

Reflections on Self-Determination Theory

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Self-determination theory (SDT; Deci & Ryan, 2008) has led to much research over the past 25 years or so. The present collection of articles in this special issue attests to that. In this last article, we present a short overview of issues that cut across these papers as well as make recommendations for future research. We believe that the future is quite bright for SDT.

Keywords: intrinsic motivation, extrinsic motivation, amotivation, self-determination, motivational outcomes

The present collection of articles in this special issue on self-determination theory (SDT) reflects the quality and creativity of the research conducted by Canadian motivation researchers. In this concluding article, we make some general comments that underscore common elements in these articles. Furthermore, we highlight some issues that may not have attracted researchers' attention but would appear to represent worthwhile future research directions.

The Heuristic Quality of SDT

A first comment that originates from the present set of articles is that SDT clearly represents a theory with great heuristic power. Indeed, it can be seen how a few key basic theoretical principles help organise and understand motivational processes, determinants, and outcomes in a variety of life contexts. Findings reported in these articles underscore that the core motivational processes posited by SDT operate in a similar fashion across areas as diverse as parenting, education, work, relationships, physical activity, health, environmental issues, and psychotherapy. For instance, findings in all articles underscore the fact that environments that provide autonomy support lead to qualitatively superior forms of motivation characterised by high levels of self-determination (i.e., intrinsic motivation and identified regulation) that, in turn, are conducive to more adaptive cognitive, affective, and behavioural outcomes.

It should also be noted that the findings reviewed are quite robust as they were obtained through a variety of methodological designs (experimental, correlational, prospective, and longitudi-

nal), methods (paper-pencil, response latencies, observational, informant), and statistical analyses (analyses of variance, structural equation modeling, cluster analyses, etc.). That similar findings have been consistently obtained across a host of domains and outcomes, in line with the theoretical tenets of SDT, is a testament of the breadth of the theory as well as its internal, external, and ecological validity.

The Fundamental Role of the Environment as a Determinant of Motivation

While the theory has gone through a number of refinements over the years (e.g., Deci, 1975, 1980; Deci & Ryan, 1980, 1985, 1991, 2000, 2008), the major emphasis on the role of the dialectic between the person and the environment in the satisfaction of the major psychological needs has remained. It should be underscored that in SDT, it is postulated that it is not the environment per se that matters, but rather what it means functionally in terms of supporting people's psychological needs. Thus, to the extent that the environment allows one to experience feelings of competence, autonomy, and relatedness, the person's motivation toward a given task will be optimal. Of interest is that researchers (Sheldon & Niemiec, 2006) have shown that optimal outcomes are attained when all three needs are balanced (i.e., equally satisfied). However, little research has focussed on the motivational consequences of the thwarting of one or more needs (see Deci & Ryan, 2008). Future research on this issue might prove important.

Over the years, the number of social factors that have been found to affect people's needs and, in turn, motivation has been growing and varies from rewards, to deadlines, to positive and negative feedback (for reviews, see Deci & Ryan, 1985, 2000; Vallerand, 1997). One should keep in mind, however, that other people are at the very heart of such effects. From the fitness instructor, to the work supervisor or teacher, how other people behave toward us has tremendous impact on our needs being satisfied and, in turn, on our motivation being optimal or not. One of the key interpersonal dimensions studied is autonomy

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support. *Autonomy support* can be defined as the active support of the person's capacity to be self-initiating and autonomous (Ryan & Deci, 2000). Much research has shown that autonomy support leads to self-determined forms of motivation (e.g., for reviews, see Deci & Ryan, 2000; Mageau & Vallerand, 2003; Reeve, 2002; Vallerand, 1997). While most papers in this special issue review research on autonomy support in a variety of settings, the paper by Joussemet, Landry and Koestner (2008) underscores its pivotal role in parenting. Of additional interest, Joussemet et al. also propose, and empirically show, that parent's implicit beliefs about organismic development, or "the extent to which their child's development will unfold naturally" represents an important determinant of parental autonomy support. That construct would appear to apply to other fields as well (e.g., teaching, coaching). Thus, future research on the application of this construct in parenting and other life domains would appear in order.

The articles by La Guardia and Patrick (2008) on close relationships and by Ryan and Deci (2008) on psychotherapy deserve special attention as they highlight the role of "relatedness support" in motivation. The paper of La Guardia and Patrick underscores the fact that our relationships with significant others represent a formidable opportunity to fulfill our psychological needs, not only through the caring they provide us, but also through the care we provide others (see Deci et al., 2006). Furthermore, we are reminded that close relationships are dynamic in nature and cannot be reduced to a static attachment style. We behave differently toward others as a function of the situation and who the other person is. Similarly, the Ryan and Deci paper underscores that, in addition to autonomy support, relatedness support may play a key role in the promotion of change and growth in therapeutic settings. While they are not very explicit about it, it can be speculated that if the therapeutic alliance leads to relatedness satisfaction, the message and values transmitted by the therapist may be more readily internalised by the client. Furthermore, to the extent that the therapist also supports the client's autonomy, such internalization will be autonomous in nature, thereby leading to positive and long-lasting changes in the client. The need for relatedness has been less studied in past research than the other needs. It is thus not surprising that the authors of the present collection of articles have devoted less attention to it. However, because it may play an important role in a variety of processes, we predict that the need for relatedness will be the focus of much research in the years to come.

Another issue for future research may rest on the functional role of situational factors as colored by the broader picture of a given social context. For example, being criticised by a teacher with whom one connects is not the same as being criticised by a teacher we do not like. Research supports this hypothesis. For instance, Pallak, Costomiris, Sroka, and Pittman (1982) showed that good-player awards were interpreted as conveying competence information and therefore increased situational intrinsic motivation when offered to children in schools where such rewards were regularly used. However, awards were perceived as being controlling, and thus decreased situational intrinsic motivation, when presented to children in schools where they were not typically used. This interactive position is also in line with that proposed by Gagné and Forest (2008) who posit that compensation systems may affect employees' motivation dif-

ferently as a function of the organisational culture inherent in a company. To the effect that social factors and motivational orientations at higher levels affect motivational processes at lower levels, we suggest that contextual elements (or more permanent fixtures in a given life domain, such as education) may serve to affect the meaning of situational (or more temporary) factors and thus their effects on motivation. Future research on this issue would appear particularly important to provide better prediction of the impact of social factors on motivation.

If a specific context may colour the meaning of a given situational factor, then one's contextual motivation (or one's general motivational orientation in a given life domain) may also do so. This could represent an interesting alternative to what Pelletier and Sharp (2008) propose in their article. Pelletier and Sharp propose that tailoring messages as a function of the stages of behavioural change and framing these messages in line with intrinsic rather than extrinsic goals may facilitate the internalization of behaviours and the development of self-determined motivation. In opposition to this proposition, research on persuasion and attitude change suggests that the impact of certain messages may be more effective as a function of the person's underlying characteristics (e.g., their motivational orientation). One is reminded of the work of Koestner, Losier, Vallerand, and Carducci (1996; for a review, see Koestner & Losier, 2002) who showed that highly introjected individuals tend to be more persuaded by peripheral factors (Petty & Cacioppo, 1986) that are unrelated to the issue at hand than intrinsically motivated individuals. In line with such research, future research could examine if messages framed as a function of the person's motivational orientation (i.e., intrinsic vs. extrinsic) are more effective than messages framed only in terms of intrinsic goals. Future research on these issues would appear important for both theoretical and applied reasons.

A final issue on the determinants of motivational processes pertains to nonconscious processes. Over the past 15 years, much research has looked at the role of situational nonconscious factors as determinants of behaviour (see Bargh, 2007b). Nonconscious factors refer to processes that take place out of awareness (Bargh, 2007a). More recently, research has looked at the role of such factors as a trigger of motivational processes and goal pursuit (e.g., Dijksterhuis, Chartrand, & Aarts, 2007). The article of Levesque and Copeland (2008) presents an overview of such research as it pertains to SDT. Research reveals that intrinsic motivation and extrinsic motivation (i.e., external regulation) can be primed outside of awareness (Levesque & Pelletier, 2003). Other research has also shown that identified regulation can also be primed nonconsciously (Burton, Lydon, d'Allessandro, & Koestner, 2006). Of additional interest is the research of Ratelle, Baldwin, and Vallerand (2005, Study 1), which has shown that one of the processes posited by SDT to undermine intrinsic motivation, namely a loss of autonomy, could be induced through the repeated presentation of controlling messages presented outside of awareness. Future research is needed to better understand the implication of such findings for a humanistic theory such as SDT for which the "here and now" and awareness would appear to be rather important.

Motivation Matters: The Fundamental Role of Motivation in Outcomes

One of the key postulates from SDT is that motivation varies in kind, and the most self-determined types of motivation lead to the most adaptive outcomes. Thus, if we are to understand motivational outcomes, we need to go beyond a focus on motivational quantity (i.e., high levels of motivation) and take into consideration the quality of motivation (i.e., the presence or absence of self-determined forms of motivation, such as intrinsic motivation and integrated and identified regulations). As has been made clear in this collection of papers, the most positive outcomes are derived from the self-determined types of motivation (i.e., intrinsic motivation, integrated and identified regulation), while the less self-determined forms of motivation (introjected and external regulation) are either unrelated or negatively related to adaptive outcomes. Finally, amotivation (or the lack of motivation) has been systematically and positively related to maladaptive outcomes. These findings have been obtained repeatedly (for reviews, see Vallerand, 1997, 2007; Vallerand & Ratelle, 2002) and all papers of this special issue make that point very clear with respect to a number of different outcomes.

The present articles lead to a number of points that should help us make more refined and precise hypotheses with respect to the impact of motivation on outcomes. First, one should take into consideration the nature of the task in making predictions regarding which type of motivation has the most positive impact on outcomes. More than 10 years ago, Vallerand (1997) posited that when the task is interesting, intrinsic motivation should lead to the most positive outcomes. However, when the task is less interesting (or even dull), intrinsic motivation becomes less relevant and the most self-determined forms of extrinsic motivation (i.e., integrated and identified regulation) should then be more pertinent and lead to the most positive outcomes. The research reviewed by Wilson, Mack, and Grattan (2008) in the realm of exercise tends to support this hypothesis.

A second point is that when assessing motivation at the contextual level (i.e., one's usual motivation in a specific life domain), then it might be useful to look at the configuration of the various types of motivation. Indeed, people may endorse more than just one type of motivation when engaging in an activity over time. The article by Guay, Ratelle, and Chantal (2008) makes this point very explicit. These authors looked at the relationship between motivation and an understudied outcome, namely school performance. They report that, typically, motivational configurations that involve high levels of self-determined motivation (even in the presence of some less self-determined forms of motivation) lead to high levels of performance. One interesting finding from their work is that the nature of the motivational configurations appears to depend, at least in part, on the prevailing context. Thus, while a true self-determined motivational profile (high self-determined forms of motivation and low levels of non-self-determined forms of motivation) was obtained with university students, it was not obtained with high school students who study in a more controlling context (where their attendance is mandated and they have to take certain courses). Future research is needed to more clearly test the role of the environment in determining the content of motivational clusters and their consequences.

A third issue related to the preceding pertains to how best combine the scores of the various motivational subscales into one score. Such a score is particularly useful when conducting structural equation modeling analyses because it reduces the number of constructs that one includes in the model. Several approaches to combining the subscale scores have been proposed and used in the literature. The most often used refers to the relative autonomy index (Ryan & Connell, 1989; also called the self-determination index; Vallerand, 1997). This index is obtained by multiplying each subscale score by a given weight determined as a function of the construct's placement on the self-determination continuum. Thus, intrinsic motivation is the highest form of self-determined motivation and is given a weight of +3, integrated regulation +2, identified regulation +1, introjected regulation -1, external regulation -2, and amotivation -3. Then one adds all products. The higher the score, the more self-determined the motivation. While such an index has been useful, one should consider that it reflects the theoretical proposition of SDT and may not always account for the role of the inherent context or the activity in determining which type of motivation becomes optimal. For instance, the work of Ratelle et al. (2007) on clusters in education showed that the most optimal cluster in high school was one combining high levels of both self-determined and non-self-determined forms of motivation (excluding amotivation). Similarly, as discussed previously, research reveals that when the activity is not interesting, the most positive predictor of positive outcome is integrated or identified regulation, and not intrinsic motivation (e.g., Koestner et al., 1996). Clearly, the index does not take into consideration these deviations from the theoretical model. We believe that future research is needed to address this issue. Such research should prove very useful both from theoretical and methodological perspectives.

A fourth issue with respect to motivational outcomes is that some outcomes may interact with one another as was shown in the Miquelon and Vallerand (2008) paper. Specifically, these authors showed that eudaimonic well-being (well-being derived from one's self-growth or self-realisation) that results from autonomous forms of motivation positively contributes to one's physical health. In other words, mental health can contribute to physical health and self-determined motivation triggers this positive interaction. In line with a holistic perspective, it appears that when motivated by self-determined (or autonomous) forms of motivation all systems of the person are fully integrated and thus may positively contribute to each other. Future research is needed to test this hypothesis more directly.

A final issue that deserves attention with respect to motivational outcomes is the majority of the research reported in this collection of articles is correlational in nature. Indeed, very little research has used an experimental design. It is therefore rather difficult to conclude that motivation causes outcomes. Using an experimental design, early research by Amabile (1985) showed that extrinsic motivation (i.e., external regulation) can undermine creativity relative to an intrinsic motivation condition. However, very little research has manipulated conditions to compare the impact of other types of extrinsic motivation such as identified and introjected regulation with intrinsic motivation (for an exception, see Burton et al., 2006). Such experimental research is badly needed.

The Issue of Motivational Change

The issue of how motivation changes over time is a crucial one. Indeed, if motivation leads to important outcomes, then changing suboptimal forms of motivation into more self-determined ones should allow people to experience more adaptive outcomes and derive a more meaningful life. This issue was addressed in Ryan and Deci's (2008) article on psychotherapy. These authors proposed that an environment that supports one's autonomy facilitated changes toward a more self-determined motivation. While the data support their interpretation, how exactly changes in motivation take place over time at the microlevel is not explicitly mentioned. Recent research in sports (Blanchard, Mask, Vallerand, de la Sablonnière, & Provencher, 2007), exercise (Lavigne et al., in press), and education (Lavigne & Vallerand, 2008), has shown that enduring changes in motivation takes place through small changes happening at the situational level and that are internalised on a number of occasions at the contextual level. For example, athletes who experience success at one point in time, typically experience self-determined forms of motivation at that moment (i.e., situational motivation), that in turn, initiate the internalization of self-determined reasons to engage in their sport in general (or contextual self-determined motivation). When repeated several times, such instances of small positive impact of situational motivation on contextual motivation leads to gradual changes that become internalised. Thus, it appears that motivational change is not an all or nothing process but rather something that takes place through a number of successful interactions with the environment that are repeatedly internalised in the self.

Another issue related to motivational change deals with the movement toward more self-determined forms of motivation. Because of the placement of the different types of motivation on the self-determined continuum, it is often believed that motivational changes take place from one type of motivation to the next on the continuum. That is, it is often thought necessary to move from, for instance, external to introjected regulation to become identified regulated (and thus, it would be impossible to move directly from external to identified regulation). While SDT posits that one can move from one type of motivation to any other without going through such stages, very little data exist on this issue. Thus, while some evidence seems to indicate a developmental trend toward higher forms of autonomous motivation (Chandler & Connell, 1987; Sheldon, Houser-Marko, & Kasser, 2006), it is still not clear how such development operates. Clearly future research is needed on this issue.

Finally, it should be underscored that in research, the methodological decisions and paradigms used have an important bearing on the type of knowledge that develops. For instance, early research on the impact of situational factors (e.g., rewards, deadlines, feedback, etc.) on intrinsic motivation (e.g., Deci, 1971) was conducted in the laboratory using experimental designs and novel tasks (to control for individual differences with respect to the activity). Because novel tasks were used and that motivation was typically assessed only once, such a paradigm allowed researchers to study the acquisition of intrinsic motivation. Subsequent research conducted in the field mostly used correlational designs (e.g., Vallerand, Fortier, & Guay, 1997) and mostly looked at how aspects of the environment correlate with the different types of motivation for activities engaged in on a regular basis. Because

typically, no experimental designs were used and that people's contextual motivation (or usual motivation in a given life domain) was assessed only once, such research is informative with respect to the maintenance of motivation. Although, there have been exceptions, one can see that these two research paradigms have not informed us much on the factors that may lead to motivational change. Future research using a variety of methodological designs geared toward the assessment of change (e.g., experimental designs using tasks on which people already have some preexisting motivation; multiple assessments of motivation in the field over time) is needed to have a better understanding of how motivation changes over time.

Conclusions

As a final comment, we wish to acknowledge that several other Canadian researchers have made significant advances to the theory. Thus, Valerie Chirkov, Fred Grouzet and Michelle Downie all explored SDT in the context of cultural internalization. Caroline Sénécal, Genevieve Mageau, Cam Wild, Nathalie Rinfret, Kim Noels, and Nathalie Houffort explored the relation of autonomy-supportive environments to well-being in diverse contexts such as work, second-language acquisition, and therapy. Michelle Fortier, Catherine Amiot, Céline Blanchard, Stéphane Perreault, Patrick Gaudreau, and Yves Chantal tested SDT processes in the realms of sport, exercise, and health. Gaëtan Losier and Brian O'Connor studied SDT processes with the aging population. Finally, Isabelle Green-Demers and Lisa Legault recently explored whether SDT can help to understand prejudice processes.

In sum, contemporary motivation research is vibrant and nowhere is it more evident than with respect to SDT. SDT allows us to not only better understand human processes in a number of areas (education, work, leisure activities, parenting, etc.) but also to guide applications and interventions to ameliorate the human condition. Indeed, when one integrates the motivational determinants and consequences in one unified causal sequence (see Grouzet, Vallerand, Thill, & Provencher, 2004; Vallerand et al., 1997; Vallerand & Losier, 1999), we have the blueprint for powerful interventions. Such interventions represent another neglected area in which future research would appear quite promising.

Résumé

La théorie de l'autodétermination, ou la TAD (Deci et Ryan, 2008), a donné lieu à une multitude de recherches au cours des quelque 25 dernières années, comme en témoignent les articles contenus dans la présente livraison spéciale. Le dernier article contient un bref aperçu des numéros qui abordent des sujets connexes ainsi que des propositions pour d'éventuelles recherches. L'avenir de la TAD s'annonce très prometteur.

Mots-clés : motivation intrinsèque, motivation extrinsèque, amotivation, autodétermination, conséquences motivationnelles

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Correction to Deci and Ryan (2008)

In the article "Facilitating Optimal Motivation and Psychological Well-Being Across Life's Domains" by Edward L. Deci and Richard M. Ryan, published in the February 2008 issue of *Canadian Psychology* (Vol. 49, No. 1, pp. 14–23), Figure 1 on page 17 was incorrect. The correct figure is printed below.

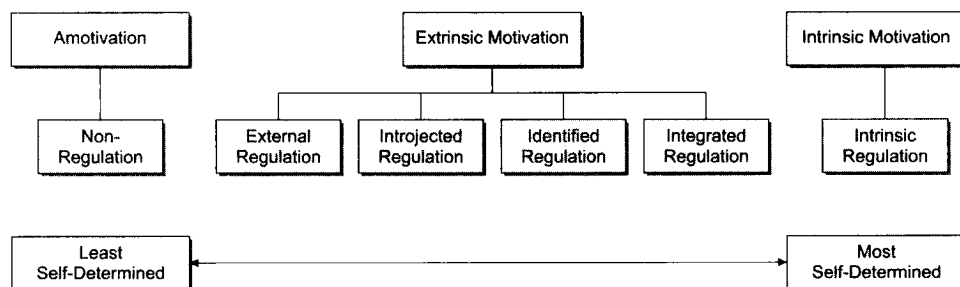


Figure 1. The types of motivation and regulation within self-determination theory, along with their placement along the continuum of relative self-determination.

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