



## Short communication

Looking cool or attaining self-rule. Different motives for autonomy and their effects on unhealthy snack purchase<sup>☆</sup>F. Marijn Stok<sup>a,\*</sup>, Denise T.D. De Ridder<sup>a</sup>, Marieke A. Adriaanse<sup>a</sup>, John B.F. De Wit<sup>b,c</sup><sup>a</sup> Utrecht University, Department of Clinical and Health Psychology, The Netherlands<sup>b</sup> Utrecht University, Department of Social and Organizational Psychology, The Netherlands<sup>c</sup> University of New South Wales, National Centre in HIV Social Research, Australia

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## ABSTRACT

Being integral to adolescent health, autonomy presumably also is related to adolescent unhealthy snacking. We distinguish two differently motivated forms of autonomy: *agentic autonomy*, driven by a motivation to self-regulate, and *self-presentational autonomy*, driven by motives of image cultivation. The present study aimed to investigate the differential associations of these two types of motivation with unhealthy snack purchase in a prospective study among 105 adolescents. Results confirmed that agentic autonomy correlated with less unhealthy snack purchase, while self-presentational autonomy correlated with increased unhealthy snack purchase in males but not in females. This supports the hypothesis that autonomy is related to adolescent unhealthy eating, but can do so in different ways.

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## Introduction

The development of autonomy is crucial for successful psychosocial adjustment in adolescence (Erikson, 1968; McElhane & Allen, 2001). Autonomy can generally be defined as a state of relative independence, with the adolescent being self-directing and self-governing (Blos, 1979; Ryan & Deci, 2000). While autonomy likely plays a role in how adolescents practice health (risk) behaviors (Spear & Kulbok, 2004), there is a remarkable lack of studies on the topic. The current study addresses this gap in the literature by investigating the relation between adolescent autonomy and unhealthy snacking.

*Autonomy and adolescent eating behavior*

The existence of a link between autonomy and eating behavior seems conceptually plausible: while eating is usually under the realm of parental control during childhood, this becomes less the case as children grow older. Adolescents consume more food away from parental input and often receive pocket money allowing them to purchase food independently (Chapman & MacClean, 1993).

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The plausibility of a link between autonomy and eating behavior is also evident from sociological and anthropological research, which demonstrates that eating is more than mere necessity and takes on a role in self-definition and identity communication (e.g. Counihan, 1999). A recent review of empirical work indicates that eating is indeed an effective vehicle for the expression of various aspects of identity such as morality and agreeableness (Vartanian, Herman, & Polivy, 2007). In a similar vein, we propose that eating behavior can be an instrumental tool both for the attainment and the expression of autonomy.

While (to the best of the authors' knowledge) no quantitative empirical evidence exists regarding the relation between adolescent autonomy and eating behavior, several qualitative studies have been conducted. Most of these studies suggest that autonomy is related to unhealthy food choices: adolescents are thought to utilize unhealthy eating as a form of rebellion against parental control (Hill, 2002; Stevenson, Doherty, Barnett, Muldoon, & Trew, 2007) or as a means through which they can display their newfound autonomy to peers and express peer solidarity (Bassett, Chapman, & Beagan, 2008). Opposite views have also been reported, however, suggesting that autonomous adolescents do not eat more unhealthily than less autonomous peers (Videon & Manning, 2003). A recent conceptual analysis even suggests that autonomous adolescents might actually make healthier food choices (Spear & Kulbok, 2004).

These differences can be explained by considering more closely how the aforementioned studies define autonomy. On the one hand, autonomy can be considered as driven by self-presentational

motives. Scholars taking this view posit that adolescents aim to quite literally break away from the familial ties that bound them as children and to show off this new-found independence to peers (Bassett et al., 2008; Hill, 2002). On the other hand, autonomy can be considered to be driven by an authentic wish to gain agency and to learn to responsibly regulate oneself.

Rather than claiming that either view of autonomy is 'right', we posit that two unrelated and independent forms of autonomy can be distinguished, that are differentially associated with eating. We call the first type of autonomy, driven by self-regulatory motives, 'agentic autonomy'. We call the second type of autonomy, driven by motives of image cultivation, 'self-presentational autonomy'.

### Present study

The present study empirically investigates the correlations of autonomy for agentic motives and autonomy for self-presentational motives with adolescents' unhealthy snacking behavior. Combining these two types of autonomy in one study brings together two previously separate and conflicting literatures on autonomy and eating. Snacking is taken as measure of eating behavior since it constitutes the food intake adolescents have most choice over. Moreover, snack consumption substantially contributes to overweight (e.g. De Graaf, 2006).

The first aim of this study is to demonstrate that the two proposed types of autonomy are indeed meaningfully distinctive, using self-control as a central differentiating factor. Self-control is defined as the ability to exert control over the self and to inhibit habitual behavior (Muraven & Baumeister, 2000; Tangney, Baumeister, & Boone, 2004). Adolescents in whom autonomy is motivated by agentic reasons likely have good self-control skills: they can inhibit impulses that would be counterproductive in the long term. Adolescents motivated for self-presentational reasons, however, probably act more impulsively. Moreover, research has shown that active impression management requires self-regulatory resources, leading to ego-depletion and impaired self-control capacity (Vohs, Baumeister, & Ciarocco, 2005). We thus expect a positive correlation between self-control and agentic motives for autonomy, and a negative correlation between self-control and self-presentational motives for autonomy. Additionally, we expect no relation between the two types of autonomy, hypothesizing rather that they exist as two independent factors.

Our second aim is to demonstrate that self-presentational autonomy and agentic autonomy are oppositely related to adolescent unhealthy snacking. It is predicted that adolescents who report higher agentic motives for autonomy will report less unhealthy snack choices. The opposite relation is expected for self-presentational motives for autonomy: adolescents who report higher tendencies toward self-presentational autonomy are expected to report more unhealthy snacking behavior. Since eating may carry different (self-presentational) meaning for men and women (Martin, Leary, & O'Brien, 2001; Pliner & Chaiken, 1990), we will explore whether gender moderates the relation between either type of autonomy and snack purchase.

## Method

### Participants

Participants were recruited from two Dutch secondary schools. The study was prospective with a week between the first and second data collection. A total of 154 students participated in the first part of the study, while 105 students completed the second part. Logistic regression indicated that drop-out was selective ( $\chi^2(4, N = 154) = 16.42, p < .001$ ). Based on the Wald criterion, gender ( $\chi^2(1, N = 154) = 5.89, p = .015$ ) and school level ( $\chi^2(1,$

$N = 154) = 6.43, p = .011$ ) predicted drop-out. Males were more likely to drop out than females (odds ratio = .40) and drop-out was more likely with lower school levels (odds ratio = .60).

Thirty-six percent of participants were male and 64 percent were female. Participants were between 14 and 17 years of age with an average age of 14.63 (SD = .89). Their average BMI was 19.21 (SD = 2.16). BMI ranged from 15.17 to 25.39, which is in the healthy range for this age group (Centers for Disease Control and Prevention, 2002).

### Procedure

Students were recruited for a study about lifestyle. Prospective participants received an instruction form and their email address was recorded, after which they were sent the link to an online questionnaire (email addresses were kept separate from all other data). A week later, participants received a diary in which they recorded the number of snacks bought during three days.

### Materials

#### Questionnaire

The questionnaire was administered using the Internet survey tool NetQuestionnaires and assessed demographic data such as gender, age, school level, height and weight. Students were also asked to indicate the amount of money at their disposal. After these questions, three additional parts assessed the two types of autonomy and self-control.

*Agentic autonomy.* Agentic autonomy was measured by a number of items from the behavioral autonomy subscale of the Worthington Autonomy Scale (Anderson, Worthington, Anderson, & Jennings, 1994). Only the six items of this scale relevant to agentic autonomy were included. Items were measured on a 5-point Likert scale (ranging from 1 = not like me at all to 5 = very much like me). Sample items include "I accept responsibility for my own mistakes", "I don't spend my money wisely" (reverse coded) and "I apologize for my part of an argument even if the other person doesn't" (Cronbach's  $\alpha = .60$ ).

*Self-presentational autonomy.* For self-presentational autonomy, a general questionnaire was not available. A measure was therefore created by the authors. The Self-Presentational Motives Scale (Martin et al., 2001), a measure of self-presentational motives for health behavior, was taken as a starting point. The wording that is used in this scale to measure self-presentational motives was then applied to the concept of autonomy (rather than to health behavior like in the original scale). The six items included in the scale were "spending my own money makes me look cool", "when I spend my own money, I fit in with my friends", "people who spend their own money are attractive", "spending my own money gives me a feeling of independence", "spending my own money makes me seem more adult", and "I like showing others that I spend my own money". (Cronbach's  $\alpha = .74$ ). The items were measured on a 5-point Likert scale (ranging from 1 = do not agree at all, to 5 = agree completely).

Spending money, rather than unhealthy eating, was chosen as the topic because adolescents can demonstrate autonomy very effectively using their own money. Several studies indicate that spending one's own money is a key feature of autonomy (Darling, Reeder, McGee, & Williams, 2006; McElhaney & Allen, 2001). Adolescents experience few true moments of free choice, and an important share of these moments are when they take their own money to the shop and decide what to buy with it. In addition, the way they spend this money is very indicative of their food-choice behavior. The only true "free" food choices adolescents have is when they buy something themselves. A study on adolescent

**Table 1**  
Correlations, means and standard deviations for variables under study.

	1	2	3	4	5	6	7	8	9
1 age									
2 gender (0 = m, 1 = f)	.067								
3 school level	.171	-.018							
4 BMI	.261**	.230*	-.005						
5 money at disposal (€/month)	-.017	.222*	.179	-.105					
6 self-presentational autonomy	.047	.240*	-.106	.033	.122				
7 agentic autonomy	.218*	.123	.164	.193 <sup>a</sup>	-.128	.020			
8 self-control	.062	-.109	.146	-.027	-.241*	-.200*	.491**		
9 number of unhealthy snacks	-.093	-.177	-.076	.011	.016	.089	-.264**	-.135	
<i>M</i>	14.63	n.a.	n.a.	19.28	44.15	1.76	3.46	3.21	3.94
( <i>SD</i> )	(.89)			(2.16)	51.79	(.61)	(.50)	(.63)	(5.92)

\* Correlation significant at  $p < .05$ .

\*\* Correlation significant at  $p < .01$ .

<sup>a</sup> The partial correlation between agentic autonomy and BMI, controlling for age, was not significant ( $r = .145$ ,  $p = .140$ ).

spending patterns (Darling et al., 2006) demonstrated that the three categories most adolescents spend money on are fast food, school lunches and snack food, indicating that spending one's own money is indeed a crucial factor both in the assertion of one's autonomy in general as well as food-choice autonomy specifically.

**Self-control.** Self-control was assessed with the 13-item brief version of the Self-Control Scale (Tangney et al., 2004). This scale measures trait self-control on a 5-point Likert scale (ranging from 1 = not at all like me, to 5 = very much like me). Sample items are "I am good at resisting temptation" and "people would say I have iron self-discipline" (Cronbach's  $\alpha = .80$ ).

#### Diary

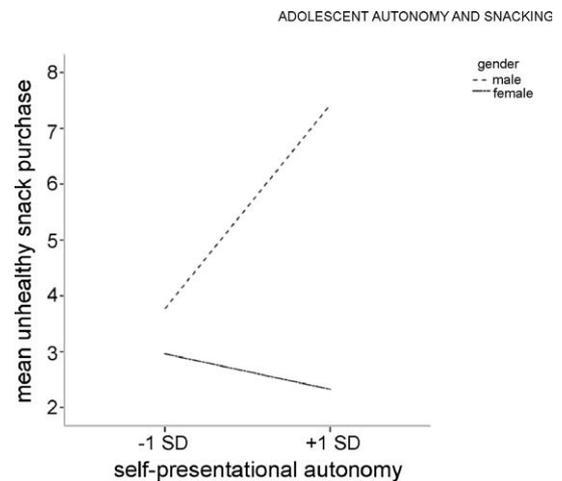
Based on a previously developed food diary (Gerrits, De Ridder, De Wit, & Kuijer, 2009) a diary was created in which students could record the number of snacks they bought during three days. A table of ten unhealthy snack types (such as chocolate bar, hamburger, ice cream) was provided where participants indicated the number of snacks bought of each type per day. Unhealthy snack purchase was calculated by adding up the total number of snacks purchased. The diary also included filler items such as mobile phone use, time spent doing several activities and spending of money on a number of other purchases and activities. Unhealthy snack purchase was highly positively skewed, which can be explained from the fact that a number of students did not purchase any snacks. A natural log transformation of the variable did not change the outcome of the analyses, so the untransformed data were retained.

#### Results

Table 1 shows the correlations, means and standard deviations for the main variables under study. Results from the correlational analysis indicate a strong empirical basis for the conceptual distinction between self-presentational autonomy and agentic autonomy. While there was a strong positive relation between agentic autonomy and self-control,  $r = .491$ ,  $p < .001$ , the relation between self-control and self-presentational autonomy was significant and negative,  $r = -.200$ ,  $p = .040$ . Moreover, the two types of autonomy were not significantly correlated with each other,  $p = .835$ .

The relation between autonomy and the number of snacks purchased, as well as the potential interaction effect of gender, were analyzed with two multiple linear regression analyses (for zero-order correlations, see Table 1). One type of autonomy was entered into the regression in step one, with gender and the interaction term being added in step two.

There was a main effect of agentic autonomy: adolescents reporting higher autonomy for agentic motives purchased fewer



**Fig. 1.** Mean unhealthy snack purchase for low (–1 SD) and high (+1 SD) self-presentational autonomy for males and females.

unhealthy snacks than less self-governing adolescents,  $B = -3.10$ ,  $p = .006$  (model  $R^2 = .07$ ,  $F(1,104) = 7.79$ ,  $p = .006$ ). The model was not improved by adding gender,  $B = -7.73$ ,  $p = .334$ , or the interaction term between agentic autonomy and gender,  $B = 1.73$ ,  $p = .454$ . ( $\Delta F$  was not significant,  $p = .231$ ).

For self-presentational autonomy, a different picture emerged. While there was no main effect of self-presentational autonomy on unhealthy snack purchase,  $B = .86$ ,  $p = .367$  (model  $R^2 = .01$ ,  $F(1,104) < 1$ ), the second step did reach significance, model  $R^2 = .08$ ,  $F(3,102) = 2.79$ ,  $p = .044$  ( $\Delta F$  was significant,  $p = .027$ ). There was a marginally significant interaction effect of gender and self-presentational autonomy on unhealthy snack purchase,  $B = -.351$ ,  $p = .092$ . A simple slopes analysis was conducted to further specify this interaction effect, using values of self-presentational autonomy one standard deviation below and above the mean score (see Fig. 1). While the slope for males was significantly different from zero ( $t = 2.20$ ,  $p = .030$ ), this was not the case for females ( $t = .24$ ,  $p = .808$ ). Males scoring high on autonomy for self-presentational motives purchased more unhealthy snacks than males scoring lower, while there was no relation between self-presentational autonomy and unhealthy snack purchase in females.

#### Discussion

The current study explored two different motives for autonomy and their relation to adolescent snacking behavior. Results demonstrated, firstly, that two differently motivated types of autonomy can be distinguished in adolescents. Agentic autonomy

and self-presentational autonomy were shown to be two distinct concepts, distinguishable by means of self-control scores. As expected, results showed that self-control scores were higher in adolescents with agentic (controlled, internally regulated) autonomy than in adolescents with self-presentational (externally guided) autonomy. Moreover, the two motives for autonomy were uncorrelated, further indicating that these concepts are independent.

Secondly, these two types of autonomy have differential correlations with adolescent snacking behavior. Hypotheses were mostly confirmed: as expected, adolescents high in agentic motives for autonomy purchased fewer unhealthy snacks than less agentic peers. Moreover, males with high self-presentational autonomy scores purchased more unhealthy snacks than males scoring lower. There was no relation between self-presentational autonomy and snack purchase for females. This seems understandable when taking into consideration that there are other, more important self-presentational concerns tied in with eating behavior for women. By restricting their eating or eating healthily, women attempt to convey impressions of femininity and attractiveness (Martin et al., 2001; Pliner & Chaiken, 1990). Such motives likely override the effect of wanting to come across as autonomous. For males, eating does not carry such meaning (Pliner & Chaiken, 1990), allowing the motive of conveying autonomy to take center stage.

#### *Directions for future research and implications*

As a study of health risk behavior, the present study focused only on *unhealthy snack purchase*. There are two potential limitations to this focus that should be addressed in future research. Firstly, self-reported snack purchase rather than consumption was investigated. We believe this is a strong suit, as investigating consumed snacks would include snacks received from others or brought into the house by parents. On the other hand, focusing on snack purchase leaves open the possibility that adolescents would buy a snack but not actually eat it. It may therefore be important for future studies to also include measures of actual snack consumption. Secondly, a focus on unhealthy snacks leaves unanswered the question whether the two differently motivated types of autonomy could also be related to healthy eating. Future research should include both measures of health risk behaviors as well as health promotion behaviors.

The scale used to measure self-presentational motives for autonomy is a new scale that was constructed by the authors for the present study. While results indicate that the scale in its current form has merit, we suggest that a measure of self-presentational autonomy is specifically developed for future research. All items now focus on spending money and while this seems to be a crucial aspect of adolescent autonomy, it did result in a discrepancy between a more general measure of agentic autonomy and a rather specific measure of self-presentational autonomy. A new measure could probe the need for image cultivation more directly (for example, “it is important for me to look cool in front of others”; “I like showing others that I am independent”). Another option would be to steer the measure of agentic autonomy, which in its present form contained two questions about spending money, even more toward spending one’s own money, since this seems to be a key feature of autonomy (both for agentic and for self-presentational motives).

The current results indicate that while it may be beneficial to support adolescents in being autonomous, allowing them to make

their own food choices, attention should be paid that agentic motives for such autonomy are stimulated, rather than self-presentational motives. If adolescents possess agentic autonomy, they purchase fewer unhealthy snacks than less agentic peers, suggesting better self-regulation. Parents and other authority figures can aid development of such agentic autonomy by giving adolescents autonomy support (Williams, Cox, Kouides, & Deci, 1999). In adolescent boys, special attention should be paid to the effects of self-presentational motives on their eating behavior.

In the present study, we brought together two previously opposing bodies of literature regarding autonomy and its relation with eating behavior. We showed that adolescent autonomy can have two different underlying motives, which are also differentially related to adolescent snacking behavior. This study constitutes the first in the field to distinguish between these two differently motivated types of autonomy and the first to use a quantitative approach. Our results point to the necessity of further empirical research on the relation between adolescent autonomy and their health behaviors.

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