Learning from Authoritarian Teachers:
Controlling the Situation or Controlling Yourself Can Sustain Motivation

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Abstract

Positive psychology encompasses the study of positive outcomes, optimal functioning, and resilience in difficult circumstances and negative experiences. In the context of language learning, positive outcomes include academic engagement, self-determined motivation, persistence in language learning, and eventually becoming a proficient user of the language. These questionnaire studies extend previous research by addressing how these positive outcomes can be achieved even in adverse circumstances. In study 1, the primary and secondary control scales of interest were validated using 2468 students at a Canadian university. Study 2 examined the capacity of 100 Canadian language learners to adjust themselves to fit in with their environment, termed "secondary control," and how it was related to their motivation for and engagement in language learning and their feelings of anxiety speaking in the classroom. Secondary control in the form of adjusting one's attitude towards language learning challenges through positive reappraisals was positively associated with self-determined motivation, need satisfaction, and engagement. In regression analyses, positive reappraisals were also found to buffer the negative effects of having a controlling instructor on students' engagement and anxiety. These findings suggest that personal characteristics interact with the learning environment to allow students to function optimally in their language courses even when the teacher is controlling.

Learning from authoritarian teachers: Controlling the situation or controlling yourself can sustain motivation

In order for students to acquire communicative competence in a new language, they must actively engage in the learning process, devoting intense effort and persistence to what can be a difficult and time-consuming challenge (Masgoret & Gardner, 2003). However, language learning circumstances are sometimes not ideal for promoting students' engagement. Factors that cause students to feel controlled have been shown to negatively affect motivation (e.g., Deci, Eghrari, Patrick, and Leone, 1994). In light of this finding, the fact that language study is often compulsory at North American and European schools, as is the study of English as a Foreign Language (EFL) in many Asian countries, is potentially problematic. Having a language instructor with an authoritarian teaching style is also likely to make students feel controlled, possibly decreasing their motivation for language learning (Deci & Ryan, 2000). For these reasons, the question of how students can maintain their motivation under such environmental constraints is important.

Positive psychology concerns itself in part with questions of resilience, or how students can function optimally and achieve positive outcomes even in adverse circumstances; students react to instructor behaviors in different ways, and students with greater resiliency can react in positive ways to negative classroom conditions. The current study addresses the question of language learners' resilience, focusing on how students maintain motivation and positive affect in the face of controlling instructors. In this paper, we examine secondary control, or the sense that one can change oneself to adapt to the environment, as a strategy to mitigate the negative effects of having a controlling instructor in a university language class. While many studies have focused on either how aspects of the language learning context affect learners or how individual differences among learners relate to motivation, few have looked at how individual

characteristics of language learners interact with the learning context. We begin by outlining our motivational framework and describing past literature on academic resilience, then defining primary and secondary control. We consider how these control strategies might support motivation in the language classroom.

Motivation

The present study uses self-determination theory (SDT; Deci & Ryan, 1985; 2000; see Noels, 2001, 2009, for discussions of SDT applied in the language learning context) as a framework to look at motivation. According to Deci and Vansteenkiste (2004), SDT is fundamentally linked to positive psychology because it involves the prediction of optimal human functioning. Chirkov, Sheldon, and Ryan (2011) position self-determination as central to the achievement of human happiness. The SDT perspective on academic motivation describes a way to encourage love of learning, which is one of the character strengths identified by Peterson and Seligman (2004) as central to human well-being. This perspective implies that SDT is concerned with some of the central interests of positive psychology and a good starting point for addressing questions of motivation and resilience.

One subtheory of self-determination theory describes different types of motivational orientations, or classes of reasons for engaging in an activity or task. These orientations represent a continuum of increasingly self-endorsed types of reasons, as well as amotivation, in which an individual cannot see any reason or value for the activity. These types of motivation are sometimes dichotomized into "controlled" and "self-determined" types of reasons (Deci & Ryan, 2000). External regulation involves external rewards or punishments as the reason for behavior and is considered the most controlled motivational orientation. Introjected regulation is still classified as a "controlled" orientation, but it is slightly more internalized in that the

motivating reward or punishment is an internal one such as pride, guilt, or self-esteem maintenance. Identified regulation, which involves seeing personal value in the activity, but as a means to achieve an important goal rather than for the sake of the activity itself, is relatively internalised and is considered a "self-determined" orientation. Finally, intrinsic motivation, in which an activity is pursued out of interest in or enjoyment of the activity itself, is considered fully self-determined (Deci & Ryan, 2000).

Self-determination theory also describes three fundamental psychological needs; relatedness, competence, and autonomy contribute to our capacity to experience intrinsic motivation and lead to general well-being. Relatedness is a feeling of warmth and connectedness to others. Competence describes the ability to perform well at the given task. Autonomy refers to the degree to which a person's actions are self-endorsed and consistent with his or her values, beliefs, and desires (Deci & Ryan, 2000). Fulfilling these three needs contributes to the experience of self-determined motivation (i.e., intrinsic motivation and identified regulation). If these needs are infringed upon, individuals tend to feel more controlled and therefore experience greater introjected or external regulation, and they may even become amotivated (Deci & Ryan, 2000).

According to self-determination theory, more self-determined forms of motivation should be associated with positive academic outcomes. High intrinsic motivation predicts higher grades and higher standardized test scores for children, while controlled motivation, and especially amotivation, have been associated with lower test scores and grades (e.g. Boiché & Stephan, 2013; Lepper, Cerasoli, Nicklin, & Ford, 2014; Corpus, & Iyengar, 2005). Intrinsic motivation is also associated with a preference for more challenging tasks (Abuhamdeh & Csikszentmihalyi, 2009). This type of orientation should in turn allow individuals to engage in the high-skill and optimally challenging activities required to experience the immersive, fulfilling, focused

motivational state known as flow (Csikszentmihalyi, 1997). In language classes, self-determined

motivation has been associated with high self-evaluations of language competence, greater

intention to continue language studies, higher motivational intensity, and lower classroom

anxiety (Noels, Clement, & Pelletier, 1999; Noels, Pelletier, Clément, & Vallerand, 2000; Noels,

2005; Comanaru & Noels, 2009; McEown Sugita, Noels, & Saumure, 2014). In sum, intrinsic

motivation is linked to more effective learning, higher effort, and more challenge-seeking

behavior.

The behavior of teachers can support or undermine students' experience of autonomy and

self-determined motivation in the classroom. Autonomy-supportive behaviors such as providing

choice and emphasizing how course materials are relevant to students' lives have been associated

with students' self-determined motivation and positive feelings about and engagement in

learning, while controlling behaviours such as pressuring or being intrusive may have the

opposite effect (e.g. Assor, Kaplan, & Roth, 2002; Black & Deci, 2000; Chirkov & Ryan, 2001).

A teaching style that is high in controllingness and low in autonomy-support has been found to

be detrimental to students' feelings of autonomy, competence, and relatedness, which in turn is

related to diminished engagement, achievement, and intrinsic motivation and greater negative

affect (Jang, Reeve, Ryan, & Kim, 2009). This type of teaching style can be referred to as

authoritarian following Walker's (2008) definition, which states that an authoritarian teacher is

highly demanding and unresponsiveness to students' needs. Since autonomy and relatedness tend

to be positively interrelated (Ryan & Deci, 2011), SDT measures of autonomy support capture

the ideas of both responsiveness and demandingness; a controlling, non-autonomy-supportive

teaching style should involve both controllingness, which is an important aspect of

demandingness, and failure to adapt to students' needs and interest, which is indicative of low responsiveness.

Primary and Secondary Control

Not all students who encounter an authoritarian instructor necessarily become de-motivated. Depending on students' personal feelings of control, they may be more or less resilient. The construct of control has been a focus of considerable attention for researchers interested in motivation. Rotter (1966) defined an internal locus of control as reflecting the belief that the outcome of a given event is contingent on a person's own characteristics or actions. This can be differentiated from external locus of control, which is the belief that the outcome of an event is contingent on something outside the self, such as luck or a powerful other person. Deci and Ryan introduced the notion of "locus of causality" to refer to beliefs about where the control over the individual's behavior resides. Notions of control vs. autonomy in Self-Determination Theory emphasize a person's feelings of agency or their beliefs that they are self-regulating versus being regulated by external forces.

In contrast with these beliefs about who or what controls the outcome of a given situation, other researchers have proposed that people can use different strategies to exercise agency. Rothbaum, Weisz, and Snyder (1982) note that the idea of "control" has traditionally referred to "the individual's ability to change the environment to fit the self's needs" (p. 8), and they refer to such externally-targeted control striving as "primary control". Rothbaum et al. argue that control can also be exercised by changing the self. This internally-targeted control striving is termed "secondary control,"[1] and reflects the degree to which individuals express agency by adapting

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1. There is some disagreement about use of the term "secondary control," to refer to this type of action, since this behavior is not necessarily "secondary" to or less adaptive than primary control. Some researchers have suggested a switch to such terms as "accommodation" (Skinner, 2007), "adjustment," (Morling, Kitayama, & Miyamoto, 2002; Tsai, Miao, Seppala, Fung, & Yeung, 2007), or "internally targeted control" (Tweed, White and Lehman, 2004). In

the self to "fit in" with the environment. According to Morling and Evered (2006), secondary

control includes both accepting the situation as it is and adjusting the self to fit that situation.

Tweed, White, and Lehman (2004) describe secondary control as "internally-targeted," while

primary control is "externally-targeted" because secondary control involves managing the self,

while primary control involves influencing the environment outside the individual. Both

secondary and primary control are consistent with lay usage of the word "control" in the sense

that they involve exerting influence—over something external in the case of primary control, and

over something internal in the case of secondary control. These two strategies are not necessarily

at odds; some evidence suggests that it may be most adaptive to use both primary and secondary

control together (e.g., Hall, Perry, Ruthig, Hladkyj, & Chipperfield, 2006). Both types of control

strategies can be contrasted with the notion of helplessness, in which a person is unable to

control any aspect of his or her circumstances.

    Rothbaum et al. (1982) initially posited several subtypes of secondary control, and these

were later refined by Weisz and colleagues (1984). In our research, we will focus on three

subtypes (Table 1; adapted from Weisz et al., 1984). Secondary control via positive reappraisals

involves efforts to adjust one's attitude towards a situation by trying to derive meaning from the

experience or focus on the benefits of it. Secondary control via lowering aspirations, which

functions to help the individual avoid uncertainty or disappointment, is achieved by accepting the

probable outcome of a situation and adjusting one's expectations to fit that outcome. Individuals

can also engage in vicarious secondary control by aligning themselves with an in-group,

institution, or individual in order to psychologically benefit from others' successes. These

subtypes are roughly analogous to interpretive control, predictive control, and vicarious control,

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the interest of consistency with most of the prior research dealing with this concept, we will use the term "secondary
control" in this paper.

respectively, as described by Weisz et al. (1984), and they involve elements of accepting

situations as well as adjustment of the self, although some subtypes may lean more towards one

or the other of these aspects (Morling & Evered, 2006).

Role of Secondary Control: Linking Secondary Control, Academic Motivation, and

Resilience

When forces in the environment limit an individual's choices and opportunities to act freely,

we might expect a negative impact on feelings of autonomy and self-determined motivation

(Ryan & Deci, 2000). In North America, having unconstrained choices has long been considered

an important aspect of the definition of autonomy. The chance to make even unimportant choices

leads to increases in both motivation and task performance for Euro-North American children

(Iyengar & Lepper, 2002), but even a simple reward can decrease North Americans' intrinsic

motivation and make them feel less autonomous (Deci, Koestner, & Ryan, 1999; Noels et al.,

1999). Thus, North Americans' feelings of autonomy predict positive outcomes and are sensitive

to perceived constraints.

Resilience in the context of self-determined academic motivation can refer to achieving

positive learning outcomes despite a controlling environment. In a review by Waxman, Gray,

and Padron (2003) motivation and autonomy were linked to students' resiliency. Motivation was

found to be an important predictor of resilience. Additionally, resilient students tended to be

more satisfied with their classroom environments than non-resilient students, even in schools

where the teachers were generally perceived as non-supportive. Confidence, self-efficacy, and

sense of personal control have all been found to be associated with students' sense of being able

to overcome academic challenges (i.e., "academic resilience;" Capella & Weinstein, 2001;

Martin & Marsh, 2006).

A sense of autonomy encourages intrinsic motivation, so it is not unreasonable to expect that if secondary control is a way of expressing agency, it might have a similar relation to motivation. Hladkyj and colleagues (1998; in Perry, Hall, & Ruthig, 2005) found weak positive correlations between secondary control and intrinsic motivation. Secondary control involves adjusting oneself to one's circumstances, and resilience has been described as successful adaptation to difficult circumstances, so it also makes sense that secondary control might promote resilience (Waxman et al., 2003). Indeed, Hall et al. (2006) found that among students who failed their first test in a university class, being high in both primary and secondary control (e.g. reappraising the situation as a learning experience and also seeking extra help in office hours) was associated with the highest GPA and lowest dropout rates. Secondary control seems to be an adaptive strategy for resilience to initial failure, at least when paired with primary control.

Secondary control may promote students' resilience by increasing both autonomy, and relatedness. The fact that secondary control can involve adjusting the self to accommodate to others in the social context may indicate a link to relatedness and interdependence as well as autonomy. Ashman, Shiomura, and Levy (2006) found high levels of interdependence predicted higher levels of adjusting the self to fit with others via secondary control. Additionally, situations in which students had engaged in primary control were found to boost feelings of efficacy, and therefore under an SDT framework we would expect primary control to promote autonomy and competence. Stories about instances when students had engaged in secondary control promoted feelings of relatedness (Morling et al., 2002).

Objectives

Despite these probable links to autonomy, relatedness, and intrinsic motivation, little work has been done to clarify how secondary control complements the self-determination theory

framework. With this goal in mind, the present study seeks to assess the psychometric properties

of a scale for measuring primary and secondary control strategies in university classrooms, then

use this scale to investigate how these strategies may support students' language learning.

Motivation, learning outcomes, and resilience to controlling classrooms are considered.

The objective of Study 1 is to establish whether survey measures of primary and secondary

control are applicable in academic contexts, and whether they show interrelations between

secondary control subtypes that indicate that these are aspects of the same larger concept.

Because the research reported in this article is, to the best of our knowledge, the first to

empirically examine resilience in the language learning classroom through the theoretical lens of

primary and secondary control (but see Ryan & Dörnyei, 2013 for a theoretical discussion of

secondary control in older adults), it is critical that we establish the validity and reliability of

measures of these constructs.

Study 2 has two broad objectives. The first is to establish how secondary control is related to

students' feelings of autonomy, competence, and relatedness, orientations to learning the target

language (TL; i.e., relatively self-determined or controlled), and learning outcomes. The second

objective is to examine whether students who report greater secondary control are more resilient

to the negative effect of having a controlling instructor.

Study 1: Psychometric Examination of Primary and Secondary Control

We conducted a psychometric study to determine whether the items chosen to represent

primary control and three secondary control subtypes (positive reappraisals, lowering aspirations,

and vicarious) reflect four statistically distinct concepts and to establish the internal consistency

of each of these subscales. We expected to find four internally consistent factors, including three

secondary control subscales, which, according to Rothbaum et al., (1982) should be positively related to one another.

Participants and Procedure

Participants were 2468 undergraduates who completed a questionnaire as part of an introductory psychology class at a Canadian university. The sample consisted of 60.9% females, 37.7% males, and 35 individuals who did not specify their sex. This is typical of the gender distribution in introductory psychology classes. Participants' ages ranged from 16 to 46 with a mean of 19.0 years (*SD*=2.33). Of the participants, 67.7% reported speaking only English as their native language, and an additional 18.7% indicated that they had been raised bilingually in English and another language. The relevant materials were part of a larger questionnaire, which all students in introductory psychology courses were given the opportunity to complete online for partial course credit.

Materials

Participants responded to a questionnaire that included 18 items related to primary and secondary control strategies. The fourteen items from Wrosch, Heckhausen, and Lachman (2000) measured primary control (5 items) and two subscales of secondary control (lowering aspirations, 5 items, and positive reappraisals, 4 items). The four items from Hall et al. (2006; α=.57) measured vicarious secondary control. The items were rated on a 7-point scale where 1 corresponded to "not at all" and 7 to "a lot." Not all participants were language learners, so the items were worded to refer to a generic academic setting rather than to a language course in particular.

Results

The responses were analyzed through principal axis factoring with oblimin rotation. The scree plot and the Kaiser criterion both indicated a four-factor solution (Gorsuch, 1983; see Table 2). The items loaded onto the hypothesized subscales measuring primary control (factor 1; eigenvalue = 4.39, 24.37% of variance explained), secondary control via lowering aspirations (factor 2; eigenvalue = 2.91, 16.17% of variance explained), secondary control through positive reappraisals (factor 3; eigenvalue = 1.57, 8.72% of variance explained), and vicarious secondary control (factor 4; eigenvalue = 1.02, 5.66% of variance explained). Thus the factorial validity of the scales was supported. The internal consistency of each of the subscales was assessed with Cronbach alpha indices. These generally indicated good internal consistency (mean α = .71; see Table 3), although the index for vicarious secondary control was unsatisfactorily low (.57).

A repeated measures analysis of variance revealed significant differences in students' mean levels of the four control strategies ($F(3, 7332)$=778.70, p<.001, η_p^2= .24). Students reported fairly high use of primary control, moderate use of vicarious secondary control and secondary control via positive reappraisals, and mean use of secondary control via lowering aspirations was the lowest, falling below the midpoint of the scale (see Table 3) [2].

Primary control showed the strongest associations with other factors, being positively associated with positive reappraisals (because the factor loadings for positive reappraisals were negative, negative correlations between this construct and the other three factors represent positive relationships), and negatively related to lowering aspirations (see Table 3).

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[2] There were mean gender differences on the secondary control subscales. Females reported higher vicarious control ($t(2415)$= -4.77, p< .001) and lowering aspirations ($t(2415)$= -2.14, p=.033) than males, while males reported more positive reappraisals ($t(2414)$= 5.00, p< .001). However, the magnitude of these differences was very small, with the largest effect size being η^2=.01. The factor structure was not substantially altered by performing the analysis separately for males and females, except that one primary control item showed a small cross-loading with positive reappraisals for males only. Because of the minimal gender differences, analyses are reported collapsed across gender.

Intercorrelations between the three secondary control subtypes, though positive, tended to be low, with the strongest association being between vicarious control and lowering aspirations. This pattern calls into question whether vicarious control and lowering aspirations should be considered control strategies, since we would expect positive relationships between these four constructs, but these relationships tend to be small or even negative. In sum, Study 1 supports the distinctiveness and the internal consistency of the four subscales of primary and secondary control. However, given the unexpected correlations between factors that suggest that vicarious control and lowering aspirations might not be control constructs, the subscales merit further exploration in Study 2.

Study 2

The purpose of Study 2 is to further examine the control strategy subscales in the language learning context and to consider whether and how primary and secondary control moderate the negative impact of an authoritarian instructor.

Hypothesis 1: The interrelation between the secondary control subscales, and also the relations with primary control, will be similar to study 1. Specifically, the secondary control subscales will again show small positive correlations, and primary control will be positively related to secondary control via positive reappraisals and negatively related to secondary control via lowering aspirations.

Hypothesis 2: Both primary and secondary control will show positive associations with fundamental need satisfaction. Consistent with Morling et al. (2002), primary control will have a strong positive correlation with feelings of autonomy and competence. Secondary control will be positively correlated with feelings of autonomy, competence, and relatedness.

Hypothesis 3: Both primary and secondary control measures will be positively correlated

with self-determined motivational orientations (intrinsic motivation and identified regulation) and negatively correlated with controlled orientations (introjected and external regulations) and amotivation.

Hypothesis 4: Primary and secondary control will be associated with positive learning outcomes, specifically high self-evaluated and comparative language competence, high academic engagement (energy, dedication, and absorption), low language class anxiety, and a strong intention to continue language studies.

Hypothesis 5a: We predict that secondary control will moderate the effect of a controlling language instructor on language learning motivation, intention to continue studying the TL, language use anxiety, the intensity of academic engagement, and language competence. Specifically, students high in secondary control will experience more positive outcomes than those low in secondary control when the teacher is seen as controlling, but when the teacher is autonomy-supportive, all students will experience relatively positive outcomes regardless of their level of secondary control.

Hypothesis 5b: We expect that secondary control will be distinct from primary control such that although the two will be associated with the same positive outcomes, primary control will not interact with instructor perception. In other words, we expect primary control to be associated with a positive motivational profile and learning outcomes, but that these relations will not be any different with an autonomy-supportive teacher than a controlling one.

Method

Participants and Procedure

The participants included 100 students (75% female)[3] enrolled in a foreign language class at a western Canadian university who were studying diverse languages, including French (29%), Spanish (29%), German (9%), Japanese (7%), Latin (5%), Chinese, Italian, American Sign Language, Cree, Swedish, Ukrainian, Korean, Norwegian, Portuguese, and Russian (each <5%). The participants ranged from 17 to 51 years old with a mean age of 19.68 years ($SD = 3.92$), and were native English-speaking Canadian citizens or permanent residents. Most (72%) were in their first year of university studies. Students had been studying the TL for between 3 weeks and 15 years with an average length of study of 4.29 years ($SD = 4.90$).

The participants were recruited from the university's psychology subject pool. They completed an online questionnaire during group testing sessions. The questionnaire was electronically tailored to reflect the target language (TL) being studied by each participant (e.g., "How long have you been studying [the TL]"). The students received partial course credit in their psychology course for their participation.

Materials

The online questionnaire assessed students' language learning motivation, perceptions of their current instructor, and learning outcomes. Negatively worded items were reverse-scored so that a high mean score on each scale indicated a high degree of endorsement of that construct. A description of each of the instruments follows, along with Cronbach alpha indices of internal consistency (α).

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[3] This gender disparity in the distribution is not surprising given that more females than males tend to take both psychology classes and language classes. Males reported slightly higher amotivation than females ($t(98)= 2.12$, $p=.037$) and slightly less sense of relatedness with classmates in the language class ($t(98)= 2.14$, $p=.034$), but otherwise there were no mean gender differences on any of the variables of interest. Moreover, including gender as a covariate did not change the nature or statistical significance of the interaction effects. Given the minimal differences between genders, the analyses were computed collapsed across gender.

Primary and Secondary Control. As in Study 1, Wrosch et al.'s (2000) scale was used to measure primary control (5 items; α=.79) and two subscales of secondary control (lowering aspirations, 5 items, α=.70; and positive reappraisals; 4 items, α=.62). Three items from Hall et al. (2006; α=.62) measured vicarious secondary control. These items were rated on a 5-point scale with 1 being "not at all" and 5 being "a lot." Wording of the items was changed to refer to the student's language studies rather than to their studies in general (e.g., "in my [TL] studies").

Motivation for Language Learning. Reasons for learning a second language along the self-determination theory continuum were assessed using the Language Learning Orientation Scale (LLOS; adapted from Noels, et al., 2000). This scale measures amotivation ("Offhand, I can't think of any good reason for why I study [the TL]"; α=.87), as well as external regulation, (1 item; "Because I want to pass this course and get the course credits") and introjected regulation (5 items; "Because I would feel guilty if I didn't know a second language" α=.82), identified regulation (5 items; "Because it helps me to achieve goals that are important to me" α=.88) TL, and intrinsic motivation (4 items; "For the enjoyment I experience when I grasp a difficult construct in [TL]"; α=.91). Participants rated how closely each reason corresponded to their reasons for studying the TL from 1 ("not at all") to 7 ("exactly").

Fundamental Need Satisfaction. Nineteen items adapted from the "Basic Need Satisfaction at Work" scale (Kasser, Davey, & Ryan, 1992) assessed satisfaction of the needs for autonomy, competence, and relatedness in the language classroom. These were rated along a 7-point scale from "not at all true" (1) to "very true" (7). Four items were used to assess autonomy (e.g., "I feel like I can make a lot of inputs to deciding how I learn [the TL]"; α=.65), 5 to assess competence (e.g., "I have been able to learn interesting new skills in my [TL] class"; α=.66), and

7 to assess relatedness in the language class (e.g., "I really like the people in my [TL] class"; α=.88).

Relatedness to the TL Community. Feelings of relatedness to the TL-speaking community were measured using three items from Noels (2001; e.g., "I feel a certain 'connection' with [the TL] and the [TL]-speaking world;" α=.77). These were rated along a 7-point scale from "not at all true" (1) to "very true" (7).

Relatedness to the Instructor. Satisfaction of the need for relatedness in the student's relationship with the instructor were assessed using 10 items from Richer and Vallerand (1998), (e.g., "In my relationship with my [TL] instructor, I feel understood"; α=.91).

Classroom Language Use Anxiety. Ten items adapted from Gardner's (2010) AMTB were rated on a 5-point scale (1= "strongly disagree" to 5="strongly agree") as a measure of anxiousness about using the TL in the classroom (e.g., "I get nervous when I am speaking in my [TL] class." α=.89).

Academic Engagement. Academic engagement was assessed using 9 items adapted from Salmela-Aro and Upadaya's (2011) schoolwork engagement inventory, which includes three three-item subscales: energy (e.g., "I am enthusiastic about my [TL] studies;" α=.70), absorption ("Time flies when I am studying [the TL];" α=.80), and dedication ("I find my [TL] coursework full of meaning and purpose;" α=.78). Items were rated along a 5-point scale from "never" (1) to "always" (5).

Intention to Continue. Intention to continue learning the TL was measured using 5 items adapted from Noels, Clement, and Pelletier (1999; "I want to continue to learn [the TL] after I finish this course." α=.94). Participants answered along a 5-point scale with 5 being "always" and 1 being "never."

Self-Assessment of Language Competence. Participants evaluated their ability to read, write, speak, and understand the TL on a 5-point scale adapted from Clément and Baker (2001), with 1 being "not at all" and 5 being "very well." Previous research has shown that self-evaluation measures correlate positively with language proficiency test results (MacIntyre, Noels, & Clément, 1994; Kondo-Brown, 2005). Respondents also reported how many years they had been studying the TL and rated how they felt their proficiency compared to the other students in their class (comparative self-evaluation) on a 5-point scale ranging from 1 ("below average") to 5 ("above average").

Perceptions of the Teacher. Using 23 items adapted from the Learning Climate Questionnaire (LCQ; Williams, Wiener, Markakis, Reeve, & Deci, 1994), and Assor, Kaplan, and Roth (2002), students rated their perception of their TL instructor as autonomy-supportive (high score) or controlling (low score) on a 7-point scale with 1 being "strongly disagree" and 7 being "strongly agree" (examples: "I feel that my [TL] instructor provides me choices and options"; "My [TL] instructor tells me what to do all the time." [reversed]). This scale had an α of .90.

Results and Discussion

Correlational Analyses

Hypothesis 1: Relations between control subscales. Correlational analyses were conducted to determine the interrelations between primary control and the three subtypes of secondary control. Results showed that the three subtypes of secondary control were not related to one another quite as expected (Hypothesis 1; Table 4). As in Study 1, vicarious secondary control and secondary control via lowering aspirations were positively correlated, and secondary control via positive reappraisals was more strongly associated with primary control than with

either vicarious secondary control or secondary control through lowering aspirations. Unlike in Study 1, positive reappraisals was negatively associated with lowering aspirations, while vicarious control showed a trend towards being positively associated with reappraisals that did not reach statistical significance ($p=.095$). These results raise further doubts about whether the three types of secondary control measured should actually be considered different subtypes of the same concept.

Hypothesis 2: Relations of autonomy, competence, and relatedness with control. Next, the relationships between the different types of control and autonomy, competence, and relatedness were examined (Hypothesis 2; Table 5). Primary control was positively associated with feelings of autonomy and competence, as hypothesized, and, to a lesser extent, with feelings of relatedness with the instructor. Positive reappraisals showed the predicted positive associations with autonomy and feelings of relatedness to the instructor and the TL community. Vicarious control was significantly correlated with relatedness to classmates and to the instructor, but it was unrelated to autonomy or competence. Lowering of aspirations was negatively correlated with satisfaction of all of the fundamental needs except for relatedness in the classroom.

The fact that primary control and secondary control via positive reappraisals were both positively related to students' feelings of autonomy and competence in their language studies suggests that both strategies may be associated with feelings of agency and efficacy, consistent with the idea of "control." Positive reappraisals also showed the hypothesized positive associations with feelings of relatedness. The correlation between positive reappraisals and relatedness in the classroom did not reach significance, but a trend in the predicted direction was observed ($p=.059$) and all other forms of relatedness were significant. The relations between

autonomy and the other two secondary control subscales, vicarious and lowering aspirations, were not consistent with the concept of "control." Indeed, students who lowered their aspirations felt less autonomous, less competent, and perceived poorer relationships with their classmates and instructor than students who did not. Although vicarious secondary control was associated with feelings of relatedness in the classroom and with the instructor, it was unlike other forms of control because it was unrelated to autonomy and competence.

Hypothesis 3: Relations of motivational orientation and control orientation. As predicted, primary control was positively correlated with intrinsic motivation and identified regulation and negatively associated with amotivation (Table 6). Positive reappraisals also showed relationships consistent with the hypothesis, being negatively correlated with amotivation and positively correlated with the self-determined motivational orientations. Vicarious secondary control was positively correlated with these latter orientations as well, but it was not significantly associated with amotivation. Lowering aspiration showed a positive relationship with amotivation and a negative correlation with external regulation but was not significantly associated with any other motivational orientation.

Primary control and positive reappraisals largely conformed to the expected patterns and appeared to be moderately strong correlates of a self-determined, autonomous motivational orientation. Vicarious control could also be said to be associated with such an orientation, though to a lesser extent, while lowering aspirations did not show an adaptive pattern. Primary and secondary control were uncorrelated with students' external regulation, while introjected regulation was uncorrelated with primary control and showed a small positive correlation with positive reappraisals. This did not support the hypothesis, but may be explained by the fact that the external regulation item used in this study referred to passing the course and getting the

course credits; this is a goal all students are likely to endorse, and the item was not phrased in a particularly "controlling" way, so this item may not have reflected an external orientation well. Furthermore, although these correlations were small and nonsignificant, they did tend towards the expected direction. Introjected regulation, though considered a "controlled" orientation, is nonetheless at least slightly internalized, so nonsignificant or small positive correlations between control orientations and this variable are not too concerning.

Hypothesis 4: Relations of learning outcomes with control. Primary control was related to the outcome variables as expected; it was positively correlated with academic engagement, intention to continue TL study, and how proficient students felt they were in the TL compared to their classmates. It was also negatively correlated with language use anxiety (Table 7). Positive reappraisals showed the same pattern of associations with an additional positive correlation with self-evaluated language competence. Vicarious control was unrelated to learning outcomes. Lowering aspirations showed significant correlations with all learning outcomes, but these correlations were in the opposite direction from what was hypothesized, further indicating that this strategy is maladaptive for language learners.

Striving for control over the language learning situation was related to adaptive language learning motivation and positive language learning outcomes, but internally-targeted control striving in terms of controlling one's attitude towards the learning situation via positive reappraisals was at least equally important. Unlike primary control, positive reappraisals were associated with both feeling good at the TL compared to classmates and feeling generally good at reading, writing, speaking and understanding the TL.

Summary of correlational results. In the correlational analyses, primary control and secondary control via positive reappraisals tended to show the hypothesized relationships with

motivational and outcome variables. Moreover, these relationships tended to be as strong or stronger with positive reappraisals than with primary control. Vicarious secondary control and secondary control via lowering aspirations, however, largely failed to show the hypothesized associations with the motivational and outcome variables. Lowering aspirations appears to be quite maladaptive for language learners, while vicarious control did not appear to be particularly important for supporting students' motivation. This was not entirely surprising given that North American academic culture encourages independence rather than relying on others and ambition rather than setting realistic goals (Markus & Kitayama, 1991; Reynolds, Stewart, Macdonald, & Sischo, 2006). Vicarious control may still be a positive strategy for students to use in the classroom because this strategy was tied to relatedness (but not autonomy or competence), and increasing students' feelings of relatedness should promote self-determined motivation. However, primary control and positive reappraisals were unquestionably the best predictors of optimal language learning.

Moderation Analyses

Hypothesis 5: Secondary control (but not primary control) as a buffer for teacher controllingness. Hypotheses 5a and 5b stated that that secondary control would change or moderate the relationship between perception of the instructor as controlling (vs. autonomy-supportive)[4] and learning outcomes and motivational factors such that secondary control would promote resiliency, while primary control would not. A series of hierarchical regression analyses were computed to test for moderation effects following the procedures outlined by Aiken & West (1991). To do this, instructor perception and secondary control were centered around their

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[4] Consistent with definitions of authoritarian teachers, our instructor perception measure was correlated with relatedness (Acceptance: $r = .62$, $p < .001$; Intimacy: $r = .55$, $p < .001$). Thus teachers who were demanding and intrusive tended to be perceived as uninvolved and uncaring towards their students.

respective means, To center scores, the group mean is subtracted from each individual's score.

This procedure is done in order to reduce multicollinearity. Next, the centered scores were

entered as predictor variables in the first step, and then the interaction of both terms (i.e.,

instructor perception × secondary control) was entered as a predictor variable on the second step.

This analysis was done with each of the motivational orientations and linguistic variables as

criterion (or dependent) variables. A significant interaction term in this analysis means that the

relationship between perception of the instructor and outcomes depends upon the level of

secondary control. Because positive reappraisals was the only secondary control subscale that

consistently predicted the outcome variables in the manner hypothesized, moderation analyses

focused on this subscale.

Reappraisals and language class anxiety. The main effect of positive reappraisals on

anxiety was significant (R^2=.11, $F(2, 96)$= 5.83, p=.004; β=-.25, t=-2.09, p=.039), as was the

interaction (ΔR^2=.04, ΔF= 3.97, β=.19, t=1.99, p=.049). The interaction may be accounted for

by noting that the relationship between perception of the instructor and anxiety was different for

students who tended to positively reappraise and those who did not. Students who reported

strong endorsement of secondary control via positive reappraisals reported uniformly moderate

anxiety (simple slope: β=.00, t=.01, p=.99), while for students low in positive reappraising,

anxiety depended on perception of the instructor. Students reported high anxiety with a

controlling instructor, but only moderate anxiety with an autonomy-supportive instructor (simple

slope: β=-.32, t=-2.91, p=.004). Figure 1 shows the interaction of instructor controllingness and

positive reappraisals on anxiety, with the solid grey line representing students at least 1 standard

deviation above the mean on positive reappraisals and the dark dotted line showing students at

least 1 standard deviation below the sample mean. The y-axis represents increasing levels of language class anxiety.

Reappraisals and engagement. There were significant main effects of both reappraisals and instructor perception on the energy subscale (R^2=.43, $F(2, 95)$= 36.14, $p < .001$), so that both use of positive reappraisals and perceiving the instructor as autonomy-supportive predicted higher energy towards language studies (reappraisals, β= .67, t=6.99, p<.001; instructor, β= .20, t=2.60, p=.011). Again, these effects were qualified by a significant moderation effect; reappraisals moderated the effect of perception of the instructor on students' self-reported level of energy ΔR^2=.03, ΔF= 4.54, β=-.23, t=-2.13, p=.036). Students low in positive reappraisals reported low energy towards their language studies when they saw their language instructor as controlling, but moderate energy when the instructor was autonomy-supportive (Figure 2; simple slope: β= .33, t=3.77 p<.001). Students high in positive reappraisals showed a nonsignificant slope and reported energy levels consistently above the midpoint of the scale (simple slope: β= .06, t=.52 p=.60; Figure 3). A nonsignificant trend in this direction was also observed for dedication (R^2=.46, β=.19, t=1.99, p=.053).

Reappraisals and self-determined motivation. There was a significant main effect of positive reappraisals such that positive reappraisals predicted higher self-determined motivation (intrinsic motivation: R^2=.23, $F(2, 96)$= 15.57, β=1.23, t=5.75 p<.001; identified regulation R^2=.27, $F(2, 96)$= 18.00, β=1.15, t=6.23, p<.001). This relation was qualified by significant interaction effects (intrinsic motivation: ΔR^2=.03, ΔF= 4.22, β=-.18, t=-2.05 p=.043, =.28; identified regulation (ΔR^2=.05, ΔF= 7.14, β=-.23, t=-2.67, p=.009). Students high in positive reappraisals were high in these orientations when they perceived the instructor as not being autonomy supportive, but these students showed a negative slope such that they were actually

higher in these orientations when the instructor was controlling than when perceived autonomy-support was high (Figure 3; simple slopes: intrinsic motivation, $\beta=-.53$, $t=-2.16$ $p=.033$; identified regulation, $\beta=-.52$, $t=-2.49$ $p=.015$). For students low in positive reappraisals, endorsement of these orientations was uniformly low with a nonsignificant slope (simple slopes: intrinsic motivation, $\beta=.07$, $t=.36$ $p=.79$; identified regulation, $\beta=.15$, $t=.88$ $p=.38$). Figure 4 presents the interaction from another perspective; the more students used positive reappraisals, the greater self-determined motivation they experienced. This relationship was stronger for people who had a controlling teacher (simple slopes: intrinsic motivation, $\beta=1.61$, $t=5.53$, $p<.001$; identified regulation, $\beta=1.58$, $t=6.30$, $p<.001$) than people with an autonomy-supportive instructor (simple slopes: intrinsic motivation, $\beta=.84$, $t=2.99$, $p=.004$; identified regulation, $\beta=.71$, $t=2.95$, $p=.004$). Stated otherwise, reappraisals are particularly effective in supporting self-determined motivation when instructors are perceived as authoritarian.

Positive reappraisals moderated the relationship between perceptions of the instructor and self-determined reasons for language learning, but not quite in the way expected. Students who strongly endorsed the use of positive reappraisals received a boost to their intrinsic and identified reasons for language learning when they perceived their instructor to be relatively controlling, but when the instructor was seen as autonomy supportive, these students were actually less motivated than otherwise. One possible explanation for this finding is that these students compensated for a negative impression of the instructor by mentally emphasizing their own personally important reasons for language study. Alternatively, if these students were reappraising their instructor's controlling behaviors, they may have experienced these behaviors as supportive rather than feeling coerced (e.g., Zhou, Lam, & Chan, 2012). Having an autonomy-supportive instructor did not appear to increase the self-determined motivation of students low in

positive reappraisal. However, as primary control and positive reappraisals were moderately related, it may be that these students were demotivated by a low overall sense of control and feelings of helplessness.

Reappraisals did not significantly moderate the effect of the instructor on intention to continue studying the TL, absorption in language studies, self-evaluated language competence, comparative language competence, amotivation, or controlled motivational orientations. Except for the controlled orientations, all of these motivational variables and outcomes showed a main effect of reappraisal such that more use of positive reappraisal was associated with better functioning (i.e., lower amotivation and higher everything else). Intention to continue studying the TL showed a similar main effect of perception of the instructor as well. Thus, use of positive reappraisals was especially beneficial for some motivational factors and outcomes when the instructor was controlling, while it positively affected others regardless of the instructor's style.

Primary control was correlated with positive reappraisal ($r=.61$, $p<.01$), but it did not significantly moderate any relationships between the instructor's style and motivational orientations or learning outcomes. Instead primary control had overall positive effects on all of these variables except introjected and external regulations. Therefore positive reappraisal was distinct from primary control in that it was especially adaptive when students saw their language instructor as controlling. When the instructor was autonomy supportive, students experienced fairly positive outcomes regardless of whether they used positive reappraisals or not, but when the instructor was seen as relatively controlling, students who did not positively reappraise had high language use anxiety and low energy towards their language studies, while high-reappraisers did not experience these negative effects. In other words, being able to positively reappraise seems to be important in allowing students with controlling instructors to achieve self-

determined motivation, high energy towards the language class, and low language class anxiety, while when the instructor is autonomy-supportive, reappraisals are less helpful in terms of these outcomes.

General Discussion

The present study clarified how secondary control and academic motivation may be related in university language classrooms and established positive reappraisals as a strategy to support language learners' resilience. This data provides evidence that positive reappraisals may be an effective method for helping language students to cope with a controlling instructor. Such resilience is an important process by which students can learn and thrive in a new language and achieve the many benefits it affords.

Study 1 supported the distinctiveness of the primary control and secondary control via positive reappraisal subscales as measures of control strategies that can be used in language learning settings. But it also called into question whether vicarious control and especially lowering one's aspirations were control strategies in the same sense as primary control and positive reappraisals. At least as framed by the items used in the present study, our psychometric results suggest that these types of behaviors may not function as secondary control strategies. This interpretation was further supported in Study 2, when these strategies did not relate to the SDT motivational variables as expected. These findings highlight the importance of establishing the psychometric properties of newly developed instruments when examining new constructs in the language learning context. They suggest that researchers who wish to examine secondary control in language learning might best focus on positive reappraisals, and if they are interested in other forms of secondary control, then they should consider alternative conceptualizations of secondary control and develop alternative instruments to those used in the present study (e.g.,

reframing vicarious control and/or lowering aspirations as downward social comparisons; see

Ryan & Dörnyei, 2013).

The present research also established the role of primary control and positive reappraisals in

supporting language learning motivation and outcomes. As predicted, both primary control and

positive reappraisals were associated with autonomy and competence, and positive reappraisals

were also associated with relatedness. Primary control and positive reappraisals were also

associated with a self-determined motivational profile and positive learning outcomes. It should

be noted that these two control strategies tended to be used together. For students, exercising

agency in mastering the challenges in their learning environment was important, but exercising

control over their own attitudes was at least as, if not more important for achieving positive

language learning outcomes, particularly in difficult circumstances. These results highlight the

importance both the learning context and the learner for optimal motivation and learning, as well

as how the two interact in predicting optimal language learning.

It may be worthwhile to encourage language learners to adjust their attitudes in the face of

language learning difficulties and look at them instead as learning opportunities. The 3-step

intervention described by Gregersen, MacIntyre, Hein, Talbot, and Claman (this issue) could be

helpful in promoting positive attitudes among both learners and teachers. This intervention

involves a series of writing activities designed to scaffold emotional intelligence by first asking

participants to identify three good things that have happened to them each day, then later, to

savor these positive experiences, and finally to reflect on adverse events and pessimistic

cognitions, then brainstorm ways these experiences can be re-examined in a less negative way

(i.e. learned optimism). This same intervention, particularly the third step of learned optimism,

might also be used increase positive reappraising because it involves teaching students to

reframe adverse events in a more positive, optimistic way. Previous literature on coping suggests a few additional ways positive reappraisals might be fostered in the classroom. Sentence-completion tasks in which people fill in missing letters to finish a positive sentence have been shown to increase positive reappraising (Woud, Holmes, Postma, Dalgleish, & Mackintosh, 2011). As sentence writing is one of the four central skills involved in language learning, word-completion tasks very similar to the ones used by Woud et al. (2011) could potentially be included as part of writing or vocabulary activities in lower-level language classes to encourage students' positive reappraisal. In more advanced classes, journal-writing activities could be used to promote positive reappraisals; students could be instructed to reflect on the things they have learned recently, including anything they have found difficult, but then encouraged to end each journal entry on a positive note.

Supporting students' use of primary control may be a more straightforward route by which teachers can stimulate student motivation. Autonomy-supportive teaching strategies such as being open to students' input and tailoring course material to students' interests are likely to encourage students to engage in primary control (see Noels, 2013, for a discussion of autonomy-supportive teaching style in the language learning context). Students who feel listened to may be more likely to express their interests and preferences, ask questions, or visit office hours, and pursuing such strategies should support students' feelings of autonomy and competence.

Responsibility for learning outcomes should not be placed solely on teachers, however. Students who take responsibility for their own language learning and endeavor to both influence their environments and control their attitudes are likely to experience language learning in a way that is both successful and enjoyable. Students who use these strategies are likely to feel autonomous, competent, and intrinsically motivated. Students who manage their attitudes and

reactions to language learning setbacks may also cope effectively with adverse learning conditions. Although of course the use of autonomy-supportive teaching strategies should be encouraged, it is heartening to know that even when such strategies are not employed, resilient students may still be able to self-motivate and achieve if they strive to maintain a positive attitude.

Limitations

A limitation of our instructor measurement is that the study used students' self-reports to measure teachers' autonomy-supportive and controlling behavior. This study is a first step in looking at how instructional factors and secondary control interact to affect students, but it important to note that because of the nature of our teacher assessment, we can only say how students perceived the instructor's autonomy-support and controllingness, which may or may not be related to how the teacher actually behaved or the teacher's intended instructional style. Past research (e.g., Bernaus & Gardner, 2008) has shown that student perceptions of the teacher are not always strongly related to the teacher's actual style, so it is possible that students' ratings in the present study were influenced by their liking for the teacher. Such tendencies are unlikely to undermine the present results, however, as it is the student's subjective experience of external control that should be the most demotivating. If anything, feeling controlled by a teacher who exhibits objectively controlling behaviors might lead to even stronger relationships than the ones found here. Studies measuring teaching style and teacher controllingness using a combination of individual students' perceptions, aggregated student ratings, and observer ratings of teacher controllingness could help to tease apart how secondary control interacts with instructional practices and styles.

Our study results also showed limited variability on the teacher controllingness scale—the low end of students' ratings was near the midpoint of the scale. This is to be expected in a university setting, where students are adults and typically experience a fair amount of autonomy. It is worth noting that the means show that the "controlling" teachers in this sample were moderately autonomy-supportive, yet despite this limited variability we were able to find effects with positive reappraisals. Future studies in high school or middle school classroom settings might yield a greater variability of teaching style and allow us to see how students react to teachers who are extremely controlling. We expect these effects could be even stronger than those reported in the present study.

Conclusion

The results of the present study have implications for positive psychology because they help us understand how students can come away from even a difficult language class with a love of the language and a thirst to learn more, which has implications for which students eventually become proficient users of the languages they are studying. Both primary and secondary control striving may promote positive language learning experiences, suggesting that students should focus on managing both external realities in their language studies and internal ones. Our results also demonstrate how students' individual characteristics can interact with the learning environment, enabling resilience in the face of negative environmental factors; students can enjoy language learning even in spite of a controlling teacher if they use positive reappraisals. The question of exactly how this strategy can be fostered among language learners remains an open one, but it seems clear that language learners have the power to overcome the difficulties associated with an unsupportive teacher by managing their own attitude through positive reappraisals.

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Table 1: *Secondary Control Subtypes*

Our term	Weisz et al.'s term	Definition (from Weisz et al.)	Example item
Positive reappraisal	Interpretive	Attempts to understand or construe existing realities so as to derive a sense of meaning or purpose from them and thereby enhance one's satisfaction with them	When I am faced with a bad situation in my studies, it helps to find a different way of looking at things.
Lowering aspirations	Predictive	Attempts to accurately predict events and conditions so as to control their impact on self (e.g., to avoid uncertainty, anxiety, or future disappointment)	When my expectations are not being met in my studies, I lower my expectations.
Vicarious	Vicarious	Attempts to associate or closely align oneself with other individuals, groups, or institutions so as to participate psychologically in the control they exert	Knowing that other students have the same grades as I do gives me a comforting feeling of having something in common with others.

Table 2

Study 1: Pattern Matrix for Exploratory Factor Analysis (EFA) of Primary and Secondary Control Scale.

Items	Factor			
	1	2	3	4
In my studies, I rarely give up on something I am doing, even when things get tough.	.83			
When I encounter problems in my studies, I don't give up until I solve them.	.80			
When it comes to my studies, even when I feel I have too much to do, I find a way to get it all done.	.65			
When faced with a bad situation in my studies, I do what I can do to change it for the better.	.60			
When things don't go according to my plans in my studies, my motto is, "Where there's a will, there's a way."	.48			
When my expectations are not being met in my studies, I lower my expectations.		.77		
To avoid disappointments in my studies, I don't set my goals too high.		.68		
When I can't get what I want in my studies, I assume my goals must be unrealistic.		.61		
When it comes to my studies, I often remind myself that I can't do everything.		.38		
I have found that talking with other students who have had the same academic experiences gives me a better sense that I can manage my life.			.63	
I try to make friends with other students in my class who are ''in the same boat'' as I am.			.54	
Knowing that other students in have the same grades as I do gives me a comforting feeling of having something in common with others.			.52	
When test grades are posted in my class, I make a point of seeing how many other students got the same mark as I did.			.34	
I feel relieved when I let go of some of my responsibilities in my studies.				
In my studies, I can find something positive, even in the worst situations.				-.82
Even when everything seems to be going wrong in my studies, I can usually find a bright side to the situation.				-.62
When I am faced with a bad situation in my studies, it helps to find a different way of looking at things.				-.61
I find I usually learn something meaningful from a difficult situation in my studies.				-.34

Note: Suggested factor names: 1 "Primary Control"; 2 "Secondary Control via Lowering Aspirations"; 3 "Vicarious Secondary Control"; 4 "Secondary Control via Positive Reappraisals"

Table 3

Study 1: Factor correlation matrix with means, standard deviations, and Cronbach alpha indices of internal consistency (in parentheses on the diagonal).

Factor	Mean	SD	1	2	3	4
Primary Control	5.00	1.10	(.84)			
Lowering Aspirations	3.64	1.11	-.42	(.71)		
Vicarious	4.68	1.10	.14	.30	(.57)	
Positive Reappraisals	4.38	1.11	-.44	-.05	-.15	(.73)

Note: Correlations greater than or equal to $|.05|$ are statistically significant at $p < .05$.

Table 4

Study 2: Intercorrelations among primary control and secondary control subscales.

	Primary Control	Reappraisal	Vicarious
Reappraisal	.61**		
Vicarious	-.02	.17	
Lowering Aspirations	-.50**	-.34**	.31**

** = p<.< 0.01
* = p< 0.05
†p<0.10
N=100

Table 5

Study 2: Control with need satisfaction.

	Primary Control	Reappraisal	Vicarious	Lowering Aspirations
Autonomy	.34**	.32**	.02	-.42**
Competence	.49**	.58**	.04	-.45**
Relatedness: Classroom	.03	.19	.36**	-.23*
Relatedness: Community	.12	.32**	.13	-.03
Relatedness: Instructor	.20*	.38**	.12	-.29**

** p<.< 0.01
* p< 0.05
†p<0.10
N=100

Table 6

Study 2: Control with orientations.

	Primary Control	Reappraisal	Vicarious	Lowering Aspirations
Amotivation	-.31**	-.28**	-.16	.21*
External Reg.	-.07	-.11	.18	.07
Introjected Reg.	.11	.22*	.22*	.11
Identified Reg.	.24**	.50**	.25*	-.10
Intrinsic Mot.	.42**	.48**	.23*	-.13

** p<.< 0.01
* p< 0.05
†p<0.10
N=100

Table 7

Study 2: Control with outcomes.

	Primary Control	Reappraisal	Vicarious	Lowering Aspirations
Self Eval.	.16	.26**	.04	-.26*
Comparitive Evaluation	.39**	.33**	-.08	-.34**
Energy	.49**	.60**	.18†	-.29**
Dedication	.49**	.65**	.18†	-.26**
Absorption	.56**	.61**	.07	-.19†
Anxiety	-.38**	-.28**	.15	.49**
Continue	.28**	.38**	.12	-.28**

**p<.< 0.01
*p< 0.05
†p<0.10
N=100

Figure 1

Study 2: Interaction of language class anxiety and teaching style by positive reappraisals.
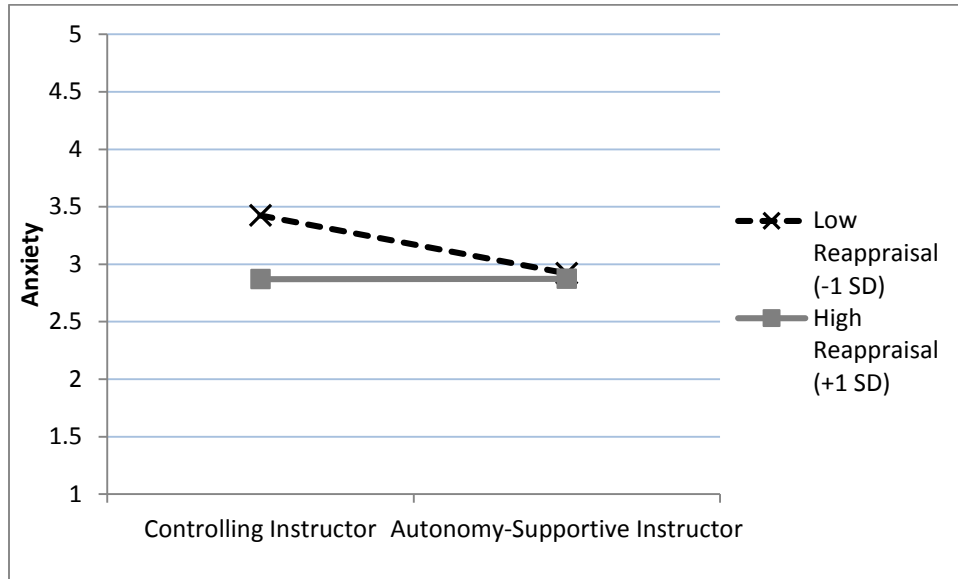
Figure 2

Interaction of energy towards the language class and teaching style by positive reappraisals.
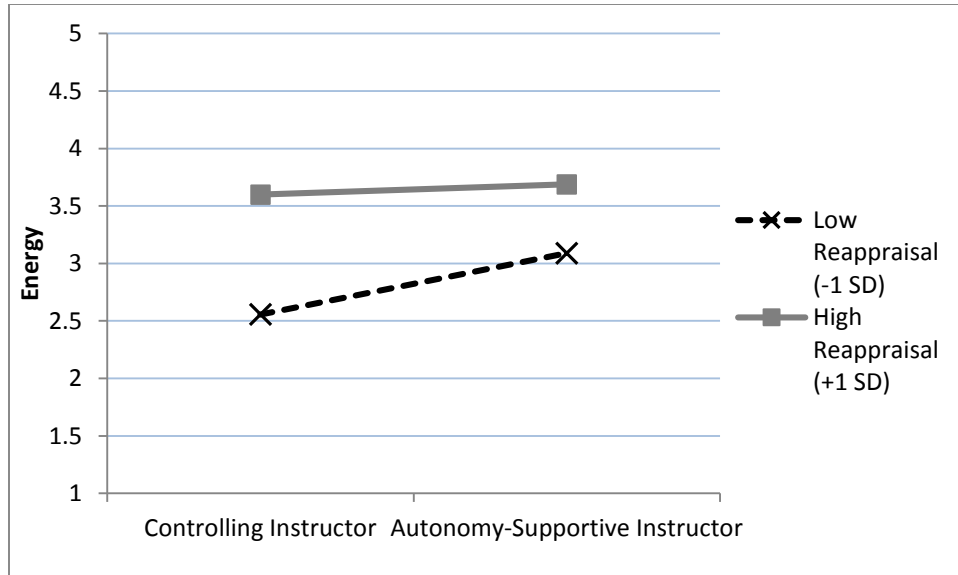
Figure 3

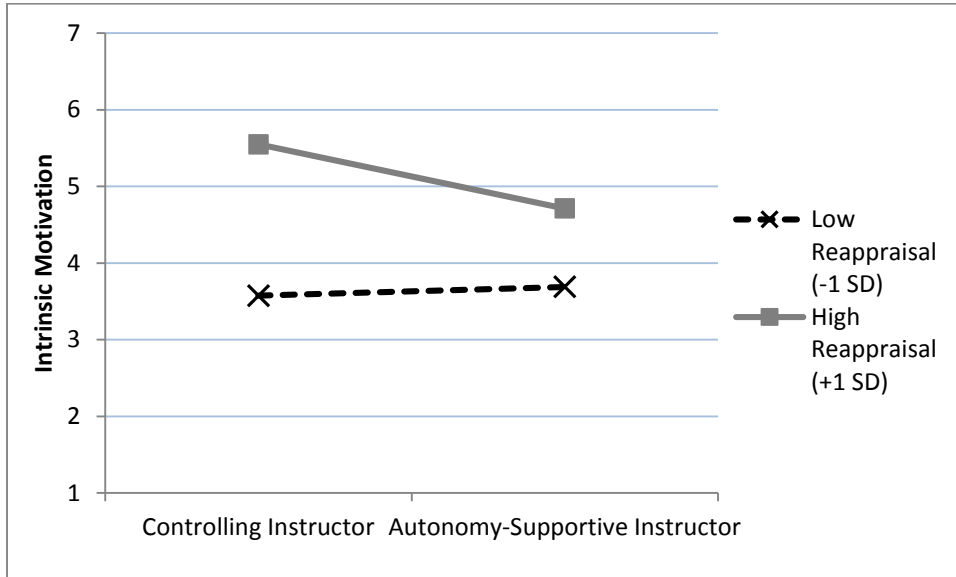*Study 2: Interaction of intrinsic motivation and teaching style by positive reappraisals.*

Figure 4

Study 2: Interaction of intrinsic motivation and positive reappraisals by teaching style.