

# Desire for control: Its effect on needs satisfaction and autonomous motivation

*Le désir de contrôle : ses effets sur la satisfaction des besoins et la motivation autodéterminée*

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## Abstract

The present study intends to examine how Desire for Control (DC) could be an antecedent of autonomous motivation. At the beginning of their first year at the university, 196 students were to fill in questionnaires to assess DC, satisfaction of the psychological needs of autonomy, competence, and relatedness. One month and a half later, their autonomous motivation toward studies was assessed. Multiple mediation analysis procedure showed that the link between DC and autonomous motivation was mediated by competence need satisfaction. Theoretical implications of these results and future directions of research are discussed.

## Résumé

Cette présente étude se propose d'examiner dans quelle mesure le Désir de Contrôle (DC) est un antécédent de la motivation autodéterminée. Au début de leur première année à l'Université, 196 étudiants ont renseigné un questionnaire mesurant le DC et la satisfaction des besoins fondamentaux d'autonomie, de compétence et d'affiliation. Un mois et demi plus tard, la motivation autodéterminée dans les études a été mesurée. Une analyse de médiation multiple révèle que la satisfaction du besoin de compétence médiatise le lien entre le DC et la motivation autodéterminée. Les implications théoriques de ces résultats sont discutées et des perspectives de recherche sont proposées.

## Key-words

Desire for control  
psychological need  
satisfaction  
autonomous  
motivation

## Mots-clés

Désir de contrôle  
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What kind of students achieves more in their studies? Who is likely to perform better? Countless scientific studies in social psychology have answered in various ways to these questions. A part of the answer highlights students' motivation and its determinants, and in particular autonomous motivation (Deci & Ryan, 2000). Self-Determination Theory (SDT; Deci & Ryan, 1985, 2012) identified three forms of motivation: autonomous motivation (i.e., engaging in an activity for pleasure and/or volition and choice), controlled motivation (i.e., engaging in an activity for internal or external pressure), and amotivation (i.e., relative absence of motivation). Conditions and processes that foster autonomous motivation (e.g., general causality orientations, satisfaction of the psychological needs of autonomy, competence, and relatedness) have been largely described in the SDT literature (Deci & Ryan, 1985, 2008; Vallerand, Carbonneau, & Lafrenière, 2009). However, too few studies have focused on personality variables as predictors of autonomous motivation (Deci & Ryan, 2008; Kasser & Ryan, 1996; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). This is the case of the Desire for Control (Burger, 1992; Burger & Cooper, 1979) that is nonetheless, according to Burger (1992), a significant determinant of intrinsic motivation (i.e., a form of autonomous motivation). Although the theoretical link has been mentioned, it has never been confirmed with published data and no mediators of this relation have been highlighted. The aim of the present research is to examine the role of DC as a potential antecedent of autonomous motivation and the potential mediating role of needs satisfaction in this relationship.

## Self-Determination Theory

According to SDT, autonomous motivation depends on the satisfaction of the psychological needs of autonomy, competence, and relatedness (Deci & Ryan, 2012; Ryan & Deci, 2000). The need for *competence* refers to the need to feel competent and efficient in what one undertakes (Skinner, 1995; White, 1959) and describes a general affective experience of effectiveness (Van den Broeck,

Vansteenkiste, De Witte, Soenens, & Lens, 2010)<sup>1</sup>. The need for *autonomy* refers to the need people have to make choices and to act in a volitional way (DeCharms, 1968; Deci, 1975). Finally, the need for *relatedness* refers to the need to get consideration from others and to feel connected to them (Baumeister & Leary, 1995). Prior studies have shown that the satisfaction of these needs leads to autonomous motivation, which in turn predicts positive outcomes (Gillet, Vallerand, Amoura, & Baldes, 2010; Hardré & Reeve, 2003; Lavigne, Vallerand, & Miquelon, 2007). For instance, Standage, Duda, and Ntoumanis (2006) have shown among a sample of physical education students that an autonomy-supportive climate was positively related to the satisfaction of the psychological needs of autonomy, competence, and relatedness, which were all significant predictors of autonomous motivation. In this study, competence need satisfaction was the main predictor of autonomous motivation. Similar results were reported by Ferrer-Caja and Weiss (2000) as well as Ntoumanis (2001).

Moreover, need satisfaction has been found to play a mediating role between social factors (e.g., the interpersonal style of a teacher/supervisor/coach) and autonomous motivation (see Vallerand et al., 2009, for a review). It is nevertheless interesting to verify if a personality variable (here the DC) can also be an antecedent of autonomous motivation through the mediating effect of psychological need satisfaction.

## Desire for Control

According to Burger (1992), individuals can vary in their motive to control events that happen in their environment and the desire to control events over their life is tantamount to acting in a volitional way. This is then an individual trait, quite stable in time that may influence motivation as well as close variables such as the perception of control (Skinner, Wellborn, & Connell, 1990). According to Burger, people high in DC are highly moti-

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1. Self-efficacy is an acquired cognition to one's capacities to achieve in a specific future task (Bandura, 1997) while the satisfaction of the need for competence is a feeling that one has mastered one's environment based on past experience.

vated to make their own decisions, take on leadership roles in group settings, and react strongly if they perceive that their control is threatened (Burger, 1990). People's attempts to control their environment are made in order to be at the origin of their actions (DeCharms, 1968). However, DC differs from the Locus of Control (Rotter, 1966), which is internal or external according to the bipolar evaluation individuals make of what happens to them, and from the Perceived Locus of Causality (Ryan & Connell, 1989), which refers to the degree to which people believe to be responsible for their own behavior.

The DC has been shown to be related to a) psychological need satisfaction and b) autonomous motivation. First, Brouillard, Lapierre, and Alain (1999) have shown that the DC was significantly related to autonomy ( $r = .58, p < .001$ ), competence ( $r = .44, p < .001$ ), and relatedness ( $r = .35, p < .001$ ) need satisfaction. Second, the DC has been shown to be significantly related to autonomous motivation. In an unpublished study (cited in Burger, 1992, p. 95), Burger showed a significant positive correlation between DC and autonomy orientation ( $r = .18, p < .05$ ) and a negative correlation between DC and impersonal orientation ( $r = -.28, p < .001$ ). Similar correlations were reported by Thompson (1990). In another unpublished study (Burger, 1992, p. 94), Burger has shown a significant correlation between the DC and the *Mastery*<sup>2</sup> subscale ( $r = .51, p < .05$ ) of the Work and Family Orientation Questionnaires (Spence & Helmreich, 1983). In addition, Legrain, Paquet, D'Arripe-Longueville, and Philippe (2011) have shown that novice athletes with a high DC, when paired with a low DC tutor (i.e., coach), are intrinsically motivated. In the same context, the concept of adaptive perfectionism (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993), which is closed to the DC in the way that it entails a self-oriented tendency to set high personal standards and achievement strivings, has been shown to be related to autonomous motivation (Longbottom, Grove, & Dimmock, 2012; Miquelon, Vallerand, Grouzet, & Cardinal, 2005; Stoeber & Eismann, 2007). Finally, Müller, Palekic, Beck and Wanninger (2006) have shown that conscientiousness, which is strongly linked to DC (Burger, 1992), explains a large

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2. For Burger, and this is debatable, the Mastery subscale is equivalent to intrinsic motivation.

part of variance of autonomous motivation for learning ( $\eta^2 = .41$ ,  $p < .05$ ).

## The Present Research

As Bains (1983) states, a motive can be strong enough as to influence and distort the way individuals perceive events in their world. This predisposition to prefer control may then lead them to autonomous forms of motivation, the locus of causality being perceived as internal (Deci & Ryan, 1985, 2000). So, based on the SDT predictions, the present research proposes to consider, among a sample of first year psychology students, 1) one possible personality variable as a direct antecedent of autonomous motivation (i.e., DC) rarely studied in the SDT framework although originally and theoretically linked to it (Burger, 1992) and 2) to explore the process explaining this relation. Our first hypothesis is that DC is positively linked to autonomous motivation toward studies (a direct effect) and our second hypothesis is that the satisfaction of the needs of autonomy, competence, and autonomy will mediate this relation between DC and autonomous motivation. Based on the literature in the educational context, competence need satisfaction might have a stronger influence on autonomous motivation than the two other needs (Ferrer-Caja & Weiss, 2000, 2002; Ntoumanis, 2001; Standage et al., 2006).

## Method

### ***Participants and Procedure***

After a month of social psychology lessons (Time 1, during fixed group tutorials), participants were asked by an unknown experimenter to fill out an anonymous questionnaire-package containing measures of their DC and needs satisfaction. At Time 1, 199 French students (40 males and 156 females, 3 did not report their gender) voluntarily participated in a study about 'students' feelings during their studies'. Mean age was 19.34 years ( $SD = 2.66$ ). One month and a half later, 97 participants (15 males and 81 females, 1 did not report his/her gender) remained voluntary for filling out a questionnaires on their motivation toward studies,

which was presented as being the second part of the study about students' feelings during their studies. Mean age was 19.41 years ( $SD = 3.05$ ).

## **Measures**

### *Desire for Control*

DC was assessed with the French version of the Desire for Control Scale (Alain, 1989; Burger & Cooper, 1979). It contains 20 statements that refer to the individuals' motive for control in various domains (e.g., "*I enjoy making my own decisions*", "*I care to check each piece of my car (or my luggage) before leaving for a long journey*";  $\alpha = .72$ ). Participants were asked to indicate the extent to which each statement described them on a 7-point Likert scale ranging from 1 (*this sentence does not describe me*) to 7 (*this sentence greatly describes me*). Results from past studies (Garant & Alain, 1995; Legrain et al., 2011) provided good support for the psychometric properties of this French version.

### *Needs satisfaction*

Satisfaction of the needs for autonomy ( $\alpha = .77$ ), competence ( $\alpha = .86$ ), and relatedness ( $\alpha = .86$ ), was assessed using the 'Échelle de Satisfaction des Besoins Fondamentaux en Contexte Sportif' (Gillet, Rosnet, & Vallerand, 2008) adapted to the educational setting. Following the stem "*In my studies at the University...*", students rated items on a 7-point Likert scale ranging from 1 (*completely disagree*) to 7 (*completely agree*). A factor analysis run with an oblique rotation revealed three factors explaining 63.38% of variance. Items of each subscales loaded on their respective dimension with loading ranging from .59 to .78 for the need of autonomy, from .73 to .83 for the need of competence, and from .71 to .89 for the need of relatedness, without any cross loadings.

### *Academic motivation*

Students' motivation was assessed with the French version of the Academic Motivation Scale for College (Vallerand, Blais, Brière, & Pelletier, 1989). This 28 item-scale assesses intrinsic motivation,

extrinsic motivation, and amotivation. Internal consistency of the different subscales was satisfactory (between .69 and .88). All items were assessed on a 7-point Likert scale ranging from 1 (*does not correspond at all*) to 7 (*corresponds exactly*). The seven subscales were combined into a Relative Autonomy Index (RAI; Grolnick & Ryan, 1987; Ryan & Connell, 1989). The higher the score is, the more autonomous motivation is. This scale has been found to be reliable and valid (Brault-Labbé & Dubé, 2010; Vallerand, Pelletier, Blais, Brière, Sénécal, & Vallières, 1993).

## Results

### Descriptive statistics

Results concerning the means, standard deviations, and relations between our variables are displayed in Table 1. Autonomy, competence, and relatedness need satisfaction was significantly correlated to the RAI (respectively,  $r = .22, p < .05$ ;  $r = .41, p < .001$ ;  $r = .21, p < .05$ ). DC was also correlated to autonomy ( $r = .28, p < .01$ ), competence ( $r = .30, p < .001$ ), and relatedness ( $r = .28, p < .001$ ) need satisfaction, and to the RAI ( $r = .25, p < .05$ ).

	M	SD	1	2	3	4
1. Desire for control	4.66	0.59	–			
2. Need for autonomy	4.85	0.93	.28**	–		
3. Need for competence	3.81	0.94	.30**	.49***	–	
4. Need for relatedness	4.57	1.05	.28**	.33***	.46***	–
5. Autonomous motivation	6.45	3.30	.25*	.22*	.41***	.21*

TABLE 1:  
Means, standard deviations and correlations for study variables ( $n = 97$ ).

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### Main analysis

To test for the link between DC and autonomous motivation as well as for the role of the need satisfaction as mediator of the relation between DC and motivation, a multiple mediation analysis procedure was run (Preacher & Hayes, 2004, 2008). Advantage of performing this type of analysis rather than three separate mediation analyses (Baron & Kenny, 1986) allows to test

for an overall mediation effect and to determine the unique mediating effect that a specific variable has with a single model, controlling for the presence of other mediators. Moreover, as stated by Preacher and Hayes (2008), this type of analysis also permits to enhance statistical power and decreases the probability of Type I errors.

TABLE 2:  
Multiple mediation  
estimates for  
autonomous  
motivation.

Variables	<i>b</i>	<i>t</i>	<i>p</i>	
DC to mediators				
Need for autonomy	.42	2.86	< .01	
Need for competence	.41	2.98	< .01	
Need for relatedness	.46	2.80	< .01	
Direct effects of mediator on autonomous motivation				
Need for autonomy	-.05	-.13	= .90	
Need for competence	1.45	3.15	< .01	
Need for relatedness	.03	.09	= .93	
Total effect of DC on autonomous motivation				
DC	1.38	2.51	< .02	
Remaining direct effect of DC on autonomous motivation				
DC	.79	.93	= .16	
Partial effect of gender on autonomous motivation				
	.58	1.74	= .52	
	<i>b</i>	CI <sub>lower</sub>	CI <sub>upper</sub>	<i>p</i>
Indirect effects of DC on autonomous motivation via mediators (bootstrap results)				
Total indirect effects	.59	.01	1.68	n.s.
Need for autonomy	-.02	-.49	.36	n.s.
Need for competence	.60	.11	1.58	< .01
Need for relatedness	.01	-.30	.56	n.s.

Note. Confidence interval are bias controlled and accelerated; Bootstrap resamples = 5000; *n* = 97 for all tests.

DC had a significant impact on autonomous motivation ( $b = 1.38, p = .02$ ; see Table 2<sup>3</sup>). Moreover, DC was significantly linked to autonomy ( $b = .42, p < .01$ ), competence ( $b = .41, p < .01$ ) and relatedness ( $b = .46, p < .01$ ) need satisfaction. However, only competence need satisfaction was linked to autonomous motivation ( $b = .60, p < .01$ ) after controlling for DC. Indeed, results showed that autonomous motivation was significantly mediated only by the satisfaction of the need for competence.

3. Analyses were conducted with gender as covariate.



The link between DC and autonomous motivation was reduced from 1.38 (see total effects of DC, the *c* path in Preacher & Hayes, 2008) to .79 (see remaining direct effect on DC, the *c'* path) by the set of three mediator variables (the needs for autonomy, relatedness, and competence). However, only the need for competence significantly accounts for these mediational effects (.60 of the total .59, see indirect effects of DC on autonomous motivation, confidence intervals being respectively of CI<sub>99</sub>: .11, 1.58 and .01, 1.68<sup>4</sup>) and the effect of DC disappears when this need is controlled for ( $b = .79, p = .16$ ). So, only the competence need satisfaction deserves to be elected as a total mediator because it follows the 4 steps described by Baron and Kenny (1986).

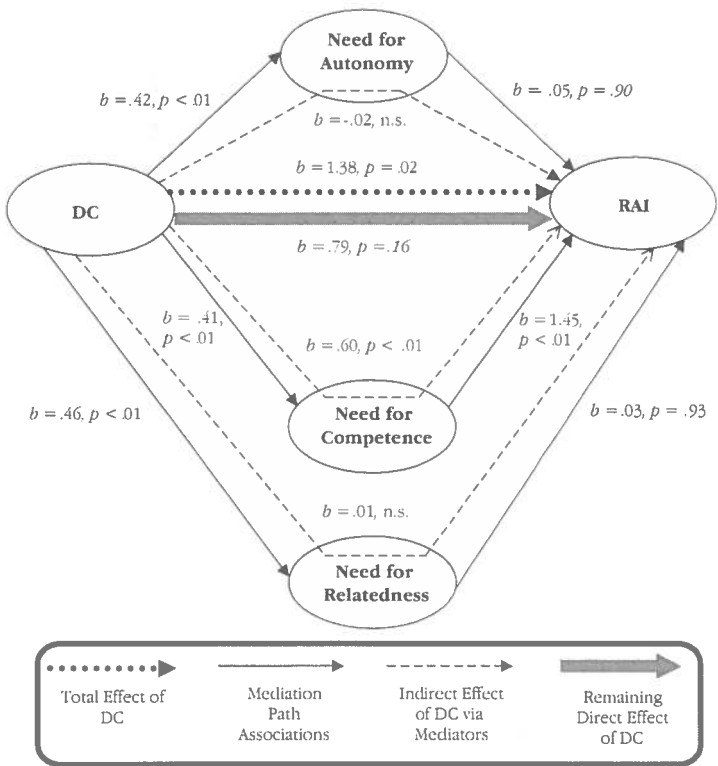


FIGURE 1: Multiple mediation bootstrap analysis of relationships between Desire for Control (DC) and autonomous motivation (RAI) as mediated by competence need satisfaction.

4. Note that whenever zero is not contained with the bootstrap confidence interval, we can conclude that the effect is significantly different from zero.

## Discussion

The main purpose of the present research was to highlight the role of DC as an antecedent of autonomous motivation. First, we hypothesized that DC was significantly linked to autonomous motivation measured by the RAI. Second, according to SDT (Deci & Ryan, 1985), we postulated that the psychological need satisfaction would mediate these links.

Results confirmed our first hypothesis and for the first time, DC formally appeared to be a relevant personality variable that is positively related to autonomous motivation assessed six weeks later. Although Burger and Cooper (1979) postulated that *“the desire to control events in one’s life therefore also seems to be closely tied to the concept of intrinsic motivation”* (p. 382), no published studies had supported it yet. Remedying this lack, our results showed that students who were motivated to control events in their life were more likely to present autonomous motivation toward their studies. Moreover, our study showed that this link, coherently with SDT’s predictions and past results found in educational settings (Ferrer-Caja & Weiss, 2000, 2002; Ntoumanis, 2001; Standage et al., 2006), was mediated by the satisfaction of the need for competence.

If many studies performed in the educational context highlighted the role of the need for competence in the motivational process, SDT generally predicts that the satisfaction of all three needs has a significant influence on autonomous motivation. Our results partially confirmed our second hypothesis; only the competence need satisfaction mediated the relation between DC and autonomous motivation, autonomy and relatedness need satisfaction were not linked to autonomous motivation. However, if all of the three needs nourish autonomous motivation, each of them can be more or less easily satisfied according to the contexts, and differently contribute to autonomous motivation (Deci & Ryan, 1985; Gillet, Berjot, & Rosnet, 2009; Vallerand, 1997). The satisfaction of the need for competence of our high DC’s students might have been particularly important to contribute to and explain their autonomous motivation toward their studies as their knowledge of the discipline is quite low in the beginning of

their studies. That is why feeling effective and competent is important to them. This was not the case for autonomy and relatedness need satisfaction.

Even if the statistical procedure we used is quite complex and demanding in its simulation of a causal relation, precautions must be kept as to the conclusion we can draw from a correlational design. Replications of this study are desirable, and experimental designs could also be interesting. Future research could for instance test for the conjoint effects of DC and perception of control (Paulhus, 1983; Paulhus & Van Selst, 1990) on autonomous motivation. Indeed, DC and perception of control have been found relevant to predict psychological well-being and happiness (Brouillard et al., 1999; Garant & Alain, 1995), but no studies have been conducted on autonomous motivation.

In sum, our results highlight the fact that DC is quite a strong predictor of autonomous motivation in this educational setting. Burger (1992, p. 94) assumed that DC as a personality variable appears to be very similar to Deci's notion of self-determination (Deci, 1980; Deci & Ryan, 1985) and that high DC people should have a stronger need to demonstrate to themselves that they are masterful manipulators of their environment. According to Burger's hypotheses, our study provides an explanation for the similarity between the DC and autonomous motivation. Indeed, autonomous motivation occurs, at least among university students, when the need for competence is satisfied (Deci, 1975; White, 1959).

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