

## *Self-Determination Theory and the Relation of Autonomy to Self-Regulatory Processes and Personality Development*

**Christopher P. Niemiec, Richard M. Ryan, and Edward L. Deci**

The struggle for freedom has been a dominant political theme throughout history. Repeatedly, repressive regimes have gained control over countries, eventually to be challenged by one or more rebellious individuals who topple the tyranny and proclaim freedom. Evidence of such conflicts can be found in the Greek war cry, “Freedom or death,” a sentiment echoed by Patrick Henry’s famous demand, “Give me liberty or give me death.” In more recent times this struggle has been reflected in the actions of such people as Archbishop Desmond Tutu and the 14th Dalai Lama of Tibet, who worked to promote their people’s voices and self-governance.

Through the millennia and across cultures an analogous struggle for self-governance has also played out at the psychological level of individuals during development. Born with an inherent tendency toward self-organization and growth, individuals struggle to act with volition and integrity amid social forces that can make them feel controlled like pawns or helpless (de Charms, 1968; Deci & Ryan, 1985b). At this individual level of analysis, it is not tyrannical political systems, but rather more proximal interpersonal forces in the everyday contexts of people’s lives, which represent the primary sources of control. That is, the salient controls for most people stem from external pressures, rewards, or contingent approval of peers, parents, teachers, managers, and other significant people. This personal struggle between the experience of autonomy and its impingement by control represents a backdrop for every human life.

Regarding conflicts over freedom at the historical, sociopolitical, and economic levels, many thinkers have stressed the importance of freedom and self-governance as a component of healthy development and successful societies (e.g., Sen, 1999). Yet whereas political and economic freedom has many champions, within the discipline of psychology the importance of autonomy has had few proponents. Various mainstream

theories have in fact maintained that autonomy is not a useful or meaningful concept (e.g., Bandura, 1989); is simply a reflection of not having not identified the true, external determinants of behavior (e.g., Skinner, 1971); is primarily a Western, male value (Markus & Kitayama, 1991); or is an illusion (e.g., Wegner, 2002; Wilson, 2002). In contrast, *self-determination theory* (SDT; Deci & Ryan, 1985b, 2000; Ryan & Deci, 2000b) has maintained that the struggle between the need for volition and choice and the forces of both external and internal chaos and control is a deep and central agenda in human development that has important implications for motivation, behavior, and wellness. Within SDT, autonomy concerns people's inherent inclination toward integration and synthesis. As individuals develop the capacity to self-regulate and to integrate values to guide behavior, they experience greater autonomy. As such, the concept of autonomy is necessary for understanding how healthy personality development occurs and how individuals can be flexible and self-regulating as they encounter the ever-changing challenges of life. In this chapter we apply the principles of SDT to an understanding of the processes involved in self-regulation and personality development.

To elucidate these ideas, this chapter examines three main themes. First, we briefly discuss how autonomy has been defined by various philosophical traditions (for a more complete review, see Ryan & Deci, 2004, 2006). Second, we review both historical and contemporary ideas on the concepts of will and autonomy within psychology. Third, we discuss the metatheoretical and theoretical postulates of SDT and review and synthesize empirical findings from within this tradition on the role of autonomy in healthy self-regulation and personality development.

## **Philosophical Perspectives on Autonomy**

The concept of autonomy is central to SDT. To be autonomous means to be self-governing and to act with the experience of volition. When acting autonomously, one stands behind or endorses one's actions. In contrast, a lack of autonomy is reflected in the experience of being controlled to behave in certain ways. Various theoretical traditions within philosophy, including phenomenology, existentialism, and analytic philosophy, have addressed autonomy or closely related concepts. We briefly consider these traditions.

### *The Phenomenological Perspective*

Phenomenology addresses the study of autonomy in terms of how it appears within the experience of a person. Early in the phenomenological movement begun by Husserl, Pfander (1908/1967) highlighted the salience of autonomy within people's experience.

He argued that autonomous actions are those that are felt to emanate from, or to be supported by, the self. In Pfander's analysis autonomy need not entail an absence of external influence or impetus to act. Rather, the issue of autonomy concerns the degree to which the person endorses the actions that follow from such influences. Similarly, Ricoeur (1966) considered autonomous actions to be those that are fully endorsed. In his view, independence from external influences is not necessary for the experience of autonomy; rather, autonomy requires that people truly assent to and value the actions they take following initiating events.

### *The Existential Perspective*

Kierkegaard (1843/1985) suggested that the self represents a continually active, synthetic process through which people can continually reevaluate themselves, so as to ensure that their actions are aligned with their deeply held values and beliefs. People are said to be *authentic* to the extent that they are willing to take responsibility for their own actions and to integrate them with their abiding values. When a person fails to live authentically, the person is said to exist in a state of "bad faith" (Sartre, 1956). Within psychology, the issue of authenticity was recently taken up by Kernis and Goldman (2005), who associated authenticity with autonomy and demonstrated empirically that authentic living is experienced as autonomous and is conducive to psychological health. Similarly, Ryan and Deci (2004) argued that the meaning of authenticity, both in the sense of authoring one's actions and of representing something genuine, is aligned with the construct of autonomy, which pertains to truly volitional and integrated actions.

### *The Analytic Perspective*

Over the past four decades, the concept of autonomy has been an important element of the modern analytic tradition of philosophy that began with Frankfurt (1971) and includes the work of Dworkin (1988) and, more recently, Friedman (2003) and Taylor (2005). Applying a hierarchical conception, these authors state that autonomy requires that one's actions be reflectively endorsed, as such behaviors are those that can be (more or less) wholeheartedly enacted and are most supported by reason, "all things considered." Applying this perspective, Friedman (2003) specifically asserted the importance of autonomy for women and detailed how the value for autonomy is compatible with valuing relatedness. In her perspective, the capacity to reflectively evaluate and choose one's actions is not only unopposed to relatedness; she submits that it is indeed through one's volition or autonomous action that one may help nurture and develop relationships and connections with others.

*A Brief Summary*

Three important tenets of autonomy can be drawn from these philosophical traditions. First, autonomy concerns the self-endorsement of one's actions. This endorsement may not always be explicit, but it can be affirmed through a reflective process by which people examine their behaviors to ensure that they are congruent with their beliefs and values. Second, to be autonomous people do not have to act independently of external prompts, pressures, or influences. Indeed, external factors often lay the groundwork for motivated behavior, both autonomous and controlled. Third, autonomy involves people's full and deep commitment to continually reevaluating their behaviors to ensure that they are autonomous. When people follow societal mandates that are antithetical to their values, it is within their capacity to realign their behaviors with their beliefs to act with authenticity and autonomy.

## **The Concept of Will in Psychology: Historical and Contemporary Considerations**

*Historical Considerations*

The concept of *will* has long been a topic of discussion in philosophy and psychology. Rightly, psychologists have argued against the concept of free will, pointing out that free will implies a lack of lawfulness or causality in behavior (Ryan & Deci, 2006). However, Sperry (1976) argued that the concept of "will," as opposed to "free will," simply means that people's choices can have a causal relation to their behavior. Thus, rather than adopting a unidirectional relation from neurological to psychological processes, Sperry accepted a bidirectional relation suggesting that psychological processes (*viz.*, will) can also influence neurological processes. In fact, a look at the historical theories of will within psychology suggests that, in fact, this is how "will" has been interpreted.

James (1890) suggested that all voluntary behavior is willed, describing it in terms of people's thinking about a future attainable outcome and having the behaviors necessary to obtain that outcome occur automatically. However, when obstacles arise, the person must make a deliberate decision to act despite the barrier, which James referred to as *fiat*. Thus, for James, there was room for intentionality and volition within automatic processing.

Lewin (1951) formulated his theory of will during the time of the "cognitive revolution," positing that when physiological drives become operative, people formulate goals to satisfy these urges. At times, however, barriers may arise that stand in the way of moving toward the desired goal and achieving equifinality. For Lewin, the concept of will comprises the extra energy needed to overcome the impasses that obstruct goal-directed behavior.

Although Erikson (1950, 1968) used the term autonomy, rather than will, he developed his concept from a psychosocial developmental perspective, suggesting that

children form a rudimentary sense of autonomy around the ages of 2 or 3 years, during which time they begin to view themselves as separate from the environment and, accordingly, capable of exercising autonomy. Denial of the experience of free choice or feeling overexposure and self-consciousness in exercising autonomy are likely to leave children with the experience of doubt, which may lead to the development of overly rigid or defiant behaviors later in life. Thus, for Erikson, it was important that children feel a sense of trust in exercising autonomy, which allows for healthy identity formation and the courage to choose and guide one's own future.

Piaget (1967) discussed the concept of will from a cognitive developmental perspective. He proposed that the will becomes operative during middle childhood, around the ages of 8 or 9 years, a time during which children are very involved with their peers. At this time, children encounter conflicts between their biological drives, which Piaget considered to be morally inferior, and their thoughts concerning appropriate behavior, which Piaget considered to be morally superior. For Piaget, will was what allowed children to behave in accord with their morally superior thoughts, rather than their morally inferior urges.

### *Contemporary Considerations*

Despite the seemingly important status of the concepts of autonomy and will among prominent historical figures in psychology, some classic and contemporary theorists have relegated the concepts and maintain that volition (i.e., autonomy) and will are neither meaningful nor universally important, or even suggest that autonomy is merely an illusion. We shall briefly outline these arguments to allow for a broad understanding of how autonomy is conceptualized within current psychological theory (for a more complete review, see Ryan & Deci, 2004, 2006).

Operant psychology (Skinner, 1971) emphasized that control over action resides in the contingencies of reinforcement in the environment and that autonomy was simply an attribution made when the true causes of a behavior cannot be identified. Evolving from these behaviorist roots, social-cognitive theories (e.g., Bandura, 1989) have interpreted autonomy (or will) as independence from all external influences on behavior. Because the environment undeniably has an effect on people's behavior, the concept of autonomy was thus rejected and motivation was reduced to beliefs about control over reinforcements and feelings of efficacy about obtaining those end states. As such, like operant theory, social-cognitive theories defined autonomy as independence from an environment, a definition that *a priori* renders it meaningless.

More recently, neuroscientists and other psychologists have claimed that the concept of autonomy is an illusion. For example, Pinker (2002) suggested that because the brain has the capacity for executive control to prompt behavior and override automatic responses, "the rational free agent traditionally identified with . . . the self" (p. 43) is a myth. Instead, Pinker argues that it is the *brain* that controls the actions of the person, not the *self*. Some social psychologists interested in nonconscious

processes (e.g., Wegner, 2002; Wilson, 2002) have argued that because, at times, behaviors arise from causes of which individuals are unaware, the notion of a conscious will is illusory. However, their formulation of will in terms of conscious decision making about behavior fails to speak to the more important issues of endorsement and volition in behaving, which, repeatedly, have been linked empirically to effective performance and psychological well-being (e.g., Deci, & Ryan, 2000; Ryan & Deci, 2000b).

Finally, some cultural relativists (e.g., Markus & Kitayama, 1991) have argued that autonomy, which they defined as individualism and independence, is relevant to behavior and psychological health primarily among Western individuals because these values are prominent in Western societies, but not in Eastern societies that tend to focus on communal and interdependent living. Iyengar and DeVoe (2003), who also defined autonomy as individualism and independence, argued that autonomy does not contribute to psychological health among Easterners. Similarly, feminists such as Jordan (1997) have argued that autonomy is primarily a male concept that contributes little, if any, to the psychological health of women, and Stephens, Markus, and Townsend (2007) have maintained that choice and agency are important for middle-class Americans, but have little relevance to the lives of the working class. In short, these theorists combine to suggest that autonomy is not important to Asians, women, and the impoverished classes. In contrast, as we will argue, we believe that autonomy is critical for these groups, as well as for all humans.

### *A Brief Summary*

This review of the conceptualization of autonomy within psychology makes clear several points. First, although in some traditions autonomy and volition have been considered important to healthy human functioning, a number of prominent voices—both in the past and in contemporary psychology—deny the existence and functional importance of autonomy or will. Second, those who deny the centrality of autonomy in human experience differ in their definition of the concept, with definitions varying from a complete independence from the environment to illusions about causal mechanisms. Thus the importance of providing a coherent and exacting definition of autonomy as the experience of volition and self-organization cannot be overstated, for this definition has allowed an empirical examination of autonomy. We turn now to SDT, which has examined the relation of autonomy to self-regulatory processes and personality development.

## **Self-Determination Theory: Metatheoretical Assumptions and Basic Psychological Needs**

The starting point for SDT, which is also the point of divergence from many other psychological theories, is its organismic-dialectic metatheory.

### *The Organismic-Dialectic Metatheory*

SDT assumes that humans are, by nature, active organisms who are oriented toward developing and refining their capabilities by interacting with the physical and social environment; seeking out opportunities for choice, mastery, and interpersonal connection; and integrating their ongoing experiences. Yet at the same time they remain vulnerable to control and passivity and may come to rely primarily on external influences for direction when conditions are not supportive of their innate tendencies toward growth. The importance of this metatheory is that, by proposing an active organism that is vulnerable to control, SDT asserts that behavior may emanate either from people's sense of self—that is, from their interests and values—or from sources external to their sense of self, such as social mandates that are perceived as pressuring. As such, this distinction lays the groundwork for an empirical examination of the causes and consequences of behaviors that emanate from one's self or from heteronomous forces acting on the self.

Within this perspective we propose that physiological drives, psychological needs, and emotions supply the energy for motivated behavior and can work in either a complementary or an antagonistic manner. People's motivation can involve the experience of choice and volitional self-regulation or can be controlled. As well, people can fall into a state of amotivation. These points, which concern the energization and direction of behavior, contrast with other theories that fail to posit innate energy sources for behavior and instead focus only on the direction of behavior.

Finally, SDT proposes that humans tend toward psychological coherence and adaptation to their environment, a synthetic process that is conducive to development. However, under specific social conditions, persons may also experience psychological fragmentation, disharmony, and alienation, and engage in maladaptive behaviors. Thus humans are oriented toward integration at the psychological (i.e., autonomy) and interpersonal (i.e., homonomy) levels (Angyal, 1965), yet are also vulnerable to falling into psychological ill-being and discord.

### *Basic Psychological Needs*

Within SDT the concept of basic psychological needs is a unifying principle, although our definition of a need differs dramatically from that used in several other psychological traditions. Specifically, whereas some uses of the construct of need pertain to individual differences in desires or motives, SDT focuses on the concept of need as a necessary nutriment for integrated functioning.

Historically, the most prominent usage of the concept of psychological needs was offered by Murray (1938), who defined them as individual differences in desires or preferences that are learned over time and that motivate behavior across situations. Murray's definition of a need thus applies to virtually any motive or desire, without consideration of whether the behaviors that follow are salubrious or detrimental to

the person. Accordingly, Murray's list of needs includes both viscerogenic needs (e.g., air, water, food, sex) and psychogenic needs (e.g., abasement, acquisition, aggression, recognition). Many of these "needs" might facilitate health (e.g., the need for affiliation; see McAdams, 1989), whereas others might be associated with ill-health or inner conflicts (e.g., Murray's need for abasement). Still others (e.g., Murray's need for acquisitiveness) might become more salient following experiences in unsupportive environments (e.g., T. Kasser, Ryan, Zax, & Sameroff, 1995; Ryan, 2005).

By contrast, within SDT, psychological needs are defined as those nutriment that support the inherent organismic tendencies toward psychological growth and adaptation. That is, "needs specify *innate psychological nutriment that are essential for ongoing psychological growth, integrity, and well-being*" (Deci & Ryan, 2000, p. 229, italics in the original). This definition of a need as a basic nutriment for psychological health is akin to the idea that plants need certain key nutrients (i.e., sun, soil, water) to grow (Ryan, 1995). This concept of needs is amenable to empirical test, as the notion suggests that conditions that support needs will enhance growth and integrity, whereas need deprivation will have deleterious effects. Thus *basic needs theory* (Ryan & Deci, 2002), a subtheory within SDT, suggests that basic psychological needs, when satisfied, contribute independently to psychological well-being, the quality of interpersonal relationships, effective performance, and physical health, and when thwarted yield negative consequences. Moreover, SDT defines a basic need as universal, that is, as having cross-cultural significance. This means that, regardless of ambient values, satisfaction of basic needs should be associated with greater integrity and wellness.

For the past 35 years researchers within the SDT tradition have identified three basic psychological needs, namely autonomy, competence, and relatedness, each of which represents a distinct foundation for wellness (see Deci & Ryan, 1985b, 2000; Deci & Vansteenkiste, 2004; Ryan & Deci, 2000b). Notably, although we are open to the possibility of there being other basic needs, we have found little evidence to support the inclusion of others (Ryan & Deci, 2000c). The *need for autonomy* (de Charms, 1968) refers to the experience that behavior is owned, enacted choicefully, and reflectively self-endorsed. People are said to be autonomous when they perceive their behavior to emanate from the self and behave in ways that are congruent with their abiding interests, values, and beliefs. Importantly, the opposite of autonomy is not dependence, but rather heteronomy, or the experience of feeling controlled or pressured to think, feel, or behave in certain ways (e.g., Ryan & Deci, 2006). The *need for competence* (White, 1959) refers to the experience of effective interactions with the environment. Competence can be supported or enhanced by conditions that provide people opportunities to test and expand their capabilities (e.g., optimal challenges), and can be diminished by conditions that signify a lack of control over, or an inability to obtain, desired outcomes. Finally, the *need for relatedness* (Baumeister & Leary, 1995; Ryan, 1995) refers to the experience of close, deep connections with important others. The opposite of relatedness is isolation and disconnection. Relatedness experiences are associated with a willingness to trust and rely on others (e.g., Ryan,

La Guardia, Solky-Butzel, Chirkov, & Kim, 2005), or, in the case of dependents, to care for them.

The specification of psychological needs as the nutriments required for wellness has been empirically examined across a wide variety of domains and age groups. For example, a survey of recent findings suggests that satisfaction of the basic psychological needs is positively associated with psychological well-being and physical health, as well as performance, in such domains as the workplace (e.g., Baard, Deci, & Ryan, 2004; Vansteenkiste et al., 2007), athletics (e.g., Ntoumanis, 2005; Pelletier, Fortier, Vallerand, & Brière, 2001), education (e.g., Black & Deci, 2000; for a review, see Niemiec & Ryan, 2009), parenting (e.g., Assor, Roth, & Deci, 2004; Niemiec et al., 2006), prosocial behavior (Gagné, 2003), relationships (Deci, La Guardia, Moller, Scheiner, & Ryan, 2006; Patrick, Knee, Canevello, & Lonsbary, 2007), and health care (e.g., Williams et al., 2006), among others. Furthermore, the importance of psychological needs for mental and physical health has been demonstrated across the life span, from early childhood (e.g., Deci, Driver, Hotchkiss, Robbins, & Wilson, 1993) to adolescence (e.g., Niemiec et al., 2006) to old age (e.g., V. Kasser & Ryan, 1999).

Recently, studies examining within-person variations in psychological need satisfaction have shown that the three needs contribute independently to daily fluctuations in psychological well-being (e.g., Reis, Sheldon, Gable, Roscoe, & Ryan, 2000) and to variations in security of attachment (La Guardia, Ryan, Couchman, & Deci, 2000). Furthermore, and counter to the cultural relativist position (e.g., Markus & Kitayama, 1991), evidence supporting SDT's assertion that needs are universal necessities for wellness has been obtained in both Western and Eastern cultures, including Bulgaria (Deci et al., 2001), Russia (Chirkov & Ryan, 2001), Canada and Brazil (Chirkov, Ryan, & Willness, 2005), South Korea (Ryan et al., 2005), and China (Vansteenkiste, Lens, Soenens, & Luyckx, 2006), among others. As well, findings contrary to the implications of work by Stephens et al. (2007) indicated that satisfaction of the need for autonomy promoted healthy behavior among a population that consisted primarily of poor and working-class Americans (Williams et al., 2006). Finally, satisfaction of the basic psychological needs has been found to be equally beneficial for the psychological well-being and physical health of both men and women (e.g., Ryan et al., 2005).

With an understanding of the nature and functional importance of psychological need satisfaction, we turn to a discussion of the relation of psychological needs—in particular, autonomy—to self-regulatory processes and personality development.

## **Self-Determination Theory: The Relation of Autonomy to Self-Regulatory Processes**

SDT began with early empirical studies that investigated such factors as extrinsic rewards and positive feedback that either enhanced or undermined intrinsic motivation (Deci, 1971). It then turned to an empirical investigation of various types of extrinsic

motivation that result from differing degrees of internalization. We briefly discuss each area of research in turn.

### *Intrinsic Motivation*

The concept of intrinsic motivation was discussed by Deci (1975) when referring to behaviors that occur spontaneously (e.g., exploration, play), even in the absence of contingent rewards, punishments, or other forms of external impetus. Phenomenologically, intrinsically motivated behaviors are undertaken because they are inherently interesting or enjoyable (Ryan & Deci, 2000a). From the perspective of attribution theory, such behaviors have an *internal perceived locus of causality* (de Charms, 1968; Ryan & Connell, 1989), which means that the actor perceives the behavior as originating from his or her self, rather than as a result of external pressures or inducements. Affectively, intrinsic motivation is accompanied by the experiences of interest and excitement (Izard, 1977), and sometimes—although not always—“flow” (Csikszentmihalyi, 1975).

Intrinsic motivation plays a central role in development, in so far as humans find it inherently interesting to seek out novel and challenging situations, to expand their capacities, and to explore their inner and outer environments (Flavell, 1999; Niemiec, Ryan, & Brown, 2008). As such, social contexts that support intrinsically motivated behaviors are critical for healthy emotional, cognitive, and personality development.

*Cognitive evaluation theory* (CET; Deci & Ryan, 1980), a second subtheory within SDT, is focused on the factors that either enhance or undermine intrinsic motivation. In brief, CET posits that satisfaction of the psychological needs for autonomy and competence is essential to the maintenance and enhancement of intrinsic motivation. Moreover, CET posits that the two needs are interactive such that competence in the absence of autonomy will not sustain intrinsic motivation, which is contrary to the self-efficacy theory view (Bandura, 1989). Hundreds of studies have been conducted to date examining the social and intrapersonal factors that affect the experience of intrinsic motivation (see, e.g., Deci, Koestner, & Ryan, 1999).

In the first studies, Deci (1971) reported that participants who received monetary rewards for solving an interesting puzzle, relative to those who did not receive any reward, showed less intrinsic motivation for the activity after the reward contingency was removed. Subsequently, other work showed that intrinsic motivation was undermined by such factors as surveillance (e.g., Plant & Ryan, 1985), deadlines (e.g., Amabile, DeJong, & Lepper, 1976), and competitive pressure (e.g., Vansteenkiste & Deci, 2003), among others. Controlling interpersonal feedback (e.g., Ryan, 1982) and pressured internal states such as ego involvement (Ryan, Koestner, & Deci, 1991) have also been found to undermine intrinsic motivation. Deci and Ryan (1985b) suggested that the reason these events undermine intrinsic motivation is that they shift the perceived locus of causality (de Charms, 1968) from internal to external, resulting in a loss of volition and a thwarting of the need for autonomy. Importantly, factors that are expected

theoretically to enhance volition, including perceived choice (Bao & Lam, 2008; Zuckerman, Porac, Lathin, Smith, & Deci, 1978) and the provision of a meaningful rationale (Koestner, Ryan, Bernieri, & Holt, 1984) have been found to support intrinsic motivation. Finally, studies have shown that the general ambience or climate of a situation (e.g., a classroom) can be characterized in terms of the degree to which it is autonomy supportive versus controlling, and the more autonomy supportive the interpersonal climate the higher the intrinsic motivation of the people (e.g., students) who are in it (Deci, Schwartz, Sheinman, & Ryan, 1981; Ryan & Grolnick, 1986). In sum, the experience of autonomy is of central importance to the behavioral and affective manifestation of the proactive organism and to the prototype of volitional behavior—namely, intrinsic motivation.

Other studies found that positive feedback (Deci, 1971) and optimal challenge (Danner & Lonky, 1981) enhanced intrinsic motivation by providing satisfaction of the basic need for competence, whereas negative feedback diminished intrinsic motivation (Vallerand & Reid, 1984). Thus the experience of competence is also important for intrinsic motivation, although again the experience of competence must be accompanied by the experience of autonomy for it to have a positive impact on intrinsic motivation (Ryan, 1982). Contexts that support both autonomy and competence are referred to as *informational*.

### *Extrinsic Motivation and the Process of Internalization*

Although it is fairly easy to identify behaviors that are intrinsically motivated, particularly among children, the majority of behaviors that people engage in are not inherently satisfying or enjoyable. With age, people acquire a greater number of responsibilities and, therefore, spend more of their time fulfilling social duties and obligations, rather than playing. The type of motivation in which a behavior is performed to obtain some separable outcome is referred to as *extrinsic motivation* (Ryan & Deci, 2000a). Importantly, though, SDT maintains that extrinsically motivated behaviors can vary in the degree to which they are characterized by the experience of autonomy or volition.

Internalization refers to the natural, active process of coming to endorse the value of extrinsically motivated behaviors (Ryan, 1993). Thus the process of internalization is necessary for the self-initiation and maintenance of behaviors that are important for effective social functioning but are not intrinsically motivated. Satisfaction of the psychological needs for autonomy, competence, and relatedness facilitates the process of internalization. In other words, it is unlikely that people will initiate the behaviors that socializing agents (e.g., parents, teachers, physicians) deem to be important if they feel wholly unable to do them (competence) or if they do not feel a strong sense of interpersonal connection to the socializing agents (relatedness). Furthermore, it is unlikely that people will come to volitionally self-endorse the initiated behaviors if they do not feel choiceful in enacting them (autonomy).

SDT suggests that support for all three psychological needs facilitates the process of internalization. However, socializing agents often pit satisfaction of different needs against one another, as is the case when people must forego autonomy in order to get the approval and affection of the socializing agent, a practice that is referred to as parental conditional regard. These need conflicts have been shown to yield negative consequences for behavioral regulation and well-being (Assor et al., 2004).

*Organismic integration theory* (Deci & Ryan, 1985b; Ryan & Connell, 1989), a third subtheory within SDT, states that extrinsically motivated behaviors vary along a continuum of relative autonomy that reflects the degree to which they are internalized into the self. When behaviors have been more fully internalized—and thus are experienced as more autonomous—the value of those behaviors has been assimilated and integrated with other abiding values and interests of the self and, as a result, positive affective, cognitive, and behavioral consequences are expected to follow. The theory specifies four distinct types of regulatory styles that encompass the different degrees to which extrinsic motivation can be internalized into the self.

The least autonomous form of behavioral regulation is referred to as *external regulation*, which describes behaviors that are enacted to obtain a reward or to avoid a punishment. Phenomenologically, externally regulated behavior is perceived as being prompted by factors outside the self and thus such behaviors have an external perceived locus of causality. Moreover, because externally regulated behaviors are dependent upon external contingencies, they are experienced as relatively controlled and demonstrate poor maintenance and transfer once the controlling contingencies have been removed (e.g., Vansteenkiste, Ryan, & Deci, 2008).

The next type of extrinsic motivation along the continuum of relative autonomy is *introjected regulation*, which describes behaviors that are enacted to satisfy internal contingencies such as pride and self-esteem enhancement, or to avoid guilt, self-derogation, and doubt. Thus the contingency that gives rise to the behavior exists inside the person—rather than in the environment, as is the case with external regulation—although the regulation of the behavior has not been fully internalized into the self. Because of this, behaviors that are regulated through introjection still have an external perceived locus of causality and are experienced as relatively controlling. These behaviors often manifest as ego involvement, contingent self-esteem, and the pursuit of extrinsic life goals (cf. Niemiec et al., 2008).

As behavioral regulation proceeds toward greater autonomy, people enact behaviors because of the importance and value that they ascribe to them, which in SDT is referred to as *identified regulation*. This type of self-regulation has an internal perceived locus of causality and is experienced as relatively autonomous because the behavior has personal relevance and is volitional. The process of internalization is completed when the identified regulation is synthesized with other identifications and aspects of the self, resulting in *integrated regulation*. These behaviors have an internal perceived locus of causality and are experienced as fully autonomous. It is important to note that, although both identified and integrated regulation are relatively autonomous,

they are still extrinsically motivated because the behaviors are instrumental to separable outcomes, rather than being based exclusively in inherent satisfactions.

As noted, SDT proposes that internalization is more likely to occur in contexts that allow for satisfaction of the basic psychological needs, a claim that has been supported by findings within the domains of parenting (e.g., Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Niemiec et al., 2006), education (e.g., Grolnick & Ryan, 1987; Williams & Deci, 1996; for a review, see Niemiec & Ryan, 2009), health care (Williams et al., 2006), work (Baard et al., 2004), and close personal relationships (La Guardia et al., 2000), among others. In a laboratory experiment, Deci, Eghrari, Patrick, and Leone (1994) demonstrated that the provision of autonomy support (i.e., a meaningful rationale, acknowledgment of feelings, encouragement of choice, minimization of control) facilitated more internalization for an uninteresting visual monitoring task. More specifically, when there was greater autonomy support, the internalization that occurred tended to be integrated, whereas when there was less autonomy support, the internalization that occurred tended to be only introjected. Thus, using diverse methodologies (i.e., interview, questionnaire, intervention, experiment), research has supported the importance of autonomy-supportive conditions for the facilitation of internalization.

In addition to identifying the factors that promote internalization of extrinsic motivation, SDT also suggests that autonomous self-regulation is associated positively with social functioning and adjustment. The corpus of research supporting this claim is too voluminous to discuss fully (for a more complete review, see Deci & Ryan, 2000; Ryan & Deci, 2000b; Vansteenkiste et al., 2008), so we describe a few recent findings. In the domain of education, studies have revealed relations between autonomous self-regulation and psychological well-being among high school students (e.g., Niemiec, Lynch, et al., 2006), and in the domain of health care, studies have found that higher levels of autonomous self-regulation related positively to the psychological well-being and long-term health-behavior change of adult outpatients (Niemiec, Ryan, Patrick, Deci, & Williams, 2009; Williams, Niemiec, Patrick, Ryan, & Deci, in press). Moreover, autonomous self-regulation was positively associated with behavioral persistence and performance, as well as well-being, among unemployed individuals (Vansteenkiste, Lens, De Witte, De Witte, & Deci, 2004) and gymnasts (Gagné, Ryan, & Bargmann, 2003). Finally, it is important to note that autonomous self-regulation has important advantages when assessed with either implicit or explicit measures, as demonstrated by the finding that people high in autonomous self-regulation were more effective in controlling their prejudice (Legault, Green-Demers, Grant, & Chung, 2007).

### *A Brief Summary*

We conclude this section on the relation of autonomy to self-regulatory processes by highlighting several important findings. First, satisfaction of the needs for autonomy

and competence is critically important for the maintenance and enhancement of intrinsic motivation, which is the embodiment of the proactive organism. Second, internalization, the process through which individuals take in and integrate ambient social and cultural norms and practices, is facilitated by satisfaction of the needs for autonomy, competence, and relatedness. Third, fuller forms of internalization, which are experienced as autonomous self-regulation, are conducive to behavioral persistence and performance, physical health and health-behavior change, psychological well-being, and a range of other positive outcomes. Thus it is clear that autonomy is at the very heart of true self-regulation.

### **Self-Determination Theory: The Relation of Autonomy to Personality Development**

So far we have discussed the antecedents and consequences of autonomous self-regulation in the context of behavior- or domain-specific processes. However, SDT also recognizes that it is useful to characterize people in terms of their general motivational orientations, which cut across contexts and time. SDT has implemented two approaches to studying autonomy as it relates to personality development—causality orientations and life goals. We consider each in turn.

#### *Causality Orientations*

A fourth subtheory within SDT, *causality orientations theory* (Deci & Ryan, 1985a), was formulated to address individual differences in global motivational orientations as they relate to other individual differences and predict behavioral outcomes. The theory posits the existence of three orientations that each exist to varying degrees within people and characterize both their perceptions of the source of behavioral initiation and the motivational processes associated with that initiation. People who are high on the *autonomy orientation* typically view their own needs and values as the initiators of their behavior, interpret external events as informational, and thus regulate their behavior with an experience of autonomy. People who are high on the *control orientation* typically look to external cues or demands to provide impetus for their behavior, interpret these cues as pressuring, and regulate their behavior with an experience of control. People who are high on the *impersonal orientation* typically interpret social contexts as being indicative of their inability to behave in ways that will yield desired outcomes, and thus they experience amotivation and passivity.

Causality orientations are theorized to develop over time as a result of the interaction between the active organism and the interpersonal environment that may be more or less supportive of the basic psychological needs. Thus, for example, as people are repeatedly subjected to controlling forces in various settings and domains, they tend

not only to develop controlled behavioral regulation within particular settings and domains, but gradually this development generalizes such that they tend to be controlled across the many settings and domains they encounter. In other words, they tend to develop a strong control causality orientation. Similarly, the strength of autonomy and impersonal orientations depend on the degree to which people experience autonomy-supportive and amotivating interpersonal contexts, respectively, in their life domains. Therefore, need supportive environments are conducive to the development of a healthy, autonomous personality (Deci & Ryan, 2000).

In their initial investigation, Deci and Ryan (1985a) reported that the autonomy orientation was associated positively with self-actualization, self-esteem, ego development, and a willingness to support the autonomy of others; the control orientation was associated positively with the Type A coronary-prone behavior pattern and public self-consciousness; and the impersonal orientation was associated positively with self-derogation, depression, and social anxiety, and negatively with ego development and self-esteem. More recently, others have found that the autonomy orientation was associated positively with personality integration (Koestner, Bernieri, & Zuckerman, 1992), satisfying personal relationships (Hodgins, Koestner, & Duncan, 1996), and interest and enjoyment in a learning context (Black & Deci, 2000), whereas the controlled orientation was found to be associated positively with ego-defensiveness and driving anger (Neighbors, Vietor, & Knee, 2002).

### *Life Goals*

Life goals, or aspirations, organize and direct behavior over time. As such, the types of aspirations that people pursue can be considered to be a relatively stable, motivationally relevant index of personality. Initial work clarified that there are two quite different types of life goals that were labeled *intrinsic* and *extrinsic* and began to examine the outcomes associated with the pursuit and attainment of intrinsic (viz., personal growth, close relationships, community involvement, physical health), relative to extrinsic (viz., money, fame, image), aspirations (T. Kasser & Ryan, 1993, 1996). These researchers examined the importance of aspirations using adult and college samples and reported that the relative importance of intrinsic aspirations was associated positively with self-actualization, vitality, and positive affect, and negatively with depression, physical symptoms, and narcissism. Subsequently, they (T. Kasser & Ryan, 2001) found that the relative importance of intrinsic aspirations was associated positively with the quality of interpersonal relationships, and negatively with engagement in risky behaviors. The structural relations among these various aspirations have been observed among diverse cultural groups (Grouzet et al., 2005).

T. Kasser and Ryan (2001) proposed that there is an integral association between the pursuit and attainment of aspirations and satisfaction of the basic psychological needs. To support this, T. Kasser et al. (1995) reported that mothers' provision of support for autonomy and relatedness related positively to their teenage children's

placing relatively high importance on intrinsic aspirations. Recently, Niemiec, Ryan, and Deci (2009) conducted a longitudinal study to examine the relations of *attaining* intrinsic and extrinsic aspirations to positive and negative indices of psychological health. We found, as expected, that the attainment of intrinsic aspirations related positively to well-being and negatively to ill-being. Moreover, the attainment of extrinsic aspirations made no contribution to well-being, and actually related positively to ill-being. Importantly, the relation of change in attainment of intrinsic aspirations to change in psychological health was mediated by change in psychological need satisfaction.

### *A Brief Summary*

To conclude this section on the relation of autonomy to personality development, we highlight several important findings. First, people who experience autonomy at the level of their personality are more likely to approach situations in ways that allow for satisfaction of the basic psychological needs for autonomy, competence, and relatedness. Moreover, people who are high on the autonomy orientation report higher levels of psychological health and social functioning, whereas the converse is true for people who are high on the control or impersonal orientations. Second, satisfaction of the basic psychological needs is important for people's valuing intrinsic, relative to extrinsic, aspirations. Third, both the valuing (Vansteenkiste et al., 2007) and attainment (Niemiec et al., 2009) of intrinsic aspirations are conducive to psychological need satisfaction, which in turn relates positively to psychological health.

## **The Self in Self-Determination Theory**

Throughout, we have made reference to the concept of "the self." Within SDT, the self is defined as the core of the synthetic process within individuals. It is the means through which the innate integrative tendencies facilitate psychological growth and adaptation to the social environment. In motivational terms, the self includes intrinsic motivation and well-integrated extrinsic motivation (*viz.*, identified and integrated regulation). Therefore, in contrast to Pinker (2002) and others who have asserted that the self is a myth, we maintain that the construct of the self refers to synthetic, integrated functioning, which is manifest in distinct neuropsychological, phenomenological, and functional processes. When people are acting from their integrated self, they will be autonomous in their actions and experience a high level of well-being. By contrast, when acting from external or introjected regulation, people do not experience behavior as emanating from the self, and as a result they are less wholehearted in their pursuits, as reflected in lower behavioral persistence and performance, vitality, and satisfaction.

## Conclusion

We began this chapter by drawing parallels between the historical tendencies for people to resist control and to seek freedom, and the tendencies within individuals to seek autonomy, to thrive under conditions of autonomy support, and to develop in the direction of autonomous self-regulation. Central to our argument is that there is a natural or inherent propensity toward self-organization, self-endorsement, and self-regulation of behavior, and correspondingly, there are deleterious effects on energy and wellness when behavior is heteronomously controlled. We outlined some of the central principles of self-determination theory and reviewed considerable empirical evidence suggesting that the experience of autonomy is critical for the maintenance and enhancement of intrinsic motivation, the internalization of extrinsic motivation, and the development of a healthy personality and system of values. Furthermore, whereas the positions of Markus and Kitayama (1991), Jordan (1997), and Stephens et al. (2007), when combined, suggest that autonomy is relevant only for Western males from middle or upper classes, many studies point to the functional importance of autonomy and volition across cultures, gender, and social class. This does not mean that everyone faces the same obstacles to autonomy, but rather that the relations between autonomy and outcomes are not moderated by these differences.

Autonomous functioning is at once a phenomenological, functional, and biological phenomenon. The experience of an internal perceived locus of causality corresponds to particular features of behavior, such as its quality, equifinality, and persistence, and to particular neuropsychological underpinnings (see Ryan & Deci, 2006). Thus, in contrast to the view espoused by Wegner (2002), autonomy is *not* an illusion, but rather a description of a fully functioning organism, unified in its actions. At the same time, as an abundance of research makes clear, autonomy is a form of functioning that is heavily influenced by social contexts and the supports for psychological need satisfaction they afford.

## References

- Amabile, T. M., DeJong, W., & Lepper, M. R. (1976). Effects of externally imposed deadlines on subsequent intrinsic motivation. *Journal of Personality and Social Psychology, 34*, 92–98.
- Angyal, A. (1965). *Neurosis and treatment: A holistic theory*. New York: Wiley.
- Assor, A., Roth, G., & Deci, E. L. (2004). The emotional costs of parents' conditional regard: A self-determination theory analysis. *Journal of Personality, 72*, 47–88.
- Baard, P. P., Deci, E. L., & Ryan, R. M. (2004). Intrinsic need satisfaction: A motivational basis of performance and well-being in two work settings. *Journal of Applied Social Psychology, 34*, 2045–2068.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist, 44*, 1175–1184.

- Bao, X., & Lam, S. (2008). Who makes the choice? Rethinking the role of autonomy and relatedness in Chinese children's motivation. *Child Development, 79*, 269–283.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.
- Black, A. E., & Deci, E. L. (2000). The effects of instructors' autonomy support and students' autonomous motivation on learning organic chemistry: A self-determination theory perspective. *Science Education, 84*, 740–756.
- Chirkov, V. I., & Ryan, R. M. (2001). Parent and teacher autonomy-support in Russian and U.S. adolescents: Common effects on well-being and academic motivation. *Journal of Cross-Cultural Psychology, 32*, 618–635.
- Chirkov, V. I., Ryan, R. M., & Willness, C. (2005). Cultural context and psychological needs in Canada and Brazil: Testing a self-determination approach to the internalization of cultural practices, identity, and well-being. *Journal of Cross-Cultural Psychology, 36*, 423–443.
- Csikszentmihalyi, M. (1975). *Beyond boredom and anxiety*. San Francisco: Jossey-Bass.
- Danner, F. W., & Lonky, E. (1981). A cognitive-developmental approach to the effects of rewards on intrinsic motivation. *Child Development, 52*, 1043–1052.
- de Charms, R. (1968). *Personal causation*. New York: Academic Press.
- Deci, E. L. (1971). Effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology, 18*, 105–115.
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum.
- Deci, E. L., Driver, R. E., Hotchkiss, L., Robbins, R. J., & Wilson, I. M. (1993). The relation of mothers' controlling vocalizations to children's intrinsic motivation. *Journal of Experimental Child Psychology, 55*, 151–162.
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. (1994). Facilitating internalization: The self-determination theory perspective. *Journal of Personality, 62*, 119–142.
- Deci, E. L., Koestner, R., & Ryan, R. M. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125*, 627–668.
- Deci, E. L., La Guardia, J. G., Moller, A. C., Scheiner, M. J., & Ryan, R. M. (2006). On the benefits of giving as well as receiving autonomy support: Mutuality in close friendships. *Personality and Social Psychology Bulletin, 32*, 313–327.
- Deci, E. L., & Ryan, R. M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 39–80). New York: Academic Press.
- Deci, E. L., & Ryan, R. M. (1985a). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality, 19*, 109–134.
- Deci, E. L., & Ryan, R. M. (1985b). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11*, 227–268.
- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former Eastern Bloc country. *Personality and Social Psychology Bulletin, 27*, 930–942.
- Deci, E. L., Schwartz, A. J., Sheinman, L., & Ryan, R. M. (1981). An instrument to assess adults' orientations toward control versus autonomy with children: Reflections on intrinsic motivation and perceived competence. *Journal of Educational Psychology, 73*, 642–650.

- Deci, E. L., & Vansteenkiste, M. (2004). Self-determination theory and basic need satisfaction: Understanding human development in positive psychology. *Ricerche di Psicologia*, 27, 17–34.
- Dworkin, G. (1988). *The theory and practice of autonomy*. New York: Cambridge.
- Erikson, E. H. (1950). *Childhood and society*. New York: W. W. Norton & Company.
- Erikson, E. H. (1968). *Identity youth and crisis*. New York: W. W. Norton & Company.
- Flavell, J. H. (1999). Cognitive development: Children's knowledge about the mind. In J. T. Spence (Ed.), *Annual Review of Psychology* (Vol. 50, pp. 21–45). Palo Alto, CA: Annual Reviews, Inc.
- Frankfurt, H. (1971). Freedom of the will and the concept of person. *Journal of Philosophy*, 68, 5–20.
- Friedman, M. (2003). *Autonomy, gender, politics*. New York: Oxford University Press.
- Gagné, M. (2003). The role of autonomy support and autonomy orientation in prosocial behavior engagement. *Motivation and Emotion*, 27, 199–223.
- Gagné, M., Ryan, R. M., & Bargmann, K. (2003). Autonomy support and need satisfaction in the motivation and well-being of gymnasts. *Journal of Applied Sport Psychology*, 15, 372–390.
- Grolnick, W. S., & Ryan, R. M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology*, 52, 890–898.
- Grolnick, W. S., & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, 81, 143–154.
- Grolnick, W. S., Ryan, R. M., & Deci, E. L. (1991). The inner resources for school performance: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, 83, 508–517.
- Grouzet, F. M., Kasser, T., Ahuvia, A., Dols, J. M., Kim, Y., Lau, S., et al. (2005). The structure of goals across 15 cultures. *Journal of Personality and Social Psychology*, 89, 800–816.
- Hodgins, H. S., Koestner, R., & Duncan, N. (1996). On the compatibility of autonomy and relatedness. *Personality and Social Psychology Bulletin*, 22, 227–237.
- Iyengar, S. S., & DeVoe, S. E. (2003). Rethinking the value of choice: Considering cultural mediators of intrinsic motivation. In V. Murphy-Berman & J. J. Berman (Eds.), *Nebraska symposium on motivation: Cross-cultural differences in perspectives on self* (Vol. 49, pp. 129–174). Lincoln: University of Nebraska Press.
- Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.
- James, W. (1890). *The principles of psychology*. New York: Holt.
- Jordan, J. V. (1997). Do you believe that the concepts of self and autonomy are useful in understanding women? In J. V. Jordan (Ed.), *Women's growth in diversity: More writings from the Stone Center* (pp. 29–32). New York: The Guilford Press.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410–422.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 280–287.
- Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the relative attainment of intrinsic and extrinsic goals. In P. Schmuck & K. M. Sheldon (Eds.), *Life goals and well-being: Towards a positive psychology of human striving* (pp. 116–131). Seattle, WA: Hogrefe & Huber Publishers.

- Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and social environments to late adolescents' materialistic and prosocial values. *Developmental Psychology, 31*, 907–914.
- Kasser, V. M., & Ryan, R. M. (1999). The relation of psychological needs for autonomy and relatedness to health, vitality, well-being and mortality in a nursing home. *Journal of Applied Social Psychology, 29*, 935–954.
- Kernis, M. H., & Goldman, B. M. (2005). Authenticity, social motivation, and psychological adjustment. In J. P. Forgas, K. D. Williams, & S. M. Laham (Eds.), *Social motivation: Conscious and unconscious processes* (pp. 210–227). New York: Cambridge University Press.
- Kierkegaard, S. (1985). *Fear and trembling*. New York: Penguin Books. (Original work published 1843.)
- Koestner, R., Bernieri, F., & Zuckerman, M. (1992). Self-regulation and consistency between attitudes, traits, and behaviors. *Personality and Social Psychology Bulletin, 18*, 52–59.
- Koestner, R., Ryan, R. M., Bernieri, F., & Holt, K. (1984). Setting limits on children's behavior: The differential effects of controlling versus informational styles on children's intrinsic motivation and creativity. *Journal of Personality, 54*, 233–248.
- La Guardia, J. G., Ryan, R. M., Couchman, C. E., & Deci, E. L. (2000). Within-person variation in security of attachment: A self-determination theory perspective on attachment, need fulfillment, and well-being. *Journal of Personality and Social Psychology, 79*, 367–384.
- Legault, L., Green-Demers, I., Grant, P., & Chung, J. (2007). On the self-regulation of implicit and explicit prejudice: A self-determination theory perspective. *Personality and Social Psychology Bulletin, 33*, 732–749.
- Lewin, K. (1951). Intention, will, and need. In D. Rapaport (Ed.), *Organization and pathology of thought* (pp. 95–153). New York: Columbia University Press.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 92*, 224–253.
- McAdams, D. P. (1989). *Intimacy: The need to be close*. New York: Doubleday.
- Murray, H. (1938). *Explorations in personality*. New York: Oxford University Press.
- Neighbors, C., Vietor, N. A., & Knee, C. R. (2002). A motivational model of driving anger and aggression. *Personality and Social Psychology Bulletin, 28*, 324–335.
- Niemiec, C. P., Lynch, M. F., Vansteenkiste, M., Bernstein, J., Deci, E. L., & Ryan, R. M. (2006). The antecedents and consequences of autonomous self-regulation for college: A self-determination theory perspective on socialization. *Journal of Adolescence, 29*, 761–775.
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education, 7*, 133–144.
- Niemiec, C. P., Ryan, R. M., & Brown, K. W. (2008). The role of awareness and autonomy in quieting the ego: A self-determination theory perspective. In H. A. Wayment & J. J. Bauer (Eds.), *Transcending self-interest: Psychological explorations of the quiet ego* (pp. 107–115). Washington, DC: APA Books.
- Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The path taken: Consequences of attaining intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality, 43*, 291–532.
- Niemiec, C. P., Ryan, R. M., Patrick, H., Deci, E. L., & Williams, G. C. (2009). *The energization of health-behavior change: Examining the associations among autonomous*

- self-regulation, subjective vitality, depressive symptoms, and tobacco abstinence*. Unpublished manuscript, University of Rochester, Rochester, NY.
- Ntoumanis, N. (2005). A prospective study of participation in optional school physical education using a self-determination theory framework. *Journal of Educational Psychology, 97*, 444–453.
- Patrick, H., Knee, C. R., Canevello, A., & Lonsbary, C. (2007). The role of need fulfillment in relationship functioning and well-being: A self-determination theory perspective. *Journal of Personality and Social Psychology, 92*, 434–457.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J., & Brière, N. M. (2001). Associations among perceived autonomy support, forms of self-regulation, and persistence: A prospective study. *Motivation and Emotion, 25*, 279–306.
- Pfander, A. (1967). *Phenomenology of willing and motivation* (H. Spiegelberg, Trans.). Evanston, IL: Northwestern University Press. (Original work published 1908.)
- Piaget, J. (1967). *Six psychological studies* (D. Elkind, Ed.). New York: Vintage.
- Pinker, S. (2002). *The blank slate: The modern denial of human nature*. New York: Viking.
- Plant, R. W., & Ryan, R. M. (1985). Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally controlling styles. *Journal of Personality, 53*, 435–449.
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin, 26*, 419–435.
- Ricoeur, P. (1966). *Freedom and nature: The voluntary and the involuntary* (E. V. Kohak, Trans.). Chicago: Northwestern University Press.
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology, 43*, 450–461.
- Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy and the self in psychological development. In J. Jacobs (Ed.), *Nebraska symposium on motivation: Developmental perspectives on motivation* (Vol. 40, pp. 1–56). Lincoln: University of Nebraska Press.
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality, 63*, 397–427.
- Ryan, R. M. (2005). The developmental line of autonomy in the etiology, dynamics, and treatment of borderline personality disorders. *Development and Psychopathology, 17*, 987–1006.
- Ryan, R. M., & Connell, J. P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology, 57*, 749–761.
- Ryan, R. M., & Deci, E. L. (2000a). Intrinsic and extrinsic motivations: Classic definitions and new directions. *Contemporary Educational Psychology, 25*, 54–67.
- Ryan, R. M., & Deci, E. L. (2000b). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
- Ryan, R. M., & Deci, E. L. (2000c). The darker and brighter sides of human existence: Basic psychological needs as a unifying concept. *Psychological Inquiry, 11*, 319–338.
- Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). Rochester, NY: The University of Rochester Press.

- Ryan, R. M., & Deci, E. L. (2004). Autonomy is no illusion: Self-determination theory and the empirical study of authenticity, awareness, and will. In J. Greenberg, S. L., Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 449–479). New York: Guilford Press.
- Ryan, R. M., & Deci, E. L. (2006). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality*, *74*, 1557–1585.
- Ryan, R. M., & Grolnick, W. S. (1986). Origins and pawns in the classroom: Self-report and projective assessments of children's perceptions. *Journal of Personality and Social Psychology*, *50*, 550–558.
- Ryan, R. M., Koestner, R., & Deci, E. L. (1991). Ego-involved persistence: When free-choice behavior is not intrinsically motivated. *Motivation and Emotion*, *15*, 185–205.
- Ryan, R. M., La Guardia, J. G., Solky-Butzel, J., Chirkov, V. I., & Kim, Y. (2005). On the interpersonal regulation of emotions: Emotional reliance across gender, relationships, and cultures. *Personal Relationships*, *12*, 145–163.
- Sartre, J. P. (1956). *Being and nothingness*. New York: Philosophical Library.
- Sen, A. (1999). *Development as freedom*. New York: Alfred A. Knopf.
- Skinner, B. F. (1971). *Beyond freedom and dignity*. New York: Alfred A. Knopf.
- Sperry, R. W. (1976). Changing conceptions of consciousness and free will. *Perspectives in Biology and Medicine*, *20*, 9–19.
- Stephens, N. M., Markus, H. R., & Townsend, S. S. M. (2007). Choice as an act of meaning: The case of social class. *Journal of Personality and Social Psychology*, *93*, 814–830.
- Taylor, J. S. (Ed.) (2005). *Personal autonomy*. New York: Cambridge University Press.
- Vallerand, R. J., & Reid, G. (1984). On the causal effects of perceived competence on intrinsic motivation: A test of cognitive evaluation theory. *Journal of Sport Psychology*, *6*, 94–102.
- Vansteenkiste, M., & Deci, E. L. (2003). Competitively contingent rewards and intrinsic motivation: Can losers remain motivated? *Motivation and Emotion*, *27*, 273–299.
- Vansteenkiste, M., Lens, W., De Witte, S., De Witte, H., & Deci, E. L. (2004). The “why” and “why not” of job search behaviour: Their relation to searching, unemployment experience, and well-being. *European Journal of Social Psychology*, *34*, 345–363.
- Vansteenkiste, M., Lens, W., Soenens, B., & Luyckx, K. (2006). Autonomy and relatedness among Chinese sojourners and applicants: Conflictual or independent predictors of well-being and adjustment? *Motivation and Emotion*, *30*, 273–282.
- Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., De Witte, H., & Van den Broeck, A. (2007). On the relations among work value orientations, psychological need satisfaction and job outcomes: A self-determination theory approach. *Journal of Occupational and Organizational Psychology*, *80*, 251–277.
- Vansteenkiste, M., Ryan, R. M., & Deci, E. L. (2008). Self-determination theory and the explanatory role of psychological needs in human well-being. In L. Bruni, F. Comin, & M. Pugno (Eds.), *Capabilities and happiness* (pp. 187–223). Oxford: Oxford University Press.
- Wegner, D. (2002). *The illusion of conscious will*. Cambridge, MA: MIT Press.
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, *66*, 297–333.
- Williams, G. C., & Deci, E. L. (1996). Internalization of biopsychosocial values by medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, *70*, 767–779.

- Williams, G. C., McGregor, H. A., Sharp, D., Levesque, C., Kouides, R. W., Ryan, R. M., et al. (2006). Testing a self-determination theory intervention for motivating tobacco cessation: Supporting autonomy and competence in a clinical trial. *Health Psychology, 25*, 91–101.
- Williams, G. C., Niemiec, C. P., Patrick, H., Ryan, R. M., & Deci, E. L. (in press). The importance of supporting autonomy and perceived competence in facilitating long-term tobacco abstinence. *Annals of Behavioral Medicine*.
- Wilson, T. D. (2002). *Strangers to ourselves*. Cambridge, MA: Belknap Press.
- Zuckerman, M., Porac, J. F., Lathin, D., Smith, R., & Deci, E. L. (1978). On the importance of self-determination for intrinsically motivated behavior. *Personality and Social Psychology Bulletin, 4*, 443–446.