Toward the development of a scale to assess

Possible Selves as a source of language learning motivation

Peter D. MacIntyre

Sean MacKinnon

Cape Breton University

Richard Clément

University of Ottawa

Abstract

In light of Dörnyei's (2005) introduction of possible selves to the L2 literature, data are presented on the reliability and construct validity of a new quantitative measure for L2 possible selves. The measure included two key categories, Present L2 Selves and Future L2 Selves. Two separate principal components analyses were conducted, and results indicated a simple, unitary factor structure in both cases. Additionally, perceived competence and elements of Gardner's (2001) integrative motive correlated highly with possible selves phrasing, suggesting that the constructs share conceptual ground.

Introduction.

Motivation has been a central concept in SLA since the seminal work of Gardner and Lambert (1959) developed into the socio-educational model, with integrative motivation as its centerpiece (Gardner, 1985; 2001). The close links among language, culture, identity, and the self clearly suggest, however, that we need to know more about the self-concept as it relates to language learning. A small number of studies in the SLA literature have used the concept of self as a basis for their findings (Clément, Noels & Deneault, 2001; Cszier & Dörnyei, 2005a; 2005b; Yashmia, Zenuk-Nishide & Shimizu, 2004). Recently, Dörnyei (2005) has proposed a conceptual scheme called the "L2 Motivational Self System" that features the concept of possible selves that bridges research into the self and language learning motivation. The purpose of the present study is to create a quantitative measure of L2-related possible selves and to examine the links between possible selves and core elements of Gardner's (2001) integrative motive.

The conceptualization of motivation in SLA has undergone rapid expansion in the past two decades, but empirical research has not kept pace (MacIntyre, MacMaster & Baker, 2001). For many years, the central concept in the study of motivation in the SLA literature has been the integrative motive from Gardner's (1985) socio-educational model. The integrative motive has two key defining features: integrativeness and motivation. Integrativeness refers to openness and positive attitudes toward a target cultural / linguistic group. It refers to a desire to take on attributes of that other group, such as their language (Gardner, 2005), though not necessarily to become a group member. Motivation reflects a combination of positive attitudes, desire to learn, and effortful behaviour directed toward the target language[1].

The conceptualization of the self in psychological research also has undergone substantial change over the years, moving toward a multifaceted conceptualization of the self (Greenwald & Pratkanis, 1984). The self, indeed, has been used as a framework to understand a variety of motivational processes, such as academic achievement (Leondari, Syngollitou, & Kiosseoglou, 1998; Marsh & Craven, 1997), adolescent delinquency (Oyserman, 1990) and work motivation (Leonard, Beauvais & Scholl, 1999). Several papers in the present volume advance theory and research applications specifically for SLA.

Dörnyei (2005), in fact, argues that at the core of the integrative motive is a psychological and emotional identification with social and cultural material associated with the target language. Specifically, he refers to the concept of possible selves, which was designed to provide a link between self-related cognition and affect (Markus & Nurius, 1986, p. 958). In commenting on the notion of possible selves, Gardner (2005) noted that "(i)t is quite possible that individuals who are high in integrativeness may have different perceptions of their self and

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[1] A third element of the integrative motive, attitudes toward the learning situation is specific to language classrooms (teacher and course) and is not included here because it does not have clear parallels to the L2 Self System.

their ideal self, particularly as they relate to the second language … (I)n any event, research will be needed to establish whether there is any relation between the two conceptualizations (Gardner 2005, p. 8)." It is, therefore, in the spirit of reconciling these two frameworks that the following is proposed.

Possible Selves in SLA

Possible selves create a link between self-related cognition and motivation by synthesizing the relevance of various incentives for future behavior. From the perspective of a researcher, linking the literature on the self with the SLA literature appears to be a daunting task (MacIntyre, MacKinnon & Clément, in press this volume). The literature on the self is expansive, with both a rich historical tradition and extensive current interest. In particular, current research argues for reciprocal causal links among self-concept, academic interest, and achievement (Marsh, Trautwein, Lüdtke, Köller, & Baumert, 2005).

Marsh and colleagues have published numerous studies on self concept in conjunction with academic achievement (Marsh, 1992; Marsh 1993; Marsh et al, 2005; Marsh Trautwein, Lüdtke, Köller, & Baumert, 2006, for a review, see Marsh & Craven, 1997). Generally, Marsh and colleagues' research shows that not all aspects of the self concept play a role in academic achievement and motivation. Self-concepts can be developed in different domains, such as academic, social and physical selves, and they are not necessarily related to each other (Marsh & Craven, 1997). Moreover, Marsh and colleagues' research has revealed that academic self-concept, while substantially related to academic achievement, does not show a strong relationship with non-academic self-

concepts (Marsh, 1992), global measures of self-esteem (Marsh, 1993), or the Big Five personality characteristics (Marsh et al, 2006). In sum, it appears that a domain-specific self concept plays a significant role in predicting academic achievement, serving as a more consistent predictor than personality traits and non-differentiated models of the self. Given the strong links among language, culture, identity and self-concept, SLA researchers should consider ways in which concepts of the self change when learning a second-language, and the motivational implications those changes.

Dörnyei's (2005) L2 Self System provides the conceptual basis for the study of self in the second language domain. Dörnyei argues that "… possible selves offer the most powerful, and at the same time the most versatile, motivational self-mechanism, representing the individuals' ideas of what they might become, what they would like to become, and what they are afraid of becoming" (2005, p. 99). Drawing on Higgins' (1998) work on the promotion and prevention functions of self-regulation, Dörnyei (2005) proposes three key dimensions of the L2 Self System: Ideal L2 self, Ought-to L2 self, and L2 learning experience. The Ideal L2 Self is the language speaker that one would like to become, it represents the promotion of a hoped-for future self. The ought-to L2 Self serves a prevention function, that is, it represents our vision of what we should become in the future in order to avoid undesirable or feared future outcomes. Motivation stemming from the ought-to or feared self drives the behavior that we feel we should do out of duty or obligation. The third element of the system, L2 Learning Experience, reflects situation-specific motives that regulate the immediate environment and guide the learner through the present learning experience. This dimension of the L2 self is qualitatively different from the other two in that (1) its focus lies in the present, not

future, by reflecting the evaluation of past success at language learning, and (2) it requires an ongoing language learning activity of some sort to trigger the situation-specific motives.

L2 Self System and the Integrative Motive

The L2 Self System approach differs in phrasing from Gardner's Integrative Motive but Dörnyei (2005) has argued that the two approaches share "striking similarities" and "correspond closely" (p. 107). If this claim can be supported empirically, the results would be quite encouraging for the study of motivation in SLA because:

(1) the extensive work on integrative motivation and social identity could be used to inform future development of the L2 Self System without repeating those studies,

(2) future research on the motivational properties of reducing the discrepancy between present and future self would be a novel research trajectory derived from Dörnyei's L2 Self System, yet still informed by extensive work on discrepancy as the cognitive basis for motivation (see Reeve, 2005),

(3) cross-cultural differences in the conceptualization of the Self in general, and the L2 Self in particular, could be taken explicitly into account in the development of new research tools and measures,

(4) research that focuses on the multifaceted nature of motivation and how language learners prioritize between competing motives would be a significant advance, and would complement prior research on the integrative motive.

Typically, the research on possible selves takes a distinct qualitative bent, often asking participants to spontaneously generate possible selves in open-ended surveys

(Carver & Sakina, 1994; Leondari, Syngollitou, & Kiosseoglou's, 1998; Norman & Aron, 2003; Oyserman & Markus, 1990; Oyserman, Terry, & Bybee, 2002). This approach has been used to examine possible selves within various domains. It would be both useful and practical to complement this qualitative approach with quantitative measures that allow for an empirical assessment of the links with Gardner's Integrative Motive (see Dörnyei, 2005). This is the major purpose of the present study.

Developing the Scale

Our approach to developing the possible selves measure centers on Markus & Nurius' (1986) research which makes it clear that it is important to know whether or not respondents think the self in question (a) is a potential future self and/or (b) a self that describes them presently. There are four possible combinations of answers, two of which hold the potential to enhance motivation. If a characteristic of the present self is envisioned to continue being relevant to the future self, this reflects ongoing development in that area (as when incipient language skills are acquired and then developed, see for example Tomlinson, 2007). Also, some characteristics might not currently be part of the self-concept, but conceivably could be added in the future. In this case, a person would feel motivated to achieve congruence between his or her present and future self by adding a new element to their self-concept.

In contrast, there are two response patterns that do not endorse future L2 possible selves and therefore seem far less likely to support motivated behaviour. A person whose present self is not expected to continue might reflect the end of action in that area, as when a person drops out of school. This type of responding is likely to be quite rare. Moreover, a language learner who neither recognizes the qualities mentioned in our scale

item as an element of the present self nor contemplates them as part of their future self is likely to be unmotivated. In this case, the component of the self is irrelevant and there exists little motivation for its development.

With this in mind, the core of the measure being developed is whether a potential personal characteristic is part of the present self (yes or no) and part of possible future self (yes or no). To assess the motivational qualities of these items, three additional issues will be considered, each at the item level. First, it is important to know if the possible self in question is *desirable* or not, because a possible self that is not supported by the emotion system – that is, a self that might be a nice idea but has no emotional investment – will not likely be motivating (Lewis, 2005). Oyserman, Bybee, Terry, & Hart-Johnson (2004) postulate that there are two types of possible selves: (1) Possible selves that simply promote feeling good, with no plan of action and (2) Possible selves that promote self-regulation of behaviour. Their research showed that for a possible self to have an impact on academic outcomes, the possible self must include a plausible plan of action; merely placating oneself with a pleasant possible self with no specific plan is not related to academic outcomes. Thus, it is also important to find out how *likely* participants consider a possible self to be; a highly unlikely possible self probably will have little relation to motivation. Finally, Norman and Aron's (2003) research suggested that people will be more motivated by, and therefore likely to achieve or avoid a possible self that is easily constructed in the mind, more easily brought into conscious awareness and under one's perceived control. For this reason, it may also be interesting to obtain a rating of *how often a possible self is thought about*; the easier it is to bring a possible self

into awareness, and the more often it is thought about consciously, the more likely it will impact motivation.

The Present Research

Following the above, the present research pursues three goals.

1. We will develop and assess the reliability and dimensionality of a scale measuring present and possible future selves in domains relevant to L2 acquisition.

2. We will assess the predictive validity of both possible selves and Gardner's motivational constructs by examining correlations with perceived L2 competence (see Baker & MacIntyre, 2000).

3. We will examine empirically the relationship between the new possible selves measure and key elements of Gardner's integrative motive.

Method

Participants

The sample consisted of high school students (N = 135) from an all-girls school in a small, predominately English speaking city.

Materials

The following instruments were administered to all participants:

Possible selves. As an initial step in developing an approach utilizing possible selves, we created 18 items related to the French Language and French Canadians (see Appendix A for the items), based on items from Gardner's (1985) AMTB. Each item generated 5 responses. The first two responses had dichotomous options to the prompts: (1) Describes me now (yes / no) and (2) Describes possible future (yes / no). These two responses are of primary interest in assessing present and future selves. Three additional

questions tapped how desirable the future self is, how likely it is, and how often the respondent has thought about it. These latter three variables were measured on a 5-point scale. We will examine the reliability and factor structure of the responses to the dichotomous items, and use the three 5-point responses to assess the motivational quality of each item.

Integrativeness ($\alpha = 0.94$). This was measured by combining three scales from Gardner's Attitude/Motivation Test Battery (Gardner, 1985; 2000): (1) **integrative orientation** which examines reasons for learning the other language based on attraction to the other group, (2) **interest in foreign languages** which examines the level of appeal held by other languages in general, and (3) **attitudes toward French Canadians** which examines the degree of positive evaluation of the language group (French Canadians in the present research).

Motivation ($\alpha = 0.96$). This is the second key element of the integrative motive shown to be relevant across cultures, which was also measured by combining three subscales from Gardner's AMTB: (1) **motivational intensity** which represents the amount of effort expended in language learning, (2) **desire to learn French** which examines how much the learner wants to acquire the language, and (3) **attitudes toward learning French** which examines the beliefs that the learner holds about the language itself.

Perceived competence/fluency in French ($\alpha = 0.95$). This 4 item measure asked participants to rate their overall ability to perform the following tasks: Read French, write French, speak French, and understand spoken French. Participants place a mark on a continuum that ranged from 1 (not at all) to 7 (fluently) for each of the 4 tasks.

Results

Reliability and Dimensionality of the Possible Selves Scale

The first research question addresses the development of a quantitative measure for possible L2 selves. The measure has 2 key response vectors, Present L2 Self and Future L2 Self. To determine the underlying factor structure of the new items, two separate principal components analyses were conducted, one for present self responses and the other for future self responses. In order to determine the number of factors to retain, we examined (a) all the eigenvalues that were greater than one; (b) the scree plot of the eigenvalues, and (c) all factor loadings that were ≥|.30|. Analyses were conducted using SPSS 12.0, and missing values were replaced with the mean.

The initial extraction on each of the Principal Components Analyses (PCAs) resulted in a varying number of factors when using the eigenvalue greater than one rule, with a different number of factors for Present L2 Self (7 factors) and Future L2 Self (4 factors). However, when the scree plots for each analysis were examined (see Figure 1), in both cases there was a single clear break in the scree plot occurring after the first factor. Given the notorious unreliability of the eigenvalues-greater-than-one rule (Cliff, 1988), we selected the one factor solutions based on the scree plots. Having determined a preference for a one-factor solution, the PCAs were run again extracting one factor in each without rotation, because solutions with one factor cannot be rotated. The factor loading matrices resulting from these analyses are shown in Table 1 and the reliabilities for both 18-item scales are located in Table 2. Overall, these results indicate that these response vectors of present and future selves are internally consistent and unidimensional.

At the scale level, the total scores for the 18 items for present and future selves correlated highly with the ratings of desirability, likelihood and how often the self was thought about. All correlations were within the range of .61 to .75 and were all significant at the $p < .001$ level. At the item level, the pattern was consistently replicated. Of the 108 correlations between present and future selves with desirability, likelihood and how often the self was thought about, 96 (89%) were significant at $p < .001$.

The reliability and unidimensionality of the scale allow us to examine the content of the items to assess the content of present and future L2 selves, as reflected in the items used (see Table 3). The most frequently endorsed (> 70%) present selves include being a knowledgeable person who wants to learn many languages and feeling at ease with French-speakers. The least frequently endorsed (< 20%) were thinking and acting like a Francophone, and working at a job requiring French. The most frequently endorsed (> 80%) future selves include being a knowledgeable and cultured person who wants to learn many languages, who feels at ease with Francophones, and has friendships with French Canadians. The least frequently endorsed future selves (< 50%) were thinking and acting like French Canadians and using media in French (newspapers, magazines, and films).

Correlations among Possible Selves and Gardner's Measures

The two components from the AMTB, motivation and integrativeness, are significantly, highly correlated ($r = .74$, $p < .01$) with each other, consistent with previous findings (Masgoret & Gardner, 2003). Moreover, correlations between the possible selves

measures and the integrativeness and motivation scales ranged from .54 to .76, and were

consistently significant (see Table 4).

Predicting L2Perceived Competence

To examine the predictive validity of the possible selves measure and Gardner's

measures, each was correlated with the overall perceived competence score. As can be

seen in Table 4, correlations with possible selves were moderate-to-strong, ranging from

.51 to .70. As well, perceived competence correlates strongly with Motivation and

Integrativeness were .76 and .51, respectively.

Item-level: Present – Future Discrepancy

In order to assess the relationship of discrepancies between present and future

selves with Motivation, Integrativeness and Perceived Competence, a series of ANOVAs

was done, one for each of the PS scale items. There are four possible combinations of

responses to the items 'describes me now' and 'describes me in the future' (group 1: yes /

yes, group 2: no / yes, group 3: no / no, and group 4: yes / no). Being in Group 1

indicates that the possible self describes the individual now and in the future; in other

words, she/he developing one aspect of the L2 self, a response pattern we will call

developing aspects of self. Group 2 indicates that the self does not possess the item's

properties now but expects to do so in the future, indicating that she/he is adding to the

L2 self, which we will call *expanding future aspects of self*. Group 3 indicates that the

respondent does not currently possess the attribute and is not contemplating adding this to

the self, indicating that the item is viewed as *extraneous to self*. The last of these

possibilities (yes / no, indicating the item describes me now but not in the future) did not

occur frequently enough to be included in the following analysis (see Table 3). This is

understandable because a person who, for example, indicates that they presently understand French Canadian views but will not do so in the future is in an unusual state of mind and might experience motivational deprivation[2].

Motivation. A series of Oneway ANOVAs were conducted comparing the mean motivation scores for the three groups using Tukey's HSD method for post hoc tests ($p <$ .01). Significant differences among the PS categories were observed for 14 of 18 items. Most of these item-level differences involved contrasts with the *extraneous* group who did not envision development of the L2 self in the area described by the item. Among the 14 cases where differences were found, all showed that the *developing* group was higher in motivation than the *extraneous* group. Further, in 10 cases, significant differences showed that the *expanding* group was higher in motivation than the *extraneous* group. In only 6 cases were differences observed between the *developing* and *expanding* groups. In these cases, the *developing* group was higher in motivation than the *expanding* group. Thus, as an overall pattern, we can see that the *developing* group is highest in motivation overall, followed by the *expanding* group, while the *extraneous* group is lowest in motivation.

Integrativeness. With respect to the variable integrativeness, the results are similar. Most of the significant item-level differences ($p < .01$) involved contrasts between the *extraneous* group and both the *developing* group (16 of 18 comparisons were significant) and the *expanding* group (15 of 18 contrasts were significant). In only 2 cases was a significant difference observed between the *developing* and *expanding* groups. We observe the same overall pattern as last time; the *developing* group was

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[2] This might occur in situations of subtractive bilingualism or language dropouts, neither of which is the case in the present sample.

highest in integrativeness, followed by the *expanding* group, with the *extraneous* group remained lowest in integrativeness.

Perceived competence. Finally, perceived competence showed a slightly different pattern. Significant differences (p < .01) were observed between the *extraneous* group and the *developing* group on 12 of 18 items. Only 3 of 18 comparisons between the *extraneous* group and the *expanding* group were significant indicating a greater degree of similarity between the level of perceived competence than was observed for motivation or integrativeness. Further, less than half (7 of 18) of the comparisons between the *developing* and *expanding* groups were significant. These results show that the level of perceived competence is consistently highest within the *developing* self group and lowest in the *extraneous* group. The other group, *expanding*, is not consistently similar to either of the other two groups in current levels of perceived competence.

Discussion

The pattern of results provides encouragement for further pursuing the motivational basis of possible selves for language learning. In examining the research questions, we find that (1) the new possible selves measure shows strong reliability and a simple, unitary factor structure that provide information about the content of the L2 self, (2) possible selves show strong and consistent correlations with key elements of integrative motivation and perceived L2 competence, and (3) discrepancies between present and future selves are related to integrativeness, motivation and perceived L2 competence.

The factor structure and strong internal consistency of the possible selves scale is encouraging. At the scale-level, scores for future selves correlate strongly with scores for the present selves and, despite the different areas of experience covered by the 18 items, a single factor structure appears to emerge. To the extent that these items cover the domain of Possible L2 Selves, the conceptualization appears to be unitary and tends to reflect a cohesiveness that among items. Whereas the integrative motive has 11 variables contributing to its three major factors, we found that the possible selves data can be represented by a single-factor structure. This is due in part to having only 18 possible selves items, compared with the 72-item AMTB. However, it may also suggest that an idealized view of the L2 self tends to be cohesive and integrated (Dörnyei & Csizer, 2005), though future work in this area is required to better understand the structure of the L2 self.

The pattern of results for the present L2 self at the item level paints an interesting picture. The most frequently endorsed items, receiving approval from at least two-thirds of learners, include: being knowledgeable, cultured, interested in learning many languages, at ease with L2 speakers, and appreciative of their art and literature. The already high percentages of learners endorsing these items increased with reference to future selves. The largest increases were observed for working at a job using French and understanding French Canadian views. These items include elements of both the classic instrumental and integrative orientations (and intrinsic and extrinsic motives).   Although they can be grouped separately and distinctions drawn between them, the present data show that endorsing one set of reasons for language learning tends to predict endorsing

the others as well, results mirroring those obtained elsewhere (e.g., Clément, Dörnyei & Noels, 1994; Clément & Kruidenier, 1983).

Similarly, scores on Gardner's measures of integrativeness and motivation correlate with scores on the possible selves scale. This provides some empirical evidence for Dörnyei's (2005) claim that the two conceptual schemes share common ground. The correlations are not so high as to preclude differential predictions of language learning outcomes, so the scales are not necessarily alternate forms of the same test. Rather, this suggests, a relationship between the two frameworks which may link a process represented in the socio-educational model and a structure represented by the L2 self.

The structure of the new possible L2 selves lends itself to application in educational settings. The contrast between present and future selves is may be interesting when students indicate that the item does not describe them now or in the future. This pattern would be indicative of amotivation or the absence of motivational support for language learning (Noels, 2005). Teachers might be able to use this information with their students to identify learning activities that might strengthen the notion of possible future selves.

Teachers might also consider ways of enhancing motivation when respondents indicate that the possible self describes them in the future. In cases where the present self does not include the item but the future self does, the motivation implications are to acquire the item, if it is a desirable future. In contrast, when the self describes a respondent both now and in the future, motivation for language learning and maintenance of the L2 self likely would come primarily from the feared self. Oyserman & colleagues have suggested that students need both a hoped-for self and a countervailing feared self in

the same domain in order to stimulate motivation (Oyserman & Markus, 1990; Oyserman, Terry & Bybee, 2002). The sense of losing what one has achieved can be a powerful motivator if the loss is salient to the self. In its present configuration, our possible L2 selves scale does not test feared futures per se, but feared selves could be interesting especially to study in language learning contexts among minority group members.

The possible selves framework provides interesting forays into less studied domains. The nature of the self-concept differs among various cultural groups and the development of variations of the scale using other conceptual schemes holds promise. In future research, items could be added or modified to be appropriate to the context in which the study is being conducted. It should be recognized that using differing methodologies will make comparisons among studies more difficult. However, it is more important that the concept of self be used in a culturally appropriate ways, and differences among views of the self can be documented as part of the research. Future research in this vein could map areas of cross-cultural similarities and difference in the role of the self-concept in language learning, and elaborate on the development of the present scale.

One of the advantages of using a possible selves framework is looking at the integration of present and future selves and how various elements of those selves work together for an individual. The psychological demands for such integration would be far greater with self-relevant items than for items reflecting attitudes or beliefs where inconsistencies among specific beliefs are more easily tolerated. Implicating the self by contemplating one's future increases the demands for the various aspects of self to make

sense together, especially if the learner has thought seriously about his or her language learning future.

In the present study we have not attempted to capture directly the notions of ideal and ought-to self (Dörnyei, 2005) or desired and feared future selves (Oyserman & Markus, 1990) that are central to understanding the multifaceted nature of the self. Future development of the new scales along those lines would allow for examination of the differentiation among aspects of self-functioning, and their roles in second language acquisition and development. By testing learners in an all-girls school, in a social milieu where majority group members are learning the language of a high ethnolinguistic vitality minority group, we must not assume that the results will be generalizable. However, this study has produced evidence that the development of possible selves links with existing work on language learning motivation and provides potential new directions for future research into present-future self discrepancies.

Conclusion

The development of possible selves represents a new approach to language learning motivation that draws upon a widely studied concept in psychology. The present study shows that elements of the integrative motive (Gardner, 2001) correlate consistently and strongly with possible selves phrasing (Dörnyei, 2005), providing evidence that the concepts share conceptual ground. We believe that the potential advantage of using a possible selves approach lies in the comparison of present and future states, highlighting the discrepancy between them to understand the sources of language learning motivation. This idea might be used systematically by teachers to tailor

motivational strategies to aspects of individual students' developing and expanding

selves, or in some cases to search for potential motivational loss.

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Figure 1:

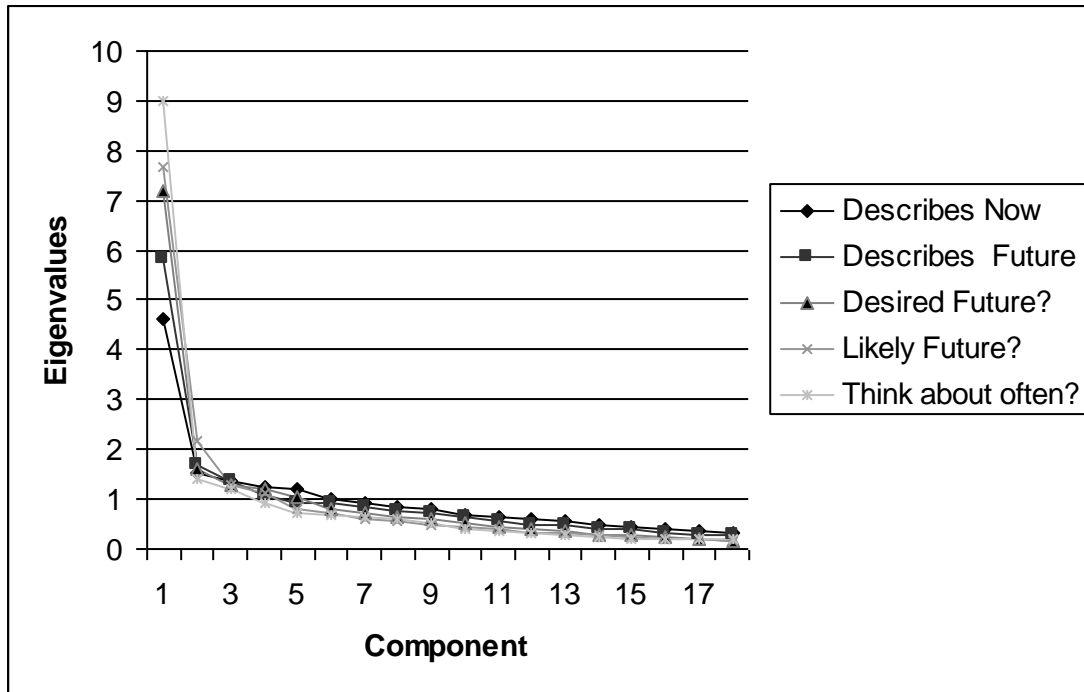**Scree plots from all 5 scales on the French Canadian Possible Selves Questionnaire**

Table 1: Factor loadings for all 5 Possible Selves scales when one factor was extracted

	Component				
	Describes Now	Describes Future	Likely Future?	Desired Future?	Think about often?
Variance Accounted For:	25.7%	32.4%	42.7%	40.0%	50.0%
Understand French-Canadians' views	.603	.666	.747	.733	.692
Think like French Canadians	.299	.487	.682	.589	.612
Be a Knowledgeable person	.211	.422	.485	.378	.499
Be a cultured person	.528	.463	.601	.592	.606
Understand French literature	.676	.681	.769	.812	.841
Appreciate French art and literature	.603	.637	.764	.716	.833
Feel at ease with French Canadians	.308	.542	.654	.634	.742
Friendships with French Canadians	.465	.455	.686	.615	.802
Feel respected because I speak French	.676	.579	.689	.707	.798
Enjoy speaking French	.664	.697	.710	.711	.812
Want to learn many languages	.380	.524	.620	.508	.594
Participate freely in activities of other cultural groups	.336	.452	.671	.531	.691
Act like French Canadians	.211	.398	.386	.424	.573
Meet and converse with French Canadians	.706	.693	.770	.761	.821
Work at a job using French	.475	.653	.627	.632	.645
Travel to French-speaking areas / countries	.389	.479	.609	.554	.650
Go to French films in the original language	.534	.597	.539	.640	.639
Read newspapers and magazines in French	.592	.664	.622	.670	.750

Table 2: Reliability coefficients for possible selves questionnaire

	Chronbach's Alpha	*Variable Type*
Describes me now	α = 0.82	Dichotomous
Describes possible future	α = 0.88	Dichotomous
Is this an undesirable or desirable future?	α = 0.91	5-point Likert
How likely is this in the future?	α = 0.92	5-point Likert
How often have you thought about this future?	α = 0.95	5-point Likert

Table 3: Possible selves frequencies and means

Item No.	Frequencies in Percent						Means (Std. Deviations)		
	Describes me now? (% yes)	Describes Possible Future? (% yes)	Now and a possible future	Not now, but is a possible future	Not now, and not a possible future	Now, but not a possible future	Desired Future?	Likely Future?	Think about the future often?
1	37	70	36	36	27	<1	3.6 (1.4)	3.2 (1.4)	2.1 (1.3)
2	9	31	9	22	69	0	2.8 (1.5)	2.5 (1.4)	1.7 (1.2)
3	78	94	79	15	6	0	4.7 (0.8)	4.1 (1.2)	3.7 (1.5)
4	66	87	65	21	13	<1	4.4 (1.1)	3.9 (1.4)	3.3 (1.5)
5	34	54	33	21	44	2	3.6 (1.4)	3.1 (1.5)	2.5 (1.5)
6	66	76	62	14	21	4	3.8 (1.2)	3.4 (1.4)	2.3 (1.3)
7	70	87	70	17	13	0	4.1 (1.27)	3.8 (1.3)	2.4 (1.5)
8	63	88	61	27	11	2	4.3 (1.0)	3.7 (1.3)	2.6 (1.5)
9	31	50	31	19	49	2	3.4 (1.6)	3.0 (1.6)	2.4 (1.5)
10	58	65	56	9	33	2	3.6 (1.6)	3.4 (1.6)	2.7 (1.5)
11	76	84	74	10	14	2	4.3 (1.3)	3.7 (1.5)	3.6 (1.5)
12	49	72	47	25	26	2	3.8 (1.4)	3.5 (1.4)	2.5 (1.5)
13	5	15	6	9	85	0	2.1 (1.3)	2.2 (1.4)	1.5 (0.9)
14	50	77	48	29	22	2	3.7 (1.3)	3.5 (1.4)	2.5 (1.5)
15	13	51	13	38	49	0	3.3 (1.6)	3.1 (1.6)	2.8 (1.5)
16	51	82	50	31	18	<1	4.2 (1.3)	3.9 (1.3)	3.4 (1.6)
17	20	47	20	27	53	0	2.9 (1.6)	2.9 (1.5)	2.2 (1.4)
18	20	38	17	21	60	23	2.9 (1.7)	2.9 (1.6)	2.1 (1.4)

Items: (1) Understand French-Canadians' views; (2) Think like French Canadians; (3) Be a Knowledgeable person; (4) Be a cultured person; (5) Understand French literature; (6) Appreciate French art and literature; (7) Feel at ease with French Canadians; (8) Friendships with French Canadians; (9) Feel respected because I speak French; (10) Enjoy speaking French; (11) Want to learn many languages; (12) Participate freely in activities of other cultural groups; (13) Act like French Canadians; (14) Meet and converse with French Canadians; (15) Work at a job using French; (16) Travel to French-speaking areas / countries; (17) Go to French films in the original language; (18) Read newspapers and magazines in French.

Table 4: Correlations between possible selves, the AMTB and perceived competence

	PS Now	PS Future	PS Desired	PS Likely	PS Often	MOTIV	INEG	Perceived Competence
PS Now	1							
PS Future	.70	1						
PS Desired	.65	.75	1					
PS Likely	.65	.69	.67	1				
PS Often	.60	.65	.61	.64	1			
MOTIV	.69	.71	.69	.65	.57	1		
INEG	.59	.76	.62	.57	.54	.74	1	
Perceived Competence	.70	.57	.57	.59	.51	.76	.51	1

- *Note:* PS = Possible self; MOTIV = Motivation; INEG = Integrativeness

- *All correlations are significant at p < .001 (2-tailed)*

Appendix A: French Canadian Possible Selves Questionnaire

Probably everyone thinks about the future to some extent. When doing so we often think about the kinds of experiences that are in store for us. Some of these experiences are probably quite likely to occur while others are much less likely. Some of these future experiences are very much desired and hoped for while others are worried about or feared. As we think about the future we also think about the kind of people we might become. Again, we may look forward to some of these "future selves" but we may be quite concerned about others. In short, given the proper circumstances, we can probably all imagine a number of possible futures for ourselves in terms of the kind of people we might become, the way we might feel, or the acts we might commit. Some of these possible selves may be also achieved or quite likely to be achieved and some may only be very vague or fanciful ideas for the future. Some of us may have a larger number of "possible selves" in mind as we think about the future while others may have only a few.

Listed below are a number of possibilities of "future selves" that have been provided by other people. We are interested in what "possible selves," both positive and negative, that you may have considered for yourself.

Column 1: The first question asks whether this possible self has ever actually characterized you in the past. If it has, mark "yes", if not, mark "no".

Column 2: Next we are concerned with whether this possible self actually characterizes you right now. If it does, mark "yes", if not, mark "no".

Column 3: The third question asks whether you have ever previously considered this as a possible self for you. If you have never considered this possible self as a possibility for you, mark "no" and then go on to the next possible self. If you have ever considered a particular possible self as a possibility for you, mark "yes" and then answer the next two questions to the right (see the last page for the scale).

Column 4: The next one asks, "for you, how likely is this possible self?" If a possible self is very likely to occur in the future such that you are very certain that you will become this way, mark "extremely likely". If, on the other hand, you have considered this as a possibility for you, but you are very uncertain if you will become this way, mark "extremely unlikely". You should mark the numbers in between to indicate less extreme judgments of how often you have considered a particular possible self.

Column 5: The last question asks, "how often do you think of this as a possible self for you?" If you have spent a lot of time thinking about this self as a possible future self for you, mark "very often". If you have not spent any time thinking about this, mark "never." If you have at one time or other considered this self as a possible self, use the numbers in between to indicate less extreme judgments.

Please work very rapidly on this questionnaire. We are interested in your first thoughts about your future selves. Try to be honest. Do not mull over you answer - answer with the first

responses that come to mind. Do not worry about contradictions, inconsistencies, or uncertainties.

		Describes me now	Describes possible future	Is this desired or undesirable future? (1=undesired 5=desired)	How likely is this in the future? (1=not likely 5=very likely)	How often have you thought about this future (1=never 5= a lot)
1.	Understand French-Canadians' views	Yes | No	Yes | No			
2.	Think like French Canadians	Yes | No	Yes | No			
3.	Be a Knowledgeable person	Yes | No	Yes | No			
4.	Be a cultured person	Yes | No	Yes | No			
5.	Understand French literature	Yes | No	Yes | No			
6.	Appreciate French art and literature	Yes | No	Yes | No			
7.	Feel at ease with French Canadians	Yes | No	Yes | No			
8.	Friendships with French Canadians	Yes | No	Yes | No			
9.	Feel respected because I speak French	Yes | No	Yes | No			
10.	Enjoy speaking French	Yes | No	Yes | No			
11.	Want to learn many languages	Yes | No	Yes | No			
12.	Participate freely in activities of other cultural groups	Yes | No	Yes | No			
13.	Act like French Canadians	Yes | No	Yes | No			
14.	Meet and converse with French Canadians	Yes | No	Yes | No			
15.	Work at a job using French	Yes | No	Yes | No			
16.	Travel to French-speaking areas / countries	Yes | No	Yes | No			
17.	Go to French films in the original language	Yes | No	Yes | No			
18.	Read newspapers and magazines in French	Yes | No	Yes | No			