
Deci and Ryan's Self-Determination Theory: A View from the Hierarchical Model of Intrinsic and Extrinsic Motivation

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Notes

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Deci and Ryan's Self-Determination Theory: A View From the Hierarchical Model of Intrinsic and Extrinsic Motivation

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Self-determination theory (SDT) has gone through several revisions over the years (Deci, 1975; Deci & Ryan, 1980; Deci & Ryan, 1985; Deci & Ryan, 1991). In the target article, Deci and Ryan present the most recent version of SDT. The authors make a number of important points and it is impossible to discuss them all here. Because there is a fairly high level of agreement between SDT and my own position presented more fully in the Hierarchical Model of intrinsic and extrinsic motivation (Vallerand, 1997; Vallerand & Ratelle, in press), I therefore focus on certain elements of disagreement between the two perspectives or issues that deserve further treatment. Thus, I focus on four main points:

1. The importance of a hierarchical structure of motivational processes.
2. The role of psychological needs in the motivational sequence.
3. Individual differences in needs.
4. The different roles of the need for relatedness.

However, before discussing these various issues I first briefly present the Hierarchical Model of Intrinsic and Extrinsic Motivation.

A Quick Overview of the Hierarchical Model

The model takes into consideration the different types of motivation (intrinsic and extrinsic) at three levels of generality, how these various motivations are related, as well as the determinants and consequences of these motivational representations. The model appears in Figure 1.

Several elements deserve our attention. First, the model posits that we must consider motivation from a multidimensional perspective. Thus, we agree with Deci and Ryan that it is not sufficient to distinguish between intrinsic and extrinsic motivation in a dichotomy. Rather, we must consider these constructs on a continuum in which different types of intrinsic and extrinsic motivation range from a high to a low level of self-determination. These constructs are: intrinsic motivation to know, to accomplish, and to experience stimulation (see Vallerand et al., 1992, 1993 on the three types of intrinsic motivation), integrated, identified, introjected, and external regulation, and finally amotivation (or the relative absence of motivation; see Deci & Ryan, 1985). Much research now supports the existence of such a continuum (see Vallerand, 1997 for a review).

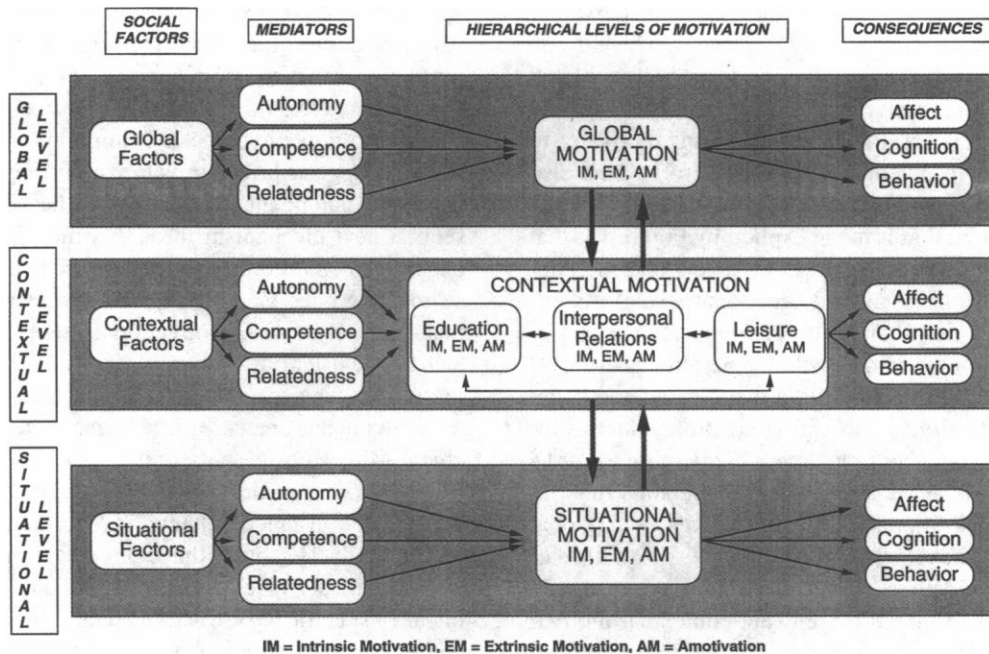


Figure 1. *The Hierarchical Model of Intrinsic and Extrinsic Motivation. From Toward a Hierarchical Model of Intrinsic and Extrinsic Motivation, by R. J. Vallerand, 1995, June. A theory/review paper presented at the Canadian Psychology Association annual conference, Charlottetown, Prince Edward Island, Canada.*

A second premise of the model is that intrinsic and extrinsic motivation, and amotivation take place within the individual at three hierarchical levels of generality. These levels are the global (or personality), contextual (or life domain), and situational (or state) levels. The global motivation refers to a broad disposition to engage in activities with an intrinsic or extrinsic orientation. It sits on top of the motivational hierarchy and refers loosely to what Deci and Ryan call “causality orientations.” Contextual motivation, on the other hand, refers to motivational orientations (or “domain-specific regulatory styles” in SDT) that are specific to various contexts such as education, leisure, and interpersonal relationships (the three most important life contexts for college students, see Blais, Vallerand, Gagnon, Brière, & Pelletier, 1990). This second level of generality sits at the intermediate level of generality. Finally, situational motivation refers to the last level of generality. It refers to the here and now of motivation (or state motivation). A third important element of the model focuses on motivational determinants (see the left-hand side of Figure 1). Several different aspects dealing with motivational determinants need to be underscored. First, motivation results from social factors at each of the three levels of generality. Thus, situational factors can affect situational motivation, contextual factors can affect contextual motivation, and finally global factors can affect global motivation. Second, the impact of social factors on motivation is proposed to be mediated by perceptions of competence, autonomy, and relatedness (or “need satisfaction” in

SDT) at each of the three levels. Thus, I agree with Deci and Ryan on the importance of the satisfaction of the three needs for self-determined motivation (engaging in activities and tasks as a function of intrinsic motivation and self-determined extrinsic motivation) to flourish. However, although SDT posits that these needs are innate and universal, the jury is still out on this issue.

A third aspect dealing with the determinants of motivation is that motivation is also influenced by the motivational dynamics involving the relations among motivation at the three levels of generality. One such type of effect involves a top-down effect from motivation at a higher level in the hierarchy on motivation at the next lower level in the hierarchy (see the downward arrows in Figure 1). Another type of motivational dynamics involves a recursive relationship (or bottom-up effect) between motivation at the lower level in the hierarchy that over time can have some feedback effect on motivation at the next higher level (see the upward arrows in the center of Figure 1). A final type of motivational dynamics refers to the interplay among the different types of contextual motivation (see the sideways arrows in the center of Figure 1). As I show, such an interplay among the contextual motivations may lead to compensation effects.

A final element of the model is that motivation produces psychological outcomes. This dimension of the model can be subdivided into four aspects. The first is that these motivational outcomes can be cognitive, affective, and behavioral in nature (see the right side of

Figure 1). The second point is that intrinsic motivation produces the most positive consequences, whereas certain types of extrinsic motivation (especially external regulation) and amotivation produce the most negative ones. Thus, it is not sufficient to be highly motivated to derive positive outcomes from our efforts. One also needs to be motivated in a self-determined fashion. The third point that is made explicit by Figure 1 is that consequences take place at three levels of generality (the global, contextual, and situational levels). As implied by the right-hand side of Figure 1, the consequences are of the same level of generality as the level of generality of the motivation that engendered them. More specifically, situational motivation induces situational consequences (e.g., levels of attention toward a particular task at a specific time), contextual motivation produces contextual consequences, and global motivation leads to global consequences (e.g., life satisfaction). Of course, contextual consequences should be mainly determined by relevant contextual motivations. Thus, education-related outcomes (e.g., satisfaction toward education) should be the result of motivation toward education and not of motivation toward leisure activities.

On the Importance of a Hierarchical Structure of Motivational Processes

In their presentation of SDT, Deci and Ryan (this issue) propose that motivational orientations exist at least at two levels of generality, namely the causality-orientation and the domain-specific levels. However, they don't indicate how these motivational representations are formerly integrated into a broader scheme that involves situational (or state) motivation. The Hierarchical Model of intrinsic and extrinsic motivation proposes such an integration. As noted previously, the model allows us to integrate motivational representations at three levels of a hierarchy, the global, contextual, and situational levels. Recent research (e.g., Vallerand, Guay, & Blanchard, 2000) supports this three-level hierarchy of motivation. It appears that the three levels of generality account best for the data and in the order proposed by the model. Of additional importance is the fact that the model proposes the nature and the functions of the relationships among the different motivational representations. First, there is a top-down effect from motivation at a higher level in the hierarchy on motivation at the next lower level in the hierarchy. Global motivation, for example, is expected to influence contextual motivation (in the education, leisure, interpersonal relations and other contexts). Thus, to the extent that someone is intrinsically motivated at the global (or personality) level, that person is likely to also be intrinsically motivated in these various life contexts. The top-down effect also

applies to the contextual motivation-situational motivation relation. Much empirical support exists for the top-down effect (see Vallerand, 1997; Vallerand & Rousseau, *in press*).

The top-down hypothesis is important not only because it suggests how motivation at different levels of generality can be integrated, but also because it represents a new mechanism through which intrinsic and extrinsic motivation can be influenced. Previous research (e.g., see Bargh & Barndollar, 1996) reveals that relatively stable motivational representations of achievement and affiliation can influence situational motivation when primed in laboratory settings, even if the individual is unaware of such an effect. The Hierarchical Model posits that similar types of effects can take place with respect to intrinsic and extrinsic motivation. For instance, Chantal, Guay, and Vallerand (2000, Study 1) showed that contextual motivation toward leisure activities predicted situational motivation toward a specific leisure activity 3 months later. As hypothesized, individuals who had the most self-determined contextual motivation toward leisure displayed the most self-determined situational motivation toward the leisure activity. Of additional interest is that the top-down effect can be triggered by the mere mention of some links between the activity being engaged in and the relevant contextual motivation. Thus, Chantal et al. (2000, Study 2) showed that when a word-completion task was presented to some participants as a game, situational motivation toward the activity was predicted by leisure contextual motivation. However, when the same task was presented to other participants as an exercise in French (a common educational task for French-Canadian students), situational motivation resulted from contextual motivation toward education and not that toward leisure.

A second type of effects involving the different levels of motivation refers to the recursive effect from a lower level to the next higher level in the hierarchy. For example, the model proposes, that repeatedly experiencing low levels of intrinsic motivation in the classroom at the situational level is likely to have a negative feedback effect leading to a decrease in contextual intrinsic motivation toward school in general. Empirical support has been provided for this postulate. In a first study with basketball players, Blanchard, Vallerand, and Provencher (2000a, Study 1) assessed contextual motivation toward basketball before a tournament, as well as situational motivation and contextual sport motivation after each of the two games of the tournament. Finally, contextual motivation was assessed 10 days after the tournament. Results revealed that situational motivation had a recursive bottom-up effect on contextual motivation toward basketball after each of the two games, as well as 10 days after the tournament. These results have been replicated over a complete season (Blanchard et al., 2000a, Study 2). Thus,

changes in contextual motivation that take place over time may be explained through the repeated experiences of situational motivation. Similar bottom-up effects are expected to take place from global motivation to contextual motivation.

So far, I have shown how contextual and situational motivation can influence each other through top-down and recursive (bottom-up) effects. However, little attention has been devoted to the interplay among the different contextual motivations. Of significant interest is how these motivations can influence each other through the phenomenon of motivational compensation. From the model's perspective, losses in self-determined motivation in one context (e.g., education) can lead a person to compensate in another context (e.g., leisure) by becoming more intrinsically motivated there. It is hypothesized that such a phenomenon allows individuals to restore (or keep) their global motivation at a certain (self-determined) level. This runs contrary to SDT that posits that a loss in need satisfaction and motivation is compensated by engaging in activities that promote non-self-determined needs and outcomes. As Deci and Ryan put it: "compensatory processes are expected to result ... in goal processes and contents that are associated with less than optimal performance and well-being" (this issue).

Results from a preliminary study by Blanchard, Vallerand, and Provencher (2000b) support the position from the Hierarchical Model. In this study, athletes completed scales assessing their contextual self-determined motivation and their perceptions of competence toward education and sports on two separate occasions. They were also asked to rate their school performance from the last semester at Time 2. Individuals who experienced failure in the academic context at Time 2, and who perceived themselves as competent in sports (basketball) at Time 1, reported a small increase in contextual self-determined motivation toward sports from Time 1 to Time 2. No other group experienced an increase in contextual sport motivation. Losses of competence and self-determined motivation in one domain (school) seem to have motivated individuals to restore their sense of self and, consequently, to experience an increase in self-determined motivation toward the other context (sport). However, such a compensation effect is only likely to place in life domains in which people feel competent. Of course it is possible that both positions are correct. Perhaps the first response to "need thwarting" is to try to restore the equilibrium in the self and to enhance self-determined motivation in some other important contexts as proposed by the Hierarchical Model. However, if after a while this proves impossible, it is possible that people turn toward less optimal ways of functioning (e.g., external regulation and amotivation and the ensuing negative outcomes), as proposed by SDT. Future re-

search is needed on this issue to test this developmental hypothesis.

It thus can be seen that whereas SDT doesn't address the issue of the interplay among the various levels of motivation, such interactions represent a central part of the Hierarchical Model. This leads to new testable hypotheses with respect to motivational changes and pertinent psychological mechanisms.

The Role of Psychological Needs in the Motivational Sequence

Several times in their target article, Deci and Ryan discuss the role of need satisfaction in motivation and outcomes. For instance, they state that: "Motivational strategies such as rewards and threats undermine autonomy and thus lead to nonoptimal outcomes such as decreased intrinsic motivation, less creativity, and poorer problem solving" (this issue). Deci and Ryan thus propose that objective events may affect motivation and psychological outcomes. However, they do not explicitly propose the nature of the causal sequence through which the environment affect outcomes, as well as the role of need satisfaction in the process. More specifically, is need satisfaction a direct contributor of psychological outcomes (e.g., creativity, positive affect, etc.) or is motivation the most proximal influence? This question is important from theoretical and applied perspectives. From a theoretical perspective, we need to know if motivation plays a causal role in outcomes or if it is only an epiphenomenon. From an applied perspective, a better understanding of the causal sequence at play could help us identify the factors to focus on in order to derive better results from our interventions.

The Hierarchical Model posits the following causal sequence: the environment (social factors) influences perceived autonomy, competence, and relatedness (need satisfaction in SDT) that in turn influences motivation that in turn leads to outcomes (see Figure 1, from left to right). Thus, according to the Hierarchical Model, need satisfaction plays an indirect distal role in the sequence, whereas motivation is hypothesized to play a much more direct proximal function in the experience of psychological outcomes. Much research supports several aspects of the causal sequence (see Vallerand, 1997 for a review). For instance, several studies using structural-equation modeling or path analysis support the link from perceptions of competence and autonomy (and to a smaller extent relatedness) to self-determined motivation and from motivation to psychological outcomes (see Vallerand, 1997). From these studies, it appears that the impact of need satisfaction on outcomes as diverse as mental health (see Ryan, Deci, & Grolnick, 1995), school performance (Guay & Vallerand, 1997), school dropout

(Vallerand & Bissonnette, 1992; Vallerand, Fortier, & Guay, 1997), marital satisfaction (Blais, Sabourin, Boucher, & Vallerand, 1990), and others is mediated by self-determined motivation.

However, no published study shows support for the whole sequence from the influence of the objective environment to the psychological outcomes. Recent work of ours (Grouzet, Vallerand, Thill, & Provencher, 2000) provides such a support in two studies conducted at the situational level. In the first study (Grouzet et al., 2000, Study 1), participants performed a hidden-word game and were randomly assigned to conditions of success or failure. Their perceptions of competence and autonomy (feelings of relatedness were not assessed because the task was individualistic in nature), situational (or state) motivation, and outcomes dealing with concentration on the task, positive emotions, and intentions of future engagement in the activity were assessed. In the second study (Grouzet et al., 2000, Study 2), participants were randomly assigned to conditions of choice or no choice. The same variables assessed in Study 1 were again measured. Results from structural-equation-modeling analyses provided support for the proposed sequence in both studies. Objective social factors (i.e., success-failure and choice-no choice) had a direct impact on participants' perceptions of competence and autonomy that in turn influenced self-determined motivation. Finally, self-determined motivation predicted all three outcomes. As hypothesized, the more self-determined the motivation, the more positive the outcomes. Need satisfaction had no impact on outcomes. It would thus appear that the positive effects of psychological needs on psychological outcomes proposed by SDT are not due to the process of need satisfaction as such but rather to the ability of needs to create and sustain the motivational force that will facilitate psychological growth (see Vallerand, 1997 for a review on this issue).

On Individual Differences in Psychological Needs

In their target article, Deci and Ryan propose that it may not prove useful to look at individual differences in the basic psychological needs of competence, autonomy, and relatedness. They make the analogy with eating and drinking in which individual differences in these drives exist but may not tell us much with respect to psychological processes. I suggest, however, that the study of individual differences in psychological needs is important to look at because it may help us get a better grasp of motivational processes. To go back to the analogy with physiological drives, it may be that individuals with a higher eating drive level regulate their behavior through different psychological processes than those with lower drive levels. With respect

to psychological needs, different processes may be in operation for individuals high and low in the need for relatedness.

As was seen earlier, much research supports the mediating role of perceptions of competence, autonomy, and to a certain extent relatedness in the social factors-motivation relationship (see Vallerand, 1997 for a review). However, should it be expected that all three types of perceptions yield equally important effects on motivation? Is it possible that perceptions of relatedness, for instance, are more important for people high in that need, whereas other perceptions such as competence are more important for people low in the need for relatedness? If so, this would indicate that the psychological processes involved in the production of motivation may be different for people varying in the need for relatedness, a rather important issue.

Richer, Blanchard, and Vallerand (2000) recently tested this line of reasoning in a recent study by in the work place. In their study, Richer et al. assessed workers' self-determined motivation as well as perceptions of competence and relatedness toward work (at the contextual level). In addition, they assessed their need for relatedness at work with the Need for Relatedness Scale (Richer & Vallerand, 2000). The authors tested whether the mediating role of perceptions of competence and relatedness varied as a function of the need for relatedness. They hypothesized a moderating effect such that perceptions of relatedness would have a stronger mediating effect on self-determined work motivation than perceptions of competence for individuals high in the need for relatedness but that perceptions of competence would have a stronger effect than perceptions of relatedness for individuals low in the need for relatedness. Results of structural-equation-modeling analyses provided support for their hypothesis.

Thus, from the perspective of the Hierarchical Model, individual differences in needs may serve various functions, including that of determining which type of perceptions (i.e., autonomy, competence, or relatedness) will influence motivation. Contrary to SDT, it would thus appear that looking into individual differences in psychological needs may prove quite informative.

On the Different Roles of the Need for Relatedness

Much of the research involving motivation and the psychological needs focuses on autonomy and competence (see Deci & Ryan, 1991; Vallerand, 1997). Research on this issue shows that perceptions of autonomy and competence positively contribute to self-determined motivation. These findings are in support of SDT that posits that these two types of perceptions play a major facilitating role in motivation. However, according to SDT the role of relatedness is

less central in the motivational sequence. As Deci and Ryan put it, the role of relatedness is more distal. It is seen as basically playing a “needed backdrop—a distal support—for intrinsic motivation” (this issue).

However, according to the Hierarchical Model relatedness need not play a distal role in all tasks and activities. Although it may play a more remote function in certain types of activities in which the individual acts in an individualistic fashion, perceptions of relatedness may play a very important function in activities and tasks that are inherently social in nature. The role of perceptions of relatedness in the motivational sequence has been studied only recently but research provides support for this reasoning. For instance, research in the education context (Vallerand, Guay, & Blanchard, 2000, Study 1) reveals that perceptions of relatedness have a low and nonsignificant relationship with self-determined motivation in education whereas perceptions of competence and autonomy reveal important relationships. This is quite understandable because education is a rather individualistic type of activity, especially in the classroom. However, perceptions of relatedness proved to be an important predictor of self-determined motivation in contexts in which the social aspect is important such as team sports (basketball; Blanchard & Vallerand, 2000), fitness classes (Cadorette, Blanchard, & Vallerand, 1996), and work (especially for workers high in the need for relatedness; Richer et al., 2000). Clearly, relatedness can play a major role in determining motivation, especially when people engage in social tasks and activities.

I add that relatedness may serve another important function and this relates to the issue of value transmission. Value transmission refers to beliefs and values held by certain individuals and groups that eventually become internalized by other individuals. SDT posits that relatedness and competence are important in the process of value transmission. Although competence may play a small role in the process, it is my contention that relatedness is the key player in the value transmission process. It is mainly through their connection with significant others that people come to internalize previous external values. Although no published evidence exists for this hypothesis, a recent study of ours provides support for this line of reasoning. In this study, Grouzet and Vallerand (2000) followed hockey players 14 to 16 years of age and their coaches in a competitive league over a season. Early in the season as well as at the end of the season, they assessed the coaches' emphasis on sportsperson-like values with their players. They also assessed the players' self-reported violent acts at both times in the season, as well as their feelings of relatedness with their coaches at the beginning of the season. Grouzet and Vallerand hypothesized that the impact of coaches who maintained the emphasis on appropriate behaviors over the course of the season would translate into a reduction of athletes' violent be-

haviors but only for those who felt related to their coaches. Results from moderated regression analyses supported the hypothesis. Interestingly, neither perceptions of competence nor perceptions of autonomy significantly moderated the relationship between the coaches' sportsperson-like values and their athletes' report of violent behavior. Although the present data is preliminary and needs to be replicated with actual behavior, it would appear that the need for relatedness may indeed serve as a key variable in the value transmission process.

Concluding Statements

Deci and Ryan present the most recent version of their theory. SDT represents an articulate theoretical position wherein psychological needs play a crucial role in motivation and psychological outcomes. Although there is a large degree of agreement between SDT and my own position presented in the Hierarchical Model, in this commentary I underscored some areas in which the two models differ. Such differences mainly focus on the hierarchical structure of the model that leads to the formulation of novel motivational processes. In addition, I address issues on the role of psychological needs in motivation, outcomes, and the value transmission process as well as the importance of considering individual differences in psychological needs. It is hoped that by addressing these issues, I have been able to clarify various aspects of SDT as well as point toward fruitful future research directions that may enhance our understanding of motivational processes.

Note

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