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1
3 THE DEVELOPMENT OF THE
5 FIVE MINI-THEORIES OF
7 SELF-DETERMINATION THEORY:
9 AN HISTORICAL OVERVIEW,
11 EMERGING TRENDS, AND
13 FUTURE DIRECTIONS
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17 Maarten Vansteenkiste, Christopher P. Niemiec and
19 Bart Soenens
21

23 Self-determination theory is a macro-theory of human motivation, emotion,
25 and personality that has been under development for 40 years following the
27 seminal work of Edward Deci and Richard Ryan. Self-determination theory
29 (SDT; Deci & Ryan, 1985b, 2000; Niemiec, Ryan, & Deci, in press; Ryan &
31 Deci, 2000; Vansteenkiste, Ryan, & Deci, 2008) has been advanced in a
33 cumulative, research-driven manner, as new ideas have been naturally and
steadily integrated into the theory following sufficient empirical support,
which has helped SDT maintain its internal consistency. To use a metaphor,
the development of SDT is similar to the construction of a puzzle. Over
the years, new pieces have been added to the theory once their fit was
determined. At present, dozens of scholars throughout the world continue
to add their piece to the “SDT puzzle,” and hundreds of practitioners

35
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1 working with all age groups, and in various domains and cultures, have used
SDT to inform their practice. Herein, we provide an historical overview of
3 the development of the five mini-theories (viz., cognitive evaluation theory,
organismic integration theory, causality orientations theory, basic needs
5 theory, and goal content theory) that constitute SDT, discuss emerging
trends within those mini-theories, elucidate similarities with and differences
7 from other theoretical frameworks, and suggest directions for future research.

9 **COGNITIVE EVALUATION THEORY**

11 *Intrinsic Motivation*

13 Cognitive evaluation theory (CET; Deci, 1975), SDT's first mini-theory, was
15 built from research on the dynamic interplay between external events
(e.g., rewards, choice) and people's task interest or enjoyment (i.e., intrinsic
17 motivation). At the time, this research was quite controversial, as operant
theory (Skinner, 1971) had dominated the psychological landscape. The
19 central assumption of operant theory was that reinforcement contingencies
in the environment control behavior, which precluded the existence
21 of inherently satisfying activities performed for non-separable outcomes.
During this time, Deci proposed that people – by nature – possess *intrinsic*
23 *motivation* (IM), which can manifest as engagement in curiosity-based
behaviors, discovery of new perspectives, and seeking out optimal challenges
25 (see also Harlow, 1953; White, 1959). IM thus represents a manifestation
of the organismic growth tendency and is readily observed in infants' and
27 toddlers' exploratory behavior and play. Operationally, an intrinsically
motivated activity is performed for its own sake – that is, the behavior is
29 experienced as inherently satisfying. From an attributional perspective
(deCharms, 1968), such behaviors have an internal perceived locus of
31 causality, as people perceive their behavior as emanating from their sense
of self, rather than from experiences of control or coercion.

33 *Theoretical Considerations*

35
37 At this point, it is worthwhile to clarify the exact meaning of *enjoyment*, which
is central to IM, and to contrast it with the hedonic approach to well-being
39 (Kahneman, Diener, & Schwarz, 1999). Within SDT, IM does not involve the
active and explicit pursuit of enjoyment prior to activity-engagement; that is,

1 we do not describe those who are intrinsically motivated as “enjoyment-
2 seekers.” Rather, enjoyment is a by-product of full immersion in an activity.
3 This view contrasts with the hedonic approach, which stresses the importance
4 of seeking immediate gratification from one’s pursuits and can resemble a
5 *carpe diem* approach to life (Zimbardo & Boyd, 1999). Hedonic activities may
6 be enjoyable, but the positive feelings derived from such pursuits are likely to
7 be superficial and short-lived because hedonic activities may be unrelated
8 to the satisfaction of one’s basic psychological needs. In line with this,
9 Steger, Kashdan, and Oishi (2008) showed that daily engagement in hedonic
10 activities (e.g., getting drunk, eating more than intended) did not contribute
11 to daily well-being. In contrast, the enjoyment derived from IM is likely to
12 be personally relevant and long-lasting, and to be conducive to personal
13 growth and eudaimonia (Ryan, Huta, & Deci, 2008). Indeed, De Bilde,
14 Vansteenkiste, and Lens (2009) found that having a present-centered, hedonic
15 orientation was even inversely associated with being intrinsically motivated
16 for one’s school work, suggesting that hedonism can be used to compensate
17 for a lack of interest. It is also useful to clarify the meaning of *interest* as used
18 in CET and the hedonic approach. In CET, interest refers to the attraction
19 one feels toward an activity; in the hedonic approach, hedonic activities serve
20 one’s self-interest or personal benefit. As such, in the hedonic approach (self-)
21 interest represents a form of *extrinsic motivation* (EM), which refers to doing
22 an activity to obtain some separable outcome (Ryan & Deci, 2000).

23

25 *Empirical Basis of Cognitive Evaluation Theory*

27 *Undermining External Events*

28 CET examines the factors that either undermine or support IM. Because
29 intrinsically motivated behaviors are engaged spontaneously and volition-
30 ally, it follows that controlling external events (e.g., monetary rewards),
31 which pressure people to think, feel, or behave in particular ways, can
32 undermine IM. Theoretically, such events prompt a shift in the perceived
33 locus of causality from internal to external, resulting in attenuated
34 experiences of volition and interest. The first studies to examine the effects
35 of controlling external events on IM were conducted by Deci (1971), in
36 which participants worked on an interesting activity either in a rewarding or
37 in a non-rewarding context. The findings suggested an undermining of
38 IM by task-contingent rewards, such that rewarded participants were less
39 likely to persist at the activity once the reward contingency was removed
(i.e., during a free-choice period).

1 Subsequently, dozens of studies in the 1970s and 1980s demonstrated
2 the undermining of IM by such controlling external events as threat of
3 punishment, deadlines, evaluation, competition, and surveillance (see Deci
& Ryan, 1985b, for an overview). Other studies showed that controlling
5 external events affect the types of activities in which people decide to engage.
For example, Pittman, Emery, and Boggiano (1982) found that rewarded
7 participants preferred less complex (i.e., easier) tasks. Further, controlling
external events not only undermine task persistence *after* the removal of the
9 contingency, but also adversely affect experience *during* task engagement.
For instance, controlling external events were found to predict less cognitive
11 flexibility (McGraw & McCullers, 1979), more shallow learning (Grolnick &
Ryan, 1987), less creativity (Amabile, 1979), and less positive emotional
13 tone (Garbarino, 1975). Finally, being pressured to help another has
been found to undermine both the helper's and the recipient's well-being,
15 suggesting that the adverse effects of controlling contexts can radiate to
others (Weinstein & Ryan, in press).

17 Interestingly, such findings could not be predicted by expectancy-valence
theory (Wigfield & Cambria, this volume), which suggests that increasing
19 the amount of motivation would yield positive outcomes. From this
perspective, rewarding individuals for engaging in an interesting activity
21 would enhance effort and motivation, as such individuals would have
multiple reasons (intrinsic and extrinsic) for doing the activity. However,
23 the findings reviewed above suggest that introducing a reward and then
removing that contingency can have a substantial cost, manifest in reduced
25 task interest. Thus, IM and EM were found to have an interactive, rather
than additive, relation to each other over time.

27 Over 100 empirical articles have been published on the effects of rewards
on IM, and several meta-analytic reviews provided support for the under-
29 mining effect (e.g., Tang & Hall, 1995). Others (Eisenberger & Cameron,
1996) found no undermining by most reward contingencies and thus
31 suggested that CET be abandoned. Because these meta-analyses varied
considerably in several important ways, Deci, Koestner, and Ryan (1999)
33 conducted a new one and provided detailed insight into for whom and
under which types of reward contingencies IM is undermined, enhanced, or
35 unaffected. Results suggested that, on average, rewards undermine IM,
although this effect was not evident for unexpected rewards and was less
37 potent for performance-contingent (rather than engagement- or completion-
contingent) rewards.

39 Such findings could be predicted by CET. Indeed, Deci and Ryan (1985b)
suggested that satisfaction of the psychological needs for autonomy and

1 competence form the energetic basis for the development and maintenance
2 of IM and, thus, external events that thwart those needs are expected to
3 undermine IM. Because unexpected rewards are not perceived as controlling,
4 as they are administered after completion of task engagement, they
5 cannot thwart autonomy and, hence, cannot undermine IM. Likewise,
6 because performance-contingent rewards convey positive feedback, the
7 accompanying satisfaction of competence may partially counteract the
8 detrimental effects of such rewards on autonomy. Notably, individuals
9 given a less-than-maximum amount of a performance-contingent reward
10 (e.g., Luyten & Lens, 1981) displayed a much steeper decline in IM than
11 those given the maximum amount of a performance-contingent reward
12 (see Deci et al., 1999), as the needs for both autonomy and competence were
13 likely thwarted in the process.

14 Of course, external events do not occur in a vacuum and, accordingly, the
15 social context in which those events occur can affect their functional
16 significance (i.e., attributed meaning). Deci and Ryan (1985b) suggested that
17 external events (e.g., rewards) can be introduced in an informational or in a
18 controlling way. Informational events allow choice and provide competence-
19 relevant feedback, whereas controlling events pressure people to think,
20 feel, or behave in particular ways. Given their presumed differential impact
21 on autonomy, informational events are less likely than controlling events
22 to undermine IM. For example, on average surveillance undermines IM,
23 presumably because surveilled individuals feel evaluated or perhaps
24 distrusted, both of which are controlled experiences. This undermining effect,
25 however, can be offset by the way in which surveillance occurs. If one is given
26 a meaningful rationale for being watched (e.g., curiosity), then surveillance is
27 less likely to be experienced as controlling and has been found not to
28 undermine IM (Enzle & Anderson, 1993). Other research has demonstrated
29 that performance-contingent rewards (Ryan, Mims, & Koester, 1983) and
30 competition (Reeve & Deci, 1996) do not yield deleterious consequences for
31 IM if those events are presented in a non-controlling manner.

33

Facilitative External Events

35 Because IM is supported by satisfaction of the needs for autonomy and
36 competence, CET posits that external events that are conducive to need
37 satisfaction facilitate task interest and enjoyment. A number of studies have
38 supported this hypothesis. For example, Vallerand and Reid (1984) reported
39 that positive feedback enhanced IM because it supported competence,
while Patall, Cooper, and Robinson (2008) conducted a meta-analysis on

1 42 studies and found that choice, on average, enhances IM, presumably
because it is conducive to the experience of autonomy.

3 Interestingly, similar to how the social context can attenuate the
undermining of IM by controlling external events, so too the social context
5 can diminish the facilitative effects of positive feedback and choice on IM.
For instance, Ryan (1982) found that when participants were given positive
7 feedback in a controlling way (i.e., “Good. You’re doing as you *should*”),
relative to a non-controlling way, they lost their interest in the activity,
9 presumably because they felt that the positive feedback was conditional
upon their meeting the experimenter’s standards. Similarly, Moller, Deci,
11 and Ryan (2006) showed that controlled choice, which involved subtly
pressuring participants to choose a particular option (e.g., “The decision
13 you make is up to you, but as there are already enough participants who
chose option A, it would help the study a great deal if you chose option B”)
15 failed to yield a vitalizing effect, relative to the provision of autonomous
choice. The effects of choice are also likely to depend on whether (1) making
17 a choice on a *particular* issue is important for the chooser, which would
support autonomy; (2) the available options are considered meaningful
19 (vs. unattractive) by the chooser, such that one is not confronted with
the false choice of deciding between two undesirable alternatives, which
21 would thwart autonomy; and (3) the number of available options is
perceived as manageable (vs. overwhelming), such that one feels competent
23 to select an option.

Regarding the latter issue, Iyengar and Lepper (2000) questioned the
25 motivating power of choice from their finding that the provision of an
extensive (i.e., 24 or 30), relative to a limited (i.e., 6), number of *options*
27 predicted lower quality task engagement and less satisfaction with the
selected option. From a CET perspective, however, the critical question is
29 whether the number of options available affect people’s basic psychological
needs. In this respect, Iyengar and Lepper did not examine the effect of
31 choice on autonomy per se, but rather examined the effect of one’s felt
effectiveness to make the decision. Indeed, it is interesting to note that
33 participants who were given extensive options reported the decision-making
process to be more difficult and frustrating, compared to those who had
35 limited options, and also expressed more regrets about their chosen option.
It is reasonable to suggest that being given too many trivial options
37 (e.g., selecting among 24 different flavors of exotic jams; Study 1) may
have thwarted participants’ competence by creating stimulus overload,
39 which may account for Iyengar and Lepper’s conclusion that “choice is
demotivating.” This analysis speaks to the importance of examining how

1 choice affects both the needs for autonomy and competence to understand
whether choice truly has a motivating effect (see also Katz & Assor, 2007).
3 Choice seems to be most vitalizing when one feels confident to select a
particular option and when the selected option is self-endorsed and reflective
5 of personal interests and values.

7 *Directions for Future Research*

Several potential directions for future research on CET deserve mention.

9 One direction is to examine the effects of both controlling and informational
external events on satisfaction of autonomy and competence, which are
11 theorized to carry the effects of external events on IM (see Houliort,
Koestner, Joussemet, Nantel-Vivier, & Leles, 2002, for an example). A
13 second direction is to assess the effect of repeated exposure to external
events. Most, if not all, research on CET has looked at the effect of a *single*
15 exposure to an external event (e.g., rewards, deadlines). Mouratidis,
Vansteenkiste, Lens, and Sideridis (2009) showed that students' within-
17 person variation in their interest in and enjoyment of physical education
covaried with experimentally varied, *successive* exposures to a series of
19 physical education classes in which choice was provided or denied, such that
students reported more IM when their physical education teachers provided
21 choice. Such class-to-class oscillation in IM underscores the motivating
potential of the immediate social context.

23 A third direction for research is to examine the factors that promote or
undermine the *generalization* (or transfer) of behaviors (see also Maehr,
25 1976), as previous work within CET was primarily concerned with the
phenomenon of *persistence* (or maintenance). Persistence refers to the
27 continued engagement in a requested activity once the socializing figure that
introduced the activity is no longer watching. Persistence constituted the
29 central outcome in the classic free-choice paradigm (Deci, 1971) developed
within CET, as it involved the unobtrusive observation of engagement in
31 an activity once the external contingency was removed. Generalization,
however, refers to the transfer of a behavior to a different social context or
33 to a different activity. Cross-context generalization describes a situation
in which an activity performed in a particular context is transferred to a
35 *different* context, whereas cross-activity generalization describes a situation
in which the dynamics around an activity performed in a particular context
37 are transferred to a *different* activity. For both cross-context and cross-
activity generalization, we hypothesize that the type of motivational
39 dynamics operative during initial task engagement will determine whether
the behavior will be carried over to different contexts and to new activities.

1 Specifically, if external events prompt a controlled engagement in an
2 activity, it is unlikely that the activity will be performed in a new context or
3 will radiate to new activities. This is because the exposure to controlling
4 external events can frustrate one's basic needs, such that one has less energy
5 available to continue the behavior in a different context or to engage in new
6 (albeit related) behaviors.

7 Within CET, only a small number of studies have examined general-
8 ization and, indeed, only cross-activity generalization has been considered.
9 For example, Flink, Boggiano, and Barrett (1990) conducted an experiment
10 showing that 4th-grade children whose teachers pressured them to
11 perform well on an initial learning task displayed a performance deficit on
12 a subsequent novel task, relative to those who were not pressured. Such
13 results demonstrate that the adverse consequences of a controlling context
14 during task engagement can radiate to new activities. Likewise, Enzle,
15 Wright, and Redondo (1996) reported that when a task was introduced in an
16 autonomy-supportive, relative to controlling, manner, participants showed
17 heightened IM for a novel activity.

19

21 **ORGANISMIC INTEGRATION THEORY**

23 *Extrinsic Motivation*

25 Especially with age, the majority of behaviors in which people engage
26 are not inherently interesting or enjoyable. Rather, adults spend much of
27 their time meeting responsibilities and fulfilling important duties. This
28 suggests that the concept and processes of IM, which are central to CET, are
29 less or even not relevant for some activities (e.g., health-behavior changes,
30 following traffic laws). When interest and enjoyment are absent, behavioral
31 engagement requires EM, in which the activity is perceived as a means
32 to a separable outcome. In early theorizing, IM and EM were considered
33 separate and antagonistic (deCharms, 1968; Harter, 1981); specifically, IM
34 was thought to be fully self-determined and EM was said to lack personal
35 causation. Empirical examinations in the early 1980s (Koestner, Ryan,
36 Bernieri, & Holt, 1984; Ryan, 1982), however, added important new pieces
37 to the SDT puzzle, as they indicated that EM can vary in the degree to
38 which it is experienced as autonomous versus controlled and, thus,
39 suggested that different types of EM can be distinguished (Ryan & Connell,
1989).

1 Such work formed the basis for the postulation of a second manifestation
of the organismic growth tendency, namely *internalization*. The process of
3 internalization involves endorsing the value of extrinsically motivated
behaviors (Ryan & Deci, 2000) and is critical for the self-initiation
5 and maintenance of socially important, yet non-intrinsically motivated,
behaviors. As such, internalization is central to successful socialization
7 because when an individual has personally endorsed societal norms and
rules, that person is more likely to follow them willingly, even in the absence
9 of socializing agents (e.g., parents, teachers). Therefore, internalization can
facilitate social responsibility through the adoption of cultural values and is
11 at the heart of organismic integration theory (OIT; Deci & Ryan, 1985b),
SDT's second mini-theory.

13

15 *Toward a Differentiated View of Extrinsic Motivation*

17 In an important study that helped lay the foundation for OIT, Ryan (1982)
experimentally showed that people's interest in an activity can be diminished
19 not only by salient external controls, but also by intra-individual pressures.
One example of a controlling internal event is ego involvement, in which
21 people perceive their self-worth as dependent on successful completion
of a particular task. In Ryan's study, participants either were told that their
23 performance on an activity was indicative of their creative intelligence
(ego involvement) or simply had their attention drawn to the activity
25 (task involvement). After receiving positive feedback on their successful task
completion, ego-involved participants displayed less IM relative to task-
27 involved participants, presumably because ego-involved participants
had pressured themselves to do their best. Clearly, then, ego-involved
29 participants were extrinsically motivated, as their task engagement was
instrumental for demonstrating self-worth. Yet this type of EM differs from
31 that engendered by having to meet external contingencies (the type of EM
central to CET), as the reason for task engagement now resides *inside* the
33 individual. Of course, the common feature to both is their controlled nature.
Nonetheless, this study provided an important first indication of the utility
35 of distinguishing different forms of EM.

So far, we have described EM as engendering an experience of pressure
37 and control. It is important to consider, however, whether people necessarily
feel like "pawns" (deCharms, 1968), lacking volition and autonomy, when
39 extrinsically motivated. From a phenomenological perspective (Pfander,
1908/1967; Ricoeur, 1966), autonomy need not imply a literal absence of

1 external forces, so long as people fully concur with the reason for engaging
in the activity. Said differently, EM will be experienced as autonomous
3 to the extent that people feel a sense of ownership over their behavior and
have fully endorsed the personal value and significance of the behavior.
5 Koestner et al. (1984) examined the postulate that one can experience EM
as volitional if both the value of and the reason for doing the activity are
7 accepted. Before engaging in a painting activity, young children were given a
set of norms and expectations about how to keep their art materials clean.
9 The norms were introduced in an autonomy-supportive way or the children
were pressured to stick to the norms. Results suggested that children in
11 the autonomy-supportive, relative to the controlling, condition showed
greater free-choice persistence at and creativity in their paintings. Thus,
13 although children in both conditions were extrinsically motivated, as while
completing the paintings they tried to satisfy external guidelines, those in the
15 autonomy-supportive condition presumably followed the norms willingly
and with a personal understanding of their importance, which contributed
17 to their persistence and performance.

19

The Internalization Continuum

21

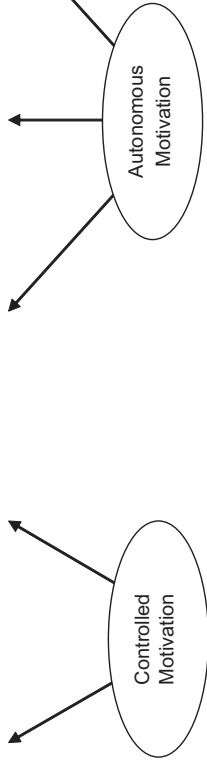
These experiments (Koestner et al., 1984; Ryan, 1982) provided an empirical
23 basis for the next development in SDT; specifically, the conceptual dif-
ferentiation of EM, which had heretofore been a unitary construct. From
25 the perspective of OIT, people possess a natural tendency to transform
social norms, mores, and rules into personal values and self-regulations so
27 as to develop a more elaborated, unified sense of self (Ryan, 1993). There
is considerable variation, however, in the extent to which the process of
29 internalization functions successfully. Accordingly, four types of EM are
distinguished, as depicted in Table 1.

AU :1

31 The least autonomous form of EM is *external regulation*, in which
people are motivated to obtain a reward or to avoid punishment. The value
33 of the behavior has not been internalized at all and, accordingly, people
behave solely to comply with external demands. To illustrate, a patient
35 with anorexia who gains weight to earn a treatment-based incentive (e.g.,
going home for the weekend) would display external regulation. This type of
37 regulation is rooted in operant theory (Skinner, 1971) and, indeed, external
regulation is a powerful form of motivation. Even according to operant
39 theory, however, the problem is with maintenance and transfer, as behaviors
controlled by reinforcements will persist only so long as those contingencies

Table 1. Schematic Relation of the Six Types of Motivation According to SDT.

Type of Regulation	Amotivation	External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation	Intrinsic Regulation
Motivational intensity	Low	High	High	High	High	High
Motivational force	Discouragement and helplessness	Expectations, rewards, and punishment	Guilt, shame, and self-worth contingencies	Personal valuation and relevance	Harmonious and coherent commitment	Enjoyment, pleasure, and interest
Internalization	No	No	Partial	Almost full	Full	Not required
Underlying feelings	Futility and apathy	Stress and pressure	Stress and pressure	Volition and freedom	Volition and freedom	Volition and freedom
Locus of causality	Impersonal	External	External	Internal	Internal	Internal
Type of motivation	Amotivation	Extrinsic	Extrinsic	Extrinsic	Extrinsic	Intrinsic



Source: Adapted from Ryan and Deci (2000).

1 are in effect, as such contingencies formed the very reason for behavioral
engagement.

3 The next form of EM is *introjected regulation*, in which people are
motivated to comply with a partially internalized contingency to gain pride
5 and self-esteem, or to avoid feelings of guilt and shame. For instance, a
person who recycles to avoid feeling guilty would display introjected
7 regulation. Introjection, which commonly manifests as ego involvement, is
etymologically rooted in the Latin words *intro* (inside) and *jacere* (to throw).
9 In other words, the reason for doing the behavior has been “thrown inside”
the individual and no longer requires external contingencies for enactment.
11 Thus, the contingency underlying the behavior, which was formerly applied
by others, is now applied to oneself. However, the regulation of the behavior
13 has been “swallowed whole” (Perls, 1973) rather than “fully digested”,
engendering feelings of internal control. Such intrapersonal pressure is quite
15 energy-depriving, which might explain why introjection only predicts short-
term persistence (Pelletier, Fortier, Vallerand, & Brière, 2001).

17 The third form of EM is *identified regulation*, in which people understand
and endorse the personal value and significance of a behavior and, as a
19 result, experience a sense of freedom in doing it. For example, an obese
teenager who decides to diet so as to take responsibility for his health would
21 display identified regulation. Identification, which can involve finding
meaning and choice in behavior, even when faced with adverse circum-
23 stances, corresponds to the tenets of existential thought (Ryan & Deci,
2004). As with introjection, identification involves behavior that is regulated
25 by intrapsychic forces. However, rather than being accompanied by feelings
of pressure, identified regulation is guided by personal values and self-
27 endorsed commitments. As such, the regulation of the behavior has almost
been fully internalized.

29 A final step toward full internalization involves the assimilation of
identified values and goals and the alignment of those identifications with
31 other aspects of the self. The fourth form of EM, *integrated regulation*,
involves the synthesis of various identifications to form a coherent and
33 unified sense of self, a process that likely requires considerable effort,
reflection, and self-awareness. To illustrate, a smoker who understands the
35 health benefits of cessation and wants to quit so that she might live to see her
grandchildren grow up would display integrated regulation. At times, people
37 understand the personal importance of a behavior, but they experience the
identification as compartmentalized and inconsistent with other aspects
39 of the integrated self. Consider, for example, a person who gives money
to charity to help those in need while employing “black-market workers”

1 to avoid paying taxes. Interestingly, the importance of integration has been
questioned by some postmodern thinkers. Gergen (1991), for instance,
3 argued that adopting a chameleon-like personality could be an adaptive
response to a world with multiple and at times competing demands.
5 Such claims conflict with an organismic approach to personality in which
the experience of multiple, but compartmentalized, identities represents
7 fragmentation and non-optimal functioning (Ryan, 1993). In line with this,
Downie, Koestner, ElGeledi, and Cree (2004) reported that the integration
9 of cultural identities into the self was conducive to tricultural individuals'
psychological well-being.

Theoretical Considerations

15 Clarification of several conceptual points seems warranted. First, IM does
17 not represent the end point of the internalization process. Behaviors that
initially were prompted by external sources can be internalized and, when
19 integrated into the self, are enacted with a full sense of volition. However,
this does not imply that such behaviors are experienced as inherently
21 interesting or enjoyable. According to SDT, intrinsically motivated
behaviors are themselves satisfying and performed for non-separable
23 reasons, whereas well-internalized, extrinsically motivated behaviors are
performed for separable outcomes and, thus, cannot – by definition – be
25 intrinsically motivated. Nonetheless, it is possible that the integration of EM
co-occurs with the development of IM (Deci & Ryan, 1985b).

27 Second, internalization represents a developmental process. That is, there
is a natural inclination toward integration of the salient norms and values
29 in the social environment (Deci & Ryan, 1985b). For instance, whereas
adolescents may pursue particular hobbies to make a good impression on
31 others, older individuals might behave according to their personal interests.
In line with this, evidence suggests that with age children tend to regulate
33 socialized behaviors more autonomously given sufficient environmental
support (e.g., Chandler & Connell, 1987). We speculate that this trend
35 would emerge because during development the integrative tendency can
engender greater awareness and understanding of personal interests. Also,
37 older individuals may find that acting in line with personal commitments
yields more satisfaction than acting to meet external demands, which
39 can encourage further exploration of one's values and interests. Similar
assumptions have been made by researchers who focused on concepts such

1 as ego-identity (Erikson, 1968), personal expressiveness (Waterman, in press),
and ego-development (Hy & Loevinger, 1996).

3 Third, the recognition that some forms of EM are relatively autonomous
has resulted in a conceptual shift in SDT. Whereas the distinction between
5 IM and EM was central to CET, this paradigm has been replaced by a
distinction between *autonomous motivation* and *controlled motivation*.
7 Autonomous motivation involves the regulation of behavior with
the experiences of volition, psychological freedom, and reflective self-
9 endorsement; the behavior has an internal perceived locus of causality. Both
identified regulation and integrated regulation, in addition to IM, are
11 autonomous forms of motivation. Controlled motivation, in contrast,
involves the regulation of behavior with the experiences of pressure and
13 coercion to think, feel, or behave in particular ways; the behavior has
an external perceived locus of causality. Both external regulation and
15 introjected regulation are controlled forms of motivation. Importantly, the
shift toward a distinction between autonomous motivation and controlled
17 motivation does not negate the findings and core principles of CET, which
focuses on IM and the external events that undermine or support it (i.e., the
19 extreme poles of the self-determination continuum). Thus, new pieces were
added to the growing “SDT puzzle” while previous pieces were left intact.

21 According to OIT, both autonomous motivation and controlled motiva-
tion reflect high involvement in an activity, although these two types of
23 motivation have very different qualities (Vansteenkiste, Lens, & Deci,
2006b). Further, autonomous motivation and controlled motivation are
25 contrasted with amotivation, in which people lack intentionality. Such
non-intentional behavior can result from a perceived non-contingency
27 between behavior and outcomes, from feeling incapable to perform the
behaviors necessary to achieve desired outcomes, or from a lack of valuation
29 of the activity (Deci & Ryan, 1985b).

Fourth, it is useful to link autonomous motivation and controlled
31 motivation to the concept of *value*, as discussed in expectancy-valence
models (Vroom, 1964; Wigfield & Cambria, this volume). Within such
33 models, values (along with expectancies) are considered the determinants
of motivated action through their effects on valences (Feather, 1992). Many
35 studies have shown that the value of an activity is an important
predictor of behavioral choice and performance. An important question
37 from the OIT perspective, however, concerns the reason one attaches high
valence to a particular activity. Such strong valuation could be motivated
39 either by external demands, internal pressures, or a personal endorsement
of the behavior. Indeed, Vansteenkiste, Lens, De Witte, and Feather (2005)

1 showed that unemployed individuals' valence of a future job (employment
value) was strongly correlated with both autonomous and controlled reasons
3 for job search. Thus, a strong valuation can be driven by qualitatively
different reasons (viz., autonomous and controlled) for the activity, which
5 yield differential relations to adjustment.

7

Empirical Basis of Organismic Integration Theory

9

The Benefits of Internalization

11 The differentiation of EM has generated dozens of studies since Ryan and
Connell's (1989) seminal article on the internalization continuum. During
13 the first half of the 1990s, the internalization continuum was examined in
several domains representing central aspects of people's lives, including
15 relationships, religion, work, education, prosocial behavior, and parenting.
Subsequently, this research was extended to such domains as life goals,
17 politics, physical activity, and the environment. Most recently, domains
holding particular relevance for some people have received empirical
19 attention, including psychotherapy, unemployment, migration, health care,
eating regulation, and gaming.

21 In contrast to CET, the studies conducted within OIT often relied on self-
report questionnaires, rather than experimental manipulations, to assess the
23 antecedents and consequences of the motives for behavioral engagement.
Such research considerably broadened the scope of the macro-theory and
25 provided evidence for the ecological validity of SDT. This was important
because some had criticized CET for studying a phenomenon (viz., IM)
27 that is seldom observed in daily life (cf. Gagné & Deci, 2005), although
several real-life experimental studies have been conducted within CET (e.g.,
29 Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005a). Thus, the empirical
investigations testing OIT naturally complemented the work within CET.

31 OIT suggests that greater internalization is predictive of enhanced
physical, psychological, and social wellness. At least three methodological
33 approaches to the statistical aggregation of the internalization continuum
have been used to examine this hypothesis. First, some researchers have
35 examined the correlates of the different forms of EM as well as IM (e.g.,
Ryan & Connell, 1989; Burton, Lydon, D'Alessandro, & Koestner, 2006).
37 Second, others have assessed the independent effects of autonomous
motivation and controlled motivation (e.g., Vansteenkiste, Zhou, Lens, &
39 Soenens, 2005b). Third, some have used a *relative autonomy index* to predict
outcomes, in which the forms of EM are differentially weighted according to

1 their location along the continuum of self-determination, with controlled
2 regulatory styles weighted negatively and autonomous regulatory styles
3 weighted positively (e.g., Niemiec et al., 2006). Regardless of the
4 methodology used, studies have indicated that more autonomous, relative
5 to controlled, motivation is associated with greater persistence, perfor-
6 mance, social functioning, and physical and psychological wellness
7 (for review, see Deci & Ryan, 2000).

9 *The Facilitation of Internalization*

10 Given that internalization is conducive to myriad positive outcomes, it is
11 important to consider the factors that facilitate this process. Just as
12 autonomy and competence form the natural ingredients for IM, contexts
13 that support these needs are thought to promote internalization (Deci &
14 Ryan, 2000). That is, to the extent that people can feel choiceful and
15 effective in undertaking non-enjoyable behaviors, they are more likely to
16 personally endorse those actions. Furthermore, in considering the factors
17 that facilitate internalization, it became necessary to introduce the need
18 for relatedness (Baumeister & Leary, 1995; Ryan, 1995) as a third basic
19 psychological need and a new piece of the “SDT puzzle.” Relatedness refers
20 to the need to experience mutual care and concern for close others. Indeed,
21 social norms and values are more likely to be adopted and internalized
22 when introduced by socializing agents to whom people feel close, rather
23 than distant. Children are, for instance, more likely to accept norms and
24 guidelines introduced by their parents, relative to strangers. Thus, full
25 internalization is most likely to occur in social contexts that are autonomy-
26 supportive (rather than controlling), competence supportive (rather than
27 chaotic and demeaning), and relatedness supportive (rather than rejecting
28 and withholding). In contrast, partial internalization is likely to occur when
29 social contexts support only the needs for competence and relatedness
30 (Markland & Tobin, in press).

31 Dozens of questionnaire-based studies in a variety of life domains, but far
32 fewer experimental studies, have lent credence to the importance of need-
33 supportive contexts in facilitating internalization (e.g., Niemiec et al., 2006).
34 Herein, we discuss three illustrative experiments. Deci, Eghrari, Patrick,
35 and Leone (1994) did a study in which participants performed a boring
36 vigilance task. Three need-supportive ingredients were manipulated in a
37 2 (rationale vs. no rationale) \times 2 (acknowledgement of feelings vs. no
38 acknowledgement) \times 2 (low vs. high controllingness) design. Interestingly,
39 participants’ engagement time increased linearly according to the number
of need-supportive factors. Also, participants’ *quality* of persistence was

1 examined by inspecting the correlations between engagement time and
3 three self-reported variables related to the task (viz., choice, usefulness,
5 interest/enjoyment) in two groups – persistent participants exposed to zero/
7 one versus two/three need-supportive factors. Importantly, among those
9 who received need support, the correlations were positive and significant
11 (indicating integrated regulation), whereas among those who did not
12 receive need support, the correlations were negative (indicating introjected
13 regulation). This examination of within-cell correlations underscores the
14 importance of moving beyond only considering the *quantity* of persistence to
15 examine its *quality*, as engagement time can be congruent with or alienated
16 from one's affective experiences.

17 Joussemet, Koestner, Lekes, and Houliort (2004) reported the results of
18 two experimental studies assessing the effects of autonomy support and
19 engagement-contingent rewards on the internalization of motivation for a
20 dull task. Deci et al.'s (1999) meta-analysis pointed out that rewards had no
21 impact on free-choice persistence at an uninteresting activity. However,
22 the studies included in the meta-analysis were limited by their considering
23 only the quantity of participants' persistence and it is possible that under
24 reward contingencies people may display a qualitatively different type of
25 persistence. Joussemet et al. found that although rewards do not undermine
26 the *quantity* of engagement, they do create a more fragmented and alienated
27 form of behavioral regulation when administered in a controlling way. That
28 is, the association between behavioral persistence and affect was negative for
29 those in the controlling reward condition, whereas that correlation was
30 positive for those in the autonomy-supportive condition, suggesting that
31 their behavior was congruent with their emotional experiences. Such results
32 argue against the common socialization practice of using rewards to fore
33 people to engage in non-intrinsically motivated behaviors.

34 Recently, in a field study Jang (2008) examined the motivational power of
35 one component of autonomy support – provision of a meaningful rationale.
36 Rationale provision was found to enhance engagement time on an
37 uninteresting learning activity. Interestingly, the motivational benefits of
38 rationale provision increased over time. Moreover, internalization of the
39 motivation for the uninteresting activity fully explained the direct positive
40 effect of rationale provision on behavioral engagement.

37 *Directions for Future Research*

39 There are many important directions for future research on OIT.
40 One direction is to examine whether the theoretical continuum of

1 self-determination requires further refinement. Assor, Vansteenkiste, and
Kaplan (2009) posited that introjected regulation could be bifurcated into
3 approach and avoidance subtypes. They suggested that behavior might be
regulated with an experience of internal pressure to *avoid* such negative
5 feelings as shame, guilt, and anxiety, or to *approach* such positive feelings as
self-aggrandizement and pride. Consistent with the approach-avoidance
7 tradition in motivation (e.g., Atkinson, 1958; Elliot, 1999), Assor et al.
found that introjected avoidance regulation yielded more negative correlates
9 than introjected approach regulation. Further, identified regulation was a
stronger predictor of positive outcomes than both subtypes of introjected
11 regulation. Interestingly, identified regulation was more strongly correlated
with introjected approach regulation than with introjected avoidance
13 regulation, suggesting that introjected approach regulation is somewhat
more autonomous than introjected avoidance regulation. This seems logical
15 given that avoiding negative outcomes is more stressful and autonomy-
thwarting than approaching positive outcomes (Elliot & Sheldon, 1998).

17 These findings underscore three important points. First, they disconfirm
Carver and Scheier's (1999) criticism that the differential correlates of
19 autonomous motivation and controlled motivation are due to autonomous
motivation's being approach-regulated and controlled motivation's being
21 avoidance-regulated. Assor et al. (2009) found that feeling internal pressure
to achieve contingent self-worth (i.e., introjected approach regulation)
23 was associated with less adaptive outcomes than willingly endorsing one's
behavior (i.e., identified regulation), although both forms of EM are
25 approach-regulated. Second, they call for an examination of whether the
approach-avoidance distinction may be incorporated across the internaliza-
27 tion continuum. For example, external regulation can manifest as either
avoiding punishment or approaching a reward. Further, identified regula-
29 tion can manifest as approaching one's personal values and commitments,
although failing to do so might engender feelings of guilt and anxiety
31 that one would aim to avoid. Such feelings are likely to be ontological
(May, 1983), as they arise when an individual is unable to personally express
33 oneself. Third, they underscore the importance of designing domain-specific
measures of internalization that include a balanced number of approach-
35 and avoidance-regulated items.

A second direction for research is to examine whether *not* engaging in a
37 particular activity is necessarily a reflection of amotivation or whether the
reason for non-engagement can be internalized and thus experienced as
39 more or less autonomous. In other words, having reflected upon a particular
request, some might choose not to engage in an activity to give priority to

1 alternative actions. For instance, a driver might deliberately choose not to
follow prescribed traffic rules (e.g., not speeding) because he believes the
3 situation is safe enough to do so. Alternatively, others might feel pressured
not to engage in a requested activity. Consider, for example, a student whose
5 mother suggests that she search for a summer job, but the student's friends
prefer that she be available to hang out during the summer and thus
7 pressure her into not searching for a job. Such controlled non-engagement
might also take the form of defiance, as when people defy another's request
9 so as to "save face" or to maintain independence. For instance, an
adolescent with anorexia might simply reject her parents' wish for her to eat
11 more because she believes that her parents' request is illegitimate. Such
rebellious reactions are controlled, as they are driven by a reaction against
13 external forces that one resists obeying. In short, then, it is possible for
both activity engagement and non-engagement to be experienced as either
15 autonomous or controlled.

In this respect, Vansteenkiste, Lens, De Witte, De Witte, and Deci (2004)
17 examined the motives given by unemployed individuals for searching
and not searching for a job, and found that autonomous motivation not-to-
19 search related positively to the experience of being unemployed and to
general well-being, whereas controlled motivation not-to-search related
21 negatively to the experience of being unemployed. Notably, autonomy-
supportive contextual factors may promote autonomous non-engagement in
23 an activity. For example, Vandereycken and Vansteenkiste (2009) examined
the effects of allowing patients with eating disorders to make an informed
25 choice about whether to continue or to terminate treatment after the first
few weeks of treatment. The implementation of this autonomy-supportive
27 strategy reduced patients' drop-out rate during subsequent treatment,
relative to another program in which such choice was denied. This choice
29 implementation likely facilitated autonomous engagement in therapy among
those who continued treatment, as well as autonomous disengagement from
31 therapy among those who terminated treatment.

A third direction for research is to examine individuals' motivational
33 profiles as they relate to outcomes, thereby using a person-centered rather
than a dimensional approach. Such an approach is instructive for various
35 reasons. For instance, the person-centered approach offers a more in-depth
understanding of the different types of motivational profiles that can
37 be used to characterize individuals, which might also be instructive for
practitioners (e.g., therapists, school counselors) interested in developing
39 programs for different individuals. Also, this data-analytical technique
provides new ways to test competing hypotheses. For instance, the argument

1 maintained in expectancy-valence theories and echoed by lay beliefs that
2 being highly motivated (regardless of the type of motivation) yields
3 beneficial effects can be contrasted with the SDT perspective, which
4 suggests that the type of motivation is also useful in predicting important
5 outcomes. Using a person-centered approach to test this hypothesis, Ratelle,
6 Guay, Vallerand, Larose, and Senécal (2007) and Vansteenkiste, Sierens,
7 Soenens, Luyckx, and Lens (2009) found that students characterized by high
8 levels of autonomous motivation and low levels of controlled motivation
9 displayed better academic outcomes, relative to those characterized by the
10 opposite motivational profile, although both groups had equal amounts of
11 motivation. These findings are in line with SDT but contradict quantitative
12 perspectives on motivation, as they suggest that being highly motivated does
13 not necessarily yield beneficial effects, especially when one's motivation is
14 controlled.

15 A fourth direction for research is to examine whether internalization
16 predicts generalization (or transfer) of behaviors, similar to our recommen-
17 dation for future research on CET. For example, some governments
18 encourage their constituents to recycle by selling expensive garbage bags,
19 thereby deterring people from filling those bags with recyclable materials.
20 One of the critical questions is (1) whether people continue recycling while on
21 vacation when garbage bags are free (i.e., cross-context generalization) and
22 (2) whether they engage in a broad array of pro-environmental behaviors,
23 such as conserving water or driving in an ecologically responsible way (i.e.,
24 cross-behavior generalization). According to OIT, autonomous motivation is
25 conducive to both behavioral persistence and generalization because, when
26 more fully internalized, behavior is not dependent on external contingencies
27 of reinforcement. In line with this, Hagger, Chatzisarantis, Culverhouse,
28 and Biddle (2003) found that high-school students who reported more
29 autonomous reasons for physical education were more likely to exercise
30 during their leisure time, suggesting that the benefits of autonomous
31 motivation in physical education radiated to a new context. Further, in an
32 experimental study, Vansteenkiste, Simons, Soenens, and Lens (2004c) found
33 that an autonomy-supportive introduction of a new exercise (viz., Tai-Bo)
34 during a physical education class promoted enrollment in a Tai-Bo club four
35 months later. Some recent studies provided initial evidence for cross-activity
36 generalization. Muraven, Gagné, and Rosman (2008) showed that controlled,
37 relative to autonomous, engagement in a relatively boring activity
38 that required self-control (e.g., not typing the letter *e*) predicted poorer
39 performance on a subsequent, unrelated self-control task, as mediated by
40 reduced vitality. Finally, Mata et al. (2009) reported that exercise motivation

1 was associated with more healthy eating regulation in an intervention
3 program among obese individuals that primarily targeted physical activity
change, thus suggesting a motivational spill-over effect.

5 A fifth direction for research is to examine whether OIT's taxonomy of
EM adds explanatory precision to domain-specific approaches to motiva-
7 tion. For instance, Allport and Ross (1967) distinguished between intrinsic
and extrinsic religious orientations. Those with an intrinsic religious
9 orientation have internalized their religious beliefs (e.g., humility, compas-
sion) "without reservation" and accommodate or reorganize other goals to
bring them into harmony with their religious convictions. Those with an
11 extrinsic religious orientation, in contrast, approach religion in an instru-
mental way to attain "self-centered" ends (e.g., safety, solace). Recently,
13 Neyrinck, Lens, Vansteenkiste, and Soenens (in press) showed that
Allport and Ross's intrinsic-extrinsic distinction does not correspond to
15 SDT's distinction between IM and EM. Specifically, the intrinsic religious
orientation related positively to well-internalized EM, but was unrelated to
17 IM, suggesting that such an orientation might more accurately be labeled
as internalized EM. A similar conceptual refinement could be applied to the
19 motivation measure for smoking cessation developed by Curry, Wagner,
and Grothaus (1990), which is primarily grounded in the intrinsic-extrinsic
21 motivation distinction that formed the basis for CET.

23

CAUSALITY ORIENTATIONS THEORY

25

Autonomous, Controlled, and Amotivated Functioning at the Dispositional Level

27

29 In contrast to CET and OIT, which examine motivational dynamics in
particular life domains or situations, causality orientations theory (COT;
31 Deci & Ryan, 1985a), SDT's third mini-theory, focuses on individual
differences in global motivational orientations. That is, COT adds a new
33 piece to the "SDT puzzle" by applying the dynamics of behavioral regulation
to an understanding of people's personality-level functioning. The term
35 "causality orientation" contains the Latin root *causa*, which refers to the
reason behind, or the cause of, behavioral initiation (deCharms, 1968).
37 According to COT, individuals differ in how they typically perceive the
source of their behavioral initiation. People who are high on the *autonomy*
39 *orientation* tend to act in accord with their own emerging interests and
self-endorsed values, interpret external events as informational, and thus

1 typically regulate their behavior autonomously. In contrast, those who are
3 high on the *control orientation* tend to act in accord with external or internal
5 demands, interpret external events as pressuring, and thus typically
7 regulate their behavior with an experience of control. Finally, people who
9 are high on the *impersonal orientation* tend to perceive their life experiences
as beyond personal control and, accordingly, are prone to pervasive
feelings of helplessness, ineffectiveness, and passivity; such an orientation
is the dispositional equivalent of amotivation and is conceptually related to
Rotter's (1966) concept of external locus of control.

11 Deci and Ryan's (1985a) specification of causality orientations was later
13 adopted in Vallerand's (1997) hierarchical model of motivation, which
15 suggests that motivation can be studied at three hierarchically organized
17 levels – global individual differences, social contexts, and specific situations.
19 Consistent with the proposed interrelation among these three levels of
motivation, research has shown that the causality orientations are mean-
ingfully related to domain-specific motives. Williams and Deci (1996),
for instance, reported that the autonomy and control orientations were
associated with autonomous and controlled reasons for participating in a
medical interviewing course, respectively.

21

Theoretical Considerations

23

25 Because causality orientations are relatively stable individual differences,
27 it is important to distinguish them from other personality constructs,
29 particularly the Big Five traits. Whereas the Big Five traits can be
31 considered core personality dimensions (Asendorpf & van Aken, 2003), as
33 they are highly stable and have a substantial genetic basis, the causality
35 orientations can be considered surface personality dimensions, as they are
37 more malleable and shaped by socialization experiences. Indeed, causality
39 orientations represent dynamic outcomes that develop as a function of
the amount of received need support in interaction with genetic and
biological factors. Importantly, COT suggests that *each* of the three
causality orientations exists to varying degrees within each of us. As a result,
situational cues can elicit otherwise latent causality orientations that, once
triggered, influence perception and action. For instance, a braggart may
trigger a control orientation in a conversation partner that, in turn, may
elicit a competitive and defensive stance toward the braggart. Nonetheless,
each individual has a predominant motivational orientation that charac-
terizes his/her disposition in general.

Empirical Basis of Causality Orientations Theory

An Initial Investigation

Deci and Ryan (1985a) developed the General Causality Orientations Scale (GCOS) to assess general motivational orientations and found them to be differently related to a broad array of personality and adjustment outcomes. Specifically, the autonomy orientation related positively to ego-development and self-esteem, and negatively to self-derogation. Interestingly, those who scored high on the autonomy orientation also reported a greater tendency to support their children's autonomy and had children who were more securely attached. Thus, the autonomy orientation may be transmitted intergenerationally through autonomy-supportive parenting. The control orientation, by contrast, related positively to the Type-A coronary-prone behavior pattern and to public self-consciousness, indicating that control-oriented individuals experience substantial tension and stress, and are highly sensitive to others' evaluations. Bridges, Frodi, Grolnick, and Spiegel (1983) reported that the mothers of resistant babies scored high on the control orientation, suggesting that such children are anxious about losing their mother's approval, just as their mothers are concerned with others' approval. The impersonal orientation showed the least adaptive profile of personality functioning and adjustment. Specifically, those who scored high on the impersonal orientation reported greater self-derogation, depressive symptoms, and social anxiety, as well as impaired ego-development and low self-worth. Mothers with an impersonal orientation had children who displayed an avoidant attachment pattern, which may engender feelings of inadequacy at a very young age.

Open Versus Defensive Modes of Responding

A central line of research within COT has examined the relation of the autonomy and control orientations to openness and defensiveness, respectively. Hodgins and Knee (2002) argued that because autonomy-oriented individuals experience more psychological freedom and choice, they likely would process information and interact with others with a sense of openness, engendering greater tolerance and non-biased responding. In contrast, because control-oriented individuals often feel preoccupied with meeting external demands and maintaining self-worth, they likely would feel threatened by intrapersonal and interpersonal pressures. They would react to such pressures by processing information in a biased, self-serving way and would relate to others in a more defensive, strategic, and intolerant manner. Indeed, studies have provided support for this line of reasoning.

1 First, the autonomy and control orientations have been shown to yield
differential relations to people's awareness and knowledge of their attitudes,
3 personality traits, and behavior. Specifically, Koestner, Bernieri, and
Zuckerman (1992, Study 1) reported that the association between self-report
5 and behavioral (i.e., free-choice persistence) assessments of IM was stronger
among autonomy-oriented, relative to control-oriented, individuals. Similar
7 findings were observed between self-report and behavioral (i.e., returning a
questionnaire on time) measures of conscientiousness (Koestner et al., 1992,
9 Study 2). Overall, then, autonomy-oriented individuals report higher levels of
self-knowledge, whereas control-oriented individuals report more biased and
11 inaccurate self-perceptions.

Second, the autonomy and control orientations have been shown to yield
13 differential relations to people's processing of information that could inform
them about their capabilities, interests, and identity (i.e., self-relevant
15 information). Koestner and Zuckerman (1994), for instance, showed that
autonomy- and control-orientated individuals react differently to success
17 versus failure feedback on a puzzle task. Whereas individuals high on the
autonomy orientation showed the same amount of persistence in the success
19 and failure conditions, those high on the control orientation persisted more
in the failure condition. Also, the persistence shown by control-oriented
21 participants related negatively to their positive affect during the free-choice
period. This suggests that control-oriented individuals attempted to restore
23 feelings of self-worth by "proving themselves" following failure feedback,
resulting in conflicted, ego-involved persistence. In a related study, Knee
25 and Zuckerman (1996) showed that autonomy-oriented individuals did not
display a self-serving bias, as manifested in their tendency to adopt a self-
27 aggrandizing attitude after success and to deny responsibility for failure.

Such differences between autonomy- and control-oriented individuals in
29 processing self-relevant information also manifest in how they approach
the developmental process of identity exploration. For example, Soenens,
31 Berzonsky, Vansteenkiste, Beyers, and Goossens (2005) found that the
autonomy orientation was associated with an information-oriented style,
33 in which adolescents engage in an open and flexible exploration of identity-
relevant alternatives. In contrast, the control orientation was associated
35 with a normative style, which is characteristic of adolescents who safeguard
their adopted identity commitments against discrepant self-relevant
37 information in an assimilative, defensive fashion.

Third, the autonomy and control orientations have been related to
39 markedly different interpersonal styles. Whereas autonomy-oriented individuals
tend to relate to others with a sense of openness and honesty, those

1 with a control orientation tend to relate to others in an intolerant, closed-
2 minded, and manipulative way. For instance, Hodgins, Liebeskind, and
3 Schwartz (1996) showed that autonomy-oriented individuals' provided
4 fewer lies and more mitigating themes (e.g., concessions and excuses) after
5 offending someone than those with a control orientation. Hodgins et al.
6 suggested that following an offense, autonomy-oriented individuals
7 are authentically concerned with the restoration of the relationship, rather
8 than with "saving face" and protecting their reputation. Other studies
9 have shown that control-oriented individuals have a more Machiavellian
10 interpersonal orientation (McHoskey, 1999), and display more aggression
11 in sports (Goldstein & Iso-Ahola, 2008) and while driving (Neighbors,
12 Viator, & Knee, 2002), because they tend to dehumanize others by
13 considering them as obstacles that need to be removed (Moller & Deci,
14 2009; Vansteenkiste, Mouratidis, & Lens, in press).

15

Priming Unconscious Motivational Orientations

17 Rather than relying on self-reports of global motivational orientations,
18 recent studies have made use of priming procedures to activate the
19 autonomy and control orientations outside conscious awareness to examine
20 how these latent, unconscious motivational orientations affect behavior,
21 performance, and well-being. The findings of these studies largely paralleled
22 those obtained using the GCOS. More specifically, primed autonomy
23 and control orientations have been shown to predict open (vs. defensive)
24 intrapersonal and interpersonal functioning, performance, and adjustment
25 in theoretically consistent ways. In one of the first priming studies, Levesque
26 and Pelletier (2003) activated the autonomy and control orientations by
27 using a scrambled sentence task. Autonomy-primed participants descrambled
28 sets of words that contained terms related to autonomy (e.g., choice,
29 freedom), whereas control-primed participants descrambled sets of words
30 that contained terms related to control (e.g., should, forced). Results showed
31 that autonomy-, relative to control-, primed participants, reported more
32 enjoyment during a subsequent crossword puzzle task. Using a similar
33 priming procedure, Hodgins and colleagues have shown that control-,
34 relative to autonomy-, primed participants, displayed a more defensive intra-
35 personal orientation, as reflected in a stronger self-serving bias (Hodgins,
36 Yacko, & Gottlieb, 2006, Study 2); reported higher self-handicapping (i.e.,
37 making anticipatory excuses for failure; Hodgins et al., 2006, Study 3); and
38 had a larger discrepancy between explicit and implicit self-esteem (Hodgins,
39 Brown, & Carver, 2007). Control-primed individuals also experienced lower
implicit self-worth (Hodgins et al., 2007) and displayed poorer performance

1 on a rowing machine (Hodgins et al., 2006, Study 3). These findings
have been confirmed using both supraliminal and subliminal procedures
3 (Radel, Sarrazin, & Pelletier, 2009).

5

Directions for Future Research

7

There are many important directions for future research on COT. One
9 direction is to examine stability and change in the causality orientations.
If causality orientations reflect surface personality dimensions, then they
11 should be less stable than core personality dimensions. Further, longitudinal
research could show that, despite being relatively stable, causality orienta-
13 tions are susceptible to change in response to environmental influences
(e.g., need support). A second direction for research is to address the
15 measurement of the GCOS, which was developed in the 1980s when OIT had
not yet been fully developed. Although Deci and Ryan (1985a) provided
17 evidence for the validity of the scale, a closer inspection of the items indicates
that the operationalization of the autonomy orientation was limited to items
19 tapping emerging interests, whereas the control orientation measure was
limited to items referring to monetary rewards and external approval. Thus,
21 the operationalization of the autonomy and control orientations was heavily
influenced by the distinction between IM and EM, which is at the heart
23 of CET – the most developed and refined theory at the time. However, given
that new pieces have been added to the “SDT puzzle” it seems appropriate
25 to reevaluate the GCOS. Because autonomy involves acting upon one’s
interests *and* personal values, and controlled functioning can take the form of
27 external *and* internal pressure, it is important to operationalize the autonomy
and control orientations in a more inclusive manner.

29 A third direction for research is to examine whether interpersonal
supports for autonomy interact with the causality orientations in predicting
31 behavior and well-being. From a match-perspective, it could be argued
that control-oriented individuals would benefit from being in a controlling
33 environment, as the motivational orientation would match the contextual
dynamics. Because control-oriented individuals’ basic needs would be
35 frustrated in a controlling environment, according to COT such individuals
would be expected to suffer in such an environment. To date, most studies
37 on autonomy support (vs. control) and research on causality orientations
have been conducted in relative isolation from each other. Black and Deci
39 (2000) examined such interactions and found that students’ autonomous
motivation and perceived teacher autonomy support interacted to predict

1 performance, but not adjustment. Interestingly, low autonomy-oriented
3 students benefited from perceiving their instructors as autonomy-supportive, which contradicts the match-perspective prediction that such individuals would fare better in controlling contexts.

5

7

BASIC NEEDS THEORY

9

A Unifying Principle

11 The concept of basic psychological needs has been woven throughout our
13 discussion of SDT. Within CET need satisfaction was used to explain the
15 effects of external events on IM, whereas within OIT and COT need
17 satisfaction accounted for the effects of the social environment on the
19 internalization of societal norms and rules, and the development of global
21 motivational orientations, respectively. In addition to representing a unifying
23 principle within SDT (Niemi et al., in press), the concept of need
25 satisfaction is important in its own right. Basic needs theory (BNT; Ryan &
27 Deci, 2002), SDT's fourth mini-theory, specifies innate psychological
29 nutriment that are necessary for psychological and physical health, and
31 social wellness. Following the principle of Ockham's razor (the law of
33 parsimony) and to avoid proliferation of the number of basic psychological
35 needs, a *minimal* number of needs (i.e., three) have been proposed to account
for a *maximal* number of phenomena across ages, genders, and cultures.

25 The need for autonomy (deCharms, 1968) refers to the experience of
27 volition and psychological freedom. With autonomy, one experiences choice
29 in and ownership of behavior, which is perceived as emanating from the self
31 and is in accord with abiding values and interests. The need for competence
(White, 1959) refers to the experience of effectance in one's pursuits. The
33 need for relatedness (Baumeister & Leary, 1995) refers to the experience
35 of reciprocal care and concern for important others. In line with SDT's
cumulative, research-driven development, this does not preclude the
specification of additional needs, but a new need would only be added
following strong theoretical arguments and empirical support.

35

37

Supporting Basic Psychological Needs

39 Parallel to the basic needs, BNT specifies three dimensions of the social
environment that support (rather than thwart) those needs. Specifically,

1 autonomy-supportive (rather than controlling) contexts support autonomy,
2 well-structured (rather than chaotic and demeaning) contexts support
3 competence, and warm and responsive (rather than cold and neglectful)
4 contexts support relatedness. Consider each in turn.

5 Autonomy-supportive individuals promote the volition of those they
6 socialize. In doing so, such individuals provide the amount of choice desired
7 by the person being socialized, offer a meaningful and realistic rationale
8 when choice is constrained, and try to understand the other's perspective.
9 In contrast, controlling individuals direct the thoughts, feelings, and
10 behaviors of those they socialize. In doing so, such individuals may use
11 overt, externally pressuring tactics (e.g., controlling language, punishments),
12 or more covert, subtle techniques of manipulation, including conditional
13 regard (Assor, Roth, & Deci, 2004), guilt induction (Vansteenkiste et al.,
14 2005a), and shaming (for a review, see Soenens & Vansteenkiste, in press-a).
15 Several studies in various life domains have shown that perceptions of
16 autonomy support (relative to control) are associated with higher well-
17 being, better performance, and more behavioral persistence.

18 Whereas autonomy support promotes the self-initiation of behavior,
19 structure is critical for the competent pursuit of one's goals. Interestingly,
20 some have proposed that structure and autonomy support are contrasting
21 socialization styles, as if these styles are situated at opposite ends of a
22 continuum (see Reeve, 2009). BNT maintains that autonomy support is *not*
23 a laissez faire socialization technique in which guidance is lacking and
24 unlimited freedom is granted, which certainly would reflect the opposite of a
25 well-structured environment (Jang, Reeve, & Deci, in press). Indeed,
26 although guidelines may structure and limit behavior, such restrictions are
27 not necessarily experienced as controlling. Rather, people are more likely to
28 personally endorse and volitionally follow social norms that are introduced
29 in an autonomy-supportive way. Thus, both autonomy support and
30 structure are essential for effective socialization, as the former describes
31 the way rules and expectations are introduced and the latter describes the
32 clarity of those norms.

33 Interpersonal support, as described within the socialization literature
34 (Davidov & Grusec, 2006), is provided through warmth (or the ability to
35 amicably connect with others and to partake in mutually enjoyable
36 activities) and responsiveness to distress (or the ability to empathize with
37 and respond to others' unpleasant feelings in a way that provides solace and
38 comfort). The importance of interpersonal support has been highlighted by
39 such theories as attachment theory (Bowlby, 1988) and acceptance-rejection
theory (Rohner, 2004). According to SDT, interpersonal support is

1 necessary for the satisfaction of the need for relatedness, as it fosters a sense
of connectedness, love, and understanding within relationships.

3

5 *Advantages of Specifying Basic Psychological Needs*

7 There are several advantages to positing the existence of basic psychological
needs (Deci, 1992). First, this concept allows for theorizing about the
9 *energization* of behavior, which, in addition to the direction of behavior,
is an important component of motivation (Deci & Ryan, 1985b). Many
11 theories of motivation however, only focus on the direction of behavior.
In contrast, SDT maintains that basic psychological needs represent an
13 energetic resource that propels a variety of motivated behaviors.

Second, this concept allows for a discussion of human nature and the
15 specific psychological factors that are essential for optimal human
development. Various scholars typically fail to address these important
17 questions, either because they focus on a circumscribed phenomenon
(e.g., unrealistic optimism), which obviates their grappling with such issues,
19 or because they assume (implicitly or explicitly) that no inherent human
nature need to be specified. Other scholars argue that humans are born as
21 *tabula rasa* (blank slates) upon which cultural values and norms are
imprinted during socialization, a perspective known as the Standard Social
23 Science Model (SSSM; Barkow, Cosmides, & Tooby, 1992). According to
the SSSM, culturally acquired behaviors are not evaluated according to
25 their compatibility with human nature, but rather according to whether
those behaviors are emphasized by the environment, and well-being is
27 expected to result from a match between one's behavior and ambient
social values. In contrast, SDT posits that *all* humans, regardless of whether
29 their behaviors fit or do not fit the social context, require satisfaction
of autonomy, competence, and relatedness for psychological growth and
31 wellness (Deci & Ryan, 2000).

Third, this concept enables researchers to synthesize a broad range of
33 divergent phenomena. For instance, within SDT the satisfaction versus
thwarting of basic needs has been used to explain such positive outcomes as
35 well-being, productivity, and cooperation, as well as such negative outcomes
as depression, pathology, and racism, among many others. Fourth, this
37 concept gives researchers a theoretical basis for understanding which
dynamics of social contexts (homes, organizations, schools) promote versus
39 hinder high-quality motivation, productivity, and well-being. Related to
this, the specification of basic psychological needs is important from an

1 *applied perspective*, as this concept gives socializing agents a means to
2 predict whether their interaction styles, organizational structures, and
3 educational practices will promote optimal outcomes.

5

6 *Characterization of Basic Psychological Needs*

7

8 Early motivation theorists, most prominently Hull (1943), focused on
9 physiological drives (viz., hunger, thirst, sex), which are non-nervous-system
10 tissue deficits that activate behaviors to reduce those drives. In contrast,
11 the focus of BNT is on psychological needs, which provide an important
12 source of energy (in addition to physiological drives and emotions) and are
13 considered the essential nutriments for optimal functioning. Just as plants
14 require sun, soil, and water to grow, humans require satisfaction of the
15 needs for autonomy, competence, and relatedness to function optimally at
16 the physical, psychological, and social levels (Ryan, 1995). An important
17 characterization of basic needs, therefore, is that when satisfied, they
18 promote humans' thriving and optimal functioning, and prevent illness.

19 A second important characterization of basic needs is that they are *innate*,
20 from which three implications can be derived. First, it implies that
21 satisfaction of the basic psychological needs is critical throughout one's
22 entire life, from birth until death. Second, it implies that the benefits of need
23 satisfaction do not necessarily require conscious, cognitive processing
24 to accrue, as even children as young as one-year old benefit from being in
25 need-supportive environments (Grolnick, Bridges, & Frodi, 1984). Third,
26 it implies that the needs for autonomy, competence, and relatedness are
27 *universal* nutriments necessary for optimal functioning, regardless of gender,
28 social class, and cultural context.

29 A third important characterization of basic needs is that when thwarted,
30 people may cope in a variety of maladaptive ways (Deci & Ryan, 2000).
31 One such maladaptive coping response is to develop *need substitutes*, which
32 represent strong desires (e.g., material success, a thin body, social approval)
33 that strongly affect cognition, emotion, and behavior. Although achieving
34 such desires may yield some derivative satisfaction, such feelings are
35 short-lived, as those ends fail to satisfy basic psychological needs. For
36 instance, a materialist may experience a derivative sense of competence if he
37 is successful in business, but such satisfaction is likely short-lived and
38 his pursuit of financial success may in time cause work–family conflict
39 (Vansteenkiste et al., 2007b), thus interfering with his satisfaction of
relatedness. Consider also an adolescent who has such a strong desire for

1 social recognition that she spreads rumors about her classmates. Although
2 this relationally aggressive style may enhance her popularity, it is unlikely to
3 promote her developing close relations with others (Soenens, Vansteenkiste,
4 Goossens, Duriez, & Niemiec, 2008).

5 A second maladaptive coping response is to develop rigid behavior
6 patterns, which may provide short-term feelings of security, stability, and
7 efficacy, but interfere with genuine need satisfaction. For instance,
8 maladaptive perfectionists often obsess about achieving very demanding
9 standards. Although such high standards may provide structure, their rigid
10 pursuit is likely to interfere with the satisfaction of autonomy (Shafran &
11 Mansell, 2001), as such standards preclude opportunities for full absorption
12 in the activity.

15 *Theoretical Considerations*

17 *Needs as Experiential Inputs Versus Needs as Motives*

18 BNT's definition of basic psychological needs as innate nutriments necessary
19 for integrated functioning differs from the more prominent usage of the
20 concept provided by Murray (1938). According to Murray, psychological
21 needs are relatively stable differences in desires that vary in strength
22 across individuals as a function of their socialization history. From this
23 perspective, individuals learn to associate positive emotions with particular
24 motives (e.g., affiliation, achievement, power) during development, resulting
25 in differences in the strength of those preferences. An important implication
26 of this acquired "needs" perspective is that the satisfaction of these motives
27 is only beneficial for people who desire to have those motives satisfied; thus,
28 people will most likely experience wellness in contexts that match their
29 acquired "needs." For example, those with a strong desire for achievement
30 are expected to benefit from a context that emphasizes outperforming others
31 (Senko & Harackiewicz, 2002). BNT, in contrast, posits that the basic needs
32 for autonomy, competence, and relatedness are innate requirements for
33 psychological growth, even for those who do not place strong importance on
34 those needs. To the extent that basic needs are satisfied, positive outcomes
35 are expected to follow. In line with this, Mouratidis, Vansteenkiste, Lens,
36 and Sideridis (2008) demonstrated that positive feedback enhanced IM,
37 even for those who did not value doing well on the activity.

38 When needs are thwarted, initially an individual is likely to persist in an
39 attempt to satisfy basic needs by looking for new routes to need satisfaction
(Deci & Ryan, 2000). For instance, following critical feedback an individual

1 might have an increased desire for competence. Indeed, Sheldon and Gunz
(in press) showed that experiential deficits in autonomy, competence, and
3 relatedness predicted corresponding motives to overcome those deficits.
This study, however, did not examine whether pursuing a need after an
5 experienced deficit predicted subsequent need satisfaction. We doubt this
would be the case, as there are a number of reasons that people would be
7 less likely to feel maximally satisfied once their pursuit is consciously and/or
reactively driven.

9 First, when needs are thwarted, people may become sensitive to
environmental cues that signal opportunities for need satisfaction. For
11 instance, Gardner, Pickett, Jefferis, and Knowles (2005) found that lonely
individuals, who presumably lacked relatedness satisfaction, displayed
13 an increased attention to social cues and opportunities for interpersonal
interaction. Such heightened sensitivity to environmental cues might
15 lead previously need-deprived individuals to interpret a subsequent need-
supportive experience as less supportive than when their needs are satisfied.
17 Indeed, van Prooijen (2009) showed that relative to those whose autonomy
was satisfied, autonomy-deprived participants experienced a no-voice
19 decision-making process as less fair. This suggests that previously controlled
individuals interpreted subsequent events more strongly as autonomy-
21 frustrating, thereby potentially inducing a negative spiral.

Second, the regulation of behaviors intended to satisfy needs can vary in
23 relative autonomy. When needs are thwarted, one might become explicitly
focused on pursuing need satisfaction because of ego involvement. That is,
25 need-deprived individuals may be preoccupied with potential need-satisfying
activities because they base self-worth on their successful completion of such
27 tasks. When feeling incompetent, for instance, one may have a strong desire
to prove oneself as capable and effective. Likewise, when feeling lonely,
29 one may have a strong desire to portray oneself as having an extensive
social network. Finally, when feeling pushed around and unable to voice
31 personal preferences, one may have a strong desire to be independent and
differentiated from others. Thus, when needs are thwarted, people may
33 actively pursue opportunities for need satisfaction so as to regain self-worth,
which is unlikely to contribute to need satisfaction. In fact, Ryan, Koestner,
35 and Deci (1991) and Vansteenkiste and Deci (2003) demonstrated that
providing negative feedback to ego-involved individuals engendered
37 inauthentic persistence during a free-choice period. Presumably, such
persistence was done to feel competent after having received critical
39 feedback, but the behavior was experienced as internally conflicted and,
thus, not genuine. Paradoxically, the controlled pursuit of competence may

1 have precluded participants' opportunity to satisfy their needs, as feeling
controlled may have detracted from competently engaging the activity.

3 Although need deprivation appears to prompt heightened attention
to social cues and a stronger *desire* for need satisfaction, this does not
5 preclude the possibility that need-deprived individuals (a) anticipate less
satisfaction from subsequent need-satisfying experiences (due to previous
7 experiences of need deprivation) and (b) derive less satisfaction from
those new experiences. In line with this, Moller, Deci, and Elliot (in press)
9 used diary and experimental methodologies to show that individuals
high in person-level relatedness (i.e., those who reported higher general
11 levels of relatedness) expected greater need satisfaction from a relational
event (anticipated value) and experienced days and events in which
13 their relatedness was supported as more satisfying (experienced value).
Thus, different from the studies mentioned above, Moller et al. examined
15 subsequent need *satisfaction* and found that those high in general need
satisfaction found subsequent need-supportive events more affectively
17 rewarding and need satisfying. Interestingly, Reis, Sheldon, Gable, Roscoe,
and Ryan (2000) and Moller et al. used the term *sensitization* to explain their
19 findings and suggested that satisfaction of relatedness makes an individual
more sensitive to opportunities for relatedness, leading people to perceive
21 need-supportive events as more important and satisfying.

In short, it appears that both need-deprived and need-satisfied individuals
23 are sensitive to new need-satisfying experiences, albeit at different moments
and in different ways. Given that need-deprived individuals tend to
25 reactively monitor their environment for need-satisfying signals, they are
alert or sensitive to potentially new need-satisfying stimuli *before* such
27 stimuli occur. Rather than reactively seeking new need-satisfying experi-
ences, previously need-satisfied individuals tend to be *spontaneously*
29 immersed in ongoing activities. When asked whether they anticipate
deriving satisfaction from a new event, their history of need-satisfying
31 experiences may lead them to expect and experience greater subsequent need
satisfaction, relative to need-deprived individuals. Thus, for need-satisfied
33 individuals the sensitization process occurs *after* need satisfaction has
occurred. Although need-deprived individuals might initially increase in
35 alertness for and motivation to approach new need-satisfying events
(Sheldon & Gunz, in press), their failure to derive as much satisfaction
37 from new need-satisfying encounters (Moller et al., in press) might lead
them to devalue the importance of new need-satisfying experiences over
39 time. Indeed, the initially controlled reactions of need-deprived individuals
might be gradually replaced by a sense of helplessness; they might feel

1 incapable of getting their basic needs met, leading them to attach less
2 importance to need satisfaction, a process referred to as accommodation or
3 desensitization (Deci & Ryan, 2000; Moller et al., in press). These dynamics
4 await further empirical testing.

5

The Universal Importance of Autonomy

7 Several contemporary psychologists have questioned the importance of
8 autonomy for such groups as Easterners (Iyengar & DeVoe, 2003), women
9 (Jordan, 1997), and the working class (Stephens, Markus, & Townsend,
10 2007). Herein, we discuss the cultural relativist perspective (Markus &
11 Kitayama, 2003) and later we consider the relevance of autonomy for
12 Easterners, women, the impoverished, and, indeed, all humans. Markus and
13 Kitayama have disputed the universal importance of autonomy by arguing
14 that autonomy is a typical Western concept that is unlikely to yield the
15 same well-being correlates for Easterners, whose culture emphasizes social
16 harmony and interdependence. Such a view is rooted in the SSSM, as it
17 suggests that autonomy will only promote desirable outcomes for those
18 whose culture emphasizes the importance of acting autonomously. Clearly,
19 this view is at odds with SDT and, accordingly, it is important to discuss this
20 complex, multi-faceted controversy.

21 First, SDT and cultural relativists define autonomy in different ways.
22 Whereas cultural relativists typically equate autonomy with individualism,
23 independence, and uniqueness, BNT defines autonomy as the experience of
24 volition, choice, and psychological freedom. When defined as independence,
25 it follows that such a concept would not be relevant to those who value
26 interdependence. However, within BNT the opposite of autonomy is not
27 dependence (i.e., reliance on others to guide one's behavior and decision
28 making), but rather the experience of pressure or coercion to behave in
29 particular ways (Vansteenkiste et al., 2005b), and we maintain that
30 autonomy will have functional benefits in cultures that emphasize both
31 independence (Western values) and interdependence (Eastern values). When
32 defined as volition and choice, it follows that one can feel either free or
33 coerced to act independently or to remain dependent on others. To
34 illustrate, both a Belgian and a Chinese college senior may feel choiceful
35 (vs. controlled) in her decision to live by herself (i.e., to become
36 independent) or to live with her family (i.e., to remain dependent), with
37 divergent outcomes associated with the degree to which her decision is
38 experienced as autonomous (Kins, Beyers, Soenens, & Vansteenkiste, 2009).

39 Second, and fully in line with the cultural relativist perspective, we recognize
40 that differences in emphasis on independence versus interdependence are

1 learned through socialization. Despite mean-level differences in a culture's
2 emphasis on independence versus interdependence, BNT maintains that
3 the behaviors associated with both types of functioning can vary in the
4 degree to which they are experienced as psychologically free or coerced.
5 A more volitional (relative to pressured) pursuit of either independence or
6 interdependence (regardless of the dominant cultural values) is expected to
7 promote optimal functioning, and this has been confirmed in several studies
(e.g., Rudy, Sheldon, Awong, & Tan, 2007).

9 Third, BNT's claim that satisfaction of autonomy yields positive effects
10 across cultures does not contradict the idea that there exists considerable
11 cross-cultural variation in how psychological needs are satisfied. For instance,
12 Iyengar and Lepper (1999) reported that for European Americans making a
13 personal choice was more intrinsically motivating than having the choice
14 made by one's mother or the experimenter. However, for Asian Americans
15 having the choice made by one's mother was comparable to making a
16 personal choice, although both were more intrinsically motivating than
17 having the choice made by the experimenter. At first sight, such findings seem
18 to challenge BNT's assumption that autonomy is a universal need. However,
19 from the perspective of BNT such findings illustrate the considerable cross-
20 cultural variation in how autonomy can be satisfied. For those from an
21 individualistic culture, behaving autonomously (with a sense of volition)
22 implies making a personal choice, whereas those from a collectivistic culture
23 seem to feel volitional when behaving in accord with the choice of someone
24 who they trust (e.g., their mother), perhaps because they have identified with
25 that person's choice for them. Indeed, Bao and Lam (2008) found that pre-
26 adolescent Chinese children reported comparable levels of IM when making
27 a personal choice as when the choice was made by an adult (viz., parent,
28 teacher) to whom they felt close, presumably because their need for
29 relatedness was satisfied. Notably, although Bao and Lam obtained their
30 results in a culture that emphasizes social harmony and relationships, BNT
31 posits that similar results would be found among those from an individualistic
32 culture, as relatedness is equally important in both cultures. In short, the
33 specification of innate and universal needs does not preclude differences in
34 socialization affecting how those needs are satisfied. Thus, it is critical to
35 examine the dynamic interplay among the basic needs to understand how the
36 social environment supports need satisfaction in different cultures.

37

Covariance among the Elements of Need Support

39 Although the elements of need support have been isolated and examined
separately (Sheldon & Filak, 2008), in daily interactions supports for

1 autonomy, competence, and relatedness are likely to covary. Such
2 covariance may occur because the elements of need support are based,
3 in part, on an accurate understanding of another's perspective. Specifically,
4 autonomy support involves the provision of choice and a meaningful
5 rationale when choice is constrained, competence support involves the
6 provision of a desired amount of information and guidance, and relatedness
7 support involves the provision of a desired amount of care and concern.
8 When an individual truly understands another's internal frame of reference,
9 the provided choice, information, and concern can be experienced as
10 genuine, helpful, and caring. Thus, accurate empathy seems to be a
11 precondition for supporting all three needs, which may explain why the
12 three facets of need support strongly covary. Further, some elements of need
13 support might satisfy a single need, whereas others might satisfy two or
14 three needs. For instance, a meaningful rationale might help an individual
15 grasp the value of an activity (autonomy support) and provide structure for
16 the activity (competence support). Choice, however, would likely only
17 satisfy autonomy. Thus, because there is no one-to-one association between
18 need support and need satisfaction, the elements of need support are often
19 highly correlated.

21

Empirical Basis of Basic Needs Theory

23

Basic Psychological Needs and Wellness

25 A central tenet of BNT is that satisfaction of each of the basic needs
26 contributes unique variance to the prediction of psychological wellness,
27 productivity, and social functioning. Empirical evidence supporting
28 this proposition has been obtained in many life domains, including school,
29 work, exercise, and sports. Need satisfaction has even been shown to predict
30 outcomes other than one's immediate psychological functioning, such as
31 long-term health-behavior change (Williams, Niemiec, Patrick, Ryan, &
32 Deci, 2009a) and medication adherence (Williams et al., 2009b). Further,
33 need satisfaction has been shown to facilitate wellness across the lifespan,
34 from early childhood (e.g., Grolnick et al., 1984) to adulthood (e.g.,
35 Vansteenkiste et al., 2007b). The amount of need satisfaction accumulated
36 during one's life has even been found to negatively predict mortality
37 (Kasser & Ryan, 1999). Other studies have demonstrated that daily
38 variations in need satisfaction contribute independently to within-person
39 fluctuations in well-being (Reis et al., 2000) and to within-person differences
in security of attachment (La Guardia, Ryan, Couchman, & Deci, 2000).

1 Thus, the “ups and downs” in daily emotional experiences and in the
2 quality of relationships covary with fluctuations in need satisfaction. Need
3 satisfaction not only varies at the between- and within-persons levels, but
4 also at the group level. To illustrate, Kelly, Zuroff, Leybman, Martin, and
5 Koestner (2008) showed that group differences in need satisfaction predicted
6 higher positive affect and performance over and above the differences in
7 need satisfaction between group members.

8 Recently, investigators have examined the importance of having
9 one’s basic psychological needs satisfied to a relatively equal extent
10 (i.e., balanced need satisfaction). Sheldon and Niemiec (2006) found
11 that balanced need satisfaction predicted higher adjustment and lower
12 mother-rated oppositional defiant behaviors among children, even while
13 controlling for the total amount of need satisfaction. Interestingly, not
14 only imbalance among the needs, but also imbalance in need satisfaction
15 across contexts detracts from well-being. Milyavskaya et al. (2009)
16 showed that adolescents who reported imbalanced need satisfaction across
17 multiple contexts had lower well-being and school grades. To explain these
18 findings, Milyavskaya et al. suggested that a lack of balance in need
19 satisfaction may undermine identity development, as such imbalance may
20 reflect their inability to reconcile the demands of multiple, context-bounded
21 identities.

23

The Universal Benefits of Need Satisfaction

25 BNT suggests that the basic psychological needs are universal requirements
26 for human flourishing. Consistent with this proposition, studies have
27 demonstrated the importance of basic needs for the well-being of people
28 living in both individualistic (Western) cultures, including the United States
29 (Reis et al., 2000) and Belgium (Luyckx, Vansteenkiste, Goossens, &
30 Duriez, 2009), and collectivistic (Eastern) cultures, including Bulgaria
31 (Deci et al., 2001), South Korea (Jang, Reeve, Ryan, & Kim, 2009), Russia
32 (Lynch, La Guardia, & Ryan, 2009), and China (Vansteenkiste, Lens,
33 Soenens, & Luyckx, 2006c). Further, need satisfaction has been found to
34 facilitate health-behavior change among a sample of poor, working-class
35 Americans (Williams et al., 2009a), and to promote the psychological and
36 physical health of men and women alike (Ryan, La Guardia, Solky-Butzel,
37 Chirkov, & Kim, 2005). Together, these findings contradict the reasoning of
38 Markus and Kitayama (2003), Jordan (1997), and Stephens et al. (2007),
39 who combine to suggest that need satisfaction (in particular, autonomy) is
only beneficial for Western, working-class males.

1 *The Importance of Support for Autonomy*

2 Within BNT, much research with self-reports has shown that perceived
3 autonomy support promotes well-being in a variety of life domains. In
4 addition, various experimental studies (e.g., Vansteenkiste, Simons, Lens,
5 Sheldon, & Deci, 2004a) have shown that an autonomy-supportive, relative to
6 a controlling, communication style predicts deep learning and performance.

7 Within adolescent psychology, some psychologists, influenced by separation-
8 individuation theories, equate autonomy support with independence
9 promotion (Silk, Morris, Kanaya, & Steinberg, 2003), which differs in at
10 least two ways from the promotion of autonomy as defined by BNT
11 (Soenens et al., 2007). First, although parents can promote independence
12 in an autonomy-supportive way, independence can also be promoted in a
13 controlling way, such that children feel they have no choice other than
14 to become self-reliant. Second, when parents cannot support their child's
15 independence, they still can support their volition. Indeed, rules constrain
16 behavior and, thus, limit independence. However, by providing a mean-
17 ingful rationale for those guidelines and trying to be empathic, parents can
18 support volition even though they limit independence.

19 To examine the distinction between the views of BNT and separation-
20 individuation theories, Soenens et al. (2007) assessed adolescents' percep-
21 tions of their parents' promotion of both independent and volitional
22 functioning, and found that both constructs were moderately positively
23 correlated with each other and with psychological well-being. However, only
24 parental promotion of volition (but not independence) accounted for unique
25 variance in well-being when both constructs were simultaneous predictors.
26 These results suggest it is critical for adolescents to perceive parental
27 support for expressing their preferences and enacting their personal values,
28 rather than to perceive parental support for independence and self-reliance.
29 Whereas some adolescents may choose to be independent, others may act
30 independently for controlled reasons, either because they do not feel ready
31 to be independent (premature independence) or because they wish to rebel
32 against their parents (defiant independence).

33 A subsequent study (Soenens, Vansteenkiste, & Sierens, 2009) showed
34 that parental promotion of both volition and independence differentially
35 related to psychologically controlling parenting. Whereas promotion of
36 independence was orthogonal to psychologically controlling parenting,
37 promotion of volition was antithetical to it. Next, Soenens, Vansteenkiste,
38 and Luyten (in press) developed items assessing parents' attempts to force
39 children to remain dependent through the use of guilt trips or conditional
40 regard. Soenens et al. (in press) found that the children of such parents

1 displayed a more dependent orientation, which in turn predicted depressive
symptoms. Together, then, the work of Soenens, Vansteenkiste, and friends
3 suggests that adolescents who perceive their parents as promoting either
independence or dependence in a controlling (relative to autonomy-
5 supportive) manner experience lower well-being.

7 *The Importance of Support for Competence*

The concept of structure has received far less attention than autonomy
9 support within BNT. Grolnick and Ryan (1989) conducted structured
interviews with children in 3rd through 6th grade to obtain ratings of
11 parental autonomy support and structure. They reported that autonomy
support related positively to children's academic autonomous self-regulation
13 and grades, while structure predicted children's control beliefs. More
recently, Cleveland and colleagues examined the relations of parental
15 autonomy support and structure to preschool children's reminiscence of
daily events. In an observational study, Cleveland and Reese (2005) showed
17 that the two parenting styles could be distinguished and that by 65 months
of age, children of high structuring parents (i.e., parents who asked open-
19 ended, elaborative questions) recalled more daily events than those of low
structuring parents. Subsequently, Cleveland, Reese, and Grolnick (2007)
21 found that elaborative structure related positively to children's memory of
the details and narrative quality (i.e., coherence) of a standardized event,
23 while autonomy support predicted children's observer-rated engagement
(see also Jang et al., in press). Finally, using self-reports of autonomy support
25 and structure, Sierens, Vansteenkiste, Goossens, Soenens, and Dochy (2009)
found that structure only had a positive relation to students' self-regulated
27 learning when it was provided in an autonomy-supportive way.

29 *The Importance of Support for Relatedness*

Support for relatedness has generally been found to predict a host of
31 positive outcomes, including social competence, empathy, and secure
attachments (Rohner, 2004). However, at times socializing agents may be
33 involved and show concern in a controlling way, thus providing love at the
expense of autonomy. One such socialization strategy is parental condi-
35 tional regard (PCR; Assor et al., 2004; Roth, Assor, Niemiec, Ryan, & Deci,
2009), in which parents provide love and affection when their child behaves
37 according to their expectations, but withdraw love and affection when their
child fails to meet their expectations. In essence, such parents contingently
39 provide love in order to pressure their child into compliance, thereby pitting
the child's need for relatedness against autonomy. PCR has been shown to

1 promote children's inner tension and resentment toward parents (Assor
2 et al., 2004; Roth et al., 2009). Other studies have revealed harmful
3 consequences of social contexts that pit autonomy against relatedness. For
4 example, a combination of controlling (i.e., autonomy-inhibiting) and
5 supportive (i.e., relatedness-providing) parenting is related to a maladaptive
6 pattern of developmental outcomes in children and adolescents,
7 including poor academic achievement (Aunola & Nurmi, 2004) and poor
8 empathic skills (Kanat-Maymon & Assor, 2010), as well as externalizing
9 problems (Aunola & Nurmi, 2005). Importantly, with conditional support
10 for relatedness, parents love is likely to be driven by their agenda and
11 must be "earned" by the child. Such support is limited, strategic, and not
12 genuine; therefore, conditional regard is unlikely to provide deep, enduring
13 satisfaction of relatedness.

15

Directions for Future Research

17

18 Several potential directions for future research on BNT deserve mention.
19 One direction is to validate both domain-general and domain-specific
20 measures of need satisfaction. Researchers have often relied on ad hoc
21 measures, which make it difficult to compare findings across studies. Such
22 validation work has been done in the domains of exercise (Wilson, Rogers,
23 Rodgers, & Wild, 2006) and organizations (Van den Broeck, Vansteenkiste,
24 De Witte, Lens, & Soenens, in press), and future research could extend this
25 work to other life domains.

26 A second direction for research is to examine the etiology of need
27 substitutes. Indeed, recent research has begun to explore these dynamics.
28 For instance, Soenens et al. (2008) showed that patients with eating
29 disorders, relative to a matched control group, perceived their fathers as
30 more psychologically controlling. Such autonomy deprivation presumably
31 leaves individuals vulnerable to adopting self-critical, perfectionist stan-
32 dards that, in turn, promote eating pathology. In a more direct test of this
33 idea, Thøgersen-Ntoumani, Ntoumanis, and Nikitaras (in press) found that
34 adolescents who reported a lack of need satisfaction had a stronger focus on
35 weight-control strategies and, in turn, lower body satisfaction. Qualitative
36 research might provide insight in how need-thwarting experiences give rise
37 to the emergence of need substitutes and psychopathology (Ryan, Deci,
38 Grolnick, & La Guardia, 2006).

39 A third direction for research is to examine whether basic needs
explain the impact of various environmental factors on outcomes. Indeed,

1 domain-specific theories often identify the critical factors that contribute to
2 optimal development but fail to adequately explain the mechanisms that
3 underlie these effects; the concept of basic psychological needs might fill
4 this gap. To illustrate, Van den Broeck, Vansteenkiste, De Witte, and Lens
5 (2008) showed that need satisfaction is a critical mechanism that explains the
6 health-enhancing and -impairing effects of job resources and job demands
7 (Karasek, 1979), respectively. Further, some (Markland, Ryan, Tobin, &
8 Rollnick, 2005; Vansteenkiste & Sheldon, 2006) have argued that need
9 satisfaction might explain the positive effects of motivational interviewing
10 (Miller & Rollnick, 2002) on clinical outcomes, such as drop-out, behavioral
11 change, and relapse.

13

GOAL CONTENT THEORY

15

The Content of Life Goals

17

18 In addition to studying the reasons underlying behavioral regulation and
19 the concept of basic psychological needs, a growing body of research from
20 SDT has examined the correlates of different types (intrinsic and extrinsic)
21 of life goals, or aspirations, that people pursue (for a review, see Kasser,
22 2002; Vansteenkiste et al., 2006b). Kasser and Ryan (1996) distinguished
23 intrinsic goals (viz., personal growth, close relationships, community con-
24 tribution, physical health) from extrinsic goals (viz., money, fame, image)
25 and argued that, whereas intrinsic aspirations are likely to satisfy the basic
26 needs for autonomy, competence, and relatedness, extrinsic aspirations are
27 likely to be unrelated to need satisfaction. These goal contents are theorized
28 to have differential relations to basic needs, in part, because intrinsic
29 goal pursuit may engender an *inward* orientation that is conducive to
30 need satisfaction, whereas extrinsic goal pursuit may engender an *outward*
31 orientation that is focused on garnering self-worth through achievement and
32 external validation, detracting from basic need satisfaction (Vansteenkiste,
33 Soenens, & Duriez, 2008a). Because of their different foci, Ryan, Sheldon,
34 Kasser, and Deci (1996) argued that “not all goals are created equal” and,
35 therefore, are likely to have differential relations to physical, social, and
36 psychological health.

37 Originally, the distinction between intrinsic and extrinsic goals was
38 incorporated within BNT, as extrinsic aspirations are considered to be
39 compensatory goals that people value and pursue in times of need
40 deprivation. An emphasis on extrinsic goals as need substitutes is fueled

1 both by the media and advertising industry, which portray wealth, social
3 recognition, and achieving “the right look” as the ultimate routes to identity
5 development (Dittmar, 2007; Soenens & Vansteenkiste, in press-b) and
7 happiness (Kasser, 2002). Indeed, individuals who are deprived of need
9 satisfaction and who experience identity diffusion may be more likely to
buy into extrinsic goals, hoping that such pursuits will provide a source of
identity, meaning, and self-worth (La Guardia, 2009). The problem, however,
is that such pursuits are not likely to provide genuine satisfaction of basic
needs, which is integral to healthy personality development and wellness.

To meaningfully organize the burgeoning research on the content of life
11 goals, it seems appropriate and timely to introduce a fifth mini-theory of
SDT, namely goal content theory (GCT). We maintain that the pursuit of
13 intrinsic goals represents a third manifestation of the organismic growth
tendency (Vansteenkiste et al., 2006b), along with IM and internalization,
15 which are central in CET and OIT, respectively. That is, we posit that
people have a natural tendency to move toward intrinsic goals and away
17 from extrinsic goals, although such shifts do not happen automatically,
but require contextual supports for need satisfaction. Accordingly,
19 research has shown that need-supportive contexts promote movement
away from extrinsic goals and toward intrinsic goals (Sheldon, Arndt, &
21 Houser-Marko, 2003), whereas need-thwarting contexts hinder such change
(Sheldon & Krieger, 2004). Further, we propose that the structure of goal
23 contents will be similar across different types of cultures.

25

Theoretical Considerations

27

It is important to clarify several conceptual points. First, the distinction
29 between intrinsic and extrinsic goals is not unique to GCT. For example,
Fromm (1976) proposed a distinction between a *having* orientation and
31 a *being* orientation, while Van Boven and Gilovich (2003) proposed
a distinction between *experiential* purchases and *material* purchases.
33 Moreover, the extrinsic aspirations for wealth and an appealing image
(viz., the thin-ideal) have been examined extensively by consumer (e.g.,
35 Richins & Dawson, 1992) and body dissatisfaction (e.g., Stice, 2001)
psychologists, respectively.

37 Second, GCT is not intended to be an all-inclusive theory of goals. The
list of goals proposed within GCT is not exhaustive because some goals
39 (e.g., hedonism) are neither used to validate self-worth nor inherently
growth-promoting and, therefore, cannot be classified as intrinsic or

1 extrinsic. Unlike most other research (e.g., Schwartz, 1992), GCT does not
2 intend to chart the universal structure of human strivings. Rather than being
3 *descriptive* in nature, GCT is *prescriptive* in nature, as it formulates clear
4 predictions regarding the correlates of goal contents. These claims are
5 derived from the extent to which goal contents are consistent with human
6 nature and, thus, likely to satisfy basic psychological needs. For instance,
7 individuals who contribute to their community through volunteering
8 are likely to build meaningful relationships and thus satisfy their need
9 for relatedness, whereas those who aim to amass wealth are likely to view
10 colleagues as rivals and experience conflict between their work and
11 family, thereby detracting from satisfaction of relatedness and autonomy
(Vansteenkiste et al., 2007b).

13 Third, although related, intrinsic and extrinsic aspirations are distinct
14 from IM and EM, which are central to CET and OIT, respectively. Indeed,
15 both intrinsic and extrinsic goals can be pursued for either autonomous or
16 controlled reasons. For instance, a retiree may volunteer either because he
17 would feel guilty for not contributing to society (controlled motivation) or
18 because he really likes volunteering (autonomous motivation). Similarly, an
19 adolescent may strive for a physically appealing body because her partner
20 praises her good looks (controlled motivation) or because she personally
21 values this goal (autonomous motivation). Thus, although intrinsic goals
22 tend to be pursued for autonomous reasons and extrinsic goals tend to be
23 pursued for controlled reasons (Sheldon, Ryan, Deci, & Kasser, 2004), the
24 content of, and reasons for pursuing, aspirations can be empirically crossed.

25

27

Empirical Basis of Goal Content Theory

The Structure of Goal Contents

29 Initial work within GCT (Kasser & Ryan, 1993) distinguished the pursuit of
30 financial success from personal growth, close relationships, and community
31 involvement. Kasser and Ryan (1996) subsequently showed that the
32 aspirations fall into two general categories, namely intrinsic and extrinsic.
33 These factor-analytic results have been replicated using samples from
34 cultures characterized as individualistic (Belgium; Vansteenkiste et al.,
35 2007b), moderately collectivistic (Russia; Ryan et al., 1999), and collecti-
36 vistic (South Korea; Kim, Kasser, & Lee, 2003). Using more refined
37 descriptive techniques (viz., multidimensional scaling analysis), Grouzet and
38 colleagues (2005) showed that the structure of intrinsic and extrinsic goal
39 contents was observed in 15 cultures across the globe.

1 *The Relation of Goal Contents to Wellness and Performance*

3 A central tenet of GCT is that intrinsic and extrinsic goal contents
5 differentially predict well-being and adjustment. One line of research
7 relevant to this hypothesis has examined the *importance* of intrinsic and
9 extrinsic aspirations, showing that the importance of intrinsic (relative to
11 extrinsic) goals related positively to well-being and negatively to ill-being.
13 Other work has shown that the effects of intrinsic (relative to extrinsic) goal
15 contents generalize beyond individuals' personal well-being to health-
17 related, interpersonal, and societal outcomes. In the health-care domain,
19 smokers who had maintained their aspirations for physical health at one-
21 year post-treatment were more likely to attain tobacco abstinence at two-
23 years post-treatment (Niemic, Ryan, Deci, & Williams, 2009b). Further,
25 the importance of intrinsic (relative to extrinsic) goals has been found to
27 predict *less* alcohol and drug use, romantic relationship conflict, and
29 prejudicial and discriminatory attitudes toward immigrants, as well as
31 *more* trust in romantic relationships. Finally, there are important societal
33 benefits associated with the importance of intrinsic (relative to extrinsic)
35 goals, including less egoistic responses in scarce-dilemma situations and a
37 smaller ecological footprint (for a review, see Kasser, 2002; Vansteenkiste,
39 Timmermans, Lens, Soenens, & Van den Broeck, 2008b).

21 Interestingly, based on the match-perspective (e.g., Sagiv & Schwartz,
23 2000), which is rooted in the SSSM, it can be argued that the effects of
25 pursuing intrinsic (relative to extrinsic) goals would depend on the kind of
27 goals that prevail in one's environment. Therefore, the pursuit of extrinsic
29 goals would not be harmful in an environment that places high emphasis on
31 such goals. This position stands in contrast to GCT, as we underscore the
33 importance of considering which goals are congruent with basic psychologi-
35 cal needs rather than with the goals prevailing in the social environment
37 to derive predictions about the adaptive value of goals. A number of studies
39 have examined these conflicting hypotheses. In line with the match
perspective, Sagiv and Schwartz found that business students who valued
extrinsic (relative to intrinsic) goals reported higher psychological well-
being, whereas psychology students reported more optimal functioning
when they valued intrinsic (relative to extrinsic) goals. In contrast, in
two subsequent studies (Kasser & Ahuvia, 2002; Vansteenkiste, Duriez,
Simons, & Soenens, 2006a) extrinsic (relative to intrinsic) goal pursuits
were associated with lower well-being and more internal distress among
business students, even though extrinsic goals tend to be emphasized in their
environment. Furthermore, Sheldon and Krieger (2004) reported that law
students shifted away from intrinsic goals and toward extrinsic goals during

1 their first year of law school. Given that law schools typically foster status-
2 seeking and image-building (Krieger, 1998), a match perspective would
3 suggest that such changes should be adaptive. In spite of this, these changes
4 predicted a decline in psychological well-being.

5 A second line of research has examined the *attainment* of intrinsic and
6 extrinsic aspirations. Kasser and Ryan (2001) found that attainment of
7 intrinsic (relative to extrinsic) goals related positively to the quality of
8 interpersonal relationships and psychological health. Examining the cross-
9 cultural generalizability of these findings, Ryan et al. (1999) reported that
10 among US and Russian students, attainment of intrinsic (relative to
11 extrinsic) goals related positively to psychological health. Further, Niemiec,
12 Ryan, and Deci (2009a) conducted a longitudinal study and found that
13 attainment of intrinsic aspirations related positively to well-being and
14 negatively to ill-being, whereas attainment of extrinsic aspirations was
15 unrelated to well-being and actually contributed to ill-being. Finally, Van
16 Hiel and Vansteenkiste (2009) showed that whereas seniors' attainment
17 of intrinsic goals contributed to their ego-integrity and death acceptance,
18 extrinsic goal attainment positively predicted despair. Together, these
19 studies qualify the expectancy-valence theory (Wigfield & Cambria, this
20 volume) and social cognitive theory (Bandura, 1997) views, which suggest
21 that attainment of valued goals, regardless of their content, is conducive to
22 psychological wellness.

23 A third line of research has examined the *contextual promotion* of intrinsic
24 and extrinsic aspirations. Vansteenkiste and colleagues conducted a series
25 of experiments showing that framing a learning activity as conducive to
26 intrinsic (vs. extrinsic) goal attainment promoted deeper learning, better
27 achievement, and longer persistence. Such results were found regardless of
28 both the specific intrinsic and extrinsic goals that were promoted and the
29 specific learning activities (e.g., exercise, studying) that were taught (for a
30 review, see Vansteenkiste et al., 2006b). Interestingly, the detrimental impact
31 of extrinsic (vs. intrinsic) goal framing emerged even among participants
32 who valued extrinsic goals more strongly than intrinsic goals, suggesting
33 that a "match" does not yield benefits (Vansteenkiste et al., 2008b).

34 Further, the experimental manipulation of intrinsic and extrinsic
35 goals has permitted a direct comparison of competing hypotheses offered
36 by GCT and expectancy-valence theory on the effect of goal promotion.
37 Vansteenkiste et al. (2004b) contrasted an intrinsic goal framing condi-
38 tion with a double goal (intrinsic and extrinsic) framing condition, while
39 Vansteenkiste et al. (2004b) contrasted an extrinsic goal framing condition
40 with a no-goal control condition. If, as suggested by expectancy-valence

1 theory, promotion of *any* goal would increase the utility value of an activity
and thus have a motivating effect, then participants in the double
3 goal framing condition and extrinsic goal framing condition would be
expected to show better outcomes than those in the intrinsic goal and
5 no-goal control conditions, respectively. In contrast, GCT predicts that
promotion of extrinsic goals would distract the learner from the activity
7 and thus undermine learning, performance, and persistence. In line with the
predictions of GCT, results demonstrated that participants in the intrinsic
9 goal framing condition and no-goal control condition showed better
learning, performance, and persistence than those in their respective
11 comparison conditions, thereby supporting the proposition that not all
goals are beneficial for motivation.

13 In addition to being studied at the situational level (i.e., prior to
engagement in a specific learning activity), goal promotion can also be
15 examined at the domain (e.g., organizations, schools) and global levels
(Vallerand, 1997). Regarding the latter, Duriez, Soenens, and Vansteenkiste
17 (2008) found that parental promotion of intrinsic (relative to extrinsic) goals
related positively to tolerance toward out-groups.

19

The Relation of Goal Contents to Basic Needs

21 GCT further posits that intrinsic and extrinsic goal contents differentially
predict satisfaction of the basic psychological needs, which accounts for
23 the differential relations of goal contents to psychological, physical, and
social wellness. A small but growing number of studies have lent support
25 to this hypothesis. For instance, Vansteenkiste et al. (2007b) showed that
need satisfaction at work mediated the relations of the importance of
27 extrinsic (relative to intrinsic) work value orientations to job-related
outcomes and work–family conflict. In the exercise domain, Sebire,
29 Standage, and Vansteenkiste (2009) found that need satisfaction partially
accounted for the relation of intrinsic (relative to extrinsic) goal content to
31 psychological well-being, exercise anxiety, and physical self-worth. Thøgers-
sen-Ntoumani et al. (in press) reported that a stronger focus on the intrinsic
33 goal of physical health positively predicted basic need satisfaction, which,
in turn, was negatively related to the thin-ideal adoption and engagement
35 in unhealthy weight-management behaviors; in contrast, the pursuit of
physical attractiveness was positively related to the thin-ideal adoption.
37 Further, Niemiec et al. (2009a) found that change in need satisfaction
accounted for some of the association between change in attainment of
39 intrinsic aspirations and change in well-being; change in attainment of
extrinsic aspirations was unrelated to change in need satisfaction.

1 *The Development of Goal Contents*

2 There are at least two possible routes through which people develop strong
3 values for intrinsic or extrinsic goals (Kasser, 2002). First, over time people
4 may come to endorse the salient goals promoted by their culture, similar to a
5 process of modeling. Thus, employees for whom competition and financial
6 success are the central values of their organization may come to value and
7 pursue those same goals. Indeed, Schwartz (2006) showed that those in
8 capitalistic societies tended to value extrinsic values (e.g., achievement,
9 power) more than intrinsic values (e.g., universalism, self-direction). Second,
10 over time people exposed to need-supportive contexts may come to endorse
11 intrinsic goals, whereas those exposed to need-thwarting contexts may come
12 to endorse extrinsic goals. Indeed, the pursuit of extrinsic goals may be used
13 to cope with the irritation, anxiety, and insecurity associated with need
14 deprivation. In line with this, Kasser, Ryan, Zax, and Sameroff (1995)
15 found that teenagers of mothers who supported their autonomy and
16 relatedness placed greater importance on intrinsic goals (relative to financial
17 success), and Williams, Cox, Hedberg, and Deci (2000) found that
18 adolescents of autonomy-supportive parents were more likely to endorse
19 intrinsic (relative to extrinsic) goals.

21

Directions for Future Research

23

24 GCT can be expanded in several different directions. One direction is to
25 consider whether the list of intrinsic and extrinsic goals might be expanded.
26 From the perspective of GCT, new goals would only be added if they
27 are clearly linked to satisfaction of basic psychological needs. If such
28 a relation cannot be made, there is no theoretical basis for predicting
29 whether a new goal would be beneficial or harmful to wellness. One viable
30 candidate to be added as an additional extrinsic goal is *power*, which was
31 found to co-load with financial success and fame in factor analyses (Ryan
32 et al., 1999; Vansteenkiste et al., 2007b). A second direction for research
33 involves the development of domain-specific assessments of aspirations,
34 as not all goals are equally relevant in all life domains. For example, the
35 intrinsic aspiration for physical health is important in the domains of health
36 care (Niemiec et al., 2009a) and exercise (Sebire et al., 2009), but is less
37 relevant in the work domain.

38 A third direction for research is to examine additional, lower-
39 level mediational processes that might account for the effects of intrinsic
and extrinsic goals. We propose that need satisfaction represents a

1 *macro*-mediational process between goal contents and outcomes, which may
2 be complemented and enriched by an examination of *micro*-mediational
3 processes (e.g., attentional and cognitive factors). For instance, a woman
4 who exercises in pursuit of the thin-ideal (an extrinsic goal) might be overly
5 attentive to the number of calories she has burned while running on a
6 treadmill or might spend more time looking at herself in the mirror than
7 looking for opportunities to connect with others, thus detracting from
8 full immersion in the her exercise (Vansteenkiste, Matos, Lens, & Soenens,
9 2007a). Such preoccupations are likely to undermine need satisfaction.
10 Identifying such lower-level mediational processes might provide further
11 insight into how intrinsic and extrinsic goal promotion and pursuit affect
12 need satisfaction and functioning (Vansteenkiste et al., 2008a).

13 A fourth direction for research is to examine whether the differential
14 relations of goal contents are carried by the motives (autonomous and
15 controlled) that underlie them, as proposed by Carver and Baird (1998).
16 A number of studies at general (Carver & Baird, 1998; Sheldon et al., 2004)
17 and domain-specific (education: Vansteenkiste et al., 2004a; exercise:
18 Ingledew & Markland, 2008; Sebire et al., 2009) levels have examined this
19 issue, but have produced mixed results, with some studies showing
20 independent effects (Sheldon et al., 2004) and others not (Sebire et al.,
21 2009). The independence of the “what” and “why” of goal pursuits might
22 depend on a number of factors (the domain under investigation, the outcomes
23 examined, the formulation of goal items, and the meaning attributed to a
24 goal). For example, it is possible that because goal contents are cognitive in
25 nature they are more predictive of cognitive-attitudinal outcomes (e.g.,
26 prejudice), whereas because motives are experiential and affective in nature
27 they are more predictive of affective outcomes (e.g., well-being).

29

CONCLUSION

31

32 The literature on SDT has witnessed an exponential increase in the last
33 decade. The theory has attracted the attention of dozens of scholars across
34 the globe, perhaps due to its coherent and internally consistent develop-
35 ment. The strong meta-theoretical (i.e., organismic dialectical) foundation
36 of SDT provides an ideal basis to generate and test novel hypotheses
37 that meaningfully account for observed phenomena. Moreover, it provides
38 an antidote against the theoretical eclecticism in modern psychology,
39 a movement that fits within the current postmodern cold-buffet culture
40 where it is “bon ton” to take ideas from diverse theories, compile one’s own

1 model, and present oneself as theoretically pluralistic. We hope this chapter
will provide a source of inspiration for scholars to further develop SDT,
3 thereby fitting their own piece into the “SDT puzzle.”

5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39

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REFERENCES

- Allport, G. W., & Ross, M. J. (1967). Personal religious orientation and prejudice. *Journal of Personality and Social Psychology*, 5, 432–443.
- Amabile, T. M. (1979). Effects of external evaluation on artistic creativity. *Journal of Personality and Social Psychology*, 37, 221–233.
- Asendorpf, J. B., & van Aken, M. A. G. (2003). Personality-relationship transaction in adolescence: Core versus surface personality characteristics. *Journal of Personality*, 71, 629–666.
- Assor, A., Roth, G., & Deci, E. L. (2004). The emotional costs of perceived parents’ conditional regard: A self-determination theory analysis. *Journal of Personality*, 72, 47–89.
- Assor, A., Vansteenkiste, M., & Kaplan, A. (2009). Identified versus introjected approach and introjected avoidance motivations in school and in sports: The limited benefits of self-worth strivings. *Journal of Educational Psychology*, 101, 482–497.
- Atkinson, J. W. (1958). *Motives in fantasy, action and society*. Princeton, NJ: Van Nostrand.
- Aunola, K., & Nurmi, J. E. (2004). Maternal affection moderates the impact of psychological control on a child’s mathematical performance. *Developmental Psychology*, 40, 965–978.
- Aunola, K., & Nurmi, J. E. (2005). The role of parenting styles in children’s problem behavior. *Child Development*, 76, 1144–1159.
- 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.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Barkow, J. H., Cosmides, L., & Tooby, J. (1992). *The adapted mind: Evolutionary psychology and the generation of culture*. New York: Oxford University Press.
- 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.
- Bowlby, J. (1988). Developmental psychiatry comes of age. *The American Journal of Psychiatry*, 145, 1–10.
- Bridges, L., Frodi, A. M., Grolnick, W., & Spiegel, N. H. (1983). *Motivation and attachment: The relationship between maternal causality orientation, infant-mother attachment, and infant mastery motivation*. Unpublished manuscript. University of Rochester, Rochester, NY.

- 1 Burton, K. D., Lydon, J. E., D'Alessandro, D. U., & Koestner, R. (2006). The differential
3 effects of intrinsic and identified motivation on well-being and performance: Prospective,
experimental, and implicit approaches to self-determination theory. *Journal of
Personality and Social Psychology, 91*, 750–762.
- 5 Carver, C. S., & Baird, E. (1998). The American dream revisited: Is it what you want or why
you want it that matters? *Psychological Science, 9*, 289–292.
- 7 Carver, C. S., & Sheier, M. F. (1999). Themes and issues in the self-regulation of behavior.
In: R. S. Wyer, Jr. (Ed.), *Advances in social cognition* (Vol. 12, pp. 1–105). Mahwah, NJ:
Lawrence Erlbaum.
- 9 Chandler, C. L., & Connell, J. P. (1987). Children's intrinsic, extrinsic and internalized
motivation: A developmental study of behavioral regulation. *British Journal of
Developmental Psychology, 5*, 357–365.
- 11 Cleveland, E. S., & Reese, E. (2005). Maternal structure and autonomy support in
conversations about the past: Contributions to children's autobiographical memory.
13 *Developmental Psychology, 41*, 376–388.
- Cleveland, E. S., Reese, E., & Grolnick, W. S. (2007). Children's engagement and competence
15 in personal recollection: Effects of parents' reminiscing goals. *Journal of Experimental
Child Psychology, 96*, 131–149.
- 17 Curry, S., Wagner, E. H., & Grothaus, L. C. (1990). Intrinsic and extrinsic motiva-
tion for smoking cessation. *Journal of Consulting and Clinical Psychology, 58*,
310–316.
- 19 Davidov, M., & Grusec, J. E. (2006). Untangling the links of parental responsiveness to distress
and warmth to child outcomes. *Child Development, 77*, 44–58.
- 21 De Bilde, J., Vansteenkiste, M., & Lens, W. (2009). *Understanding the association between future
time perspective and self-regulated learning through the lens of self-determination theory*.
Unpublished manuscript. University of Leuven, Leuven, Belgium.
- 23 deCharms, 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.
- 25 Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum.
- Deci, E. L. (1992). On the nature and functions of motivation theories. *Psychological Science, 3*,
27 167–171.
- Deci, E. L., Eghrari, H., Patrick, B. C., & Leone, D. R. (1994). Facilitating internalization:
The self-determination theory perspective. *Journal of Personality, 62*, 119–142.
- 29 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,*
31 *125*, 627–668.
- Deci, E. L., & Ryan, R. M. (1985a). The general causality orientations scale: Self-determination
33 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.
- 35 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.
- 37 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
39 of a former eastern bloc country. *Personality and Social Psychology Bulletin, 27*,
930–942.

- 1 Dittmar, H. (2007). The costs of consumer culture and the “cage within”: The impact of the
material “good life” and “body perfect” ideals on individuals’ identity and well-being.
3 *Psychological Inquiry*, 18, 23–31.
- 5 Downie, M., Koestner, R., ElGeledi, S., & Cree, K. (2004). The impact of cultural
internalization and integration on well-being among tricultural individuals. *Personality
and Social Psychology Bulletin*, 30, 305–314.
- 7 Duriez, B., Soenens, B., & Vansteenkiste, M. (2008). The intergenerational transmission of
authoritarianism: The mediating role of parental goal promotion. *Journal of Research in
Personality*, 42, 622–642.
- 9 Eisenberger, R., & Cameron, J. (1996). Detrimental effects of reward: Reality of myth?
American Psychologist, 51, 1153–1166.
- 11 Elliot, A. J. (1999). Approach and avoidance motivation and achievement goals. *Educational
Psychologist*, 34, 169–189.
- 13 Elliot, A. J., & Sheldon, K. M. (1998). Avoidance personal goals and the personality-illness
relationship. *Journal of Personality and Social Psychology*, 75, 1282–1299.
- 15 Enzle, M. E., & Anderson, S. C. (1993). Surveillant intentions and intrinsic motivation. *Journal
of Personality and Social Psychology*, 64, 257–266.
- 17 Enzle, M. E., Wright, E. F., & Redondo, I. M. (1996). Cross-task generalization of intrinsic
motivation effects. *Canadian Journal of Behavioral Science*, 28, 19–26.
- 19 Erikson, E. H. (1968). *Identity: Youth and crisis*. New York: Norton.
- 21 Feather, N. T. (1992). Values, valences, expectations, and actions. *Journal of Social Issues*, 48,
109–124.
- 23 Flink, C., Boggiano, A. K., & Barrett, M. (1990). Controlling teaching strategies: Undermining
children’s self-determination and performance. *Journal of Personality and Social
Psychology*, 59, 916–924.
- 25 Fromm, E. (1976). *To have or to be?* New York: Harper & Row.
- 27 Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of
Organizational Behavior*, 26, 331–362.
- 29 Garbarino, J. (1975). The impact of anticipated reward upon cross-aged tutoring. *Journal of
Personality and Social Psychology*, 32, 421–428.
- 31 Gardner, W. L., Pickett, C. L., Jefferis, V., & Knowles, M. (2005). On the outside looking
in: Loneliness and social monitoring. *Personality and Social Psychology Bulletin*, 31,
1549–1560.
- 33 Gergen, K. J. (1991). *The saturated self: Dilemmas of identity in contemporary life*. New York:
Basic Books.
- 35 Goldstein, J. D., & Iso-Ahola, S. E. (2008). Determinants of parents’ sideline-rage emotions and
behaviors at youth soccer games. *Journal of Applied Social Psychology*, 38, 1442–1462.
- 37 Grolnick, W. S., Bridges, L., & Frodi, A. (1984). Maternal control style and the mastery
motivation of one-year-olds. *Infant Mental Health Journal*, 5, 72–82.
- 39 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.
- Grouzet, F. M. E., Kasser, T., Ahuvia, A., Miguel, J., Dols, F., Kim, Y., et al. (2005).
The structure of goal contents across 15 cultures. *Journal of Personality and Social
Psychology*, 89, 800–816.

- 1 Hagger, M. S., Chatzisarantis, N. L. D., Culverhouse, T., & Biddle, S. J. H. (2003). The process
3 by which perceived autonomy support in physical education promotes leisure-
time physical activity intentions and behavior: A trans-contextual model. *Journal of*
Educational Psychology, *95*, 784–795.
- 5 Harlow, H. F. (1953). Motivation as a factor in the acquisition of new responses. In:
J. S. Brown, et al. (Eds), *Current theory and research on motivation* (pp. 24–49). Lincoln:
University of Nebraska Press.
- 7 Harter, S. (1981). A new self-report scale of intrinsic vs. extrinsic orientation in the
classroom: Motivational and informational components. *Developmental Psychology*,
9, 300–312.
- 9 Hodgins, H., Yacko, H., & Gottlieb, E. (2006). Autonomy and nondefensiveness. *Motivation*
and Emotion, *30*, 283–293.
- 11 Hodgins, H. S., Brown, A. B., & Carver, B. (2007). Autonomy and control motivation and self-
esteem. *Self & Identity*, *6*, 189–208.
- 13 Hodgins, H. S., & Knee, C. R. (2002). The integrating self and conscious experience. In:
E. L. Deci & R. M. Ryan (Eds), *Handbook of self-determination research* (pp. 87–100).
Rochester, NY: University of Rochester Press.
- 15 Hodgins, H. S., Liebeskind, E., & Schwartz, W. (1996). Getting out of hot water: Facework in
social predicaments. *Journal of Personality and Social Psychology*, *71*, 300–314.
- 17 Houlfort, N., Koestner, R., Joussemet, M., Nantel-Vivier, A., & Leves, N. (2002). The impact
of performance-contingent rewards on perceived autonomy and competence. *Motivation*
and Emotion, *26*, 279–295.
- 19 Hull, C. L. (1943). *Principles of behavior: An introduction to behavior theory*. New York:
Appleton-Century-Crofts.
- 21 Hy, L. X., & Loevinger, J. (1996). *Measuring ego development* (2nd ed.). Mahwah, NJ: Erlbaum.
- 23 Ingledew, D. K., & Markland, D. (2008). The role of motives in exercise participation.
Psychology and Health, *23*, 807–828.
- 25 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, NE: University of Nebraska Press.
- 27 Iyengar, S. S., & Lepper, M. R. (1999). Rethinking the value of choice: A cultural per-
spective on intrinsic motivation. *Journal of Personality and Social Psychology*, *76*,
349–366.
- 29 Iyengar, S. S., & Lepper, M. R. (2000). When choice is demotivating: Can one desire too much
of a good thing? *Journal of Personality and Social Psychology*, *79*, 995–1006.
- 31 Jang, H. (2008). Supporting students' motivation, engagement, and learning during an
uninteresting activity. *Journal of Educational Psychology*, *100*, 798–811.
- 33 Jang, H., Reeve, J., & Deci, E. L. (in press). Engaging students in learning activities: It's not
autonomy support or structure, but autonomy support and structure. *Journal of*
Educational Psychology.
- 35 Jang, H., Reeve, J., Ryan, R. M., & Kim, A. (2009). Can self-determination theory explain what
underlies the productive, satisfying learning experiences of collectivistically oriented
37 Korean students? *Journal of Educational Psychology*, *101*, 644–661.
- Jordan, J. V. (1997). Do you believe that the concepts of self and autonomy are useful in
39 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.

- 1 Joussemet, M., Koestner, R., Lekes, N., & Houliort, N. (2004). Introducing uninteresting tasks
to children: A comparison of the effects of rewards and autonomy support. *Journal of*
3 *Personality, 72*, 141–169.
- Kahneman, D., Diener, E., & Schwarz, N. (1999). *Well-being: The foundations of hedonic*
5 *psychology*. New York: Russell Sage Foundation.
- Kanat-Maymon, M., & Assor, A. (2010). Perceived maternal control and responsiveness to
7 distress as predictors of young adults' empathic responses. *Personality and Social*
Psychology Bulletin, 36, 33–46.
- Karasek, R. (1979). Job demands, job decision latitude, and mental strain. *Administration*
9 *Science Quarterly, 24*, 285–307.
- Kasser, T. (2002). *The high price of materialism*. London: MIT Press.
- Kasser, T., & Ahuvia, A. C. (2002). Materialistic values and well-being in business students.
11 *European Journal of Social Psychology, 32*, 137–146.
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of
13 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
15 correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22,*
80–87.
- Kasser, T., & Ryan, R. M. (2001). Be careful what you wish for: Optimal functioning and the
17 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*
19 (pp. 116–131). Seattle: Hogrefe & Huber Publishers.
- Kasser, T., Ryan, R. M., Zax, M., & Sameroff, A. J. (1995). The relations of maternal and
21 social environments to late adolescents' materialistic and prosocial values. *Developmental*
Psychology, 31, 907–914.
- Kasser, V., & Ryan, R. M. (1999). The relation of psychological needs for autonomy and
23 relatedness to vitality, well-being, and mortality in a nursing home. *Journal of Applied*
Social Psychology, 29, 935–954.
- Katz, I., & Assor, A. (2007). When choice motivates and when it does not. *Educational*
25 *Psychology Review, 19*, 429–444.
- Kelly, A. C., Zuroff, D. C., Leybman, M. J., Martin, E. A., & Koestner, R. (2008). Satisfied
27 groups and satisfied members: Untangling the between- and within-groups effects of
need satisfaction. *Journal of Applied Developmental Psychology, 38*, 1805–1826.
- 29 Kim, Y., Kasser, T., & Lee, H. (2003). Self-concept, aspirations, and well-being in South Korea
and the United States. *Journal of Social Psychology, 143*, 277–290.
- 31 Kins, E., Beyers, W., Soenens, B., & Vansteenkiste, M. (2009). Patterns of home leaving and
subjective well-being in emerging adulthood: The role of motivational processes and
33 parental autonomy support. *Developmental Psychology, 45*, 1416–1429.
- Knee, C. R., & Zuckerman, M. (1996). Causality orientations and the disappearance of the
35 self-serving bias. *Journal of Research in Personality, 30*, 76–87.
- Koestner, R., Bernieri, F., & Zuckerman, M. (1992). Self-regulation and consistency
37 between attitudes, traits, and behaviors. *Personality and Social Psychology Bulletin,*
18, 52–59.
- 39 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.

- 1 Koestner, R., & Zuckerman, M. (1994). Causality orientations, failure, and achievement. *Journal of Personality, 62*, 321–346.
- 3 Krieger, L. (1998). What we're not telling law students – and lawyers – that they really need to know: Some thoughts-in-action toward revitalizing the profession from its roots. *Journal of Law and Health, 13*, 1–48.
- 5 La Guardia, J. G. (2009). Developing who I am: A self-determination theory approach to the establishment of healthy identities. *Educational Psychologist, 44*, 78–89.
- 7 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.
- 9
- 11 Levesque, C. S., & Pelletier, L. G. (2003). On the investigation of primed and chronic autonomous and heteronomous motivation orientations. *Personality and Social Psychology Bulletin, 29*, 1570–1584.
- 13 Luyckx, K., Vansteenkiste, M., Goossens, L., & Duriez, B. (2009). Basic need satisfaction and identity formation: Bridging self-determination theory and process-oriented identity research. *Journal of Counseling Psychology, 56*, 276–288.
- 15 Luyten, H., & Lens, W. (1981). The effect of earlier experience and reward contingencies on intrinsic motivation. *Motivation and Emotion, 5*, 25–36.
- 17 Lynch, M. F., La Guardia, J. G., & Ryan, R. M. (2009). On being yourself in different cultures: Ideal and actual self-concept, autonomy support and well-being in China, Russia and the United States. *The Journal of Positively Psychology, 4*, 290–304.
- 19 Maehr, M. (1976). Continuing motivation: Analysis of seldom considered educational outcome. *Review of Educational Research, 46*, 443–462.
- 21 Markland, D., Ryan, R. M., Tobin, V. J., & Rollnick, S. (2005). Motivational interviewing and self-determination theory. *Journal of Social and Clinical Psychology, 24*, 811–831.
- 23 Markland, D., & Tobin, V. J. (in press). Need support and behavioral regulations for exercise among exercise referral scheme clients: The mediating role of psychological need satisfaction. *Psychology of Sport and Exercise*.
- 25 Markus, H. R., & Kitayama, S. K. (2003). Models of agency: Sociocultural diversity in the construction of action. In: V. Murphy-Berman & J. J. Berman (Eds), *Nebraska symposium on motivation: Cross-cultural differences in perspectives on self* (Vol. 49, pp. 1–57). Lincoln, NE: University of Nebraska Press.
- 27
- 29 Mata, J., Silva, M. N., Vieira, P. N., Carraça, E. V., Andrade, A. M., Coutinho, S. R., et al. (2009). Motivational “spill-over” during weight control: Increased self-determination and exercise intrinsic motivation predict eating self-regulation. *Health Psychology, 28*, 709–716.
- 31
- 33 May, R. (1983). *The discovery of being*. New York: W. W. Norton & Company.
- 35 McGraw, K., & McCullers, J. (1979). Evidence of a detrimental effect of extrinsic incentives on breaking a mental set. *Journal of Experimental Social Psychology, 15*, 285–294.
- 37 McHoskey, J. (1999). Machiavellianism, intrinsic versus extrinsic goals, and social interest: A self-determination theory analysis. *Motivation and Emotion, 23*, 267–283.
- 39 Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change*. New York: Guilford Press.
- Milyavskaya, M., Gringas, I., Mageau, G. A., Koestner, R., Gagnon, H., Fang, J., et al. (2009). Balance across contexts: Importance of balanced need satisfaction across various life domains. *Personality and Social Psychology Bulletin, 35*, 1031–1045.

- 1 Moller, A. C., & Deci, E. L. (2009). Interpersonal control, dehumanization, and violence: A self-
determination theory perspective. *Group Processes & Intergroup Relations*, *13*, 41–53.
- 3 Moller, A. C., Deci, E. L., & Elliot, A. J. (in press). Person-level relatedness and the incremental
value of relating. *Personality and Social Psychology Bulletin*.
- 5 Moller, A. C., Deci, E. L., & Ryan, R. M. (2006). Choice and ego-depletion: The moderating
role of autonomy. *Personality and Social Psychology Bulletin*, *32*, 1024–1036.
- 7 Mouratidis, A., Vansteenkiste, M., Lens, W., & Sideridis, G. (2008). The motivating role of
positive feedback in sport and physical education: Evidence for a motivational model.
Journal of Sport & Exercise Psychology, *30*, 240–268.
- 9 Mouratidis, A., Vansteenkiste, M., Lens, W., & Sideridis, G. (2009). *Class-to-class variation in
vitality and intrinsic motivation in physical education as a function of the synergistic
interaction between need-supportive teaching and pupils' motivational orientations*.
Unpublished manuscript. University of Leuven, Leuven, Belgium.
- 11 Muraven, M., Gagné, M., & Rosman, H. (2008). Helpful self-control: Autonomy support,
vitality, and depletion. *Journal of Experimental Social Psychology*, *44*, 573–585.
- 13 Murray, H. A. (1938). *Explorations in personality*. New York: Oxford University Press.
- 15 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.
- 17 Neyrinck, B., Lens, W., Vansteenkiste, M., & Soenens, B. (in press). Updating Allport's and
Batson's framework of religious orientations: A refreshing look from the perspective of
self-determination theory and Wulff's cognitive model of approaches towards religions.
International Journal of the Scientific Study of Religion.
- 19 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.
- 21 Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009a). The path taken: Consequences of attaining
intrinsic and extrinsic aspirations in post-college life. *Journal of Research in Personality*,
23 43, 291–306.
- 25 Niemiec, C. P., Ryan, R. M., & Deci, E. L. (in press). Self-determination theory and the relation
of autonomy to self-regulatory processes and personality development. In: R. H. Hoyle
(Ed.), *Handbook of personality and self-regulation*. Malden, MA: Blackwell Publishing. **AU :4**
- 27 Niemiec, C. P., Ryan, R. M., Deci, E. L., & Williams, G. C. (2009b). Aspiring to physical
health: The role of aspirations for physical health in facilitating long-term tobacco
abstinence. *Patient Education and Counseling*, *74*, 250–257.
- 29 Patall, E. A., Cooper, H., & Robinson, C. (2008). The effects of choice on intrinsic motivation
and related outcomes: A meta-analysis of research findings. *Psychological Bulletin*, *134*,
31 270–300.
- 33 Pelletier, L. G., Fortier, M., 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.
- 35 Perls, F. S. (1973). *The gestalt approach and eyewitness to therapy*. Palo Alto, CA: Science and
Behavior Books.
- 37 Pfander, A. (1967). In: H. Spielberg (Trans.), *Phenomenology of willing and motivation*.
Evanston, IL: Northwestern University Press (Original work published, 1908).
- 39 Pittman, T. S., Emery, J., & Boggiano, A. K. (1982). Intrinsic and extrinsic motivational
orientations: Reward-induced changes in preference for complexity. *Journal of Personality
and Social Psychology*, *42*, 789–797.

- 1 Radel, R., Sarrazin, P., & Pelletier, L. (2009). Evidence of subliminally primed motivational
orientations: The effects of unconscious motivational processes on the performance of a
3 new motor task. *Journal of Sport & Exercise Psychology, 31*, 657–674.
- Ratelle, C. F., Guay, F., Vallerand, R. J., Larose, S., & Senécal, C. (2007). Autonomous,
5 controlled, and amotivated types of academic motivation: A person-oriented analysis.
Journal of Educational Psychology, 99, 734–746.
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how
7 they can become more autonomy supportive. *Educational Psychologist, 44*, 159–175.
- Reeve, J., & Deci, E. L. (1996). Elements of the competitive situation that affect intrinsic
motivation. *Personality and Social Psychology Bulletin, 22*, 24–33.
- 9 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
11 Bulletin, 26*, 419–435.
- Richins, M. L., & Dawson, S. (1992). A consumer values orientation for materialism and its
13 measurement: Measure development and validation. *Journal of Consumer Research, 19*,
303–316.
- Ricoeur, P. (1966). In: E. V. Kohak (Trans.), *Freedom and nature: The voluntary and the
15 involuntary*. New York: Harper & Row.
- Rohner, R. P. (2004). The parental “acceptance-rejection syndrome”: Universal correlates of
17 perceived rejection. *American Psychologist, 59*, 830–840.
- Roth, G., Assor, A., Niemiec, C. P., Ryan, R. M., & Deci, E. L. (2009). The emotional and
19 academic consequences of parental conditional regard: Comparing conditional positive
regard, conditional negative regard, and autonomy support as parenting practices.
Developmental Psychology, 45, 1119–1142.
- 21 Rotter, J. B. (1966). Generalized expectancies for internal versus external control of
reinforcement. *Psychological Monographs, 80*, Whole No. 609.
- 23 Rudy, D., Sheldon, K. M., Awong, T., & Tan, H. H. (2007). Autonomy, culture, and well-being:
The benefits of inclusive autonomy. *Journal of Research in Personality, 41*, 983–1007.
- 25 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.
- 27 Ryan, R. M. (1993). Agency and organization: Intrinsic motivation, autonomy and the self
in psychological development. In: J. Jacobs (Ed.), *Nebraska symposium on motivation:
29 Developmental perspectives on motivation* (Vol. 40, pp. 1–56). Lincoln, NE: University of
Nebraska Press.
- Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of
Personality, 63*, 397–427.
- 31 Ryan, R. M., Chirkov, V. I., Little, T. D., Sheldon, K. M., Timoshina, E., & Deci, E. L. (1999).
The American dream in Russia: Extrinsic aspirations and well-being in two cultures.
Personality and Social Psychology Bulletin, 25, 1509–1524.
- 33 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
35 Psychology, 57*, 749–761.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic
37 motivation, social development, and well-being. *American Psychologist, 55*, 68–78.
- Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic
39 dialectical perspective. In: E. L. Deci & R. M. Ryan (Eds), *Handbook of self-
determination research* (pp. 3–33). Rochester, NY: Rochester University Press.

- 1 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 &
3 T. Pyszczynski (Eds), *Handbook of experimental existential psychology* (pp. 449–479).
New York: Guilford Press.
- 5 Ryan, R. M., Deci, E. L., Grolnick, W. S., & La Guardia, J. G. (2006). The significance of
autonomy and autonomy support in psychological development and psychopathology.
In: D. Cicchetti & D. Cohen (Eds), *Developmental psychopathology: Theory and methods*
7 (2nd ed., Vol. 1, pp. 795–849). New York: Wiley.
- 9 Ryan, R. M., Huta, V., & Deci, E. L. (2008). Living well: A self-determination theory
perspective on eudaimonia. *Journal of Happiness Studies*, 9, 139–170.
- 11 Ryan, R. M., Koestner, R., & Deci, E. L. (1991). Varied forms of persistence: When free-choice
behavior is not intrinsically motivated. *Motivation and Emotion*, 15, 185–205.
- 13 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.
- 15 Ryan, R. M., Mims, V., & Koester, R. (1983). Relation of reward contingency and
interpersonal context to intrinsic motivation: A review and test using cognitive
evaluation theory. *Journal of Personality and Social Psychology*, 45, 736–750.
- 17 Ryan, R. M., Sheldon, K. M., Kasser, T., & Deci, E. L. (1996). All goals are not created
equal: An organismic perspective on the nature of goals and their regulation. In:
P. M. Gollwitzer & J. A. Bargh (Eds), *The psychology of action: Linking cognition and*
19 *motivation to behavior* (pp. 7–26). New York: Guilford.
- Sagiv, L., & Schwartz, S. H. (2000). Value priorities and subjective well-being: Direct relations
and congruity effects. *European Journal of Social Psychology*, 30, 177–198.
- 21 Schwartz, S. (1992). Universals in the content and structure of values: Theoretical advances and
experimental tests in 20 countries. In: M. Zanna (Ed.), *Advances in experimental social*
23 *psychology* (Vol. 25, pp. 1–65). New York: Academic Press.
- Schwartz, S. H. (2006). Cultural and individual value correlates of capitalism: A comparative
analysis. *Psychological Inquiry*, 18, 52–57.
- 25 Sebire, S. J., Standage, M., & Vansteenkiste, M. (2009). Exploring exercise goal content:
Intrinsic vs. extrinsic exercise goals, exercise outcomes, and psychological need
27 satisfaction. *Journal of Sport & Exercise Psychology*, 31, 189–210.
- Senko, C., & Harackiewicz, J. M. (2002). Performance goals: The moderating roles of
29 context and achievement orientation. *Journal of Experimental Social Psychology*, 38,
603–610.
- 31 Shafran, R., & Mansell, W. (2001). Perfectionism and psychopathology: A review of research
and treatment. *Clinical Psychology Review*, 21, 879–906.
- 33 Sheldon, K. M., Arndt, J., & Houser-Marko, L. (2003). In search of the organismic valuing
process: The human tendency to move towards beneficial goal choices. *Journal of*
Personality, 71, 835–869.
- 35 Sheldon, K. M., & Filak, V. (2008). Manipulating autonomy, competence and relatedness
support in a game-learning context: New evidence that all three needs matter. *British*
Journal of Social Psychology, 47, 267–283.
- 37 Sheldon, K. M., & Gunz, A. (in press). Psychological needs as basic motives, not just
experiential requirements. *Journal of Personality*.
- 39 Sheldon, K. M., & Krieger, L. (2004). Does law school undermine law students? Examining
changes in goals, values, and well-being. *Behavioral Sciences and the Law*, 22, 261–286.


- 1 Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need
satisfaction also affects well-being. *Journal of Personality and Social Psychology*, *91*,
3 331–341.
- Sheldon, K. M., Ryan, R. M., Deci, E. L., & Kasser, T. (2004). The independent effects of goal
5 contents and motives on well-being: It's both what you pursue and why you pursue it.
Personality and Social Psychology Bulletin, *30*, 475–486.
- 7 Sierens, E., Vansteenkiste, M., Goossens, L., Soenens, B., & Dochy, F. (2009). The interactive
effect of perceived teacher autonomy-support and structure in the prediction of self-
regulated learning. *British Journal of Educational Psychology*, *79*, 57–68.
- 9 Silk, J. S., Morris, A. S., Kanaya, T., & Steinberg, L. (2003). Psychological control and
autonomy granting: Opposite ends of a continuum or distinct constructs? *Journal of
Research on Adolescence*, *13*, 113–128.
- 11 Skinner, B. F. (1971). *Beyond freedom and dignity*. New York: Knopf.
- 13 Soenens, B., Berzonsky, M. D., Vansteenkiste, M., Beyers, W., & Goossens, L. (2005). Identity
styles and causality orientations: In search of the motivational underpinnings of the
identity exploration process. *European Journal of Personality*, *19*, 427–442.
- 15 Soenens, B., & Vansteenkiste, M. (in press-a). Theoretical upgrade of the concept of parental
psychological control: Proposing new insights on the basis of self-determination theory.
Developmental Review.
- 17 Soenens, B., & Vansteenkiste, M. (in press-b). On the congruence between the self and
identity: Identity development from a self-determination perspective. In: S. J. Schwartz,
19 K. Luyckx, & V. L. Vignoles (Eds), *Handbook of identity theory and research*. New York:
Springer.
- 21 Soenens, B., Vansteenkiste, M., Goossens, L., Duriez, B., & Niemiec, C. P. (2008). The
intervening role of relational aggression between psychological control and friendship
quality. *Social Development*, *17*, 661–681.
- 23 Soenens, B., Vansteenkiste, M., Lens, W., Luyckx, K., Goossens, L., Beyers, W., et al. (2007).
Conceptualizing parental autonomy support: Adolescent perceptions of promotion of
25 independence versus promotion of volitional functioning. *Developmental Psychology*, *43*,
633–646.
- 27 Soenens, B., Vansteenkiste, M., & Luyten, P. (in press). Towards a domain-specific approach to
the study of parental psychological control: Distinguishing between dependency-
oriented and achievement-oriented psychological control. *Journal of Personality*.
- 29 Soenens, B., Vansteenkiste, M., & Sierens, E. (2009). How are parental psychological control
and autonomy-support related? Naturally occurring profiles of psychological control
and two types of autonomy-support. *Journal of Marriage and Family*, *71*, 187–202.
- 31 Soenens, B., Vansteenkiste, M., Vandereycken, W., Luyten, P., Sierens, E., & Goossens, L.
(2008). Perceived parental psychological control and eating disordered symptoms:
33 Maladaptive perfectionism as a possible intervening variable. *Journal of Nervous and
Mental Disease*, *196*, 144–152.
- 35 Steger, M. F., Kashdan, T. B., & Oishi, S. (2008). Being good by doing good: Daily eudaimonic
activity and well-being. *Journal of Research in Personality*, *42*, 22–42.
- 37 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.
- 39 Stice, E. (2001). A prospective test of the dual-pathway model of bulimic pathology: Mediating
effects of dieting and negative affect. *Journal of Abnormal Psychology*, *110*, 124–155.

- 1 Tang, S. H., & Hall, V. C. (1995). The overjustification effect: A meta-analysis. *Applied*
2 *Cognitive Psychology*, 9, 365–404.
- 3 Thøgersen-Ntoumani, C., Ntoumanis, N., & Nikitaras, N. (in press). Unhealthy weight control
behaviours in adolescent girls: A process model based on self-determination theory.
4 *Psychology and Health*.
- 5 Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation.
In: M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 271–360).
6 New York: Academic Press.
- 7 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.
- 8 Van Boven, L., & Gilovich, T. (2003). To do or to have: That is the question. *Journal of*
9 *Personality and Social Psychology*, 85, 1193–1202.
- 10 Van den Broeck, A., Vansteenkiste, M., De Witte, H., & Lens, W. (2008). The role of basic need
11 satisfaction in explaining the relationships between demands, resources, well-being and
engagement. *Work & Stress*, 22, 277–294.
- 12 Van den Broeck, A., Vansteenkiste, M., De Witte, H., Lens, W., & Soenens, B. (in press).
Capturing autonomy, relatedness and competence: Construction and validation of a work
13 related need satisfaction scale. *Journal of Occupational and Organizational Psychology*.
- 14 Vandereycken, W., & Vansteenkiste, M. (2009). Let eating disorder patients decide: Providing
15 choice may reduce early drop-out from inpatient treatment. *European Eating Disorders*
16 *Review*, 17, 177–183.
- 17 Van Hiel, A., & Vansteenkiste, M. (2009). Ambitions fulfilled? The effects of intrinsic and
extrinsic goal attainment on older adults' ego-integrity and death attitudes. *International*
18 *Journal of Aging and Human Development*, 68, 27–51.
- 19 van Prooijen, J. (2009). Procedural justice as autonomy regulation. *Journal of Personality and*
20 *Social Psychology*, 96, 1166–1180.
- 21 Vansteenkiste, M., & Deci, E. L. (2003). Competitively contingent rewards and intrinsic
22 motivation: Can losers remain motivated? *Motivation and Emotion*, 27, 273–299.
- 23 Vansteenkiste, M., Duriez, B., Simons, J., & Soenens, B. (2006a). Materialistic values and
24 well-being among business students: Further evidence for their detrimental effect.
Journal of Applied Social Psychology, 36, 2892–2908.
- 25 Vansteenkiste, M., Lens, W., & Deci, E. L. (2006b). Intrinsic versus extrinsic goal contents in
26 self-determination theory: Another look at the quality of academic motivation.
Educational Psychologist, 41, 19–31.
- 27 Vansteenkiste, M., Lens, W., De Witte, S., De Witte, H., & Deci, E. L. (2004). The “why” and
28 “why not” of job search behavior: Their relation to searching, unemployment
experience, and well-being. *European Journal of Social Psychology*, 34, 345–363.
- 29 Vansteenkiste, M., Lens, W., De Witte, H., & Feather, N. T. (2005). Understanding
30 unemployed people's search behavior, unemployment experience and well-being: A
comparison of expectancy-value theory and self-determination theory. *British Journal of*
31 *Social Psychology*, 44, 1–20.
- 32 Vansteenkiste, M., Lens, W., Soenens, B., & Luyckx, K. (2006c). Autonomy and relatedness
33 among Chinese sojourners and applicants: Conflictual or independent predictors of
well-being and adjustment? *Motivation and Emotion*, 30, 273–282.
- 34 Vansteenkiste, M., Matos, L., Lens, W., & Soenens, B. (2007a). Understanding the impact
35 of intrinsic versus extrinsic goal framing on exercise performance: The conflicting role of
task and ego involvement. *Psychology of Sport and Exercise*, 8, 771–794.
- 36
37
38
39

- 1 Vansteenkiste, M., Mouratidis, A., & Lens, W. (in press). Fair play and well-being in soccer as a
function of pursuing performance-approach goals for autonomous and controlled
3 reasons. *Journal of Sport and Exercise Psychology*.
- 5 Vansteenkiste, M., Neyrinck, B., Niemiec, C. P., Soenens, B., De Witte, H., & Van den Broeck,
A. (2007b). 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.
- 7 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 &
9 M. Pugno (Eds), *Capabilities and happiness* (pp. 187–223). Oxford: Oxford University
Press.
- 11 Vansteenkiste, M., & Sheldon, K. M. (2006). ‘There is nothing more practical than a good
theory’: Integrating motivational interviewing and self-determination theory. *British
Journal of Clinical Psychology, 45*, 63–82.
- 13 Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational
profiles from a self-determination perspective: The quality of motivation matters.
Journal of Educational Psychology, 101, 671–688.
- 15 Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004a). Motivating
learning, performance, and persistence: The synergistic effects of intrinsic goal contents
17 and autonomy supportive contexts. *Journal of Personality and Social Psychology, 87*,
246–260.
- 19 Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., & Matos, L. (2005a). Examining
the motivational impact of intrinsic versus extrinsic goal framing and autonomy-
supportive versus internally controlling communication style on early adolescents’
21 academic achievement. *Child Development, 76*, 483–501.
- 23 Vansteenkiste, M., Simons, J., Lens, W., Soenens, B., Matos, L., & Lacante, M. (2004b).
“Less is sometimes more”: Goal-content matters. *Journal of Educational Psychology, 96*,
755–764.
- 25 Vansteenkiste, M., Simons, J., Soenens, B., & Lens, W. (2004c). How to become a persevering
exerciser? The importance of providing a clear, future intrinsic goal in an autonomy-
supportive manner. *Journal of Sport & Exercise Psychology, 26*, 232–249.
- 27 Vansteenkiste, M., Soenens, B., & Duriez, B. (2008a). Presenting a positive alternative
to materialistic strivings and the thin-ideal: Understanding the effects of
29 extrinsic relative to intrinsic goal pursuits. In: S. J. Lopez (Ed.), *Positive psychology:
Exploring the best in people* (Vol. 4, pp. 57–86). Westport, CT: Greenwood Publishing
Company.
- 31 Vansteenkiste, M., Timmermans, T., Lens, W., Soenens, B., & Van den Broeck, A. (2008b).
Does extrinsic goal framing enhance extrinsic goal oriented individuals’ learning
33 and performance? An experimental test of the match-perspective vs. self-determination
theory. *Journal of Educational Psychology, 100*, 387–397.
- 35 Vansteenkiste, M., Zhou, M., Lens, W., & Soenens, B. (2005b). Experiences of autonomy and
control among Chinese learners: Vitalizing or immobilizing? *Journal of Educational
Psychology, 97*, 468–483.
- 37 Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- 39 Waterman, A. S. (in press). Eudaimonic identity theory: Identity as self-discovery. In:
S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds), *Handbook of identity theory and
research*. New York: Springer.

- 1 Weinstein, N., & Ryan, R. M. (in press). When helping helps: Autonomous motivation for
prosocial behavior and its influence on well-being for the helper and recipient. *Journal of*
3 *Personality and Social Psychology*.
- White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological*
5 *Review*, 66, 297–333.
- Williams, G. C., Cox, E. M., Hedberg, V., & Deci, E. L. (2000). Extrinsic life goals and health
risk behaviors in adolescents. *Journal of Applied Social Psychology*, 30, 1756–1771.
- 7 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*
9 *Psychology*, 70, 767–779.
- Williams, G. C., Niemiec, C. P., Patrick, H., Ryan, R. M., & Deci, E. L. (2009a). The
importance of supporting autonomy and perceived competence in facilitating long-term
11 tobacco abstinence. *Annals of Behavioral Medicine*, 37, 315–324.
- Williams, G. C., Patrick, H., Niemiec, C. P., Williams, L. K., Divine, G., Lafata, J. E., et al.
13 (2009b). Reducing the health risks of diabetes: How self-determination theory may help
improve medication adherence and quality of life. *The Diabetes Educator*, 35, 484–492.
- 15 Wilson, P. M., Rogers, W. T., Rodgers, W. M., & Wild, T. C. (2006). The psychological need
satisfaction in exercise scale. *Journal of Sport & Exercise Psychology*, 28, 231–251.
- 17 Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-
differences metric. *Journal of Personality and Social Psychology*, 77, 1271–1288.
- 19
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