

Identified Versus Introjected Approach and Introjected Avoidance Motivations in School and in Sports: The Limited Benefits of Self-Worth Strivings

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On the basis of self-determination theory (Ryan & Deci, 2000), the authors examined whether 2 different types of introjected motivation—an avoidant type aimed at avoiding low self-worth and an approach type aimed at attaining high self-worth—are both associated with a less positive pattern of correlates relative to identified motivation—acting because one identifies with the value of the action. Two studies focusing on the academic and sports domains ($N = 1,222$) showed that children and adolescents differentiated between the 2 types of introjected motivation. Although introjected avoidance motivation was associated with a more negative pattern of affective and performance correlates than was introjected approach motivation, identified motivation was associated with a much more positive pattern of correlates than both types of introjected motivation. Furthermore, being high on introjected approach motivation did not yield any benefits even when combined with high identified motivation. Results suggest that past findings portraying introjected motivation as being less desirable than identified motivation cannot be ascribed to the avoidance component of introjected motivation. Findings are consistent with the view that even an approach-oriented introjected motivation has very limited benefits when compared with identified motivation.

Keywords: introjected motivation, identified motivation, approach and avoidance motivation, self-esteem motivation, self-determination theory

Putting effort into schoolwork to feel worthy and proud of oneself or to avoid feeling unworthy and ashamed is a common motivation among schoolchildren (e.g., Covington, 1998; Nicholls, 1989). Indeed, Covington (1998) and Nicholls (1984) have suggested that self-esteem concerns motivate much of the school-related behavior of many children. Nicholls (1984, 1989) has elaborated on the psychological costs of focusing on self-evaluation issues rather than on the task for schoolchildren. Covington (1998, p. 78) posited that “the search of self acceptance is the highest human priority and that, as applied to schools, one’s worth often comes to depend on the ability to achieve competitively.” Covington (1998) also claimed that the striving for self-worth in competitively structured schools has rather negative outcomes.

Although self-worth concerns have been examined by researchers for a long time (e.g., Greenwald, 1982; Sherif &

Cantril, 1947; Vroom, 1962), there is relatively little research directly comparing the effects of children’s self-worth motivations in relation to daily school-related activities with motivations that are assumed by various theorists to be more desirable.¹ One general theory of motivation and personality that focuses directly on self-worth strivings and contrasts them with motivations that are assumed to be more adaptive is self-determination theory (SDT; Deci & Ryan, 1995, 2004).

Within SDT, the type of motivation that focuses on the maintenance or enhancement of self-worth is termed *introjected* motivation.² Introjected motivation is a product of an introjec-

¹ Research anchored in achievement goal theory contrasted the pursuit of task or mastery goals with the pursuit of ego or performance goals. Whereas some authors have viewed performance goals as based on self-worth concerns (e.g., Nicholls, 1989), measures assessing performance goals do not directly assess motivation to enhance or maintain self-worth. Moreover, Elliot (2005) argued that self-worth concerns are not an integral part of performance goals but rather represent one (major) underlying motivation for pursuing performance goals. For this reason, according to Elliot (2005), self-worth concerns should be conceptually and empirically left out of the concept of performance goals.

² Although Deci and Ryan (1985) used the term *introjected regulation*, we prefer the term *introjected motivation* because it reflects our conception of introjected motivation as a force within people that energizes their behavior and determines its direction.

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tion process in which people rigidly adopt external standards of self-worth and social approval without fully identifying with them. SDT assumes that introjected motivation is accompanied by feelings of internal coercion and pressure, and therefore it is hypothesized to be less optimal than various types of motivation that SDT views as more autonomous, such as identified motivation, in which actions are guided by an understanding of and identification with the value of one's actions.

Various studies in domains as diverse as academics (e.g., Koestner & Losier, 2004; Ryan & Connell, 1989), politics (Koestner, Losier, Vallerand, & Carducci, 1996), physical education (e.g., Ntoumanis, 2001), and religion (e.g., Assor, Cohen-Malayev, Kaplan, & Friedman, 2005; Ryan, Rigby, & King, 1993) have provided evidence for these claims. Therefore, it appears that educators and parents should not rely on introjected motivation in their educational endeavors and instead try to promote understanding of the relevance and value of the activity (i.e., identified motivation).

However, current measures of introjected motivation either exclusively focus on the avoidance component of this motivation (e.g., Mullan, Markland, & Ingledew, 1997) or include both approach and avoidance components (e.g., Li, 1999; Noels, Pelletier, Clement, & Vallerand, 2003; Ryan & Connell, 1989). The avoidance component refers to attempts to meet introjected standards to avoid feeling unworthy, guilty, or ashamed, whereas the approach component refers to attempts to meet standards to feel worthy and proud of oneself (e.g., Deci & Ryan, 2004; Koestner & Losier, 2004). Because extant measures of introjected motivation are largely avoidance oriented, one cannot rule out the important possibility that the negative effects of introjected, relative to identified, motivation stem mainly from its avoidance component and that perhaps introjected approach motivation in itself might have positive effects that are comparable to identified motivation.

The view that self-worth strivings of the type captured by introjected approach motivation might be beneficial is consistent with theories emphasizing the important adaptive functions of self-esteem concerns (e.g., Dubois & Flay, 2004; Leary, 2004; Pyszczynski & Cox, 2004). The idea that an approach-oriented introjected motivation might have positive correlates is also consistent with Carver and Scheier's (1999) proposal that motivations viewed by SDT as controlling and therefore maladaptive, including introjected motivation, are harmful mainly because of their avoidant orientation. Therefore, in Carver and Scheier's view, approach-oriented forms of controlled motivations, such as introjected approach motivation, might be as adaptive as autonomous types of motivation, such as identified motivation.

Given the lack of research comparing introjected approach motivation with identified motivation, our main objective in this research was to perform such a comparison across two domains of activity (i.e., schoolwork and sports) in children and adolescents. On the basis of SDT, we hypothesized that both introjected approach motivation and introjected avoidance motivation would be associated with a less positive pattern of correlates relative to identified motivation. In addition, parallel to research in achievement goal theory examining the hypothesis that being high on both performance approach and mastery goals is associated with positive outcomes (e.g., Pintrich, 2000), we also explored the correlates of being high on both introjected approach and identified motivations. On the basis of SDT, we expected that being high on

introjected approach motivation would not be associated with a more positive pattern of correlates even when combined with high identified motivation.

The results of this research might help educators and parents to decide whether they want to encourage introjected approach motivation in students. More generally, information concerning the unique correlates of introjected approach motivation relative to identified motivation can inform discussions concerning the desirability of self-worth motivations (e.g., Crocker & Park, 2004; Dubois & Flay, 2004; Pyszczynski & Cox, 2004).

To be able to compare introjected approach motivation with identified motivation, it is first necessary to formulate an SDT-based conceptual distinction between introjected approach and introjected avoidance motivations and specify their expected effects.

Two Introjected Motivations and Their Expected Effects Relative to Identified Motivation

The term *introjection* is derived from the Latin words *intro* and *jacere*, which mean "into" and "to throw." Introjection is thus a process in which people feel as if values or goals were thrown or pressed into them by figures whose appreciation they need, without the option of modifying or even examining those values or goals (e.g., Assor, Roth, & Deci, 2004; Deci & Ryan, 1985). Hence, the introjected values and goals are experienced as internally controlling standards of self-worth and social approval and not as integral parts of the self.

Consistent with other theories of motivation (e.g., Carver, 2006; Elliot, 2006), in this research we try to distinguish between approach and avoidance components of introjected motivation. In introjected avoidance motivation, people try to avoid feelings of low self-worth, shame, or guilt that may arise as a result of the failure to live up to the introjected standards. For instance, a student is displaying introjected avoidance motivation when he or she works hard at school to avoid the feelings of shame that may result from getting poor grades. In introjected approach motivation, people strive to maintain or attain feelings of high self-worth, pride, and social approval by meeting the introjected standards. For instance, an athlete is displaying introjected approach motivation when he or she puts extra effort into training to feel worthy and proud of him- or herself.

So far, SDT has not concerned itself with the degree of perceived autonomy associated with introjected approach and avoidance motivations. Herein, we posit that because introjected avoidance motivation involves a focus on more negative and undesired experiences (i.e., feeling unworthy as opposed to feeling worthy), it would be experienced as more pressuring and controlling and less autonomous than introjected approach motivation. Consistent with this view, Sheldon and Elliot (1999) found that college students who formulated more avoidance than approach goals at the beginning of the semester were less able to get their need for autonomy met during the semester.

On the basis of the assumption that introjected avoidance motivation is experienced as more controlling than introjected approach motivation, we hypothesized that introjected avoidance motivation would be associated with a less adaptive pattern of outcomes than would introjected approach motivation. In line with this hypothesis, Sheldon and Elliot (1999) found that the pursuit of

avoidance, relative to approach, goals was associated with less progress toward these goals, less vitality and enjoyment, and lower well-being.

Although introjected approach motivation is unlikely to be associated with highly maladaptive outcomes, it is still considered less autonomous than identified motivation, a motivational orientation in which people engage in actions because they truly understand their value and identify with them (e.g., Ryan & Deci, 2000). Hence, we hypothesized that introjected approach motivation would show considerably weaker associations than identified motivation with various positive outcomes. In line with this prediction, several previous studies have shown that identified motivation is associated with a more adaptive pattern of outcomes than is introjected motivation. For instance, it was found that introjected motivation is associated with school anxiety, poorer coping mechanisms after failure among students (Ryan & Connell, 1989), lack of deep-level learning (Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005), and short-term persistence (Pelletier, Fortier, Valierand, & Brière, 2001). By contrast, identified motivation has been found to be positively related to school enjoyment and proactive coping at school (Ryan & Connell, 1989), deep-level learning (Vansteenkiste et al., 2005), and long-term persistence (Pelletier et al., 2001).

However, as already noted, at present we cannot rule out the possibility that the less positive outcomes characterizing introjected motivation relative to identified motivation stem from the avoidance component of introjected motivation. To address this problem, we compared the correlates of introjected approach and identified motivation.

As part of our focus on these motivations, we examined the possibility that introjected approach motivation might yield beneficial effects when coupled with identified motivation. Thus, similar to the views of Pintrich (2000) and Harackiewicz, Barron, and Elliot (1998) regarding the positive effects of being high on both mastery and performance approach goals, it is possible that students might benefit from being high on introjected approach motivation if they already score high on an adaptive type of motivation such as identified motivation. However, this favorable view of introjected approach motivation is inconsistent with self-determination theory because according to SDT, the nonautonomous and pressuring nature of introjected approach strivings should limit their contribution to optimal functioning even when they come together with more autonomous motivations.

Finally, on the basis of SDT's assumption that all people regardless of gender have a basic need for autonomy (Ryan & Deci, 2000), we expected identified motivation to show more positive correlates than the two introjected motivations irrespective of gender.

Present Research and Hypotheses

On the basis of the foregoing considerations, we formulated three theory-driven hypotheses and one more exploratory hypothesis. The first two hypotheses are preliminary predictions laying the foundation for the third and fourth hypotheses, which constitute the main issues examined in this research. The specific hypotheses examined were as follows: First, we expected that participants would differentiate between introjected approach and introjected avoidance motivation. Second, introjected avoidance

motivation would be experienced as more controlling and less autonomous relative to introjected approach motivation, which would, in turn, be experienced as more controlling and less autonomous than identified motivation. Third, and most central to the present research, both types of introjected motivation would be associated with a pattern of unique correlates that is clearly less positive than that associated with identified motivation. A fourth more exploratory issue to be examined was the possibility that, in contrast to our SDT approach, high levels of identified motivation would have more positive correlates when accompanied by high levels of introjected approach motivation.

We expected that our predictions concerning the nonoptimal unique correlates of the two introjected motivations and the more optimal unique correlates of identified motivation would also be confirmed when controlling for the interactions of the various motivations with gender and the interaction of identified motivation with introjected approach motivation.

We examined these issues in two studies. Study 1 was conducted with two samples of Israeli children and focused on both standard and nonstandard learning structures. It included assessments of school engagement, positive affect, and achievement goals as dependent variables. Study 2 focused on top Belgian sports students and included a broader range of outcomes, including psychological well-being and rated performance. We focused on the sports and the academic domains because in both domains students' achievements are often evaluated, and these evaluations can trigger self-worth concerns. While evaluations in the academic domain are linked with self-worth concerns for most students (e.g., Covington, 1998; Nicholls, 1989), performance in the sports domain might activate intense self-worth concerns mainly among students who are highly invested in that domain. For this reason, we investigated selected elite athletes in top sports schools, for whom sport is a major focus of life and identity (e.g., Brewer, Van Raalte, & Linder, 1993).

In general, we expected that both types of introjected motivation would be associated with a less adaptive pattern of correlates than would identified motivation, irrespective of gender and across nationalities, activity domains, and learning structures, thus enhancing the theoretical and applied value of our conceptualization and research.

Study 1

In Study 1, we focused on the educational domain and examined our hypotheses in two samples (i.e., Studies 1a and 1b). In Study 1a, we examined students' motivation for engaging in a special subject termed *domain of interest* in which students' performance is not graded and students are provided with a great deal of choice. In that study, we used a broad measure of introjected approach motivation that assesses motivation to invest effort in schoolwork to obtain social approval (e.g., "I work well in domain-of-interest classes so that other people will be impressed by what I do") and attain a sense of self-worth (e.g., "I do the assignments in domain-of-interest classes to feel proud of myself"). Study 1b was conducted with a larger sample and examined children's motivation in relation to more normative school subjects, in which performance is graded regularly throughout the year and choice is rather limited. In this study, the measure of introjected approach motivation

focused exclusively on striving to feel worthy and satisfied with oneself.

In both samples, we assessed the three SDT types of motivations on which this research focuses (i.e., identified, introjected approach, and introjected avoidance), one type of motivation considered by SDT as highly controlling and fairly maladaptive (external motivation), and one type of motivation considered by SDT as highly autonomous and adaptive (intrinsic motivation). We also examined students' reports of their positive affect in school, level of engagement in schoolwork, and their mastery and performance avoidance goal pursuit (Elliot, 2005; Nicholls, 1984). We examined mastery and performance avoidance goals because research findings are ubiquitous concerning the adaptive nature of the former and the maladaptive nature of the latter (Elliot, 2005; Midgley, Kaplan, & Middleton, 2001).

To recapitulate, our major purpose was to test the idea that both types of introjected motivation would have fewer positive correlates than would identified motivation.

Method

Participants and Procedure

Participants of Study 1a were 380 Israeli Jewish students in 4th to 6th grades (mean age = 10 years, 5 months) coming from two schools, and participants of Study 1b were 689 3rd- to 6th-grade students (mean age = 10 years, 7 months) coming from three schools. The Study 1a questionnaire focused on students' experiences during the domain-of-interest classes, whereas the Study 1b questionnaire focused on students' experiences while studying in

regular classes. The schools belong to the secular public school system; they are located in southern Israel in neighborhoods with a mostly middle-class population.

Two trained research assistants administered the students' questionnaires in one session when the teachers were not present in the classroom. All items in the questionnaire used a response format asking participants to indicate their agreement on a 4-point Likert scale ranging from 1 (*completely disagree*) to 4 (*completely agree*). Descriptive statistics and internal consistencies of all measured variables can be found in Table 1.

Measures

SDT-based measures of motivation. External, identified, and intrinsic motivations were assessed by means of three 5- to 7-item scales adapted and translated into Hebrew from the Self-Regulatory Style Questionnaire (SRQ; Assor, Kaplan, Roth, & Kanat-Maymon, 2005; Kaplan, Assor, & Roth, 2003; Ryan & Connell, 1989). In Study 1a, we changed the wording of some items of the Hebrew version of the SRQ and dropped two items assessing identified motivation to fit the activities addressed in this study. For example, we dropped the item referring to trying to answer difficult questions in class because in the domain-of-interest classes, students are not tested on their ability to answer difficult questions correctly; rather, discussions are mostly focused on helping students to find meaningful activities or topics they would like to focus on. Similarly, because the subject of domain of interest did not include the assignment of homework, we substituted the standard SRQ Identified item "I do the homework because I want to understand the subject" with the item "I listen in class because I want to understand the subject." An illustrative

Table 1
Descriptive Statistics of Measured Variables in Study 1a and Study 1b

Variable	<i>M</i>	<i>SD</i>	Possible range	Skewness	Cronbach's α
Study 1a (<i>N</i> = 383)					
SDT motivations					
Intrinsic motivation	2.65	0.94	1-4	-0.22	.84
Identified motivation	3.07	0.82	1-4	-0.82	.79
Introjected approach motivation	2.68	0.92	1-4	-0.26	.78
Introjected avoidance motivation	2.10	0.93	1-4	0.45	.79
External motivation	2.50	0.82	1-4	0.09	.77
Perceived competence	3.33	0.59	1-4	-0.95	.69
Adaptive correlates					
Mastery goals	3.38	1.15	1-4	-0.41	.80
Positive affect	3.34	0.77	1-4	-1.18	.76
Engagement	2.94	0.74	1-4	-0.54	.74
Study 1b (<i>N</i> = 689)					
SDT motivations					
Intrinsic motivation	2.90	0.89	1-4	-0.50	.87
Identified motivation	3.40	0.69	1-4	-1.30	.84
Introjected approach motivation	3.01	0.82	1-4	-0.66	.77
Introjected avoidance motivation	2.23	0.90	1-4	0.28	.71
External motivation	2.69	0.80	1-4	-0.18	.74
Perceived competence	3.22	0.60	1-4	-0.71	.72
Adaptive correlates					
Mastery goals	3.05	0.74	1-4	-0.70	.76
Positive affect	3.05	0.84	1-4	-0.63	.66
Engagement	2.99	0.66	1-4	-0.51	.63

Note. SDT = self-determination theory.

item for external motivation in Study 1a is “I make an effort in the ‘Domain of Interest’ subject because I do not want the teacher to yell at me”; for intrinsic motivation, “I make an effort in ‘domain of interest’ because I enjoy it.” Descriptive statistics for these scales and others, including Cronbach’s alphas, means, and standard deviations, are presented in Table 1. Support for the construct validity of these scales was obtained by Assor et al (2005) and by Kaplan et al. (2003).

The items assessing introjected avoidance motivation in both Studies 1a and 1b (e.g., “I make an effort in ‘domain of interest’ because otherwise I will be ashamed of myself”) were also adapted and translated from the SRQ (Ryan & Connell, 1989). To measure introjected approach motivation, we constructed theoretically appropriate items. These items in Study 1a focused on the attainment of positive self-worth (e.g., “I do the assignments in ‘domain of interest’ to feel proud of myself”) and social appreciation (e.g., “I try to do well in ‘domain of interest’ so other people will appreciate me”), whereas the items in Study 1b focused exclusively on pursuing positive personal self-evaluations (e.g., “I try to do well in school in order to feel good about myself”). The items were changed in an attempt to ensure that the type of introjected approach motivation we assessed in Study 1b is clearly self-oriented rather than other oriented, and therefore the expected relatively weak associations of this motivation with positive correlates could not be ascribed to the fact that it is other oriented. The items of the two Introjected Motivation scales and the Identified Motivation scale appear in Tables 2 and 3. More information regarding the validity of these newly developed measures can be found in the *Preliminary Results* section.

Achievement goals. Performance approach, performance avoidance, and mastery goals were measured by subscales of the Patterns of Adaptive Learning Survey (Midgley et al., 1998). Although the Mastery and Performance Avoidance scales were administered to serve as indicators of adaptive and maladaptive functioning (respectively), we did not use performance approach as an indicator of such functioning because of the debate over the extent to which this goal is optimal and desirable (e.g., Midgley, Kaplan, & Middleton, 2001). We did, however, assess this variable to examine whether the new measure of introjected approach motivation is distinct from the performance approach construct.

The Performance Approach scale involves the desire to demonstrate more ability than others (e.g., “I’d like to show my ‘domain of interest’ teacher that I’m smarter than the other students”; 6 items); the Performance Avoidance scale involves the desire to avoid performing worse than others (e.g., “I don’t want my teacher to think that I know less than other students”; 6 items). The Mastery scale measures the extent to which one is interested in mastering the learning material (e.g., “I like to have assignments in ‘domain of interest’ that I can learn from, even if I make mistakes”; 5 items). Support for the construct validity of the Hebrew version of these scales was obtained by Bereby-Meyer and Kaplan (2005) and Levy-Tossman, Kaplan, and Assor (2007).

To assess the distinctiveness of the achievement goal measures and the SDT motivation measures, in each study we conducted factor analyses using maximum likelihood extraction and oblique rotation on conceptually similar achievement goal and SDT measures. First, because in both identified motivation and mastery goals action is guided by the striving to develop skill or knowledge rather than by the desire to demonstrate skill or knowledge, we

Table 2
Factor Analysis of Items Assessing Identified, Introjected Approach, and Introjected Avoidance Motivation: Study 1a

Item content	Introjected avoidance motivation	Introjected approach motivation	Identified motivation
I make an effort in DI because otherwise I would be ashamed of myself.	.85		
I try to do my work well in DI because otherwise I would feel bad about myself.	.70		
I listen to the teacher in DI because otherwise I would feel bad about myself.	.66		
I try to do my work well in DI because I would feel guilty if I did not do everything that I could.	.61		
If I won’t try to do the difficult work in DI, I will be ashamed of myself.	.27		
I do my work well in DI class so that other people will be impressed by what I do.		-.80	
I try to do my work well in DI so that other people will appreciate me.		-.76	
I make an effort in DI class so that I feel that I am a special person.		-.65	
I do the assignments in DI class in order to feel proud of myself.		-.47	
I invest effort in classwork in DI because the topics are important to me.			.74
I work seriously in DI class because I want to learn new things.			.73
I listen in DI class because I want to understand the material.			.66
I make an effort in DI class because it will help me in my future.			.60
I take part in discussions in DI class because I know I will learn from it.			.55
Eigenvalue	5.10	1.27	1.80
% of variance	33.07	5.84	9.36

Note. $N = 383$. The table presents only item loadings with absolute values higher than .25. DI = domain of interest.

conducted a factor analysis on the items assessing these two constructs. In Study 1a, a perfect two-factor solution emerged (total variance accounted for was 55%). In Study 1b, there was also a near perfect two-factor solution, although two cross-loadings (one for identified motivation and one for mastery) did emerge (total variance accounted for was 52%). These results suggest that despite conceptual similarities, identified motivation and mastery goals can be viewed as distinct constructs.

Second, because both types of performance goals and both types of introjected motivations share an evaluative focus, we entered all

Table 3
Factor Analysis of Items Assessing Identified, Introjected Approach, and Introjected Avoidance Motivation: Study 1b

Item content	Introjected avoidance motivation	Introjected approach motivation	Identified motivation
If I would not try to answer difficult questions in class I would be ashamed of myself.	.73		
I try to do well in school because I would feel guilty if I did not do everything that I could.	.57		
I do the classwork because I would be ashamed of myself if I didn't.	.55		
I do the homework so that I will feel good about myself.		-.81	
I do the classwork because I want to feel satisfied with myself.		-.62	
I try to do well in school in order to feel good about myself.		-.46	
I try to answer difficult questions in the classroom in order to feel proud of myself.		-.33	
There are school subjects I invest effort in because they help me know things that are important to me.			.76
I take part in discussions in class because I know I will learn from it.			.69
I work hard at school because it will help me in the future.			.69
I work seriously in class because I want to learn new things.			.67
I invest effort in schoolwork because studying in school is important to me.			.62
I do the homework because I want to understand the material.			.62
I try to answer difficult questions in class in order to know if my answers are correct.			.52
Eigenvalue	2.14	.91	4.99
% of variance	11.51	2.96	31.88

Note. $N = 689$. The table presents only item loadings with absolute values higher than .30.

the items assessing these constructs into a factor analysis. Results in both studies showed that introjected approach motivation and performance approach goals emerged as separate factors, whereas items assessing introjected avoidance and performance avoidance loaded on the same factor (in Study 1a, total variance accounted

for was 54%, whereas in Study 1b total variance accounted for was 49%). Given that the major focus of our research is the contrast between introjected approach motivation and identified motivation, it is important that the measures assessing these two constructs were consistently found to be distinct from conceptually close measures based on achievement goal theory. Yet, the lack of clear discrimination between the introjected avoidance and the performance avoidance measures precluded the use of performance avoidance as a separate outcome measure that reflects adjustment. Overall, then, of the three goal measures, the Mastery Goal scale was the only goal measure to be included in the tests of the hypotheses as a distinct adjustment-related outcome.

Affect and engagement. Positive affect while studying and degree of task engagement were assessed by items used previously by Assor, Kaplan, and Roth (2002). The Positive Affect scale included two positive items (e.g., "I feel at ease in class") and two negative items (e.g., "The class annoys me"), which are reversed in computing the scale. The Engagement scale consisted of four items (e.g., "I participate in class discussions" and "After school, I read about topics that are related to the subjects I work on in class"). Cronbach's alphas of both scales were satisfactory and can be found, together with descriptive statistics, in Table 1.

Perceived competence. We administered Harter's (1982) measure of perceived competence (e.g., "I am as clever and smart as other children of my age"; 6 items) to examine the possibility that the more positive pattern of correlates associated with identified motivation relative to the introjected motivations or introjected approach compared with introjected avoidance motivation might be accounted for by differences in perceived competence.

Results

Preliminary Results

Hypothesis 1: Differentiating between introjected and identified motivations. We used exploratory factor analysis using maximum likelihood extraction with oblique rotation to examine whether both types of introjected motivation could be distinguished from one another and from identified motivation. These results are presented in Tables 2 and 3 for Studies 1a and 1b, respectively.

Three factors with an eigenvalue higher than 1 were retained in both studies, explaining in total 48% and 45% of the variance in the item responses in Study 1a and 1b, respectively. As can be noticed in both Tables 2 and 3, all item loadings were above .25. Furthermore, the three extracted factors mapped perfectly on the three types of motivation, and there were no cross-loadings. One introjected avoidance item in Study 1a had a rather low loading (.27) and was therefore discarded from further analyses. Thus, it appears that two types of introjected motivation can be differentiated by participants. On the basis of these findings, we constructed three motivational scales in each study by averaging the items that loaded on each of these factors. Internal consistencies of these constructed scales were acceptable (all above .70; see Table 1).

Hypothesis 2: Perceived autonomy of introjected and identified motivations. Next, we tested the hypothesis that introjected avoidance motivation would be experienced as more controlling and less autonomous relative to introjected approach motivation,

which would, in turn, be experienced as more controlling and less autonomous than identified motivation. This was done by examining the correlations of the three motivations of interest with other SDT-based motivations representing different levels of perceived autonomy versus coercion and by examining the correlations of the motivations of interest with various adaptive outcomes (see Roth, Assor, Kaplan, & Kanat-Myron, 2007, for a similar approach).

In assessing the degree of relative autonomy characterizing various motivations, Ryan and Connell (1989) have used the notion of a simplex structure. The simplex concept is derived from Guttman's (1954) radex theory, which describes ordered relations between correlated variables. Guttman argued that a simplex model reflects an ordered arrangement of variables along a certain parameter. In Ryan and Connell's work, the parameter along which variables are ordered is the continuum of perceived autonomy. In a perfect simplex correlation matrix, the size of the correlations decreases as one moves away from the diagonal.

Table 4 presents the correlations between the various types of motivation posited by SDT to represent different levels of autonomy when introjected approach motivation is situated, in line with our hypothesis, between introjected avoidance and identified motivation. Inspection of the correlations obtained in Study 1a (below the diagonal) and those obtained in Study 1b (above the diagonal) shows that a perfect simplex structure was obtained in both studies.

Although according to Guttman's (1954) simplex notion the pattern of the correlations is more important than the significance of the differences among correlation coefficients, we also present information concerning significance of differences. As expected, introjected approach motivation correlated more strongly with intrinsic motivation than did introjected avoidance motivation ($Z = 1.40, p < .08$, in Study 1a; $Z = 5.05, p < .001$, in Study 1b). Also as predicted, introjected approach motivation correlated more strongly with identified motivation than did introjected avoidance motivation, although this difference only reached significance in Study 1b ($Z = 6.46, p < .001$). Furthermore, although introjected avoidance motivation correlated somewhat more strongly with external motivation than did introjected approach motivation, the difference in correlational strength was not significant. Overall, this pattern of correlations suggests that introjected approach motivation is experienced as more autonomous but not less controlling than introjected avoidance motivation.

Table 4
Zero-Order Correlations Among Self-Determination Theory Motivations for Study 1a and Study 1b

Variable	1	2	3	4	5
1. External motivation	—	.41**	.39**	.16**	.15**
2. Introjected avoidance motivation	.48**	—	.52**	.16**	.27**
3. Introjected approach motivation	.44**	.48**	—	.47**	.50**
4. Identified motivation	.15**	.37**	.44**	—	.66**
5. Intrinsic motivation	.10*	.29**	.38**	.71**	—

Note. Correlations for Study 1a appear below the diagonal; those for Study 1b appear above the diagonal. For Study 1a, $N = 383$; for Study 1b, $N = 689$.

* $p < .05$. ** $p < .01$.

To examine the idea that identified motivation is experienced as more autonomous and less controlling than introjected approach motivation, we compared the correlations of both types of motivation with intrinsic motivation, which is highly autonomous, and with external motivation, which is highly controlled. Results provided full support for our hypothesis and showed that identified motivation correlated more strongly with intrinsic motivation than did introjected approach motivation ($Z = 6.72, p < .001$, in Study 1a; $Z = 4.51, p < .001$, in Study 1b) and correlated less strongly with external motivation than did introjected approach motivation ($Z = 4.93, p < .001$, in Study 1a; $Z = 4.64, p < .001$, in Study 1b).

A second, less direct way to assess the location of the three motivations of interest on the relative autonomy continuum was to examine the correlations of those motivations with the three adaptive outcomes of mastery goals, positive affect and engagement. Because SDT assumes that increased autonomy is associated with more optimal and adaptive functioning, it can be expected that the correlations with these three optimal outcomes would become increasingly more positive when moving along the autonomy continuum from introjected avoidance through introjected approach to identified motivation.

The pattern of zero-order correlations in Table 5 clearly supports our hypothesis. Thus, the correlations with mastery goals, positive affect, and engagement became more positive when moving along the continuum, with introjected avoidance motivation displaying the weakest correlates and identified motivation displaying the strongest correlates. This pattern also begins to suggest that introjected approach motivation is more adaptive than introjected avoidance motivation and that identified motivation is more adaptive than both. To more fully examine this question, however, we performed multiple regression analyses, which examine in more detail the unique associations of these three types of motivation.

Primary Analyses

Hypothesis 3: Unique associations of introjected versus identified motivations. We began by performing a series of multiple regression analyses in which gender was entered both as a main effect and as a moderator variable that interacts with each of the three motivations in the prediction of the outcomes. Interaction terms were created by multiplying centered means of the independent variables. Results showed that out of 24 regression analyses (three motivations by four dependent variables by two studies), only two significant interactions emerged. Because the pattern of the relations between motivation and the dependent variable was quite similar across gender (ordinal interaction) for both interactions and given the probability of chance results, the final multiple regression analyses presented in Table 6 do not include gender as a predictor.

We then regressed each of the outcomes on the three motivational variables and perceived competence. Finally, to assess whether introjected approach motivation is associated with a more positive pattern of correlates when combined with identified motivation, we entered the interaction of introjected approach and identified motivation as a fifth predictor.

Inspection of Table 6 shows that as predicted, the two introjected motivations were associated with a less positive pattern of correlates than was identified motivation. Identified motivation

Table 5
Correlations of Self-Determination Theory Motivations With Mastery Goal, Affect, and Engagement for Study 1a (N = 383) and Study 1b (N = 689)

Outcome	Introjected avoidance motivation		Introjected approach motivation		Identified motivation	
	1a	1b	1a	1b	1a	1b
Mastery goal	.35**	.26**	.46**	.52**	.71**	.74**
Positive affect	.09	.08*	.31**	.28**	.55**	.54**
Engagement	.23*	.11*	.36**	.37**	.75**	.63**

* p < .05. ** p < .01.

had sizable unique positive associations with mastery goals, positive affect, and engagement across Studies 1a and 1b, whereas introjected approach motivation had weaker and less consistent unique associations with these outcomes, and introjected avoidance motivation had one weak negative association (i.e., positive affect in Study 1a) and one weak positive association (i.e., mastery goals in Study 1b). Notably, all these unique associations were found above and beyond the effect of perceived competence, which was positively associated with five of the six outcomes across Studies 1a and 1b. Finally, regression analyses in which external motivation was added as a sixth predictor (in addition to the five predictors presented in Table 6) showed that identified motivation consistently had more positive unique correlates than both types of introjected motivation also in these analyses.

Exploring the effects of being high on both introjected approach and identified motivations. As expected, the interaction between identified and introjected approach motivation never reached statistical significance.

Discussion

The results of Study 1 generally support our hypotheses. First, the findings show that elementary schoolchildren differentiate among introjected approach and introjected avoidance motivation across two different types of school-related activities and learning structures (i.e., domain-of-interest activities vs. more structured regular academic studies). Second, introjected avoidance motivation appears to be experienced as less autonomous than introjected approach motivation, which appears to be less autonomous and more controlled relative to identified motivation. Third and most important, regression analyses controlling for the effects of perceived competence consistently showed that both types of introjected motivation had a less positive pattern of correlates than did identified motivation. In addition, the results were consistent with the view that high introjected approach motivation is not associated with more positive correlates even when coupled with high identified motivation.

Preliminary factor analyses had indicated that items assessing introjected avoidance motivation and performance avoidance goals consistently loaded on the same factor. It is important to note that this convergence is not likely to stem mainly from measurement problems because the two constructs were assessed by widely used items. Thus, the items assessing introjected avoidance come from

the original SRQ (Ryan & Connell, 1989) and have been used in many published studies (e.g., Downie, Koestner, El Geledi, & Cree, 2004; Mullan et al., 1997; Patrick, Skinner, & Connell, 1993; Roth, Assor, Kanat-Maymon, & Kaplan, 2006). As for the scale assessing performance avoidance goals, this measure is part of the Patterns of Adaptive Learning Survey (Bereby-Meyer & Kaplan, 2005; Levy-Tossman et al., 2007; Midgley et al. 1998), a well-known instrument assessing goal orientations.

What, then, do the findings suggest regarding the nature of introjected avoidance motivation? The performance avoidance items appear to capture a strong concern with not looking stupid and not feeling embarrassed or ashamed. Research has shown that a concern with shame and negative evaluation by others is a major component of fear of failure, which is an antecedent of performance avoidance goals (e.g., Elliot, 2006; Elliot & Thrash, 2004). It is possible then that the close link between introjected avoidance and performance avoidance reflects the preoccupation of people motivated by introjected avoidance motivation with possible failure, shame, and negative evaluation by other people. This interpretation further underscores the maladaptive nature of introjected avoidance motivation.

Taking a wider perspective, it is important to note that the phenomenon of considerable overlap between motivational constructs anchored in different theories (and the measures assessing them) is not uncommon (e.g., Murphy & Alexander, 2000). The fact that the two types of items repeatedly load together raises the possibility that they actually represent the same psychological entity or process. Future research will have to determine the degree of convergence between introjected avoidance motivation and performance avoidance goals in other samples and domains and possible ways of conceptualizing this convergence.

However, irrespective of the question of how we can conceptualize the convergence between introjected avoidance and performance avoidance items, the important point for this research is that the items assessing introjected avoidance clearly involve a concern with feeling and appearing unworthy, and in line with our hypothesis, the tendency to endorse such items was found to be associated with a fairly problematic pattern of correlates.

Table 6
Beta Coefficients of Multiple Regression Analyses: Regressing Adaptive Outcomes on Self-Determination Theory Motivations and Perceived Competence for Study 1a (N = 383) and Study 1b (N = 689)

Predictor	Mastery goals		Positive affect		Engagement	
	1a	1b	1a	1b	1a	1b
Perceived competence	.14**	.10**	.03	.15**	.22**	.23**
Introjected avoidance motivation	.01	.10**	-.16**	.01	-.08	-.01
Introjected approach motivation	.18**	.15**	.15*	.09	.06	.11**
Identified motivation	.54**	.60**	.49**	.38**	.64**	.46**
Identified × Introjected Approach Motivation	.01	-.03	-.07	.04	-.01	-.02
R ²	.53	.60	.32	.25	.61	.44

* p < .01. ** p < .05.

Study 2

In Study 2, we aimed to replicate the findings obtained in Study 1 while simultaneously extending them in several important ways. First, to examine the generalizability of the findings of Study 1, we tested our primary hypotheses in the sport domain rather than the educational domain. In doing so, we focused on a special group of sport athletes who are selected to follow a training and teaching program to become top sport athletes. We deemed it instructive to sample top sport students rather than regular students engaging in sports activities because in contrast to academic work that bears on the self-worth of most students (e.g., Covington, 1998), sport activities might have a substantial link to self-worth only for people who are heavily invested in sports and have strong athletic identities (e.g., Brewer et al., 1993).

Second, we extended the range of outcome variables examined in Studies 1a and 1b by including, in addition to well-being measures (i.e., positive affect and vitality), measures of ill-being (i.e., negative affect and depressive feelings). More important, we also assessed students' performances in the past year. In doing so, we no longer relied on self-reports but asked sport students' primary coach to provide a rating of their athletic performances in the past year. Coaches rated two different aspects of performance: Athletes' performance compared with others and athletes' progress in the previous academic year. Thus, the measures of rated performance represent a third advancement of Study 2 because they allowed us to circumvent the problem of shared method variance, which might artificially inflate some of the observed correlates of the various motivations in Study 1. We examined the same three hypotheses and one research question as in Studies 1a and 1b and expected that both types of introjected motivation would have fewer positive correlates than would identified motivation.

Method

Participants and Procedure

We contacted four top sport schools in Belgium (Hasselt, Mergem, Leuven, and Ghent), who were selected randomly from a total of seven sport schools operating in Belgium. All four schools agreed to participate in the research. The number of top sport students per school varied between 71 and 125 at the time this research was conducted. Across the four schools, the questionnaire was handed out to approximately 400 Belgian top sport students between 12 and 20 years old and was returned by 203 mainly Caucasian and Catholic top sport students (response rate = 50%). This sample consists of a highly selective group of individuals because they need to meet very high and competitive standards, outlined by the national sport federation (see <http://www.bloso.be/topsport> for more information with respect to these issues), to be allowed to pursue schooling in a top sport school. All selected top sport students are highly talented and possess the potential to become top sport athletes who make their living with their sport. Their mean age was 15.62 years ($SD = 1.70$); 31% of the sample ($N = 63$) were female and 69% ($N = 139$) were male; one person did not disclose his or her gender. The participants were distributed in the following way over the different sport disciplines: 12.5% athletics, 10.4% basketball, 5% golf, 1.5% gymnastics, 16.8% handball, 3.5% judoka, 1% ski, 2.5% tae kwon do, 0.5% table tennis, 2% triathlon, 28.2% soccer, 4% volleyball, 5.9% cycling,

and 5.9% swimming. The remaining 0.3% did not indicate their primary sport on the questionnaire. Participants had 8.38 years of experience with their sports ($SD = 2.67$) and 7.21 years of competition experience ($SD = 2.71$) with their sports.

In terms of competition level, 15.9% of the participants compete at the international level, 72.6% at the national level, and 11.5% at the provincial level. Participants trained on average 17.93 hr a week ($SD = 5.57$). Because not all coaches of the athletes provided the requested performance measures (discussed below) and some of the motivational measures were not filled out by all participants, the sample was reduced to 192 when predicting well-being outcomes and 132 when predicting performance outcomes.

Measures

Competition level. Students were asked to indicate at which level they performed their sports. On the basis of their descriptions, individuals were categorized as playing at the international level (3), the national level (2), or the local level (1).

Motivation. To assess top sport students' motivation for participating in their sport, we used the recently developed Behavioral Regulation in Sport Questionnaire (Lonsdale, Hodge, & Rose, 2008). The original scale contains 36 items, tapping nine types of motivation: five types of nonintrinsic motivations (i.e., amotivation, external, introjected, identified, and integrated) and four types of intrinsic motivation (i.e., a global measure, intrinsic motivation to know, intrinsic motivation to accomplish, and intrinsic motivation to search for stimulation). In this study, we modified the Behavioral Regulation in Sport Questionnaire by (a) leaving out the specific measures of intrinsic motivation; (b) adding 4 new introjected approach motivation items (e.g., "I participate in my sport because I feel proud of myself if I persist" and "because I can only be satisfied with myself if I continue") because the existing scale only included 3 introjection avoidance items and 1 rather general introjection item ("because I feel obligated to continue"); and (c) modifying 2 identified regulation items.

Participants were asked to record their agreement with each of the listed items on a 5-point Likert scale, which varied from 1 (*completely disagree*) to 5 (*completely agree*). Internal consistencies (Cronbach's alpha) of the Amotivation (e.g., "the reasons why I participate are not clear to me anymore"; 4 items), External Motivation (e.g., "because people push me to play"; 4 items), Integrated Motivation (e.g., "because it is an opportunity to just be who I am"; 4 items), and Intrinsic Motivation (e.g., "because I like it"; 4 items) subscales were all acceptable, ranging between .77 and .87. More detailed information regarding the descriptive statistics of these and all other measured variables can be found in Table 7. The items making up the two Introjected Motivation scales and the Identified Motivation scale appear in Table 8. Further evidence for the validity of the Introjected and Identified Motivation scales is reported in the *Preliminary Results* section.

Depressive feelings. Depressive feelings were measured with the Center for Epidemiological Studies Depression scale (Radloff, 1977). Items were adjusted to the sport context, so they all focused on participants' experience of depressive feelings over the past week at the sport school (e.g., "during the last week I felt sad at the top sport school"; 6 items). Ratings were made on a scale ranging from 0 (*rarely or none of the time [less than one day]*), to 1 (*a*

Table 7
Descriptive Statistics of Measured Variables: Study 2

Variable	<i>N</i>	<i>M</i>	<i>SD</i>	Possible range	Skewness	Cronbach's α
Self-determination theory motivations						
Intrinsic motivation	192	4.43	0.54	1–5	–0.88	.80
Integrated motivation	199	4.27	0.58	1–5	–0.71	.74
Identified motivation	192	4.07	0.61	1–5	–0.31	.73
Introjected approach motivation	192	3.55	0.94	1–5	–0.44	.84
Introjected avoidance motivation	199	2.37	1.01	1–5	0.64	.73
External motivation	192	2.06	0.82	1–5	0.73	.80
Amotivation	192	1.85	0.88	1–5	1.25	.87
Well-being outcomes						
Positive affect	198	3.50	0.64	1–5	–0.40	.88
Negative affect	198	2.10	0.76	1–5	0.48	.89
Depressive feelings	201	0.40	0.41	0–3	1.83	.76
Vitality	197	3.67	0.66	1–5	–0.56	.83
Rated performance outcomes						
Interindividual performance	141	4.56	1.41	1–7	–0.45	NA
Intraindividual progress	141	5.10	0.89	1–7	–0.40	.88

Note. *N* = 202. NA = not applicable.

couple of times [1–2 days]), and 2 (sometimes or regularly [3–4 days]), to 3 (most or all of the time [5–7 days]).

Vitality. Vitality assesses the extent to which participants felt alive and energetic at the top sport school over the past few days. Items were taken from the General Vitality scale (Ryan & Frederick, 1997) and were adjusted to the sport context (e.g., “the last couple of days I felt very energetic when doing sports”; 7 items). Items were answered on a 5-point Likert scale varying between 1 (completely disagree) and 5 (completely agree).

Positive and negative affect. Positive and negative affect were measured with the Positive Affect and Negative Affect Schedule (Watson, Tellegen, & Clark, 1988). Items were adjusted so that they focused on experienced affect on the top sport school during

the past 6 weeks (e.g., “During the past six weeks I felt enthusiastic”; 20 items). Items were answered on a 5-point Likert scale ranging from 1 (completely disagree) to 5 (very strongly experienced).

We created a composite measure of sport-specific psychological well-being by averaging the four standardized subscales.

Rated performance. The top sport students' personal coach rated two different aspects of performance, that is, interindividual performance and intraindividual progress. Interindividual performance reflects the performance level of the athlete over the past academic year in comparison with other athletes in the same sport and age category as the rated athlete. Sport coaches rated athletes' performance by circling a number on a 7-point Likert scale ranging

Table 8
Factor Analysis of Items Assessing Identified, Introjected Approach, and Introjected Avoidance Motivations: Study 2

Item content: “I participate in sports . . . ”	Introjected avoidance motivation	Introjected approach motivation	Identified motivation
1. because I would feel ashamed if I quit.	.85		
2. because I would feel like a failure if I quit.	.83		
3. because I would feel guilty if I quit.	.77		
4. because I feel proud of myself when I persist.		.87	
5. because I want to prove to myself that I'm able to persist.		.87	
6. because I can only be satisfied with myself when I continue to participate.		.78	
7. because I feel better about myself when I continue to participate.		.77	
8. because I value the benefits of sports.			.89
9. because I find it personally meaningful.			.82
10. because I stand fully behind the decision to do so.			.72
11. because the benefits of sports are important to me.			.52
Eigenvalue	1.03	4.29	1.78
% of variance	9.38	39.00	16.24

Note. *N* = 202.

from 1 (*much weaker than others*), to 4 (*at the same level as others*), to 7 (*much better than others*). Intraindividual progress reflects the extent to which the athlete has made progress and has improved his or her performance level compared with the beginning of the academic year. Four different performance aspects were rated, that is, progress at the tactical, technical, physical, and psychological level. Coaches rated these four performance aspects on a 7-point Likert scale ranging from 1 (*very strong regression*), to 4 (*stagnation*), to 7 (*very strong progress*).

Results

Preliminary Analyses

Hypothesis 1: Differentiating between introjected and identified motivations. To examine whether introjected approach, introjected avoidance, and identified motivation items load on three different factors, we performed an exploratory factor analysis using maximum likelihood extraction with oblique rotation. As in Study 1, three factors emerged with an eigenvalue higher than 1, explaining 64% of the variance in the item responses. All items had a loading of above .50, and we found no cross-loadings greater than .40. These three factors could clearly be interpreted as representing introjected approach motivation, introjected avoidance motivation, and identified motivation (see Table 8). Internal consistencies were satisfying and are presented in Table 7.

Hypothesis 2: Perceived autonomy of introjected and identified motivations. As in Study 1, we tested Hypothesis 2 by examining the correlations of the three motivations of interest with other SDT-based motivations and by examining the correlations of the motivations of interest with various adaptive and maladaptive outcomes. As can be noticed in Table 9, a clear simplex pattern emerged. More important, the pattern of correlations for introjected avoidance motivation, introjected approach motivation, and identified motivation followed the predicted simplex pattern. For example, introjected avoidance motivation was more strongly positively correlated with external motivation than was introjected approach motivation ($Z = 4.53, p < .001$), whereas introjected avoidance motivation was less strongly correlated with identified motivation ($Z = 4.36, p < .001$) and intrinsic motivation ($Z = 2.27, p < .03$) than was introjected approach motivation. Furthermore, identified motivation correlated more strongly than introjected approach motivation with intrinsic motivation ($Z = 5.07, p < .001$) and

less strongly than introjected approach motivation with external motivation ($Z = 5.61, p < .001$).

Table 10 presents the zero-order correlations between the three motivations of interest and the outcomes. As expected, introjected avoidance motivation had significant negative associations with overall well-being, vitality, and both types of rated performance, whereas it was positively and significantly associated with negative affect and depressive feelings. In contrast, introjected approach motivation had very low and nonsignificant correlations with all outcomes. Finally, identified motivation positively and significantly predicted overall well-being, positive affect, and vitality and had positive yet nonsignificant correlations with the two performance indicators.

Primary Analyses

Hypothesis 3: Unique associations of introjected versus identified motivations. To examine the unique associations between introjected and identified motivations and the outcomes, we performed a series of multiple regression analyses. Before doing so, we examined the possible role of gender as a moderator of the relations of the three motivations of interest with the dependent variables by entering gender as a main effect and as a moderator that interacts with each of the three motivations. We created the interaction terms by multiplying the centered means for gender and the motivational variables. Results showed that gender interacted with introjected avoidance motivation on most outcome measures, did not interact with introjected approach on any of the outcome measures, and had one significant interaction (out of seven) with identified motivation. Given these findings, we included gender main effect and the effect of the interaction between gender and introjected avoidance motivation as additional factors next to the three motivations and the interaction between introjected approach and identified motivation in the multiple regression analyses. Results can be found in Table 11.

As can be seen in Table 11, identified motivation had a more positive pattern of unique correlates than did both types of introjected motivations. More specifically, introjected avoidance motivation was uniquely positively predictive of depressive feelings and negative affect, whereas it was negatively predictive of overall well-being, vitality, and both rated performance outcomes. Introjected approach motivation, in contrast, was unrelated to any of the outcomes, whereas identified motivation emerged as a significant positive predictor of overall well-being, positive affect, vitality, and both performance measures.

Table 9
Descriptive Statistics of Measured Variables: Study 2

Variable	1	2	3	4	5	6	7
1. A-motivation	.87						
2. External motivation	.67**	.80					
3. Introjected avoidance motivation	.30**	.54**	.73				
4. Introjected approach motivation	.04	.23**	.45**	.84			
5. Identified motivation	-.37**	-.20**	.12	.44**	.74		
6. Integrated motivation	-.43**	-.29**	.12	.31**	.59**	.80	
7. Intrinsic motivation	-.55**	-.37**	-.01	.16*	.52**	.64**	.80

Note. $N = 202$. Figures in the diagonal represent Cronbach alpha coefficients.
* $p < .01$. ** $p < .05$.

Table 10
Zero-Order Correlations Between Self-Determination Theory Motivations and Well-Being and Performance Indicators: Study 2

Outcome	Introjected avoidance motivation	Introjected approach motivation	Identified motivation
Well-being (composite score)	-.21**	.03	.32**
Positive affect	-.03	.12	.29**
Negative affect	.21**	.03	-.13†
Depressive feelings	.21**	.03	-.08
Vitality	-.14*	.09	.43**
Rated performance			
Interindividual performance (N = 133)	-.20*	-.06	.14
Intraindividual progress (N = 133)	-.18*	-.07	.12

Note. *p < .05. **p < .01. †p < .10.

Gender had significant interactions with introjected avoidance motivation on well-being, positive affect, vitality, depression, and interindividual performance. In all these cases, introjected avoidance motivation had less positive relations with the adaptive outcomes for girls. Similarly, introjected avoidance had more negative relations with the maladaptive indicators for girls. However, it should be noted that for boys, too, introjected avoidance motivation was never associated with an adaptive pattern of correlates. Finally, regression analyses in which external motivation was added as a seventh predictor (in addition to the six predictors presented in Table 11) showed that identified motivation consistently had more positive unique correlates than both types of introjected motivation.

Effects of being high on both introjected approach and identified motivations. As in Study 1, the interaction between introjected approach and identified motivations never reached sig-

nificance, suggesting that identified motivation is not associated with more desirable outcomes when it is accompanied by high levels of introjected approach motivation.

Discussion

Study 2 provided further evidence for our hypotheses. Specifically, as in Studies 1a and 1b, which focused on the educational domain, introjected approach and introjected avoidance motivation could also be differentiated in this sport study. Furthermore, introjected avoidance motivation was experienced as more controlling and less autonomous than introjected approach motivation, which was, in turn, experienced as more controlling and less autonomous than identified motivation. This simplex pattern of correlates suggests that introjected approach motivation can be located on the autonomy continuum posited by SDT in between introjected avoidance and identified motivation. More important, regression analyses showed that identified motivation was associated with the most positive pattern of well-being and performance correlates also in the sports domain, at least for top athletes. In contrast, introjected avoidance motivation positively predicted negative affect and depression and was negatively related to rated performance, whereas introjected approach motivation did not yield any unique associations.

General Discussion

This research was primarily aimed at examining the idea that even an approach-oriented introjected motivation, aiming to promote high self-worth rather than to minimize low self-worth, is associated with considerably fewer positive correlates than is identified motivation, which involves doing things because one understands their value. To investigate this question, we took three steps. First, we examined whether children and adolescents differentiate between introjected avoidance and introjected approach motivation. Then, we tested the hypothesis that introjected approach

Table 11
Beta Coefficients of Multiple Regression Analyses Regressing Adaptive and Maladaptive Outcomes on Self-Determination Theory Motivations and Gender: Study 2

Predictor	Well-being	Positive affect	Vitality	Negative affect
Gender	.11	.02	-.01	-.10
Introjected avoidance motivation	-.29***	-.11	-.20**	.25**
Introjected approach motivation	.00	.04	-.04	-.02
Gender × Introjected Avoidance Motivation	.18**	.17*	.15**	-.06
Identified motivation	.34**	.29***	.47***	-.13
Identified Motivation × Introjected Approach Motivation	-.09	-.07	-.02	.06
R ²	.21	.12	.24	.08
	Depression	Interindividual performance	Intraindividual performance	
Gender	-.20**	.10	-.06	
Introjected avoidance motivation	.26***	-.33***	-.25*	
Introjected approach motivation	.01	-.02	-.06	
Gender × Introjected Avoidance Motivation	-.14*	.26**	.17†	
Identified motivation	-.08	.21*	.24*	
Identified Motivation × Introjected Approach Motivation	.10	-.04	-.02	
R ²	.12	.14	.09	

Note. N = 202.
*p < .05. **p < .01. ***p < .001. †p < .10.

motivation is experienced as somewhat more autonomous and less controlling than introjected avoidance motivation. Establishing the less controlling and more autonomous nature of introjected approach motivation was important because we sought to demonstrate that even a less controlling type of introjected motivation is less desirable than identified motivation, which would be experienced as most autonomous. The third step was to examine the unique correlates of these three types of motivation. Finally, we examined the idea that introjected approach motivation would also have limited value when combined with identified motivation. To assess the generalizability of our findings, we examined these issues in the academic and sport domains.

Level of Perceived Autonomy Characterizing Identified Versus Introjected Motivations

In this research, we applied the traditional conceptual distinction between approach and avoidance motivation (e.g., Carver & Scheier, 1999; Elliot, 2005) to the construct of introjected motivation within SDT, which refers to engaging in an activity out of self-worth concerns. In two studies in two different domains, we showed that children and adolescents clearly differentiated between these two subcomponents of introjected motivation.

With respect to the degree of experienced autonomy associated with the two types of introjected motivation, the pattern of correlations between the two introjected motivations and identified motivation and the other motivations posited by SDT confirmed the hypothesis that introjected approach motivation is experienced as somewhat less controlling than is introjected avoidance motivation and as considerably less autonomous than identified motivation. Thus, in both Study 1 and Study 2, the pattern of correlates became increasingly more positive as we moved from the more controlled introjected avoidance motivation through the less controlled introjected approach motivation to the more autonomous identified motivation.

Although this issue has to be further examined, these results suggest that introjected approach motivation, as measured in our studies, might be placed at the midpoint of the perceived autonomy continuum posited by SDT (e.g., Ryan & Deci, 2000), between introjected avoidance and identified motivation. Until now, SDT has not specified a motivational orientation for that point. The incorporation of the introjected approach construct into the perceived autonomy continuum might possibly allow for a more refined and discriminating use of that dimension.

The More Positive Correlates of Identified Motivation Relative to Introjected Motivations

The major purpose of our studies was to test the idea that introjected motivations, including the relatively more benign and less controlling introjected approach motivation, have less positive correlates than identified motivation. Results of zero-order correlations, and in particular regression analyses, consistently supported this hypothesis. Specifically, compared with introjected approach and introjected avoidance motivations, identified motivation had much stronger unique associations with mastery goals, well-being, and engagement indicators and was the only motivation that was positively related to the performance measures. Importantly, the consistent null effects of the interaction between

identified motivation and introjected approach motivation suggest that students also do not benefit from being high on introjected approach motivation if they already score high on identified motivation.

The finding that identified motivation had much stronger associations with various desirable attributes than did introjected approach motivation suggests that the results of previous studies showing that identified motivation is superior to introjected motivation (e.g., Koestner & Losier, 2004; Ryan & Deci, 2000) cannot be ascribed to the avoidance component of the Introjected Motivation scale. Moreover, although introjected approach motivation was associated with a more optimal pattern of correlates than was introjected avoidance motivation, as anticipated by Carver and Scheier (1999), the current data show that introjected motivation is also considerably less optimal than identified motivation when it is entirely and uniquely approach oriented. Such results provide some counterevidence for Carver and Scheier's (1999) critique of SDT that the observed negative effects of the controlled types of motivation posited by SDT can be attributed to the avoidant nature of controlled motivation.³

The finding that among top athletes, introjected approach motivation was not associated with improved performance or well-being and that identified motivation did have unique positive associations with performance and well-being appears especially important. Adolescents who are top athletes practicing in highly competitive settings are likely to feel that other people's regard, their self-worth, and their identity hinge on their achievements (Assor et al., 2004; Krane, Greenleaf, & Snow, 1997). The results of this research suggest that these individuals would perform and feel much better if they would focus on the personal value of the sport they engage in rather than on the implications of their engagement in sport for their self-worth or others' regard for them.

Differentiating Between Self-Worth as a Motive and as an Outcome

This article's focus on self-worth issues calls for a further clarification of the relations between the various motivations posited by SDT and the concept of self-worth. From the SDT perspective, it is important to distinguish between self-worth as an outcome of a given action versus self-worth as a motive for that action (Ryan & Brown, 2003). There is little doubt that having high, authentic, and stable self-esteem is associated with various benefits (e.g., Kernis, 2003). However, this does not imply that actively pursuing self-worth is associated with optimal outcomes. Indeed, when self-worth becomes a primary motive for action (as in the case of introjected motivations), people tend to hinge their self-esteem on specific outcomes, and this creates feelings of internal pressure and an unstable and fragile sense of self-worth (e.g., Assor et al., 2004; Deci & Ryan, 1995; Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000; see also Crocker, Brook, Niya, & Villacorta's [2006] recent analysis that although striving for self-worth might at times lead to engagement in action, it is unlikely to be highly beneficial).

³ It should be noted that this research was not aimed at addressing Carver and Scheier's (1999) critique in a systematic and comprehensive way because this would necessitate the assessment of constructs such as external approach motivation and perhaps even identified avoidance motivation.

Yet, this is not to say that self-worth dynamics are not involved in the case of more autonomous motivations (e.g., identified motivation), albeit of a different sort. Indeed, doing something because one understands its importance and because the action reflects one's self-chosen values can lead to what Deci and Ryan (1995) called "true self-esteem." This is because engaging in an activity to realize one's personal values is likely to create a firm and true sense of authenticity, which in turn enhances one's sense of self-worth. Thus, it is only when self-worth functions as a primary motive for action (i.e., in introjected motivation) that it is problematic.⁴

Nature of Introjected Approach Motivation

One somewhat surprising finding of this research was the pattern of relatively benign and nonharmful correlates of introjected approach motivation. According to SDT, introjection processes that are aimed at promoting feelings of self-worth or generalized social approval are experienced as at least mildly stressful and unpleasant and are not likely to be associated with positive feelings (e.g., Assor et al., 2004; Deci & Ryan, 1985). Inconsistent with this view, introjected approach motivation did not correlate negatively with the various well-being indicators and was not associated with negative affect. Also unexpected were the two significant positive regression effects of introjected approach motivation on positive affect and engagement in Studies 1a and 1b. Although these positive effects were small, they could not be ascribed to identified motivation or to introjected avoidance motivation.

How can we explain these findings, and how do they fit with the basic assumptions of SDT concerning introjected and self-evaluative motivations? One possible explanation is that the type of introjected approach motivation we assessed involves acts that students perceive as fairly reasonable and not too difficult to perform. For example, the items refer to acts such as doing classwork and homework or participating in sports activities. Such acts do not involve demands for very high achievement or an exceptional amount of work. Therefore, they might be less likely to arouse anxiety or anger. In contrast, it is possible that an Introjected Approach scale focusing on demands for high achievement and extreme effort might arouse negative feelings because these demands would be experienced as threatening (given the possibility of occasional failure) or because they would be perceived as insensitive, unreasonable, or unjust.

It is important to note, however, that from an SDT perspective, strivings aimed at promoting high self-worth are not growth promoting even if they involve standards that seem reasonable. This is because with such strivings one's sense of worth and loveworthiness is still experienced as conditional, and one does not feel accepted for whom one is (Deci & Ryan, 1995). Yet, the participants in our research did not seem to express any unease because their worth was contingent on specific behaviors. One possible reason for this might be that the enactment of socially valued achievement-oriented behaviors promotes acceptance by teachers and parents and thus provides at least some support for the need for relatedness (see Leary, 2004). In addition, the positive global self-evaluations, which introjected approach motivation strives to support, might increase students' confidence that they are competent and can meet various developmental challenges (e.g., Dubois & Flay, 2004).

Yet, we believe that although self-worth motivation (focused on reasonable standards) might occasionally mobilize students to act in ways that temporarily increase their sense of social acceptance and optimism about the future, enduring activation of self-worth motivation is likely to undermine well-being because it constantly arouses uncertainty about one's worth. Future research would have to examine this view, perhaps using longitudinal designs.

Gender Differences

Although the results of Studies 1a and 1b indicated that gender did not moderate the relations between motivations and various outcomes, Study 2 did show that introjected avoidance motivation had a more maladaptive pattern of correlates for girls than for boys. The reasons for this particular pattern among girls engaging in competitive sports are unclear. Perhaps in the sports schools competitive pressure and the likelihood of failing are greater than in the regular academic schools examined in the Israeli samples, and girls with strong introjected avoidance motivations are more sensitive to the consequences of failure.

Future Research and Limitations

Future research might include more direct assessments of the intensity of motivation, using measures of effort expenditure or initial persistence at the activity at hand. This would help to gain further insight into possible positive effects that are associated with introjected approach motivation because this research primarily tapped qualitative indicators of functioning and performance. In addition, future research might extend the approach-avoidance distinction to external motivation. When being regulated by external contingencies, not only can individuals be driven by the avoidance of negative external consequences, such as physical punishment, but their behavior can also be instigated by the attainment of desirable external consequences, such as material rewards.

In spite of the strengths of this research, a number of limitations need to be mentioned. One limitation was that the scales assessing introjected approach, introjected avoidance, and identified motivations consisted of slightly different items in the different studies. Thus, although the measures were rather similar across studies, it is still possible that we would not obtain exactly the same findings if identical measures were used across studies. In research based on SDT, investigators often develop their own specific versions of widely used scales to assess the motivations of interest, depending on the specific domain, the context, and participants' attributes (see Roth et al. [2006] on this issue). However, it appears useful to try to delineate a number of items that capture the core of each of the three motivations we have focused on and that researchers might want to include in all future measures of these constructs.

Starting with introjected avoidance motivation, it appears useful to include items indicating that one would feel ashamed, guilty, and bad about oneself if one did not make an effort or engage in the relevant activity. Similarly, in the assessment of introjected

⁴ With regard to the issue of self-worth as a motive, it is interesting to note that Covington's (1998) theory of self-worth does not posit that the striving for self-worth is problematic in itself. However, Covington did claim that the self-worth motive is maladaptive when self-worth depends on the demonstration of ability in highly competitive settings.

approach motivation, it would be useful to use items indicating that one would feel proud, satisfied, and good about oneself if one invested effort or participated in the relevant activity. Thus, in both types of introjected motivation, it is important to assess the extent to which self-related feelings serve as motives for action. Finally, in assessing identified motivation, it is important to capture the extent to which participants engage in the relevant activity because they feel that it is important, think that it is valuable, and view it as personally meaningful.

A second limitation of this research is its correlational nature, which precludes us from drawing conclusions regarding causality. Future experimental studies might want to experimentally activate the different motivations to examine whether they yield a differential causal impact on students' learning and achievement (see, e.g., Vansteenkiste et al., 2005). A third limitation is that part of the observed effects might be driven by method variance, as most data were provided by the same informant. However, it appears that the observed associations are likely to be meaningful because we also found the introjected and identified motivations to predict performance outcomes in Study 2, although the latter were provided by coaches and not by the athletes' self-reports. Still, when possible, future research might use measures that are not based on self-reports.

A fourth limitation is that the findings in the sports domain pertain only to elite athletes, which limits our ability to generalize the findings to regular students engaging in sports; similarly, because the findings concerning academic work and domains of interest do not refer to top students, we cannot generalize to this type of students. Fifth, although the distinction between and effects of three motivations examined were quite consistent across the studied life domains (i.e., schooling and sports), it remains to be investigated whether the current findings can be generalized across other life domains, age groups, and cultures.

Conclusion

The findings of our research suggest that even a seemingly "positive" approach-oriented self-worth motivation has very few benefits. The results further suggest that identified motivation is associated with much more desirable affective and performance correlates than both types of introjected motivation, so that educators would do well to motivate children by helping them experience their actions as promoting personally important values (identified motivation) rather than by viewing their actions as means for attaining high self-esteem (introjected approach motivation).

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