become capable of having their own standpoint on ideals and oughts, they can adopt their caretakers’ ideals and oughts for them as their own, thereby creating a shared reality about desired end states, which are internalized

(or identified) self-guides. Ideal self-guides relate to the promotion system that is concerned with accomplishments and advancement, and ought self-guides relate to the prevention system that is concerned with safety and security (see Higgins, 1997). An actual-self attribute that is congruent with (matches) an ideal or ought self-guide has positive value (it is a desired result), whereas an actual-self attribute that is discrepant from (mismatches) an ideal or ought self-guide has negative value (it is an undesired result; see Higgins, 1987, 1991; James, 1890/2007; Moretti & Higgins, 1999; Rogers, 1961).

Value is conferred by two different mechanisms in these systems. First, the person's ideal and ought standards of excellence are shared beliefs with significant others about which end states are desired (positive value) and which end states are undesired (negative value). Second, the actual-self states that are congruent with or discrepant from the ideal and ought self-guides themselves have positive or negative value, respectively. It is this second mechanism of conferring value that uniquely characterizes this viewpoint on value. It introduces the notion of value from monitoring one's success or failure in meeting self-guides—value from the answer to “how am I doing?” (see Bandura, 1986; Boldero & Francis, 2002; Carver & Scheier, 1990; Duval & Wicklund, 1972; Higgins, 1987).

### Value From Hedonic Experience

Jeremy Bentham (1781/1988) made an influential early statement on the importance of hedonic experiences to both ethical and nonethical value:

Nature has placed mankind under the governance of two sovereign masters, *pain* and *pleasure*. It is for them alone to point out what we ought to do, as well as to determine what we shall do. On the one hand the standard of right and wrong, on the other the chain of causes and effects, are fastened to their throne. (p. 1)

Interest in hedonic experiences as a mechanism conferring value has continued over the centuries (see Kahneman, Diener, & Schwarz, 1999; Kahneman & Tversky, 1979). Danny Kahneman (2000), for example, distinguished decision utility,

where utility is inferred from observed choices (i.e., revealed in behavior), from experienced utility, which involves experiences of pleasure and pain. Kahneman argued that the best way to measure actual experienced utility is by moment-based methods in which experienced utility of an episode is derived from real-time measures of the pleasure and pain that an individual experienced during that episode. He also proposed another mechanism that people use to confer value—their memory of pleasure and pain experiences, which he called *remembered utility* (see Kahneman, 2000).

### Value From Engagement Strength

More important, the contribution of experience to value is not restricted to the pains and pleasures experienced from goal pursuit outcomes (whether obtained or anticipated). Maxims handed down over many years reflect this understanding: “It is not enough to do good; one must do it in the right way” or “What counts is not whether you win or lose, but how you play the game.” What these maxims declare is that there is something else about the process of goal pursuit, about how goals are pursued, that also contributes to value experience beyond hedonic experience associated with outcomes. Often this something else has been understood in terms of moral or ethical factors, such as the shared, normative beliefs about desirable and undesirable procedures (how one should behave) that we discussed earlier. However, the contribution to value from how goals are pursued is not restricted to the impact of normative or moral beliefs. There are other process factors that can strengthen engagement (the state of being fully absorbed and attentive) that in turn intensify the positive or negative reactions to something (see Higgins, 2006).

Experiencing something as having positive value corresponds to experiencing a force of attraction toward it, and experiencing something as having negative value corresponds to experiencing a force of repulsion from it. These value experiences vary in intensity such that the experiences of a force of attraction to or repulsion by something can be relatively weak or strong (low or high positive and negative value, respectively). The mechanisms that confer value that we discussed earlier, such as need

satisfaction and hedonic experience, contribute both to the direction of the motivational force (i.e., whether the value force is positive attraction or negative repulsion) and to the intensity of the motivational force (i.e., how attractive or how repulsive something is). Strength of engagement contributes only to value intensity, but this contribution can be highly significant.

Several factors can contribute to value intensity by strengthening or weakening engagement, and their contribution to value intensity is independent of the hedonic state they create in the actor. (For a related idea, see Berridge and Robinson's distinction between wanting and liking; Berridge & Robinson, 2003; Robinson & Berridge, 2003.) For example, a barrier that interferes with goal pursuit creates unpleasant feelings in the actor but can nevertheless increase attraction toward the valued goal object by strengthening engagement in the goal pursuit when the actor opposes this interference (Higgins, 2006). Another factor that can intensify value from strengthening engagement that has received considerable attention in recent years is regulatory fit (Higgins, 2000).

People experience regulatory fit when their goal orientation is sustained (vs. disrupted) by the manner in which they pursue the goal. For example, some students working to attain an A in a course are oriented toward the A as an accomplishment or an aspiration (a promotion focus), whereas others are oriented toward the A as a responsibility or as security (a prevention focus). As a way to attain the A, some students read material beyond what has been assigned (an eager strategy), whereas others are careful to fulfill all course requirements (a vigilant strategy). Pursuing the goal of attaining an A with an eager strategy sustains a promotion focus (a fit), whereas pursuing it with a vigilant strategy disrupts a promotion focus (a nonfit). In contrast, pursuing the goal of attaining an A with a vigilant strategy sustains a prevention focus (a fit), whereas pursuing it with an eager strategy disrupts a prevention focus (a nonfit). Evidence has been found that engagement in a goal pursuit activity is strengthened by regulatory fit and weakened by nonfit (see Cesario, Higgins, & Scholer, 2008; Higgins, 2000, 2006; Higgins & Scholer, 2009).

An early regulatory fit study (see Higgins, Idson, Freitas, Spiegel, & Molden, 2003) illustrates how regulatory fit can intensify value independent of the hedonic properties of the valued object. Participants had either a predominant promotion or a predominant prevention orientation and were asked to make a decision using either an eager or a vigilant strategy. Specifically, in the context of a marketing study, the participants in the study were asked to indicate their preference between a Columbia coffee mug and an inexpensive pen. These two objects had been preselected to ensure that one of them—the Columbia coffee mug—would be the preference of almost all of the participants. The manner in which the participants decided which object they preferred was manipulated by telling half of them to think about what they would gain by choosing the mug and what they would gain by choosing the pen—an eager manner of making a choice—and telling the other half to think about what they would lose by not choosing the mug or what they would lose by not choosing the pen—a vigilant manner of making a choice.

After choosing the mug, the participants were given the opportunity to buy it. Participants in the regulatory fit conditions (predominant promotion and eager decision manner; predominant prevention and vigilant decision manner) offered much more money to buy the mug than participants in the regulatory nonfit conditions (predominant promotion and vigilant decision manner; predominant prevention and eager decision manner)—almost 70% higher for the exact same mug! Although the hedonic properties of the mug itself were the same in the fit and nonfit conditions and the outcome of successful goal pursuit was the same (i.e., owning the mug), the experienced value of the mug was not the same. The experienced intensity of its attractiveness was clearly greater in the fit than the nonfit conditions.

## CONTROL IN GOAL PURSUIT

We should note from the beginning that wanting to be effective in managing what happens is a very powerful human motive. The literatures on learned helplessness (e.g., Abramson, Seligman, & Teasdale,

1978; M. E. P. Seligman, 1975), control deprivation (e.g., Pittman & D'Agostino, 1989; Pittman & Pittman, 1980), perceived lack of control (e.g., Weary, Elbin, & Hill, 1987), and compensatory control (e.g., Kay, Whitson, Gaucher, & Galinsky, 2009) provide substantial evidence of the negative impact of failures in control effectiveness on emotions, cognitive processing, and behavior. Indeed, the human motivation to experience oneself as managing what happens can be so strong that people will give up value, as well as truth, for its sake.

Regarding control trumping truth, people want to experience control, want to believe that they are managing to make things happen and have managed to make things happen, despite the fact that they may not actually be in control of what happens and have only the illusion of control (see Ebert & Wegner, 2011; Langer, 1975; Wegner, Sparrow, & Winerman, 2004). Regarding control trumping value, people will take responsibility for negative outcomes, such as team members remembering that they were the more active player on the team even when the team loses (see M. Ross & Sicoly, 1979). People even take responsibility for causing something bad to happen when they know they will be punished for taking responsibility. For example, when Charles Lindbergh's child was kidnapped, more than 100 different people confessed to being the abductor. Clearly, they could not have all been guilty.

In this section we briefly discuss some of the central control functions. We are especially brief because many of the control functions do not work alone. They work together with truth. Often truth and control work together so that people go in the right direction. For this reason, these mechanisms are discussed when we turn to the part of the chapter that considers how goal pursuit functions work together, and particularly when we consider how truth and control work together. However, we begin by introducing the five central control functions considered in the traditional literature: resisting temptation, controlling wanted and unwanted states, selection, commitment, and feedback (see Higgins, 2012).

### Resisting Temptation

In the psychological literature, the two classic examples of resisting temptation come from

Sigmund Freud and Walter Mischel. For Freud, the most fundamental conflict was between the motivational forces of the id that follow the pleasure principle and the motivational forces of the superego that involve learned demands and prohibitions. In one of his last books, *Civilization and Its Discontents*, Sigmund Freud (1930/1961) described how civilization demands that individuals curb their personal pleasures, causing civilized people to live a life of guilt and frustration.

Whereas Freud's control problem concerned individuals suppressing wished-for acts that were forbidden by others, Mischel's control problem concerned individuals tolerating self-imposed delays for something they wanted now. For Mischel, such delay of gratification is a basic human task that is at the core of willpower. Mischel used the now famous marshmallow test to test children's ability to delay gratification (see Mischel, 1974; Mischel & Ebbesen, 1970). One at a time, preschoolers are brought into a room, seated at a table, and shown two food objects. Although both objects are liked by the test child, one is clearly preferred, such as a marshmallow being preferred over a pretzel. To attain the marshmallow rather than the pretzel, the child must wait alone with the two objects on the table until the experimenter returns to the room. At any time while the experimenter is away the child can ring a bell on the table to signal the experimenter to return. The children know, however, that if they hit the bell, then they will get the pretzel rather than the preferred marshmallow. Thus, the child must resist the temptation to ring the bell.

One successful strategy that children use to delay gratification is to mentally transform the objects into nonconsummatory objects, such as mentally transforming the pretzel into a thin brown log or the marshmallow into a white fluffy cloud. This strategy is said to work because the concrete "hot" objects are mentally transformed into abstract "cool" objects (see Metcalfe & Mischel, 1999; Mischel, 1999). Another common strategy that children used successfully was distraction. The children avoided looking at the objects by covering their eyes or by resting their heads on their arms, or they engaged in alternative activities, such as singing or talking to themselves or trying to sleep. Of course, distraction

is also commonly used by adults to resist temptation, including not looking at a tempting object, such as a tempting dessert (for a review of other successful strategies for resisting temptation, see Higgins, 2012).

### Controlling Wanted and Unwanted Inner States

It was S. Freud (1949), once again, who provided the classic example of controlling unwanted inner states. The prototypic case for him of unwanted inner states was people feeling anxious or guilty about their thoughts, feelings, or desires about another person; in particular, young boys (between ages 3 and 5) feeling anxious and guilty about wanting to kill their father to possess their mother—the Oedipus complex. These feeling and thoughts were considered normal. Controlling them, by ultimately identifying with the father, was considered to be critical to the development of a superego and conscience.

The thoughts and feelings associated with an Oedipus complex are not the only unwanted inner states that people want to control, and repression as a mechanism is not the only mechanism for controlling unwanted inner states. Indeed, inner states need not even be unpleasant to be unwanted. For example, when people are distracted from their focal task by pleasant extraneous thoughts, such as daydreaming, they may try to exert control and bring their attention back to the focal task. Moreover, models of self-control describe mechanisms that attempt to increase wanted inner states as well as to decrease unwanted inner states. Effective control uses all of these mechanisms. However, here we concentrate on mechanisms for controlling unpleasant inner states, such as coping mechanisms, because they have received the most attention in the psychological literature.

It is now well-known that repression is not the only mechanism, or even the most effective mechanism, for dealing with unpleasant thoughts or feelings. Active engagement with unpleasant thoughts and feelings, when done in the appropriate way, is more likely to reduce unwanted inner states than repression or distraction (Ayduk & Kross, 2010). It appears that just verbalizing is not enough,

however. Indeed, when verbalizing involves just ruminating, it can make things worse rather than better (see Nolen-Hoeksema, 2000). Rather, people benefit when the talking or writing actually produces insights and causal explanations for what happened (see Pennebaker, Mayne, & Francis, 1997). This is often facilitated when individuals take a third-person perspective on past negative events in their lives (i.e., distancing; see, e.g., Kross, Ayduk, & Mischel, 2005).

Managing moods and emotions—*affect regulation*—is not restricted to just the extreme feelings that people have. People manage their mild and moderate feelings as well, such as trying to keep a good mood or getting over a bad mood. In other words, people may not always seek to increase pleasure and decrease pain but may actually seek to increase useful emotions, regardless of their hedonic value (Frijda, 1986; Tamir, 2009). They use a variety of methods to maintain or alter both the intensity and the duration of both their positive and their negative feelings (for reviews, see Gross, 1999; Larsen & Prizmic, 2004; Ochsner & Gross, 2004). Sometimes people want to stay angry, for example, to fortify their resolve to stand up to someone they want to confront (Tamir, Mitchell, & Gross, 2008) or increase fear to make avoidance goal pursuit more effective (Tamir & Ford, 2009). This type of instrumental emotion regulation provides a clear example of times when individuals may prefer negative emotional states to facilitate control in a given situation (trading off value effectiveness for control effectiveness).

### Selection in Goal Pursuit

Resisting temptation and controlling unwanted inner states are the forms of control effectiveness that have received the most attention historically in the psychological literature precisely because they concern psychological problems that need to be solved. They are the squeaky wheels of control effectiveness. However, control effectiveness is not restricted to managing problems of self-control. Indeed, it is mostly about successfully managing all of the different self-regulatory functions required to pursue goals. Being successful in managing these functions makes people feel effective. We begin with selection in goal pursuit.

Effective management of goal pursuit requires making different selections during different phases of the goal pursuit process. Heinz Heckhausen and Peter Gollwitzer have described these different selections in their Rubicon model of self-regulation (see Gollwitzer, 1990; H. Heckhausen & Gollwitzer, 1987). Expanding on Lewin's earlier distinction between a goal-setting phase that determines which goals a person will choose to pursue and a goal-striving phase of taking action directed toward attaining the selected goals (see Lewin, Dembo, Festinger, & Sears, 1944), the Rubicon model distinguishes among preactional, actional, and postactional phases. The preactional and actional phases generally relate to goal setting and goal striving, respectively. The postactional phase functions as an evaluative feedback phase that we discuss later. Importantly, the Rubicon model also makes a distinction within the preactional phase—within goal setting so to speak—between a predecisional deliberative phase and a postdecisional implementation phase. The predecisional deliberation phase is characterized by wishing and deliberating and is when goals are selected. Selection also occurs during the implementation phase. This phase involves planning. Unless things are very simple, planning is a critical function in successful goal pursuit.

### Commitment in Goal Pursuit

Managing commitment is necessary for effective goal pursuit. The critical transition from simply deliberating to having commitment to a goal is called *crossing the Rubicon* in H. Heckhausen and Gollwitzer's (1987) model. Selecting a wish is not sufficient. Only when there is a feeling of determination to fulfill the wish will the wish be transformed into a goal intention—goal commitment. Where does determination, which is so important to feeling effective, come from?

The standard answer is that it comes from the utility of a goal pursuit, and the two factors that contribute to utility are the subjective value of successful goal pursuit and the subjective likelihood of successful goal pursuit. Commitment to pursuing a goal will be stronger when the subjective value of success is high (vs. low) and when people perceive a high (vs. low) likelihood of success. In the Rubicon

model as well, goal commitment during the deliberation phase was postulated to depend on both its desirability and its feasibility. But the story of commitment is not fully captured by the classic Value  $\times$  Likelihood utility function because it treats a goal in isolation from other goals when, in fact, people often have multiple goals. Even when there is only one goal in the foreground, other goals are still in the background (see Carver, 2004; Krantz & Kunreuther, 2007; Kruglanski et al., 2002; Simon, 1967). More important, the goals are interconnected such that even a solitary foreground goal is influenced by background goals to some degree. Specifically, qualitative differences exist in the interconnections between goals because the connection or link between a pair of goals can be facilitative or inhibitory (Kruglanski et al., 2000).

Such interconnections among goals need to be managed to be effective in sustaining commitment. Because competing goals have an inhibitory connection to one another, activating a competing goal, even if done unconsciously (i.e., subliminally), can reduce commitment to the focal goal. Given this, it is important for people to shield their focal goal from competing goals during goal pursuit. One way to accomplish this is to keep the focal goal activated. Indeed, activating a focal goal inhibits other goals competing with it (see Shah, Friedman, & Kruglanski, 2002).

Evidence has also been found that performance can be enhanced by setting a difficult goal rather than an easy goal, such as setting a weekly goal to run 20 miles rather than just 5 miles (see Locke & Latham, 1990, 2002). It is possible that setting a difficult goal is effective because it sustains commitment. Generally speaking, the more difficult a task is, the more time and effort must be continually expended to succeed at it. With a relatively easy goal of 5 miles per week, for example, an individual could complete the goal by Tuesday and then stop for the rest of the week. Setting a difficult task, then, will sustain commitment to the goal pursuit. Perhaps this is why high-need achievers, when choosing among tasks varying in difficulty, prefer a high-difficulty task over a moderate-difficulty task (see Kuhl, 1978).

A final kind of commitment in goal pursuit needs to be mentioned—commitment of resources or

effort. We mentioned earlier that people's decisions of how much effort to expend on goal pursuit and whether to persist or not when confronting obstacles are influenced by their self-efficacy judgments (Bandura, 1986). Regardless of how much effort people would be willing to invest to be successful at something, they will invest only the amount of energy that is actually required to ensure success (see Brehm & Self, 1989; Wright, 2008). For the important case of goal-directed thinking, Kruglanski et al. (2012) have recently proposed a cognitive energetics theory in which the amount of energy individuals give to a cognitive activity depends on both the maximal amount of energy an individual is prepared to invest in that activity and the amount of energy that is needed to match some restraining force on that activity, such as competition from alternative goals.

### Feedback in Goal Pursuit

The feedback function of goal pursuit involves both evaluating the goal pursuit activity while it is still ongoing—"How am I doing?"—and evaluating the success or failure of the goal pursuit after it is completed—"How did I do?" As does the extant literature, our review emphasizes feedback while approaching goals or desired reference values. Carver and Scheier (see Carver, 2004; Carver & Scheier, 1998, 2008) have proposed the most developed model of such feedback. They propose that two layers of managing what happens through feedback keep a person on track during goal pursuit.

The first layer concerns goal attainment or maintenance and consists of an input, a reference value, a comparison, and an output (see also Miller et al., 1960; Powers, 1973; Wiener, 1948). The input is information about the present condition, the current state. The goal or desired end state provides the reference value. The input (current state) is compared with the reference value (desired end state). If a discrepancy between the input (current state) and the reference value (desired end state) is detected in this comparison, then there is an error signal and an output of taking action to reduce (or eliminate) the discrepancy. The second layer of feedback involves affect. Specifically, the input for the second layer of feedback is the rate of discrepancy reduction over

time. When the rate of progress in reducing a discrepancy is below this criterion, negative affect occurs; when the rate of progress is above this criterion, positive affect occurs.

### TRUTH IN GOAL PURSUIT

We devote a little more space to truth effectiveness because, relatively speaking, it has received little attention in the literature concerned with goal pursuit functions. Somewhat like value, truth has been treated as a given rather than exploring its sources, such as assigning truth levels in terms of probabilities, likelihoods, or expectancies (typically along with valued outcomes). But where does such truth come from in the first place?

Like value, truth is an experience. For example, when we fail to establish what's real we feel confused and bewildered. William James (1890/2007) described beliefs as resulting from a reality check on thoughts. He described believing as being an emotional experience of consent; that is, people decide that what had been just a thought before is now truth. Generally speaking, people prefer the stability and solidity of truth over the agitation and contradictions of doubt.

The motive to establish what is real is so powerful that, generally speaking, the default is to treat something as real rather than to treat it as imaginary or as an open question (cf. Gilbert, 1991). This default—that whatever one is experiencing and thinking is reality—is so strong that it is difficult for people to appreciate that other people can have different perceptions, thoughts, and feelings than them about the same thing. Indeed, it takes years for children to first learn this (see Case, 1985; Piaget, 1932/1965; Werner, 1957). Even when children come to appreciate that individuals' perceptions and desires can vary, they still treat beliefs as real rather than considering the possibility that they could be false (see Gopnik, 1996).

Lee Ross (see Griffin & Ross, 1991; L. Ross & Ward, 1995) has described a human worldview called *naive realism*. Naive realism is people's tendency to assume that what they perceive, believe, or prefer directly reflects objective reality, that their thoughts and feelings are a dispassionate and

essentially unmediated apprehension of what is real. That is, people assume that their own experiences and beliefs can be, and deserve to be, treated as real. Given this, if someone disagrees with one's experience or belief about something, then that person (or group) must be irrational, ignorant, motivationally biased, or simply lying. After all, one's experiences and beliefs are simply the truth—the whole truth and nothing but the truth.

Given that being effective in finding the truth is so important to people, how do they go about it? What are the mechanisms that confer truth? We briefly describe four mechanisms (for a fuller discussion, see Higgins, 2012): judging what, asking why, cognitive consistency, and social and shared reality.

### Establishing Reality by Judging What

Consider waking up in the middle of the night to a strange noise. You might ask yourself a series of questions: “Was I just dreaming?” “Is that the wind?” “Is that an intruder in my house?” Your questions are not idle curiosity. In such a situation, people want to know the truth, to know what is really happening. People want to be successful in finding the correct answers—they want to establish what is real. Only then can they have the answers they need to make a decision about what to do.

Even if you determine that something definitely did make a noise, that is not enough. You want to know exactly what kind of something it is. It clearly matters whether the sound was made by the wind slamming the screen door or by an intruder entering the premises. Similarly, when a parent sees his or her teenager engage in helpful behavior around the house, the parent does not question whether the behavior is helpful. Rather, he or she might question whether this sudden zest for domestic chores suggests genuine helpfulness or is just impression management. It is the answer to that question that matters to people. It matters what someone's behavior really means. And what it really means depends on the inner states of the person that led to its production. Thus, the first question people ask is whether the person did or did not intend to produce the behavior and its consequences or whether the behavior or its consequences are accidental (see Heider, 1958; Jones & Davis, 1965; Malle, 2004).

Determining the inner states that led to producing a behavior is critical in establishing what happened to begin with, establishing what's real. Once intentionality is inferred (consciously or unconsciously), what comes next? Several person perception models describe the judgmental process as involving a sequence of processing stages that begin with initial low-level steps that are largely automatic or unconscious and proceed to higher level steps that are more controlled or conscious (see, e.g., Brewer, 1988; Gilbert, 1991; Trope, 1986). After this sequence is complete, people have a judgment of what happened, but they generally do not stop there. To feel confident that they understand the reality of the event, people often proceed to the next truth question: why it happened.

### Establishing Reality by Asking Why

The next step of going from what people do to why they do it is the kind of truth seeking that has received the most attention in the social psychological literature. It concerns the process of drawing inferences about other individuals' abilities, beliefs, attitudes, or personality, including trying to understand one's own actions and feelings. People want especially to know the truth about those inner states of someone that are stable over time, such as that person's abilities, attitudes, goals, and so on, because this will allow them to make more accurate predictions about what that person is likely to do in the future—seeking in the present to know what will be real about that person in the future (for reviews of this extensive literature, see Hilton, 2007; Kruglanski & Sleeth-Keppler, 2007; Malle, 2004; Uleman, Saribay, & Gonzalez, 2008). To return to the earlier example, the parent wants to know whether his or her teenager's behavior is a bid for a later curfew, a genuine desire to reestablish better relations, or simply an uncomplicated response to a perceived need.

Humans are mental time travelers (see Tulving, 2005). They think about the future, which includes fantasizing about the future but also, importantly, planning for the future. When they plan for the future, they want the future they are planning for to be real. To plan effectively, people need their predictions about the future to be real—when predicting what others will do and what they

themselves will do, which requires knowing in the present what will remain stable about others or ourselves over time.

In addition to learning how individuals' inner states affect what they do, people learn how different kinds of situations press for different kinds of behaviors for people generally. They use this knowledge to predict future reality, such as learning about the social norms of behavior for a party versus a funeral. They also learn that cultural and personality differences in behaviors are likely in different kinds of situations, such as learning that someone with an authoritarian personality will be dominant when interacting with a status inferior but will be submissive when interacting with a status superior. They also learn that different categories of people like different kinds of things, so that when a member of that category chooses to do something, such as a young child choosing to play with a toy, it establishes a reality about the toy being fun for children to play with (the situation) rather than a reality about what that particular child is like as an individual (the person).

People also want their different kinds of knowledge to work together, to form a coherent whole, as was well recognized by the Gestalt movement in psychology (e.g., Köhler, 1929). They want present knowledge to be organized with past knowledge in a meaningful way. They want a past and present reality that make sense together. They want the elements of what they already know to be consistent not only with one another but also with what is currently happening. Seeking consistency to establish what is real is considered next.

### Establishing Reality From Cognitive Consistency

In his introductory chapter to the landmark book *Theories of Cognitive Consistency: A Sourcebook*, Theodore Newcomb (1968) described the remarkable emergence of scientific attention to cognitive consistency motives:

So it was a decade or so ago when at least a half dozen of what we shall call "cognitive consistency" theories appeared more or less independently in

the psychological literature. They were proposed under different names, such as balance, congruity, symmetry, dissonance, but all had in common the notion that the person behaves in a way that maximizes the internal consistency of his cognitive system; and, by extension, that groups behave in ways that maximize the internal consistency of their interpersonal relations. (p. xv)

To provide just a flavor of how people work to establish realities that make sense to them, we briefly consider the most influential consistency theory—Festinger's (1957) cognitive dissonance theory.

Dissonance theory is concerned with resolving cognitive inconsistencies to make sense of what has happened. More important, the theory of cognitive dissonance was conceptualized by Festinger in terms of truth, in terms of establishing what is real. According to Festinger (1957), "The human organism tries to establish internal harmony, consistency, or congruity among his opinions, attitudes, knowledge, and values" (p. 260). When people fail to do so, they experience dissonance, which gives rise to pressures to reduce that dissonance. Also important, he stated: "In short, I am proposing that dissonance, that is, the existence of nonfitting relations among cognitions, is a motivating factor in its own right" (p. 3).

A classic example of people trying to make sense of an event that produced dissonance is described by Festinger, Riecken, and Schachter (1956) in their book *When Prophecy Fails*. The study was inspired by a headline they saw in the local newspaper: "Prophecy from planet Clarion call to city: flee that flood." Here was a group of people who expected that alien beings from planet Clarion would arrive on earth on a specific date and take them away on a flying saucer (thereby saving them from the great flood that would then end the world). Festinger et al. predicted that this expectancy would be disconfirmed, which would create dissonance especially because many members of the group had made sacrifices such as quitting jobs and giving away possessions in preparation for leaving the Earth. And, indeed, it was disconfirmed.

One solution to this truth problem would be to try to make sense of what happened by establishing some new reality. This solution would involve creating new truths that are consistent with their previous beliefs and actions. This happened. New judgments about the present and predictions about the future were made that were consistent with the original belief, with the disconfirming event being treated like a bump in the road. After disconfirmation, for example, there was a sharp increase in the frequency with which group members decided that other people who telephoned them or visited their group were actually spacemen. They tried to get orders and messages from the “spacemen” for a future reality that would be consistent with their original beliefs.

Another way to make sense of what happened is to maintain the same core belief about being taken away in a flying saucer but believe that the specifics were wrong (i.e., just change the date). Indeed, such a response happened much more recently when Harold Camping predicted the end of the world would be May 21, 2011. When roosters crowed on May 22, Camping revised his doomsday prediction for October 21, 2011. Such revisions can justify the sacrifices that were made by increasing the value of the original belief. To further strengthen the belief, believers might even more fervently seek new converts. Indeed, this occurred in *When Prophecy Fails*, with some group members proselytizing their beliefs after the disconfirmation (Festinger et al., 1956). Notably, this proselytizing solution reflects not only effort justification but also the motivation to create a shared reality with others that their beliefs are true. This is yet another way to establish what is real that we discuss next.

### Establishing Reality From Social and Shared Reality

In his social comparison theory, Leon Festinger (1950, 1954) discussed how physical reality can often be ambiguous and difficult to grasp, and when it is, people initiate social comparison processes in which they depend on others’ judgments to construct a social reality. Festinger also proposed that although physical reality often takes precedence over social reality, the motivation to establish a

shared reality with others can trump physical reality. This is illustrated in the classic social influence study by Solomon Asch (1956) in which a naive participant had to give a response among a group of confederates who gave the same predetermined judgment on each trial.

On conflict trials, the confederates all gave the same wrong judgment, which conflicted with the naive participant’s correct perception. Naive participants typically appeared perplexed and bewildered—a sign of truth failure (e.g., Swann & Schroeder, 1995). The judgment of the other group members did not make sense. One way to resolve this problem is to find the truth by creating a shared reality with the other group members. Most of the naive participants did this by agreeing with the group judgment on some of the conflict trials, especially those trials on which the discrimination judgment was more difficult. Many naive participants began to doubt their perceptions, with thoughts such as “I doubt that so many people could be wrong and I alone right.” Some became persuaded that the voice of the group was right, that it was the truth. Shared reality as a source of reality trumped perceived physical reality.

The shared reality created by the naive participants with the other group members can be characterized as the creation of a descriptive norm. It was a description of what is real about the world. Descriptive norms are distinct from prescriptive or injunctive social norms about what reality should be established (see Cialdini, 2003). Both types of norms, however, are important in establishing what is real. Injunctive norms establish which behaviors are socially right in which situations for which people (as a function of their social role, identity, status, or position). In contrast, a descriptive norm provides information about how other people are behaving in some life domain, that is, what people typically do in a particular situation. Social norms help to define reality, to establish what is real, and this defined reality affects people’s judgments and decisions. Indeed, descriptive norms can have a powerful influence on behavior even when the normative context appears relatively trivial. For instance, hotel guests are more likely to engage in conservation (reusing hotel towels) not only if they

learn that most guests do so but especially if they learn that most guests who have stayed in their room have done so (Goldstein, Cialdini, & Griskevicius, 2008). Apparently, an even more powerful reality is established when one learns the norm not just for the hotel but for Room 1024. Indeed, for several decades the field of symbolic interactionism has been directed by the following primary rule: “If men define situations as real, they are real in their consequences” (see Thomas & Thomas, 1928; for a review of symbolic interactionism, see Stryker & Statham, 1985).

The Asch (1956) study, as well as Sherif's (1936) classic research on group construction of social norms, illustrates how a norm about what is real can be socially constructed without a basis in physical reality, and it will still have real consequences—it will be treated as real. People's willingness to do so underlies a necessary condition of establishing reality within human culture—communicating with others about one's inner states. The motive to share reality is one of the most important goals of communication more generally (see Echterhoff, Higgins, & Levine, 2009; Higgins, 1981). When people have this goal, they are motivated to describe targets (people, objects) in a manner that matches their audience's beliefs or attitudes about it. In an early study on this phenomenon (Higgins & Rholes, 1978), college student participants, who were in the role of communicators, were asked to describe a target person, Donald, on the basis of a short essay that described his behaviors. The behaviors described in the essay were evaluatively ambiguous, such as behaviors that could be labeled either as stubborn or as persistent. After being told in an offhand manner that their audience either liked or disliked the target, the participants produced their message for their audience. The communicators tuned their message to suit the attitude of their audience, making Donald sound more positive when the audience liked Donald and more negative when the audience disliked Donald. These messages were not accurate descriptions of the information they were given about the target. Instead, the communicators created a new truth about the target that allowed them to share reality with their audience.

However, this was not all that happened in this and subsequent studies (for a review, see Echterhoff, Higgins, Kopietz, & Groll, 2008). When the participants were asked later to recall as accurately as they could the information about Donald's behaviors that was contained in the essay they had received, Higgins and Rholes (1978) found that the communicators' own memory for the original essay information was distorted to match the evaluative tone of their previous message. The communicators ended up believing and remembering what they said rather than what they originally learned about the target—the “saying-is-believing” effect. What this study shows is that communicating with a shared reality goal can lead to treating an audience-tuned message about some topic as being the truth about that topic—treating it as real—even though the message biased the actual facts about that topic.

Now that we have reviewed the mechanisms underlying the goal pursuit functions of value, control, and truth, we can turn to what we believe is the essence of goal pursuit—how value, control, and truth work together to create organizational effectiveness. This, we believe, is the key story behind how motivation works, and it is a story that is well beyond the hedonic principle of carrots and sticks (see Higgins, 2012). The next sections of this chapter are organized in terms of the theories and research that have explored the different ways that value, control, and truth work together in goal pursuit. As we will show, the different partnering of these ways of being effective—value and control, value and truth, and truth and control—capture different qualities of the goal pursuit process.

## VALUE AND CONTROL WORKING TOGETHER

Goal pursuit can be considered as a process that relates the pursuit of desired goals or end states (value) with the strategic means or manner of attaining them (control)—value and control working together as partners. In this section, we review several different ways in which value and control work together.

## Goal Systems

The notion of goal systems has been developed and tested most extensively by Arie Kruglanski and his colleagues (e.g., Kruglanski et al., 2002). A means activity can fulfill multiple goals—that is, it can have multifinality, as in “many birds with one stone”—and a goal can also be fulfilled by multiple means—that is, it can have equifinality, as in “all roads lead to Rome.” The association between a goal and its means of attainment is stronger when both multifinality and equifinality are low.

There is evidence, for example, that the extent to which priming a means increases the accessibility of its goal (or vice versa), which is a measure of means–goal associative strength, is greater when the means fulfill only that goal and not other goals (low multifinality) and the goal is fulfilled by only that means and not other means (low equifinality). This reflects the goal systems property of means–goal uniqueness (see Kruglanski et al., 2002). An everyday example of means–goal uniqueness is using a Phillips-head screwdriver to take out a Phillips-head screw. The advantage of uniqueness in the value–control relation is that simply thinking about or engaging in the means activity will automatically bring the goal to mind, which in turn will activate the intention to attain the goal (commitment). As the means–goal association becomes stronger, the transfer of goal commitment to the means activity is greater—the means activity will become tied to the goal (see Kruglanski et al., 2002; for a related consequence of structural uniqueness in connections, see Anderson, 1974, 1983).

Uniqueness of the means–goal association is one form of value–control compatibility because the means activity and the goal uniquely go together—as in the right couple who are made for each other, whether it be love and marriage or horse and carriage. This particular form of compatibility concerns the worth of a means that derives from its special ability to fulfill some goal. More generally, compatibility refers to the instrumentality of a specific means of attaining some particular goal, and when there is means–goal uniqueness, that specific means is the most effective way to attain that particular goal (i.e., high instrumentality).

In addition, substantial evidence exists that specific actions or activities are preferred to the extent that they support attaining a more general objective (see Carver & Scheier, 1981; Shah & Kruglanski, 2000; for a general review of goal supportiveness, see Brendl & Higgins, 1996). Research on self-concordance has found that the value of different actions increases for a person as their relevance to that person’s broader aims increases (see Sheldon & Elliot, 1999). People more strongly prefer a process subgoal, such as making conversation, that is compatible with the attainment of a broader purpose goal, such as achieving interpersonal closeness (see Harackiewicz & Sansone, 1991; Sansone & Harackiewicz, 1996; Tauer & Harackiewicz, 1999).

## Regulatory Fit

Another form of compatibility is regulatory fit, which we discussed earlier. It differs from the forms of compatibility that we just described because it does not refer to the instrumentality of a specific means of attaining some particular goal. Instead, it refers to whether the means or manner of goal pursuit sustains (vs. disrupts) the goal orientation of the actor (Higgins, 2000). For example, eager means of goal pursuit fit a promotion orientation but not a prevention orientation, whereas the opposite is true for vigilant means of goal pursuit.

When two things fit with one another, they suit or agree with each other; they are in harmony. This captures the general sense of fit as compatibility. In addition, when something is experienced as fitting, it feels correct, proper, or even just. This captures the sense of fit as feeling right about what is happening, which is a central element of regulatory fit theory (Higgins, 2000). Fit derives from means that sustain the actor’s goal orientation, and the primary definition of *sustain* is to hold up or prolong, to give support, sustenance, or nourishment. This definition relates to the sense of fit as something that supplies what is needed to carry on, which captures the second central element of regulatory fit—strong engagement in what one is doing (see Higgins, 2006).

Regulatory fit has been shown to not only affect the value of the goal object, as discussed earlier, but also to affect engagement and goal pursuit

performance (Freitas & Higgins, 2002; Higgins, Idson, et al., 2003; Shah, Higgins, & Friedman, 1998). When individuals experience regulatory fit, they experience increased perceived success (Freitas & Higgins, 2002) as well as actual increased success, such as soccer players performing better on a penalty shooting task when they are in a state of fit versus nonfit (Plessner, Unkelbach, Memmert, Baltes, & Kolb, 2009). The experience of regulatory fit in negotiation leads individuals to increase demandingness, which can lead to greater financial success but also to a higher likelihood of an impasse (Appelt, Zou, Arora, & Higgins, 2009). Regulatory fit also yields greater cognitive flexibility and exploration of alternative strategies in goal support (Maddox, Baldwin, & Markman, 2006; Markman, Baldwin, & Maddox, 2005; Markman, Maddox, Worthy, & Baldwin, 2007; Worthy, Maddox, & Markman, 2007) and greater processing fluency (Labroo & Lee, 2006; Lee & Aaker, 2004) and accessibility for persuasive messages (Lee & Aaker, 2004). Indeed, when messages take advantage of regulatory fit principles, individuals are more likely to increase their consumption of fruits and vegetables (Cesario, Grant, & Higgins, 2004; Latimer, Rivers, et al., 2008; Spiegel, Grant-Pillow, & Higgins, 2004), increase physical activity (Latimer, Williams-Piehot, et al., 2008), reduce intentions to smoke (Kim, 2006; Zhao & Pechmann, 2007), floss their teeth more (Uskul, Sherman, & Fitzgibbon, 2009), increase motivation to engage in healthy behaviors generally (Lockwood, Chasteen, & Wong, 2005), comply with tax laws (Holler, Hoelzl, Kirchler, Leder, & Mannetti, 2008), positively evaluate and purchase target products (Chang & Chou, 2008; Jain, Lindsey, Agrawal, & Maheswaran, 2007; Lee & Aaker, 2004; Yi & Baumgartner, 2008), and increase academic motivation (Lockwood, Jordan, & Kunda, 2002).

Regulatory fit can also affect people's interest in doing a goal pursuit activity again. For example, in one study (Higgins, Cesario, Hagiwara, Spiegel, & Pittman, 2010) some participants performed a financial duties task that they considered to be an important activity, and others performed a fun activity (the Shoot-the-Moon game). Everyone was told that they would be rewarded with a new pen if they did

well on the activity, and everyone later had a free period when they could choose what to do, including doing the activity some more if they wished.

The situation surrounding pursuing the goal was manipulated to add either enjoyable elements or serious elements. To add enjoyable elements, the reward was described as being like winning a prize at a fair, and the open period was described as being like free time. To add serious elements, the reward was described as being like getting a bonus at work, and the open period was described as being like time management. The studies found that the participants were more interested in doing the financial duties task again when the surrounding situation was serious (a fit) than when it was fun (a nonfit), whereas they were more interested in doing the fun activity again when the surrounding situation was fun (a fit) than when it was serious (a nonfit). Regarding quality of performance, another study (Bianco, Higgins, & Klem, 2003) found that participants' memory for the central events in a documentary film was better when they believed that watching the documentary film was an important activity and the goal pursuit instructions told them that the film was selected because previous viewers had considered watching it to be a serious activity (a fit) rather than because previous viewers believed that it was enjoyable to watch (a nonfit). These studies also illustrate that regulatory fit principles can be applied to many different kinds of goal orientations. Although much of the research in the area of regulatory fit has been done in the context of regulatory focus theory (Higgins, 1997), regulatory fit principles apply more broadly.

## Flow

When the value-control partnership is effective, engagement is strengthened. This is illustrated in the work on regulatory fit. The synergy between value and control was first described by Mihaly Csikszentmihalyi (1975) in his psychological concept of flow. According to Csikszentmihalyi, people come to be happy by learning to control the contents of their conscious experience. Optimal experience occurs when one voluntarily stretches one's limits to accomplish something difficult and worthwhile. As he noted,

Optimal experience is thus something that we *make* happen. For a child, it could be placing with trembling fingers the last block on a tower she has built, higher than any she has built before; for a swimmer, it could be trying to beat his own record; for a violinist, mastering an intricate musical passage. (Csikszentmihalyi, 1975, p. 9)

What the phenomenon of flow highlights is that motivation in goal pursuit is not only about the final outcome. It is also about how strongly individuals are engaged in what they are doing. The flow experience occurs while the goal is still being pursued. When individuals are “in flow” or “in the zone,” engagement steadily increases to the point of complete absorption and the experienced effort expended remains the same or even decreases (Csikszentmihalyi & Nakamura, 2010). An investigation of the psychophysiological correlates of flow during piano playing found support for the idea that flow is distinct from mental effort (de Manzano, Theorell, Harmat, & Ullén, 2010). The experience of flow was associated with decreased heart period (heart rate variability), increased activity in the zygomaticus major (smile muscle), and increased respiratory depth. In contrast, mental effort is often associated with increased activation in the corrugator supercilii (frown muscle) and decreased respiratory depth (e.g., Backs & Seljos, 1994; Cohen, Davidson, Senulis, Saron, & Weisman, 1992; Porges & Byrne, 1992). This provides support for the notion that the amount of experienced effort that individuals expend in what they are doing is not the same thing as how strongly they are engaged.

### Exploitation and Exploration

Both regulatory fit and flow concern strength of engagement in goal pursuit. The dynamics of engagement and disengagement in goal pursuit, more generally, are also revealing of value–control relations. In many contexts, individuals have to balance the trade-offs between sticking with what is known and relatively certain (exploitation) or taking risks to seek new, uncertain opportunities

(exploration; e.g., Holland, 1975; Kaelbling, Littman, & Moore, 1996; March, 1991). This tension has been examined in a number of contexts but is particularly well captured in the multiarmed bandit problem (Berry & Fristedt, 1985). In this problem, an individual confronts a room with a number of slot machines and a fixed number of opportunities to pull the levers. Determining the best strategy in this situation involves consideration of the trade-offs between exploitation (sticking with known slot machines that are believed to have some payoff) versus exploration (taking a chance with a new slot machine with unknown payoff). Such trade-offs are a common reality in a world in which individuals hold multiple goals and in which information is so often uncertain. Research has suggested that individuals are better off engaging in exploration when new to an environment but shifting toward exploitation once adequate exploration has taken place; shifts in the locus coeruleus–norepinephrine system may play a critical role in mediating these exploitation–exploration shifts (Aston-Jones & Cohen, 2005).

In addition to the specific tensions between exploitation versus exploration, individuals must also determine when to let go of or disengage from goal pursuits more generally. Perhaps not surprisingly, the self-regulation literature has tended to focus more on issues of goal commitment and engagement, yet effective self-regulation also requires that people be able to abandon goal pursuits that are no longer functional (J. Heckhausen, Wrosch, & Schulz, 2010). Indeed, those older adults who are better able to disengage from goals are buffered from the increased depressive symptoms that are associated with increases in functional disabilities (e.g., managing the everyday tasks of life that can become increasingly more difficult with age; Dunne, Wrosch, & Miller, 2011), thus suggesting the important ways in which value–control relations may play a critical role in goal disengagement (as well as engagement).

### Challenge and Threat Appraisals

According to Csikszentmihalyi (1975), when people are experiencing flow they are feeling challenged rather than anxious or threatened. Jim Blascovitch

and his colleagues (e.g., Blascovich & Mendes, 2000; Blascovich & Tomaka, 1996) have studied what distinguishes, psychologically and biologically, between feeling challenged versus feeling threatened in goal pursuit. The biopsychosocial model of challenge and threat proposes that whether individuals feel challenge or threat in a motivation performance situation is critically determined by the relation between what the goal pursuit demands of an actor and what resources that actor believes he or she possesses: “To reach the desired end state, do I have the resources that this task demands?”

When individuals feel that their resources meet or exceed demands, they show patterns of cardiovascular activity associated with challenge. When individuals feel that their resources fall short of demands, they show patterns of cardiovascular activity associated with threat (Blascovich, Seery, Mugridge, Weisbuch, & Norris, 2004). The cardiovascular markers of challenge and threat have been shown to be predictive across a number of contexts. For instance, the challenge versus threat responses exhibited by softball and baseball players when imagining performance predicted their actual athletic performance during the season (Blascovich et al., 2004). Similarly, students who exhibited challenge versus threat responses during an academic task performed better in a subsequent course, even controlling for SAT scores and self-efficacy (Seery, Weisbuch, Hetenyi, & Blascovich, 2010). Although challenge and threat appraisals can be assessed with both self-report and psychophysiological measures, the cardiovascular markers of challenge–threat responses have been shown to be particularly robust predictors (Seery et al., 2010) and may suggest the importance of assessing value–control relations at multiple levels of analysis.

### Approach and Avoidance Control Strategies and Tactics in Goal Pursuit

In David McClelland and John Atkinson’s early classic work in personality (e.g., Atkinson, 1964; McClelland, Atkinson, Clark, & Lowell, 1953), achievement was a valued goal that was pursued with different control strategies. Some individuals (called *high achievers*) emphasized approaching the pride of success over avoiding the shame of failure,

whereas others (called *low achievers*) emphasized the reverse. High achievers also differed from low achievers in their tactics, with high achievers choosing to perform achievement tasks with moderate difficulty and low achievers choosing to perform achievement tasks with low or high difficulty.

Individuals with high achievement pride can themselves be distinguished in terms of strategic control preferences. Individuals with promotion achievement pride prefer to pursue goals using eager strategies of advancement. In contrast, individuals with prevention achievement pride prefer to pursue goals using vigilant strategies of preventing mistakes (Higgins et al., 2001). Once again, these strategic differences find a parallel in tactical differences. Participants in one study by Higgins et al. (2001) listed several goals and then listed up to seven means to attain each goal. Greater promotion pride predicted more means per goal, whereas greater prevention pride predicted fewer means per goal. In another study, participants imagined being tempted by a pizza but succeeding in maintaining their diet, and then they chose which tactics they would have used to succeed. Stronger promotion pride (but not prevention pride) predicted using more effective tactics that would advance the diet goal (e.g., attending to long-term health and appearance superordinate goals), whereas stronger prevention pride (not promotion pride) predicted avoiding the use of ineffective tactics that would impede the tactic goal (e.g., avoid thinking about how yummy the pizza is).

Differences in eager approach versus vigilant avoidance strategies have significant implications in relationships as well. Relationships require a balance between eagerly approaching connection or acceptance versus vigilantly avoiding the possibility of rejection (MacDonald & Leary, 2005). As is elegantly captured in the risk regulation model (S. L. Murray, Holmes, & Collins, 2006), individuals differ in their responses to perceived threats to their relationships, especially in the extent to which they adopt eager approach (connection) strategies versus vigilant avoidance (self-protective) strategies. These strategic responses have distinct antecedents and consequences. Research has shown that individuals who are high in attachment anxiety, have low trust

in their relationship, or have low self-esteem are all more likely to respond to threats by withdrawing and engaging in self-protective strategies (e.g., S. L. Murray, Bellavia, Rose, & Griffin, 2003; S. L. Murray & Holmes, 2011; S. L. Murray, Rose, Bellavia, Holmes, & Kusche, 2002; Shallcross & Simpson, 2012; Simpson, Rholes, & Phillips, 1996).

In contrast, individuals with secure attachment, high self-esteem, and high trust are more likely to respond to threats with attempts to draw closer and approach connection (e.g., S. L. Murray et al., 2002, 2003; S. L. Murray & Holmes, 2011; Shallcross & Simpson, 2012; Simpson et al., 1996). Although individuals engage in self-protective strategies because of their desire to avoid rejection, such an approach often backfires, actually making rejection more likely (S. L. Murray et al., 2003). Indeed, research has generally supported the idea that an approach orientation in the domain of social goals leads to more positive social outcomes (e.g., increased relationship satisfaction, increased sexual satisfaction, decreased loneliness) than does an avoidance orientation (e.g., Gable, 2006; Impett, Gable, & Peplau, 2005; Impett, Strachman, Finkel, & Gable, 2008).

In discussing the difference between approach and avoidance control strategies, it is important to acknowledge that there are many different levels within a self-regulatory hierarchy at which one can distinguish between approach and avoidance. Regulatory focus theory emphasizes strategic differences within the promotion and prevention systems (Higgins, 1997; Scholer & Higgins, 2008). Other models have emphasized distinctions in approach and avoidance at different levels in a self-regulatory hierarchy. For instance, Elliot's (2006) hierarchical model of approach and avoidance motivation in the achievement domain distinguishes between general approach and avoidance dispositions or temperaments and two types of approach goals (performance-approach goals, mastery-approach goals) and two types of avoidance goals (performance-avoidance goals, mastery-avoidance goals; Elliot & Church, 1997; Elliot & McGregor, 2001). Likewise, the social domain version of this model examines differences in goals reflecting positive social outcomes (approaching affiliation and intimacy) versus goals

involving negative social outcomes (avoiding rejection and conflict; Gable, 2006; Elliot, Gable, & Mapes, 2006).

The implications of approach and avoidance are distinct at different levels in the hierarchy. Though some have argued that avoidance motivations are generally problematic (e.g., Elliot, 2006; Elliot & Sheldon, 1997, 1998; Emmons, 1996), we believe that this perspective emerges primarily in reference to the dispositional and goal levels of a self-regulatory hierarchy. We do not disagree that avoidance at those levels often leads to poorer outcomes. However, we have suggested that avoidance at the strategic level, or at the tactical level, is not inherently problematic (Scholer & Higgins, 2008, 2010). Indeed, regulatory fit theory provides evidence of times when avoidance strategies lead to better performance (Cavallo, Fitzsimons, & Holmes, 2010; Förster, Grant, Idson, & Higgins, 2001) and enjoyment (Freitas & Higgins, 2002).

## VALUE AND TRUTH WORKING TOGETHER

Goal pursuit can also be considered as a process that relates the pursuit of desired goals or end states (value) with being realistic about the process of attaining them (truth)—value and truth working together as partners. In this section, we review several different ways that value and truth work together. We begin with the classic case—the value–likelihood relation.

### Value–Likelihood Relation

In traditional models of motivation, commitment derives from combining the subjective value of successful goal pursuit and the subjective likelihood of successful goal pursuit. People commit to taking action that they anticipate (likelihood) will result in their having what they desire in the future (value). This basic motivational effect of regulatory anticipation has been proposed in various forms for centuries (e.g., Bernoulli, 1738/1954) and by scholars across a broad range of areas (e.g., Atkinson, 1957; Edwards, 1955; S. Freud, 1920/1950; Lewin, 1935; Mowrer, 1960; Rotter, 1954; Tolman, 1932). The commonality across these proposals is that the motivational force of a future desired outcome (value) on

current commitment to take action is quantified (i.e., made stronger) by the anticipation that the outcome will actually occur (i.e., will be real in the future [truth]).

Although all of these approaches contain some reference to likelihood, the psychological nature of the anticipation (truth) that quantifies value differs across models. It can be specific expectancies concerning each of the outcomes associated with performing some action or engaging in some activity (see Ajzen & Fishbein, 1970; Rotter, 1954). It can be anticipation concerning the likelihood of effective performance from perceived self-efficacy (see Bandura & Cervone, 1983). It can be general anticipations of success or failure from chronic achievement motives (see Atkinson, 1957, 1964; Feather, 1961). It can be perceptions of task difficulty or luck (see Weiner et al., 1971). It can be anticipations that derive from simulations or predictions using pre-established norms (what would normally happen) or counterfactual thinking (what might happen instead; see Kahneman & Miller, 1986; Kahneman & Tversky, 1982).

There are two distinct kinds of value–likelihood models—the subjective expected utility model and the expectancy value model. What these models have in common is that they both propose that commitment derives from the subjective value of the future outcomes that an action would produce, quantified by how strongly those outcomes are anticipated. In both models, the quantification from anticipation produces a multiplicative function. The logic is that a high future value from taking action is not motivating if you know it will definitely not happen. That is, both models recognize that commitment is not just about contemplating the future value of taking action (value) because it matters to people whether that future value is real or imaginary (truth). What has received less attention than it deserves (for an important exception, see Ajzen, 1996) is the fact that how anticipation quantifies value in these two models is quite different.

The subjective expected utility model assumes that the possible outcomes from taking some action are disjunctive; that is, the outcomes are mutually exclusive alternatives, joined by *or*. For example, when deciding whether to commit to entering a

race, a track star could think about the likelihood of coming in first (gold), second (silver), third (bronze), or worse than third (no medal). In addition, the outcomes are exhaustive, capturing all of the possible outcomes. Given these assumptions, the joint (subjective) probabilities of the possible outcomes sum to 100%. In the simple case of succeeding or failing on a task, success and failure as outcomes are mutually exclusive and exhaustive. The subjective likelihood of success and the subjective likelihood of failure sum to 100% (e.g., Atkinson, 1957; Lewin et al., 1944).

Another example of mutually exclusive and exhaustive outcomes is illustrated by the following scenario. If Bob goes to his boss to ask for a raise, one of three outcomes could happen: Bob could keep his job and get a raise, or he could keep his job but not get a raise, or he could lose his job and not get a raise. Each of these three possible outcomes has some likelihood of happening, and together their probabilities add to 100%. (The remaining fourth possibility, that his boss could fire Bob and give him a raise, is not logically possible.) Each of the three possible outcomes from going to his boss to ask for a raise has some subjective value to Bob. For Bob, the subjective utility of going to his boss to ask for a raise combines the three products of those three possible outcomes multiplied by each of their (subjective) probabilities of happening. He ends with a resultant utility that is positive or negative of varying intensity.

A key feature of the subjective expected utility model is that it represents the outcomes from making a particular choice as the discrete, disjunctive, mutually exclusive events that could happen from making that particular choice, which together capture all the possible endings (i.e., exhaustive of all possibilities). But only one of the possible events will actually happen. It is like imagining a story with different endings, but only one of the story endings actually happens. In direct contrast, the expectancy value model does not assume that only one event will actually happen. Instead, multiple outcomes can all actually happen. The expectancy value model represents outcomes as conjunctive, inclusive alternatives joined together by *and* (e.g., Fishbein & Ajzen, 1975; Rosenberg, 1956; Rotter, 1954). Multiple outcomes can all actually happen.

To return to our earlier example, if Bob goes to his boss to ask for a raise, he has some level of expectancy that he will keep his job and get a raise. He also has some level of expectancy that he will feel nervous when he asks for the raise; that his boss will be annoyed at him for having asked for a raise; that his fellow employees will disapprove of his asking for a raise; and that his spouse will be proud of him for asking for a raise. More than one of these outcomes can happen. Indeed, all of them can actually happen in the end. Moreover, because all of them can happen, and some are positive and some are negative, the expectancy value model (in contrast to the subjective expected utility model) predicts conflict and ambivalence about taking action in a case such as this where both positive and negative outcomes are likely to co-occur (Higgins, 2012).

### Value as a Determinant of Truth

It has long been recognized that the truth about the world can be determined not only bottom up by data but also top down by which truth is desired—wishful thinking. This recognition took many forms during the 20th century, from the Freudian perspectives on the effects of unconscious wishes on comprehending the world (e.g., A. Freud, 1937; S. Freud, 1933/1965) to the “New Look” studies of the effects of values and needs on perception (e.g., Bruner & Goodman, 1947; Bruner & Postman, 1948; Erdelyi, 1974) to the motivated cognition work on self-enhancement and goal effects on judgment, reasoning, and decision making (e.g., Balcetis & Dunning, 2006; Dunning, 1999; Gollwitzer & Bargh, 1996; Kruglanski, 1989; Kunda, 1990).

Given that the subjective likelihood of something happening is an inference or judgment about the truth, that is, what will be real in the future, it would not be surprising if people’s subjective values, that is, what desired results they want to have, can influence their subjective likelihoods. Indeed, clear evidence exists that they can. Studies have found that the perceived likelihood of desired outcomes is higher than that of undesired outcomes (e.g., Biner, Angle, Park, Mellinger, & Barber, 1995; Irwin, 1953; Marks, 1951). In one study, for example, Biner et al. (1995) found that people playing the lottery who had lower incomes, that is, people for whom the

subjective value of winning the lottery would be higher, believed that their likelihood of winning the lottery was higher than those playing the same lottery who had higher incomes. What this means is that a key assumption of value–likelihood models, that value and likelihood are independent variables, can be undermined by the fact that value can bias judgments of subjective likelihood.

### Truth as a Determinant of Value

Some value–likelihood models explicitly recognize the effect of perceived difficulty on determining the value of success or failure (see, e.g., Atkinson, 1957; Lewin et al., 1944). In these models, as in most standard models, a multiplicative relation between value and likelihood is proposed in which likelihood qualifies value. The new wrinkle, though, is that value itself as a variable is operationalized in terms of likelihood. Specifically, the positive value of individuals succeeding in doing something or the negative value of their failing to do something is postulated to depend on their judgment of how likely it is that they will succeed or fail. For example, if a task is very easy, like landing a dart anywhere on a dartboard when standing 3 feet away, then the likelihood of success is very high and the positive value of successfully doing so is low. As the task becomes more difficult, such as standing further and further away, then the positive value of success increases. Conversely, if a task is very difficult, like landing a dart on the bull’s-eye from 20 feet away, then the likelihood of failure is very high and the negative value of failure is low. As the task becomes easier, then the negative value of failure increases.

What is involved here is value and truth working together in goal pursuit. The desired end state, for instance, could be landing the dart anywhere on the board, but what is critical is whether this end state has a higher likelihood when standing 3 feet away or a lower likelihood when standing 20 feet away. A low likelihood of success (i.e., a difficult task) rather than a high likelihood of success gives success more positive value, and the likelihoods of success and failure determine whether the end state—success or failure—is personally meaningful (truth). An outcome (value) is personally meaningful (truth) when it establishes something real about the person who

has achieved it, such as being attributable to or diagnostic of ability or competence (see Trope & Liberman, 1996; Weiner et al., 1971). Success in dart throwing at a farther distance or failure at a closer distance is more personally meaningful.

### Likelihood as Norms

Another significant effect of likelihood (truth) is to define what is normal or neutral (e.g., Brendl & Higgins, 1996; Kahneman & Miller, 1986), which in turn influences the value of things. For example, if most of the students in a class receive a grade of B on the mid-term exam, then that is the most likely grade and defines what is normal or neutral. Grades higher than B would be evaluated positively, and grades lower than B would be evaluated negatively. Thus, once again, value is not independent of likelihood.

As we discussed earlier, using what has happened most often to define what is normal or neutral is one kind of norm—a descriptive *norm*. Descriptive norms provide information about how people typically respond in particular situations and thus suggest what others are likely to do in the future. When people are deciding what to do in a situation, especially when they are uncertain, they often consider what other people do in that situation (see Cialdini, 1993, 2001, 2003). Robert Cialdini called this *social proof* or *truths are us*. The behaviors of others define what is reasonable to do in a particular situation, which in turn has an impact on both value and commitment. If most people on a picnic eat chicken with their fingers rather than with a fork, then others will choose to do so as well. This is yet another kind of value–truth relation that affects commitment to taking a particular action.

There are also injunctive norms (or prescriptions) that involve expectancies of other people’s approval or disapproval for taking some action in a particular situation. Injunctive norms also define the situation, but they define what is obligatory to do rather than what is typically done. Injunctive norms also have an impact value and commitment. For example, some people could think eating with one’s fingers is boorish in any situation. When eating chicken with them, one will likely not use one’s fingers. Martin Fishbein and Icek Ajzen have shown

how beliefs about others’ prescriptive expectations can affect behavioral choices. Their work has shown that injunctive norms affect commitment to taking some action independent of the positive and negative outcomes of taking the action (e.g., Ajzen, 1985; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). More recent work within the theory of planned behavior has suggested that although injunctive norms can and do influence intentions, descriptive norms (what relevant others actually do) may be as or more important. Indeed, descriptive norms have been shown, at times, to have a direct and nondeliberative effect on behavior (e.g., Manning, 2009, 2011; Mcmillan & Conner, 2003).

We should also note that the motivational force of injunctive norms varies as a function of value orientation (prevention vs. promotion)—yet another way that truth and value work together. For prevention goals, such as safety, the more valuable the goal is, the more people feel that they must attain it. They are strongly committed to pursuing a high-value prevention goal because pursuing it is a necessity (e.g., Liberman & Forster, 2008; Liberman, Molden, Idson, & Higgins, 2001; Shah & Higgins, 1997). People with a prevention goal orientation represent their goals as something they ought to do, as their duty and responsibility. Injunctive norms concern the same imperative. Thus, there is a natural fit between injunctive norms and a prevention orientation, which means that the motivational force of injunctive norms will be greater for individuals with a stronger prevention than promotion orientation. Consistent with this prediction, evidence exists that strong prevention managers are more likely than strong promotion managers to manage their subordinates in a style that copies how they themselves had been managed by their boss in the past—even when they disliked being managed in that way (Zhang, Higgins, & Chen, 2011).

### Likelihood Functioning as Psychological Distance

One of the characteristics that defines humans is that they are not stuck with how things actually are, right here, right now. The “right here, right now” can be conceptualized as the starting point, the “0.” Anything that moves people away from that—away

from the present location and time, the present 100% reality—increases their psychological distance from 0 (e.g., Liberman & Trope, 2008; Trope & Liberman, 2003). The ability to increase psychological distance—to transcend the here and now—is critical for humans to do the kind of complex and innovative planning that they do. It also reveals another interesting case of truth and value working together.

Consider the following study by Todorov, Goren, and Trope (2007). They had participants choose between two versions of a theater ticket prize: One version had high value on the central characteristic of going to the theater but low value on a peripheral characteristic (e.g., a play with a famous cast at a theatre in an inconvenient location); the other version had the reverse (e.g., a play with a local cast at a local theatre). Before they made their choice between these two versions, participants were told that the likelihood of winning the theater ticket prize was either very high or very low. Todorov et al. found that, not surprisingly, the participants overall selected the version of the prize with the more valuable central characteristic, but they also found that the peripheral characteristic of each prize—the location of the play—was given much more weight in the decision when the likelihood of winning the prize was high than when it was low. Indeed, when the likelihood was high, the two versions were equally preferred, whereas the version with the more valuable central characteristic was much more preferred when the likelihood was low.

This effect of likelihood on value is very intriguing. What is happening here is that the likelihood of something happening instantiates psychological distance in the same way that space and time do (see Todorov et al., 2007; Wakslak, Trope, Liberman, & Alony, 2006). Something that has high likelihood functions like something that is here and now—it has low psychological distance. In contrast, something that has low likelihood functions like a distant time and distant place—it has high psychological distance. When something has high psychological distance, such as an event taking place in the distant future or having low likelihood, its essential or central characteristics are what are emphasized (e.g., Trope & Liberman, 2003). In contrast, when something has low psychological distance, such as

an event taking place in the near future or having high likelihood, its peripheral, less essential characteristics are also considered.

### Likelihood Functioning as Reality Preparation

Likelihood relates to establishing what is real versus what is imaginary (Higgins, 2006, 2012). Specifically, when some event or object property has a high likelihood of occurring or existing, it will be experienced as real. When something is experienced as real, engagement (including preparatory engagement) will be strengthened, and stronger engagement intensifies evaluative reactions (Higgins, 2006). This logic leads to a different prediction than classic value–likelihood models about how expressed likelihood might affect value. The subjective expected utility model, for example, predicts that, for a case in which only two outcomes (A or B) are possible, being told that there is an 80% likelihood of A happening is the same as being told that there is a 20% likelihood of B happening. However, from the reality preparation perspective, being told that A has an 80% likelihood of happening would strengthen preparatory engagement more in the present than being told that B has a 20% likelihood of happening. Moreover, if in the present a positive object (e.g., a good-tasting yogurt) and a negative object (e.g., a bad-tasting yogurt) are both being evaluated, then the 80% language, rather than the 20% language, should make the positive more positive and the negative more negative. This is precisely what Higgins, Franks, Pavarini, Sehnert, and Manley (2013) found in a study on yogurt tasting in which good and bad yogurts were tasted in the present and either 80% or 20% language was used to express the likelihood of tasting other yogurts in the future.

The value–likelihood relations we have discussed here are not the only ways in which value and truth work together. We consider next other cases in which the goals people pursue and how they pursue them are determined by value and truth working together, even in ways that are unintentional and outside of their awareness. One inspiration for these cases is James's (1890/2007) ideomotor action notion, which has recently received renewed attention.

## James and Ideomotor Action

It was William James who first suggested that a critical force driving action is beliefs about what is real, that is, beliefs about what will or will not really happen (James, 1890/2007). James was not directly talking about likelihood per se. Rather, he was talking about the perception of reality and how believing (vs. doubting) instigates action. James's perspective has two steps. The first is to treat something as real:

Everyone knows the difference between imagining a thing and believing in its existence, between supposing a proposition and acquiescing in its truth. In the case of acquiescence or belief, the object is not only apprehended by the mind, but is held to have reality. (James, 1890/2007, p. 283)

For James, a belief reflects the highest possible certainty and conviction that something is real, that something is the truth. Second, James proposed that a belief is a feeling of acquiescence that relates to volition, which resembles consent that impels action:

What characterizes both consent and belief is the cessation of theoretic agitation, through the advent of an idea which is inwardly stable, and fills the mind solidly to the exclusion of contradictory ideas. When this is the case, motor effects are apt to follow. (James, 1890/2007, p. 283)

By being anointed as the truth, as held to have reality, the idea is assigned value that instigates action.

This proposal is James's (1890/2007) famous ideomotor action notion that a bare idea can be sufficient to prompt action: "We think the act, and it is done" (p. 522). Over the past 15 years, James's particular truth-value relation has inspired a substantial amount of research testing whether merely priming a stored concept, even if done subliminally, can instigate action. Impressively, this research has generally supported James's proposal, although it is not clear that the action taken is determined solely

by the activated concept. Probably the best-known example is a study by Bargh, Chen, and Burrows (1996), although this work emphasized nonconscious influences more than James did. This study tested whether simply priming people's stored knowledge of elderly people—the idea of elderly people walking slowly—could instigate action. Compared with a no-priming condition, after priming the concept elderly (outside of awareness) participants walked more slowly down a hallway, even in the absence of any elderly person.

For James (1890/2007), a bare idea can be sufficient to prompt action. Was it the case that walking more strongly was instigated only by activating the idea of elderly people? Subsequent research suggested that an additional contribution from value (independent of truth-related consent) was also necessary. Cesario, Plaks, and Higgins (2006) proposed that people's stored ideas about things serve the function of preparing them to interact with such things, such as interacting with a member of the social category elderly. Such preparation for action, however, and the action actually taken, should also depend on the value of the category that is activated, such as individuals' attitude toward elderly individuals. Indeed, Cesario et al. found that participants who liked elderly people walked more slowly down the hallway after elderly was primed (in the absence of any elderly person), replicating Bargh et al.'s (1996) finding, but participants who disliked elderly people walked more quickly after elderly was primed, as though they were preparing to move away quickly from members of a social category they disliked (cf. Leander, Chartrand, & Bargh, 2012).

## Mental Contrasting

There is another model of commitment inspired by James but involving a different underlying mechanism. Gabriele Oettingen (1996; Oettingen & Mayer, 2002; Oettingen, Pak, & Schnetter, 2001) has demonstrated that strong goal commitment can be induced by having people contrast the enjoyment of fantasizing a desired future self (value) with imagining how to overcome the realistic obstacles that could hinder success (truth). To strengthen commitment, this mental contrasting has to result in

a high subjective likelihood of success (another truth). If the subjective likelihood of success remains low, then mental contrasting is not effective. We should also note that the final subjective likelihood product in Oettingen's model is not just a neutral belief. It is a belief about a desired future self. Thus, once again, although likelihood (truth) is given a central role as a motivational force on commitment, it is not a mere idea. It is an idea that is related to value. Once again, it is value and truth working together.

### Implicit Theories and Goal Selection

People's implicit theories of the world are also Jamesian-like ideas because they are beliefs that they hold with high certainty and conviction, and these kinds of ideas, again working together with value, can have an impact on goal selection and behavior. People's implicit beliefs can be seen as different lenses for seeing the truth of the world—meaning systems with core assumptions about the nature of self and others. Such beliefs (Is intelligence fixed or mutable? Can bad people change? Is the world safe or dangerous?) have been shown to have a powerful impact on behavior, goals, and motivations (on value; Molden & Dweck, 2006).

Carol Dweck and her colleagues have done extensive research on the impact of different implicit theories that individuals hold about the nature of intelligence—the entity view that intelligence is fixed and stable and the incremental view that intelligence is malleable and can change through effort over time (e.g., Dweck, 1999). These different theories can be chronically held or experimentally induced (e.g., Dweck, Chiu, & Hong, 1995). Whereas holding an incremental theory is associated with having learning goals (goals about developing one's intelligence), holding an entity theory is associated with having performance goals (goals about validating one's intelligence). Additionally, when faced with failure, incremental theorists tend to display mastery-oriented strategies in contrast to the helpless-oriented strategies exhibited by entity theorists (Dweck, 1999).

A field study following students across the transition to junior high school explored how the effects of these implicit theories are especially

likely to emerge in demanding situations (Blackwell, Trzesniewski, & Dweck, 2007). This life transition was selected because students are more likely to encounter greater challenges (and potential failures) in junior high courses, especially math, than they had in elementary school. At the beginning of seventh grade, no difference was found in math achievement between students who held an entity versus incremental view of intelligence. However, as the situation became more demanding, the differential effects of these implicit theories began to emerge. Whereas the math grades of incremental theorists steadily increased, the math grades of entity theorists decreased. Incremental theories had this effect on math grades through the adoption of positive beliefs about effort and mastery-oriented strategies (Blackwell et al., 2007; see also Dweck & Sorich, 1999; Henderson & Dweck, 1990). Indeed, after a challenging task, incremental theorists orient more to learning feedback than entity theorists (Dweck, Mangels, & Good, 2004).

People hold implicit beliefs not only about the fixed or mutable nature of intelligence but also about the fixed or changeable nature of personality and willpower more broadly (Job, Dweck, & Walton, 2010). To the extent that people believe that personality is fixed, individuals are less likely to voice conflict in relationships (Kammrath & Dweck, 2006), more likely to confront prejudice (Rattan & Dweck, 2010), and more likely to endorse duty-based versus rights-based morality (Chiu, Hong, & Dweck, 1997). Individuals who believe that willpower is limited are more depleted by engaging in self-regulatory tasks than individuals who believe that willpower is not a fixed and limited resource. Recent work (Murphy & Dweck, 2010) has also shown that organizations as well as individuals can hold implicit theories, with distinct consequences for individuals within the organization or individuals trying to gain entry to the organization. For example, to the extent that an organizational culture endorses entity versus incremental views of intelligence, individuals are likely to showcase their intrinsic intelligence versus their effortful motivation (Murphy & Dweck, 2010).

## TRUTH AND CONTROL WORKING TOGETHER

Goal pursuit can also be conceptualized as a process that combines making something happen (control) with being realistic about the right or best way to make it happen and with feedback about whether it is actually happening (truth)—control and truth working together as partners. Even without value, truth and control are powerful partners indeed because together they constitute going in the right direction (see Higgins, 2012). In this section, we review several different ways that truth and control work together. Once again, we begin with a classic case—control systems.

### Control Systems

Truth and control as partners in self-regulation have received the most attention in theories of control systems—devices or mechanisms that manage, direct, or regulate how things behave. Norbert Wiener, an applied mathematician and the founder of cybernetics, was a pioneer in formulating the role of feedback in control systems (see Wiener, 1948). Such systems are often assumed to contain two functional elements: a testing component designed to evaluate a system's current state (truth) and an action component designed to move it toward the desired state (control). A thermostat, for instance, has sensors to detect whether the desired temperature has been reached (truth) and a switching mechanism to activate or deactivate the heating or cooling process (control). Together, these two functional elements ensure that the temperature is going in the right direction.

One of the best-known and early control system models in psychology was proposed by Miller et al. (1960)—the TOTE (test–operate–test–exit) model. They provided the example of hammering a nail into a board of wood. The current state of the nail compares with the reference point of the nail ending up flush to the wood (the truth of establishing what is real). If there is a discrepancy between the current state of the nail and its flush end state as the reference point, that is, if the nail sticks up, then action is taken to reduce the sticking-up condition of the nail (the control of managing what happens). The nail is struck with the hammer to reduce the discrepancy by moving the nail toward the wood surface. According

to this model, then, being effective at hammering a nail requires a truth–control partnership. Working together, truth and control arrive at the stopping or exit point where the nailhead is flush with the surface—thereby having the desired result (value).

The partnership described in the TOTE model is the type of truth–control relation that has received the most attention in the motivational literature. Truth and control are working together to have desired results; that is, it is a truth–control relation in the service of value. A similar model is the influential self-regulation model of Carver and Scheier (1981, 1990, 1998) that we discussed previously. In their theory, there are two self-regulatory systems. One system involves a desired end state as the reference value and an operational control function that is concerned with reducing any existing discrepancy between the current state and the desired reference value. A second self-regulatory system involves an undesired end state as the reference value and an operational control function that is concerned with amplifying the distance between the current state and the undesired reference value. In each case, there is a monitoring and feedback truth function that compares the current state with the reference value and provides progress information regarding the amount and rate of distance reduction or amplification—the truth regarding “how am I doing?”

It is not always the case that truth and control function in the service of value as the primary motivation. Nor are truth and control always equal partners when they work together. There are times when the motivation for truth is primary and control operates in its service, and there are times when the motivation for control is primary and truth operates in its service. In this sense, truth and control can be conceptualized as separate functions that can receive motivationally differential emphasis in different situations and from different individuals. We consider this type of truth–control partnership next.

### Assessment and Locomotion as Separate Truth and Control Concerns That Work Together

Regulatory mode theory proposes that the test and operate functions, or the monitoring and reducing–amplifying functions, can be conceptualized more

broadly as distinct and general self-regulatory functions (see Higgins, Kruglanski, & Pierro, 2003; Kruglanski et al., 2000). When people pursue goals, they decide what they want that they do not currently have. They figure out what they need to do to get what they want, and then they do it. Two key functions of self-regulation are captured in this conception. First, people assess both the different goals to pursue and the different means to pursue them. Second, people locomote or move from their current state in pursuit of some alternative goal pursuit state.

Assessment is the aspect of self-regulation that is concerned with critically evaluating alternatives to judge relative quality, such as critically evaluating alternative goals or alternative means. Individuals with strong assessment concerns want to compare all options and search for new possibilities before making a decision, even if that process takes time and delays the decision. They want to choose the option that has the best attributes overall compared with the alternative options. They want to get it right. Most broadly, the assessment mode is concerned with establishing the truth, and what matters is engaging in truth-finding comparison and evaluation processes rather than the desired results that might follow from doing so—"I would rather be right than happy" (cf. Tyler & Smith, 1998).

By contrast, the locomotion mode is the aspect of self-regulation that is concerned with movement from state to state, movement for its own sake. In Lewinian terms (Lewin, 1951), locomotion is concerned with any change of position that occurs in any region within the life space. The reference point that matters is only the current state because locomotion is just about movement itself; movement away from the current state is locomotion regardless of where the movement is going. Individuals with strong locomotion concerns want to take action, to get started, even if that means not considering all the options fully. Once the task is initiated, they want to maintain it and complete it without undue interruptions or delays. They want to make steady progress. They want to "just do it." Most broadly, the locomotion mode or function is concerned with movement from state to state. Once again, it is controlling the movement and change that matters

rather than the desired results that might follow from doing so—"Doing anything is better than doing nothing."

These two goal pursuit functions need not be conceived as inseparable parts of self-regulation, as always being functionally integrated and interdependent. Instead, they can be considered two separate and independent functions of self-regulation that have wide ranges of applicability and can work together (or not) with varying degrees of emphasis on one or the other function (high emphasis on just one; high emphasis on both; high emphasis on neither). Variations in emphasis, by situation or personality, create different ways for truth and control to work together. Generally speaking, though, people's performance is often best when both locomotion and assessment are emphasized—the condition for going in the right direction (see Higgins, Kruglanski, & Pierro, 2003)—because locomotion constrains assessment from getting lost in thought, and assessment constrains locomotion from running off in the wrong direction.

**Personality styles as goal pursuit strategies in the service of locomotion or assessment.** Differential emphasis on locomotion or assessment during goal pursuit should be revealed in the choice of the means of goal pursuit. Indeed, differences in the strength of locomotion or assessment concerns should be revealed in differences in chronic ways of getting along in the world (see Higgins, Pierro, & Kruglanski, 2008).

A clear example of a general goal pursuit strategy for getting along in the world is planning for the future. Good planning involves thinking about how to move from one's current state to the future state that is one's goal, thinking about how to get started and how to carry on smoothly with minimal interruptions along the way. Good planning should well serve individuals who emphasize locomotion. Being conscientious relates to being planful, responsible, organized, thorough, and efficient (see John, 1990; John & Srivastava, 1999). Across various countries from the United States, Italy, and Israel to India and Japan, a consistent finding is that individuals who have stronger locomotion concerns are more conscientious; in contrast, there is no

relation between assessment and conscientiousness (Higgins et al., 2008).

**Decision styles as goal pursuit tactics in the service of locomotion or assessment.** States of locomotion or assessment can also be situationally induced. These states should influence preferences for particular goal pursuit tactics as well as general goal pursuit strategies. Evidence exists for this as well. In a study by Avnet and Higgins (2003), participants chose among different brands of reading book lights using either a full evaluation decision style in which every option is compared with every other option on each of the book light criteria (e.g., amount of light; light adjustability) or a progressive elimination style in which the worst brand on the first criteria is eliminated, and then the worst on the second criteria, and so on until only one option remains. Avnet and Higgins found that full evaluation was a fit for participants in an assessment state and progressive elimination was a fit for participants in a locomotion state, where fit was revealed by participants offering much more of their own money to buy the brand they had chosen.

Evidence also exists that even whether value or likelihood is emphasized in goal pursuit will vary depending on whether locomotion or assessment is emphasized. Individuals emphasizing locomotion want movement to be initiated and then continue smoothly; the destination of the movement is less important than the movement itself. What this means is that the value of possible outcomes should be less important to them than their likelihood because the higher the likelihood is, the lower the perceived difficulty, which relates to moving smoothly in the goal pursuit. In contrast, individuals emphasizing assessment want to make the right choice, which would be the choice that has the highest value. They are less concerned with whether likelihood is high or low than with simply knowing what the likelihood really is (whether high or low). In a study testing these predictions (Kruglanski et al., 2000), participants listed five personal goals that they wanted to attain, and then they rated the value to them of attaining each goal and the likelihood of its attainment. Kruglanski et al. (2000) found that participants with stronger locomotion concerns had

goals with higher attainment likelihoods, whereas participants with stronger assessment concerns had goals with higher attainment value.

**Locomotion (control) and assessment (truth) working together.** Given that locomotion and assessment emphasize different goal pursuit functions and strategies, there could be either costly conflict or beneficial collaboration when they work together. In general, the evidence has suggested that the different emphases of locomotion and assessment set beneficial constraints on one another that yield better performance. In two studies, Kruglanski et al. (2000) reported that the grade point averages of undergraduates and the successful completion of training in an elite military unit of the U.S. Army were higher for individuals who were relatively high in both locomotion and assessment. There is also evidence that groups can perform better when they include high locomotion and high assessment members.

In a study by Mauro, Pierro, Mannetti, Higgins, and Kruglanski (2009), the composition of four-member groups was experimentally manipulated by inducing either strong locomotion concerns or strong assessment concerns in the individual members before they became a group. Groups were then created that contained all high locomotors, all high assessors, or half high locomotors and half high assessors. The task was a homicide investigation in which different bits of evidence concerning three suspects were distributed among the group members, and each group's mission was to reach a consensus on the likely culprit. Mauro et al. found that the strong locomotion groups were faster in reaching a consensus than the strong assessment groups, whereas the strong assessment groups were more accurate in their final judgment than the strong locomotion groups. The groups with an even mix of high locomotors and high assessors, though, were as fast as the strong locomotion groups and as accurate as the strong assessment groups.

**Other cases in which control and truth succeed at going in the right direction.** Control and truth success at going in the right direction is not restricted to locomotion and assessment working together. An especially interesting case is when

people learn to exert control over their automatic behavioral responses to categories. For example, when a goal, such as eating healthy foods, is clearly a priority, then pursuing this goal is the right thing to do (truth). Under these circumstances, there is evidence (see Fishbach, Friedman, & Kruglanski, 2003; Fishbach & Shah, 2006) that exposure to a temptation will activate the goal with its higher priority, and activating the preferred goal will override the temptation (control). For effective self-regulators (Fishbach et al., 2003), this works because there are established associations not only between the temptation and the preferred goal but also between the temptation and the resolve to oppose it for the sake of the preferred goal.

Another control technique is to monitor one's failures to control one's responses. For example, if one represents nonprejudicial responding as one's obligation toward members of other groups, then a failure to meet this ought self-guide will automatically produce feelings of agitation and guilt. Evidence has shown that these feelings as information (truth; see Schwarz & Clore, 1988) can function as cues that help people to exert more control over their automatic prejudiced responses (Monteith, Ashburn-Nardo, Voils, & Czopp, 2002). The downside of this technique is that the anxiety-related cues can also deplete self-regulatory control resources. (We discuss failure from self-regulatory depletion in the next section.) An alternative technique would be to monitor success and failure within a system in which the feedback cues are not anxiety related, which can be accomplished by having the monitoring done within the promotion system.

In a study that took this approach (Trawalter & Richeson, 2006), White participants were told before an interracial interaction either to approach the interaction as an opportunity to have an enjoyable intercultural dialogue (a promotion focus induction) or to avoid appearing prejudiced during the interaction (a prevention focus induction). After the promotion or prevention induction, the participants were taken to a different room in which they interacted with a Black experimenter who asked them questions on various topics, including topics related to race (e.g., campus diversity). Trawalter and Richeson (2006) found that, after interacting

with the Black experimenter, prevention-focused participants had more depleted self-regulatory control than promotion-focused participants.

We should also note that truth and control can work together in goal pursuit such that different means of control are used to establish the truth. One example is Richard Sorrentino's distinction between uncertainty-oriented and certainty-oriented individuals (see Sorrentino & Roney, 2000; Sorrentino & Short, 1986). Generally speaking, everyone wants ultimately to experience a sense of certainty about the world in which they live, to establish a reality that they feel confident about (truth). There are two control strategies for dealing with uncertainty and finding certainty (Sorrentino & Roney, 2000): (a) The best way to handle the uncertainty in the world is to learn everything you can to master it—learn more, explore the unknown, and attain new knowledge (uncertainty oriented)—or (b) the best way is to stick to a few guiding principles and ignore the mass of confusion—avoid confusion and ambiguity, maintain consistency, and maintain established knowledge (certainty oriented).

These two different strategies influence how information about the world is processed and remembered. For example, in one study (Driscoll, Hamilton, & Sorrentino, 1991) participants first read one of four brief descriptions of Bob that created an initial impression that he was either a friendly or an unfriendly person and that he was either intelligent or unintelligent. After receiving one of these descriptions, all of the participants were given new, additional information about other behaviors of Bob. Some of these new behaviors were consistent with the initial impression, some were inconsistent, and some were irrelevant. Later, the participants were asked to recall as many of these behaviors as they could. The behaviors that were congruent with the initial impression were better recalled by the certainty-strategy participants, whereas the incongruent behaviors were better recalled by the uncertainty-strategy participants.

Another example of using different control means to establish the truth is Arie Kruglanski's (1980, 1989) distinction in his theory of lay epistemics between a need for (nonspecific) closure versus a need to avoid (nonspecific) closure. When

people have a motivational need for nonspecific closure, they simply want an answer—any answer—that provides a definite answer to their hypothesis question. When people want to avoid nonspecific closure they want to leave the hypothesis question open and not seize on an answer.

These different motivations for controlling the truth influence how knowledge is acquired. It involves a difference between wanting any answer to the hypothesis question and wanting no answer at all. Situations can induce one or the other of these motivational states, as when time pressure to complete a judgment quickly induces a need for nonspecific closure in which any answer will do or, alternatively, when apprehension that others will criticize the validity of the answer, whatever it is, induces a need to avoid nonspecific closure where no answer is best (see Kruglanski & Webster, 1996).

There is also extensive evidence that people hold beliefs about the world (truth) that allow them to control unpleasant and anxiety-provoking awareness of their own powerlessness. This idea is well captured in research on system justification theory (Jost, Banaji, & Nosek, 2004). People live in an unfair world; inequalities are undeniable. How do people reconcile their need for control with this reality, especially if they are members of disadvantaged groups? System justification theory suggests that people frequently manage this tension by justifying the existing social order, by seeing the status quo as legitimate and as a natural and inevitable truth. For instance, before the 2000 U.S. presidential election, both Democrats and Republicans evaluated both Bush and Gore presidencies as more desirable as the perceived likelihood of each being elected increased (Kay, Jimenez, & Jost, 2002). In other words, people rationalized not along party lines but in terms of the anticipated status quo (truth). In further support of the idea of truth in service to control, this motive appears to be particularly strong among members of disadvantaged groups (Jost et al., 2004). Members of disadvantaged groups often are more likely to support policies that maintain the status quo, show implicit preferences for higher status out-groups, and derogate in-group members who attempt to challenge the system (e.g., Haines & Jost, 2000; Jost & Hunyady, 2003; Jost et al., 2004).

**Control and truth failure to work together effectively.** The studies we have just described illustrate when control and truth succeed (at least subjectively) in working together to satisfy a concern. There are also cases in which they fail to work together effectively. One example is when there is a conflict between goals that introduce uncertainty about managing what happens (control uncertainty) and what is the right direction to pursue (truth uncertainty). An illustration of this is research testing self-discrepancy theory (Higgins, Van Hook, & Dorfman, 1988) that found that people who possess conflicting self-guides, such as a woman whose father hopes that she will be an aggressive person but whose mother believes she ought to be a passive person, are more likely to suffer from a cluster of specific emotional–motivational problems, such as feeling indecisive, distractible, muddled, unsure of themselves or their goals, and confused about their identity.

In addition, Alexander and Higgins (1993) also found that actual–ought versus actual–ideal discrepancies predicted the emotional responses of mothers after giving birth to their first child. In addition to the new responsibilities and many life changes that accompany the birth of a child, it is also an event that can shift experienced discrepancies. For women who had high actual–ought discrepancies before the birth of their child, agitation decreased from pre- to postpartum. However, for women who had high actual–ideal discrepancies before the birth, dejection increased pre- to postpartum. These results suggest that for women high in actual–ought discrepancies, fulfilling the stereotypical role duties of being a mother and a good wife may reduce their previous actual–ought discrepancies, thereby reducing their anxiety. For women high in actual–ideal discrepancies, however, the period immediately after childbirth may be especially distressing because they have fewer resources to devote to the pursuit of their ideals (e.g., professional accomplishments), thereby accentuating ideal discrepancies (failures) and producing depression.

Research on self-handicapping has provided another classic example of a truth–control conflict

(Berglas & Jones, 1978). When individuals care about success but are unsure about how likely it is, they sometimes engage in behaviors that provide an external attribution for failure (e.g., “I didn’t do well on this exam because I stayed late at the party instead of studying, not because I’m not capable of doing well”). Engaging in self-handicapping is one way to feel as though one is effectively exerting control (managing what happens), but of course engaging in self-defeating behaviors also tends to make failure more likely. The negative effects of self-handicapping have been well documented (e.g., Brown & Kimble, 2009; Hirt, McCrea, & Kimble, 2000; Kolditz & Arkin, 1982; Rhodewalt, 1994; Zuckerman, Kieffer, & Knee, 1998). Self-handicapping manifests in different ways; sometimes individuals claim control simply by pointing to a condition that provides an external attribution for failure, whereas sometimes individuals engage in the more risky strategy of attempting to increase control by actually actively creating an external attribution for failure (Berglas & Jones, 1978; Brown & Kimble, 2009; Leary & Shepperd, 1986). It is especially likely to occur when individuals have received noncontingent success feedback and are uncertain about how to maintain success (e.g., Berglas & Jones, 1978) or when they have received failure feedback (Brown & Kimble, 2009).

A similar conflict between control and truth emerges in the domain of relationships. As discussed earlier, individuals can differ in the extent to which they seek to advance and nurture connection versus avoid rejection and protect the self (Cavallo, Murray, & Holmes, 2013). Research on individuals who are highly rejection sensitive provides a clear example of individuals who often inadvertently influence the likelihood (truth) of their desired end state (acceptance, not rejection) in their attempt to gain control over possible rejection (Downey & Feldman, 1996; Downey, Freitas, Michaelis, & Khouri, 1998). The model posits that those high in rejection sensitivity anxiously expect rejection, readily perceive rejection, and tend to overreact with hostility to rejection, often leading to the very rejection they most want to avoid (Ayduk, Downey, Testa, Yen, & Shoda, 1999).

## CONCLUDING REMARKS

In this chapter, we have reviewed goal pursuit functions and how they work together. We have emphasized especially how value works together with truth functions (e.g., value–likelihood models of goal pursuit) and with control functions (e.g., cybernetic or control models of goal pursuit) and how truth and control functions work together (e.g., locomotion and assessment working together to go in the right direction). We should emphasize, however, that typically all three types of functions work together. Pioneers in psychological science such as Donald Hebb (1949) and Kurt Lewin (1951) recognized that the functional elements that determined behavior did not work independently, each with its own separate effect. Rather, they worked together as interrelated, organized elements in which the whole was not only greater than, but also different from, the sum of its parts. It is not possible here to discuss the principles that underlie the effective organization of functions (for a review, see Higgins, 2012). However, we use an example from work on regulatory focus to illustrate such organization.

Promotion and prevention goal pursuit both concern value. Promotion is concerned with the value of accomplishment and advancement in goal pursuit (moving from 0 to 1). Prevention is concerned with the value of safety and security in goal pursuit (maintaining 0 and stopping –1). Each focus has a preferred way to make things happen, that is, a preferred control strategy, that fits the orientation. For promotion, it is using eager means that ensure advancement, and for prevention it is using vigilant means that ensure against making mistakes. Thus far, these are differences in content (i.e., promotion + eager; prevention + vigilant) rather than wholes different from the sum of their parts. But consider now what happens when truth is added to the picture.

Adding the truth element to promotion and prevention value–control relations forms the full-blown organization of value, truth, and control working together. As outcomes, success is success and failure is failure. Success and failure are the same truth elements, that is, what really happened, in both the

promotion and the prevention systems. When they are organized together with the value and control elements, however, something different is created. Success strengthens promotion eagerness, but it weakens prevention vigilance. Failure strengthens prevention vigilance, but it weakens promotion eagerness.

Why is this? Because wholes are different from their parts. Beyond the pleasure from success and the pain from failure, it is the fit that counts for engagement strength. Success is a fit for promotion but a nonfit for prevention, whereas failure is a fit for prevention but a nonfit for promotion. When people have a promotion focus, success (fit) increases the eagerness that sustains promotion and it strengthens engagement, as reflected in feeling happy and encouraged; failure (nonfit) reduces the eagerness that sustains promotion and it weakens engagement, as reflected in feeling sad and discouraged. In contrast, when people have a prevention focus, success (nonfit) reduces the vigilance that sustains prevention and it weakens engagement, as reflected in feeling calm and relaxed; failure (fit) increases the vigilance that sustains prevention and strengthens engagement, as reflected in feeling tense and worried.

These differences between promotion and prevention goal pursuit highlight how the entire organization of motives—the way in which value, control, and truth all work together—must be taken into account to understand goal pursuit and motivation more generally. Yes, success brings pleasure and failure brings pain. But that alone does not tell us the motivational effects of success and failure. The motivational effects of success and failure on promotion and prevention also depend on how these truth elements work together with the value and control elements within promotion and within prevention.

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