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Relations between self-esteem, perceived control, possible selves, and academic achievement in adolescents

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ABSTRACT

The present study deals with the interrelations between self-esteem, perceived control, and "possible selves". It sought to examine the relationship of these variables not only to each other, but also to scholastic achievement. It was predicted that high self-esteem coupled with high perceived control would be associated with high levels of academic achievement. It was also predicted that well-elaborated, specific possible selves would also be associated with high levels of achievement. The relationships among these variables were examined employing path analytic techniques. The results, based on 415 high school students, partly supported the hypotheses. While high perceived control appeared to be associated with higher achievement levels, there were no direct links neither between self-esteem and achievement nor between possible selves and achievement.

Key words: Adolescents, Perceived control, Possible selves.

During adolescence the individual is faced with many decisions, possibilities and areas of uncertainty (Erikson, 1959). Contemporary social and economic changes place high demands on all young people to increase vocational qualifications, and to choose between a range of possible lifestyles and values. Negotiating these high-level demands, requires complex cognitive and interpersonal skills and a secure sense of self and self-worth. Consequently, during this period, the adolescent's attitude toward the self and the perception of personal abilities becomes particularly significant (Elkind, 1984; Harter, 1988; Rosenberg, 1986).

The functional role of self-concept in one's behavior, attitudes and experience has been demonstrated in numerous studies. The term self-concept is used to refer to the knowledge aspects of the self-schema, while the evaluative

component of the self-schema is conceptualized as self-esteem. Both components of the self, evaluative and knowledge, can be treated as states or traits. That is, feelings of self-regard can certainly fluctuate over situations, roles and events (Burke, 1980; Campbell & Tesser, 1985), but it is also true that trait self-esteem or global judgements of self-worth remain remarkably stable over time (Epstein, 1983). There is now a large body of literature demonstrating the systemic interplay between affective or evaluative states and the accessibility of compatible self-beliefs (Greenwald & Pratkanis, 1984). In this study, we focus on self-esteem, which is widely acknowledged as having a strong influence on psychological orientation to the world, including motivation to engage in efficacious behavior (Harter, 1990; Novick, Cause, & Grove, 1996).

One's sense of active control is also a critical

dimension of the self-concept (Harter, 1986). Locus of control is defined as the degree to which individuals believe that the outcomes of their actions are under their own control as opposed to control by other people or by the environment. Individuals whose responses reflect a strong belief that their outcomes are internally controlled are assessed as "internals", whereas those who believe that their outcomes are externally controlled are assessed as "externals" (Lefcourt, 1981, 1983). A review of a number of converging literatures suggest that individual differences in locus of control are systematically linked to individual differences in self-esteem (Ickes, 1988; Tennen & Herzberger, 1987).

As a component of the self-theory, perceived control facilitates a mediating role in the individual's behavior as it predicts a wide range of important outcomes across the domains of health, sports, work, school and general life satisfaction (Lefcourt, 1992; Skinner, 1995; Strickland, 1989). The primary psychological mechanism by which perceived control influences outcomes is through its effects on action and action regulation. When perceived control is high, people tend to orient toward the activity, initiate responses, try out strategies, exert effort, persist, and in general, behave actively. In contrast, when perceived control is low, people tend to move away from challenges, choose easy and familiar tasks, and avoid novelty (Skinner, 1995). In this sense, perceived control is related to the goals adopted by the individual. People with high perceived control tend to set challenging, high and concrete goals (Schunk, 1990). They seem to have more organized, elaborated and structured representations of the action space and can imagine more mean-ends connections leading to desired outcomes. People with low perceived control set low and diffuse goals. Their representations of the action space are disorganized, and chaotic (Skinner, 1995).

Within our chosen domain of school learning, the present study focuses on self-esteem and perceived control as critical correlates of academic achievement. The study also examines the role of anticipated future goals as important psychological variables

affecting the individual's academic achievement. It attempts to take into account the individual's future goals utilizing the concept of "possible selves". Possible selves are defined as conceptions of the self in future states (Markus & Nurius, 1986; Markus & Ruvolo, 1989; Markus & Wurf, 1987). They reflect the way in which individuals think about their potentials and their future. Possible selves serve a motivational function in that they function as inner guides. People are thought to pursue their positive and avoid their negative possible selves (Markus & Nurius, 1986). It has also been proposed that a given possible self will have maximal motivational effectiveness when it is a dominant or central element in the working self-concept and when it is well elaborated (Inglehart, Markus, & Brown, 1989; Locke, Shaw, Saari, & Latham, 1981; Oyserman & Markus, 1990). According to Ruvolo and Markus (1992), clearly elaborated possible selves and the strategies of realizing them decrease the psychological distance between one's current state and the desired end state. Those with a clear vision of themselves in a future state will have accessible more cues that are relevant to this future state, and this can facilitate the selective processing of information that is useful in attaining the desired state. In this paper the aim was to investigate whether this "structuring aspect" of possible selves contributes to predicting academic achievement. An additional aim was to explore the relationship between possible selves, self-esteem and perceived control. Based on the relevant literature we hypothesized that individuals low in self-esteem and low perceived control would be more inclined to engage in negative self-relevant rumination. Specifically, the hypotheses of the study were formulated as follows:

a) High self-esteem coupled with perceptions of personal control over outcomes, should be associated with higher levels of actual achievement. Conversely, lower levels of achievement would be expected from adolescents with lower levels of self-esteem and relatively external perceptions of control.

b) Adolescents with highly elaborated

success-relevant possible selves would show enhanced academic performance (would have higher grade point average). In contrast, individuals with negative possible selves and less-elaborated repertoires of success-relevant possible selves would be less successful academically.

c) Adolescents with highly elaborated success-relevant possible selves would have higher levels of self-esteem and would be more internal in their generalized control beliefs as compared to individuals with negative possible selves and less-elaborated repertoires of success-relevant possible selves.

Method

Participants and procedure

The sample consisted of 415 high school students attending school within the state sector, in Greece, ranging in age from 15.9 to 18.7 years. Half of the sample were boys ($n = 202$, 48.67%) and half were girls ($n = 213$, 51.33%). The analysis further took account of different living areas (75.42% of the participants were living in urban areas and 24.57% were living in the country) and the socioeconomic status of the family. The socioeconomic index was based on parents' education level and on father's occupation. Five basic occupational categories were used, based on the Revised Scale of Occupational Classification proposed by Warner, Weeker, and Eells (Miller, 1991), with 1 representing semi-skilled and unskilled and 5 representing professional occupation.

The entire battery of instruments was group-administered in classroom units after obtaining permission from school authorities. All scales were completed anonymously. Standardised conditions and instructions were followed.

Measures

Self-esteem was assessed by a subscale from the Culture-Free Self-Esteem Inventory (Battle, 1981), consisting of eight items. The Culture-Free Inventory taps discrete domains of the self-esteem

separately and assesses global self-esteem directly with a set of items that inquire about the individual's sense of self-acceptance and worth as a person. For our research purposes, we concentrated on the assessment of global self-esteem. Test-retest reliabilities for the entire measure range from .79-.92 (Battle, 1981). Cronbach's alpha for the present sample was .75.

Locus of control was assessed by two scales. The first, the Nowicki-Strickland Internal-External Locus of Control Scale, (NSIE, Nowicki & Strickland, 1973), containing 40 items requiring 'Yes' or 'No' responses, was used to measure the generalised locus of control. It is designed to assess people's perception of their degree of control over events and consequences in their lives. This scale was employed as it is based on the well-known Rotter Internal-External scale, but is designed to provide a reliable and valid assessment of child and adolescent locus of control. It has been utilized in many studies as it appears to be the best measure of locus of control presently available for children and adolescents, providing the most accurate assessment of individual's global sense of control. Higher scores reflect a more external orientation. Test-retest reliability figures have varied from .65 to .83 with a 6-week interval and .56 with a 1-year interval (Robinson, Shaver, & Wrightsman, 1991). Cronbach's alpha for the present sample was .70.

The second instrument was a subscale from the Spheres of Control Scale (SOC, Paulhus, 1983). The SOC comprises three 10-item scales, the Personal Efficacy Scale, Interpersonal Control Scale, and Sociopolitical Control Scale. For the purposes of this study only the first, the Personal Efficacy Scale was used. Items are rated on a seven-point Likert scale ranging from disagree to agree. The scale is keyed for scoring in the internal direction. For the current analyses the scale was reversed so that higher scores represent greater externality. Test-retest reliabilities at 4-week intervals were above .90 and at a 6-month interval were around .70 (Paulhus, 1983). Cronbach's alpha for the present sample was .63.

We used an open-ended format to elicit *possible selves* (Ruvolo & Markus, 1992). Par-

ticipants were asked to imagine themselves in the future and then write a short essay describing how they were imagining themselves. The scoring criteria of this task are given below (see Results).

Academic achievement was measured by grade point average (GPA).

Results

First, we performed a content analysis of the open-ended questions. Initially, each possible self was coded into one of five categories. The five categories were as follows:

1. General, vague representations of positive possible selves (Positive/general).
2. Clear, specific, well-elaborated positive possible selves (Positive/specific).
3. General, vague images of negative possible selves (Negative/general).
4. Specific negative possible selves (Negative/specific).
5. Inability to visualize the future (Don't know/can't say).

The coding was done by a person who was unaware of the hypotheses of the study. Interrater reliability was established on a randomly selected subset of 100 answers ($r = 0.76$). In the final analysis, because of the very small number of adolescents who choose either a Negative/specific or a Negative/general possible self, we decided to form only one category, namely Negative possible self. The frequencies and the percentages of

adolescents who fell in each category were as follows:

As can be seen from Table 1 respondents were quite likely to report mainly positive possible selves, as though representations of self as successful were readily available, whereas failing or unsuccessful representations were temporarily inaccessible. Furthermore, the majority of participants (55%) selected a Positive/general possible self.

The analytical procedure used to test the first hypothesis was structural equation analysis, which calls for the use of observed variables as indicators of hypothesised latent constructs. The analysis was conducted using AMOS 3.61 statistical package. In the model father's job and parents' educational level were used as indicators of the latent variable "socio-economic status" (SES). Also NSIE and SOC were used as indicators for the latent variable "perceived control". Goodness of fit was evaluated using three methods: a) chi-square distribution under the null hypothesis, b) normed fit index (NFI), and c) comparative fit index (CFI) (Bentler, 1989, 1990). Results of maximum likelihood estimation showed a reasonably good fit to the data (see Figure 1). The goodness of fit index (GFI) was .995, the adjusted goodness of fit index (AGFI) was .986, CFI was 1.000 and NFI was .988. The χ^2 statistic was 6.218 ($df = 8, p = .623$).

As hypothesized, a significant causal path was found between perceived control and academic

Table 1
Frequencies and percentages of adolescents choosing each of the four categories of possible selves

Categories	Frequency	Percent
Positive/specific	126	30.4
Positive/general	229	55.2
Negative	22	5.3
I Don't know /can't say	38	9.2
Total	415	100.0

achievement (-0.23), indicating that adolescents who feel in control of the outcomes in their lives have higher levels of actual academic achievement. The fact that the path between perceived control and academic achievement is negative reflects the manner in which the perceived control items are scored.

There was no direct link between self-esteem and academic achievement. However, the path between self-esteem and perceived control is one of the strongest in the model. It might be that self-esteem influences academic achievement indirectly, through perceived control.

In order to investigate the relationship

between possible selves, self-esteem, perceived control, and academic achievement, we performed a three-way MANCOVA (3 categories of Possible selves x Sex x Region), using as covariate the socio-economic index and dependent variables self-esteem, perceived control (as measured by NSIE and SOC) and academic achievement. We decided to discard the fourth category (Inability to visualize the future) from this analysis because the answer "I don't know" or "I can't say" may have been confounded with an unwillingness on the part of some adolescents to give an answer.

There was a significant multivariate main effect

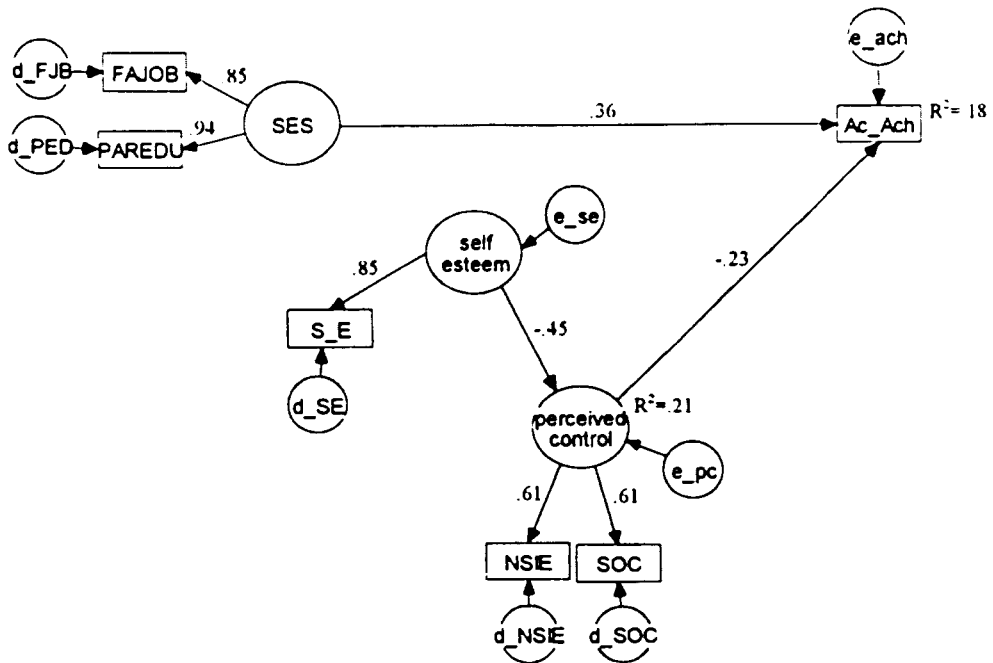


Figure 1: A model predicting academic achievement from self-esteem, perceived control and socioeconomic status

Note:

FAJOB: father Job [5 levels]; PAREDU: average of mothers' and fathers' education levels; Age: student age; S.E.=self-esteem; NSIE=Nowicki-Strickland Locus of Control Scale; SOC= Spheres of Control; Ac_Ach: academic achievement [0 to 20 scale]

SES: socioeconomic status (two indicators: FAJOB & PAREDU); perceived control: (two indicators: NSIE & SOC); Self esteem: (one indicator: S_E with fixed measurement error d_S_E variance at 28% of S_E variance)

of possible selves, $F(8, 722) = 6.985, p < 0.01$. There was also a significant Gender x Possible selves, $F(8, 722) = 2.362, p < .05$, and a Region x Possible Selves interaction, $F(8, 722) = 3.144, p < .01$. The main effect for the covariate, the socioeconomic level, was also significant $F(4, 361) = 13.680, p < .01$.

The univariate tests which followed MANCOVA showed significant group differences in relation to all the dependent variables, that is, academic achievement, self-esteem and perceived control. The three groups (Positive/specific, Positive/general, Negative) differed significantly among themselves in relation to academic achievement, $F(2, 364) = 6.500, p < .01$. An a posteriori Bonferroni test revealed that the Positive/specific group obtained the highest grades as compared to the other two groups (see Table 2).

There were significant group differences in relation to self-esteem scores, $F(2, 364) = 12.300, p < .001$. Contrasts revealed that the Negative imagery group reported significantly lower self-esteem scores than did the other two groups. There were no differences between the two Positive imagery groups (see, Table 2). There was a significant possible selves x region interaction, $F(2, 364) = 6.900, p < .01$. The country residents in the Negative imagery group obtained the lowest scores.

There were only marginal differences between

the groups in relation to NSIE locus of control scale, $F(2, 364) = 3.400, p < .05$, and significant differences in relation to SOC Personal Efficacy scale, $F(2, 364) = 9.200, p < .001$. With regard to the SOC, the Positive/specific group differed significantly from both the Positive/general and the Negative imagery groups. There was a clear trend toward greater externality with the sequence Positive/specific < Positive/general < Negative. There was also a significant difference in relation to gender, $F(1, 364) = 9.400, p < .01$, and a gender by region interaction, $F(1, 364) = 9.700, p < .01$. Girls appeared relatively more external than boys but this trend was evident in relation to country residents only (see Tables 3, 4 and 5). In addition, there was a significant region by categories of possible selves interaction. While city and country residents holding Positive/specific possible selves did not differ significantly, they did differ those holding Positive/general and Negative possible selves. This difference was more pronounced in the Negative group.

Discussion

The content analysis of the open-ended questions as regards the possible selves revealed that the participants of our study had working self-concepts that were dominated by positive

Table 2
Means and Standard Deviations in relation to categories of possible selves

Possible selves	S.E.		NSIE		SOC		Acad. Ach.	
	M	SD	M	SD	M	SD	M	SD
Positive/specific	9.92	2.99	12.80	4.09	24.13	7.22	16.73	1.69
Positive/general	10.27	2.84	13.05	4.30	26.96	6.95	16.12	1.81
Don't /know	9.13	2.10	12.79	4.76	26.74	6.01	16.39	1.81
Negative	7.99	3.85	14.23	6.07	29.87	10.25	16.29	1.85
Total	9.94	2.94	13.01	4.39	26.24	7.30	16.34	1.79

Note: S.E. = self-esteem; NSIE = Nowicki-Strickland Locus of Control Scale; SOC = Spheres of Control Scale.

Table 3
Means and Standard Deviations in relation to categories of possible selves by sex

Possible selves x sex	S.E.		NSIE		SOC		Acad. Ach.	
	M	SD	M	SD	M	SD	M	SD
P/S boys	10.47	2.88	13.10	3.88	24.05	7.31	16.83	1.54
P/S girls	9.44	3.01	12.53	4.29	24.21	7.20	16.64	1.83
P/G boys	10.63	2.64	12.44	4.21	27.10	7.25	16.12	1.69
P/G girls	9.94	2.99	13.61	4.33	26.85	6.69	16.12	1.92
Don't/know boys	9.36	2.01	12.36	4.75	26.60	6.43	16.05	1.50
Don't/know girls	8.81	2.25	13.37	4.87	26.94	5.57	16.87	2.12
Negative boys	8.65	4.17	14.25	5.79	27.77	5.81	16.25	2.13
Negative girls	7.20	3.49	14.20	6.71	32.40	13.82	16.35	1.56

Note: P/S = Positive/specific; P/G = Positive/general; S.E. = self-esteem; NSIE = Nowicki-Strickland Locus of Control Scale; SOC = Spheres of Control Scale.

possibility and, therefore, focused on images and conceptions of themselves as successful in the future. Only a small percentage of adolescents reported negative images of future selves. These adolescents appeared depressed and generally overburdened by the pressure of trying to meet the standards necessary for entry to higher education. Most of them saw themselves as academic failures, and made reference to being unemployed, lonely, unloved (see also Leondari, Syngollitou, & Kiosseoglou, 1998).

The finding that the majority of the participants did not seem to have elaborated self-relevant futures in which they drop out, are unemployed, or suffer the disapproval of family and friends, may be due to the fact that people are generally biased and unrealistically optimistic about their future (Taylor & Brown, 1986). It could also be that these adolescents entertain conceptions of positive possibility as a buffer to the tension of national exams, as it seems that when some aspect of the current self is challenged, positive possible selves can be recruited into the working self-concept and, to the extent that they are well elaborated, they may be used as a protection to such challenge (Greenberg & Pyszczynski, 1985).

A substantial number of the participants of the

present study (30.4%) were successful in generating vivid stories of their future replete with descriptions of very specific possible selves. The stories were well elaborated and highly individualised. Yet the majority of our sample seem to have a relatively constricted sense of possibility, both hoped for and feared possibility. Those who sustained a positive/general self (55.2%) made reference to vague stereotypical images.

Our first hypothesis postulating that high self-esteem and high perceived control are associated with higher levels of achievement was partly confirmed, as adolescents with perceptions of personal control over outcomes appeared to have relatively higher achievement levels. Self-esteem did not appear to relate directly to academic achievement. Given that domain specific measures rather than global ones seem to relate more highly to achievement, this lack of relationship is not particularly surprising (Harter & Connell, 1984). Another explanation could be that self-esteem influences academic achievement indirectly through perceived control given that the two measures were highly correlated.

In line with our predictions the groups did differ on academic achievement. Students who produced well-elaborated, specific pictures of

Table 4
Means and Standard Deviations in relation to categories of possible selves by region

Possible selves x region	S.E.		NSIE		SOC		Acad. Ach.	
	M	SD	M	SD	M	SD	M	SD
P/S city	9.76	2.70	12.62	3.86	24.46	7.25	16.67	1.63
P/S country	10.66	4.02	13.59	5.02	22.70	7.07	16.97	2.00
P/G city	10.15	2.69	12.55	4.44	26.04	6.85	16.31	1.63
P/G country	10.50	3.13	14.07	3.83	28.83	6.82	15.74	2.09
Don't/know city	9.13	2.10	12.79	4.76	26.74	6.01	16.39	1.81
Don't/know country	–	–	–	–	–	–	–	–
Negative city	8.94	3.21	13.00	5.31	28.64	8.83	16.48	1.83
Negative country	2.00	1.00	22.00	5.29	37.67	17.21	15.11	1.84

Note: P/S=Positive/specific; P/G=Positive/general; S.E.=self-esteem; NSIE=Nowicki-Strickland Locus of Control Scale; SOC=Spheres of Control Scale.

Table 5
Means and Standard Deviations in relation to categories of possible selves by region and sex

Possible selves	region	sex	S.E.		NSIE		SOC		Acad. Ach.	
			M	SD	M	SD	M	SD	M	SD
P/S	city	boys	9.90	2.84	12.89	3.78	24.54	7.49	16.64	1.53
P/S	city	girls	9.64	2.60	12.4	3.95	24.39	7.12	16.69	1.71
P/S	country	boys	12.47	2.07	13.85	4.27	22.31	6.59	17.48	1.45
P/S	country	girls	8.30	4.79	13.26	6.09	23.20	7.98	16.31	2.47
P/G	city	boys	10.35	2.73	11.99	4.32	26.24	7.16	16.18	1.51
P/G	city	girls	9.95	2.66	13.12	4.52	25.83	6.56	16.44	1.75
P/G	country	boys	11.29	2.32	13.51	3.75	29.15	7.17	15.98	2.08
P/G	country	girls	9.93	3.53	14.47	3.87	28.60	6.64	15.56	2.10
Dont/know	city	boys	9.36	2.01	12.36	4.75	26.60	6.43	16.05	1.50
Dont/know	city	girls	8.81	2.25	13.37	4.87	26.94	5.57	16.87	2.12
Dont/know	country	boys	–	–	–	–	–	–	–	–
Dont/know	country	girls	–	–	–	–	–	–	–	–
Negative	city	boys	9.17	3.95	13.91	5.94	28.66	5.17	16.27	2.23
Negative	city	girls	8.63	2	11.75	4.37	28.63	12.74	16.77	1.15
Negative	country	boys	3.00	–	18.00	–	18.00	–	16.00	–
Negative	country	girls	1.50	0.71	24.00	5.66	47.50	3.54	14.67	2.36

Note: P/S=Positive/specific; P/G=Positive/general; S.E.=self-esteem; NSIE=Nowicki-Strickland Locus of Control Scale; SOC=Spheres of Control Scale

positive possible selves were the most successful academically. These results are consistent with the findings of Markus (Ruvolo & Markus, 1992) who found that the best performance was observed among the persons who imagined specific, self-relevant possibilities.

The results were in line with the third hypothesis which postulated that individuals with specific positive possible selves would have high self-esteem and high perceived control. It was found that adolescents with well-elaborated, specific, positive possible selves reported feeling more in control of the outcomes in their life. This finding is in line with research findings which suggest that individuals high in perceived control seem to have more elaborated, concrete and structured goals in contrast to those with low perceived control who tend to set diffuse goals (Schunk, 1990; Skinner, 1995).

In relation to self-esteem, it was the Negative imagery group which reported less positive evaluation of their worth as a person than did the other two groups. In addition, girls rated themselves less favorably than boys. Gender differences in self-esteem are in line with previous studies which report that, generally, adolescent males tend to have higher levels of self-esteem than adolescent females (Barnes & Farrier, 1985; Leondari et al., 1998; Rosenberg, 1965).

A secondary finding of the study was that the place of residence seemed to be a significant variable in relation to perceived control. Adolescents who lived in the country tended towards greater externality in comparison to city residents in the Positive/general and the Negative group. It could be that because the social pressures are more intense in a small community, adolescents feel trapped, more vulnerable to social criticism, and find it more difficult to maintain a sense of control over the outcomes in their life. In addition, the country girls were more external in comparison to country boys.

The pattern of findings generally supported our prediction that the best performance is related to high perceived control and specific, self-relevant possibilities. The Positive/specific group outperformed not only the Negative but also the

Positive/general group as regards academic achievement. Adolescents in the Positive/specific group believed that much of what happens to them is under their own control. We could argue, then, that the structuring aspect of possible selves is significantly correlated to perceived control and both variables contribute to predicting academic achievement.

It is the adolescents in the Negative imagery group which present a less "healthy" psychological profile. They have relatively lower self-esteem, and a tendency towards greater externality. This picture is more pronounced in girls. A working self-concept which is dominated by negative end-states might function as deterrent to efficient performance. And this might happen either by distracting the individual from his/her performance on the task, or by creating a negative affective state which makes views of self as successfully completing the task at hand temporarily inaccessible, and therefore, producing inaction. Furthermore, having a low perceived control may affect appraisals of the stressful situation, coping efforts or both, and is thought to be associated with a sense of diminished self-worth (Lefcourt, 1976; Rotter, 1966).

We might argue, then, that the Negative imagery group constitutes a group at risk. It might be that this group of students are motivated to protect self-worth in achievement situations by trying to avoid the consequences of failure or to avoid censure from significant others (Covington, 1984). If these students could be identified early they could be helped to avoid the self-handicapping behavior which they are likely to exhibit.

In summary, the findings of this study support the notion that the tendency to perceive outcomes as being under personal control is associated with a sense of self-worth (Coopersmith, 1967). In addition, there is some support for the assumption that an individual's self-esteem and the interrelated dimension of perceived control establish a cognitive pattern that is associated with future goal formation. The study was an attempt to understand better how the self works to regulate behavior by utilizing the concept of

possible selves. The contribution of the concept of possible selves to traditional views of motivation is to suggest that some of the dynamic elements of personality may be carried in specific cognitive representations of the self in future states and that one's actions may be shaped by attempts to realize or avoid these states. Our results present some tentative suggestions that when the working self-concept is dominated by positive possibility and when, in addition, the focus is on a specific positive selves, individuals seem to do better academically and be in better psychological adjustment.

However, the explanations offered here stand in need of much more evidence. Further research will be needed to determine the precise role of the different categories of positive selves on academic achievement. Furthermore, the number of participants in the Negative group was too small to be able to make meaningful generalizations to the population at large without replication with other samples.

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