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Language, identity and stress:
A situated approach to acculturation

Kimberly A. Noels
School of Psychology

A thesis submitted to the
School of Graduate Studies and Research
of the University of Ottawa
as partial fulfilment of the requirements
for the degree of Doctor of Philosophy

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African	0316
American	0591
Asian	0305
Canadian (English)	0352
Canadian (French)	0355
English	0593
Germanic	0311
Latin American	0312
Middle Eastern	0315
Romance	0313
Slavic and East European	0314

Psychology etc (top middle column)
Psychology	0525
Reading	0535
Religious	0527
Sciences	0714
Secondary	0533
Social Sciences	0534
Sociology of	0340
Special	0529
Teacher Training	0530
Technology	0710
Tests and Measurements	0288
Vocational	0747

PHILOSOPHY, RELIGION AND THEOLOGY
Philosophy	0422
Religion	
General	0318
Biblical Studies	0321
Clergy	0319
History of	0320
Philosophy of	0322
Theology	0469

SOCIAL SCIENCES
American Studies	0323
Anthropology	
Archaeology	0324
Cultural	0326
Physical	0327
Business Administration	
General	0310
Accounting	0272
Banking	0770
Management	0454
Marketing	0338
Canadian Studies	0385
Economics	
General	0501
Agricultural	0503
Commerce-Business	0505
Finance	0508
History	0509
Labor	0510
Theory	0511
Folklore	0358
Geography	0366
Gerontology	0351
History	
General	0578

(right column)
Ancient	0579
Medieval	0581
Modern	0582
Black	0328
African	0331
Asia, Australia and Oceania	0332
Canadian	0334
European	0335
Latin American	0336
Middle Eastern	0333
United States	0337
History of Science	0585
Law	0398
Political Science	
General	0615
International Law and Relations	0616
Public Administration	0617
Recreation	0814
Social Work	0452
Sociology	
General	0626
Criminology and Penology	0627
Demography	0938
Ethnic and Racial Studies	0631
Individual and Family Studies	0628
Industrial and Labor Relations	0629
Public and Social Welfare	0630
Social Structure and Development	0700
Theory and Methods	0344
Transportation	0709
Urban and Regional Planning	0999
Women's Studies	0453

THE SCIENCES AND ENGINEERING

BIOLOGICAL SCIENCES
Agriculture	
General	0473
Agronomy	0285
Animal Culture and Nutrition	0475
Animal Pathology	0476
Food Science and Technology	0359
Forestry and Wildlife	0478
Plant Culture	0479
Plant Pathology	0480
Plant Physiology	0817
Range Management	0777
Wood Technology	0746
Biology	
General	0306
Anatomy	0287
Biostatistics	0308
Botany	0309
Cell	0379
Ecology	0329
Entomology	0353
Genetics	0369
Limnology	0793
Microbiology	0410
Molecular	0307
Neuroscience	0317
Oceanography	0416
Physiology	0433
Radiation	0821
Veterinary Science	0778
Zoology	0472
Biophysics	
General	0786
Medical	0760

EARTH SCIENCES
Biogeochemistry	0425
Geochemistry	0996

(second column)
Geodesy	0370
Geology	0372
Geophysics	0373
Hydrology	0388
Mineralogy	0411
Paleobotany	0345
Paleoecology	0426
Paleontology	0418
Paleozoology	0985
Palynology	0427
Physical Geography	0368
Physical Oceanography	0415

HEALTH AND ENVIRONMENTAL SCIENCES
Environmental Sciences	0768
Health Sciences	
General	0566
Audiology	0300
Chemotherapy	0992
Dentistry	0567
Education	0350
Hospital Management	0769
Human Development	0758
Immunology	0982
Medicine and Surgery	0564
Mental Health	0347
Nursing	0569
Nutrition	0570
Obstetrics and Gynecology	0380
Occupational Health and Therapy	0354
Ophthalmology	0381
Pathology	0571
Pharmacology	0419
Pharmacy	0572
Physical Therapy	0382
Public Health	0573
Radiology	0574
Recreation	0575

(third column)
Speech Pathology	0460
Toxicology	0383
Home Economics	0386

PHYSICAL SCIENCES
Pure Sciences	
Chemistry	
General	0485
Agricultural	0749
Analytical	0486
Biochemistry	0487
Inorganic	0488
Nuclear	0738
Organic	0490
Pharmaceutical	0491
Physical	0494
Polymer	0495
Radiation	0754
Mathematics	0405
Physics	
General	0605
Acoustics	0986
Astronomy and Astrophysics	0606
Atmospheric Science	0608
Atomic	0748
Electronics and Electricity	0607
Elementary Particles and High Energy	0798
Fluid and Plasma	0759
Molecular	0609
Nuclear	0610
Optics	0752
Radiation	0756
Solid State	0611
Statistics	0463
Applied Sciences	
Applied Mechanics	0346
Computer Science	0984

(right column)
Engineering	
General	0537
Aerospace	0538
Agricultural	0539
Automotive	0540
Biomedical	0541
Chemical	0542
Civil	0543
Electronics and Electrical	0544
Heat and Thermodynamics	0348
Hydraulic	0545
Industrial	0546
Marine	0547
Materials Science	0794
Mechanical	0548
Metallurgy	0743
Mining	0551
Nuclear	0552
Packaging	0549
Petroleum	0765
Sanitary and Municipal	0554
System Science	0790
Geotechnology	0428
Operations Research	0796
Plastics Technology	0795
Textile Technology	0994

PSYCHOLOGY
General	0621
Behavioral	0384
Clinical	0622
Developmental	0620
Experimental	0623
Industrial	0624
Personality	0625
Physiological	0989
Psychobiology	0349
Psychometrics	0632
Social	0451

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This thesis is dedicated, with love,
to the memory of my father

Basil A. Noels

who taught me the value of perseverance
and the importance of believing in what you do

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SUMMARY

Bilingualism is an important, if contentious, educational and socio-political issue, with implications for both society and individuals. This study considers several social psychological implications of developing second language (L2) competence by examining the links between ethnolinguistic identity, L2 self-confidence and proficiency, and psychological well-being. Participants included 368 Anglophone and 432 Francophone students attending a bilingual university. The results of confirmatory and exploratory factor analyses showed that ethnic identity is multidimensional, and the number and types of factors depends upon the identity (L1-group vs. L2-group) and the language group (Anglophone vs. Francophone) considered. The extent of identification with each group differed according to the situation and the vitality of the group. In a similar manner, L2 self-confidence and proficiency and L2-group contact varied as a function of group vitality, suggesting that contact and L2 competence mediate the link between vitality and identity. Indeed, correlational analyses confirmed the relations between contact, L2 self-confidence and identity in some situations. L2 self-confidence also mediated the connection between L2-group contact, on the one hand, and proficiency and psychological well-being, on the other. These findings point to two major implications. First, future research should adopt a multidimensional, situational approach to the study of ethnic identity. Second, although developing L2 self-confidence may be associated with identity loss for some groups, it is also generally indicative of better mental health. Thus, whether bilingualism is an "additive" or a "subtractive" experience depends upon the outcome of interest.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER 1

INTRODUCTION

In recent years, interest in issues concerning bilingualism has intensified, as is evidenced by new, and often contradictory, educational and legislative policies designed to meet the needs of different Canadian groups. Accordingly, competence in a second language (L2) is suggested to have both positive and negative implications. It is argued, for instance, that L2 learning enhances individuals' cognitive and social development, and leads to greater cultural and scientific enrichment, economic advancement, and increased intergroup harmony. It is also argued, however, that L2 acquisition may cause educational delays, identity conflict and emotional distress. It may also undermine national solidarity, reduce the distinctiveness of long-established groups, and lead to lack of understanding between cultural communities. Thus, learning and using a L2 in Canada (Bourhis, 1984a, 1986; Edwards, 1994) and elsewhere (cf. Crawford, 1992; Hakuta, 1986; Pool, 1979; Pedalino Porter, 1990; see also Padilla, Lindholm, Chen, Duran, Hakuta, Lambert, & Tucker, 1991) has become an important, if contentious, educational and socio-political issue, with implications for both society and individuals.

This study addresses a central theme of contemporary discussions of bilingualism through its examination of several social psychological aspects of L2 competence and use. More specifically, it contributes to the understanding of the links between ethnolinguistic identity, L2 competence, and acculturation stress, as they pertain to minority and majority English and French Canadians. It is argued here that ambiguities and inconsistencies in theorizing on the topic have arisen because of a failure to adequately consider situational influences on identity and its relation to language, intergroup contact and psychological distress. Moreover, it is argued that these situational influences vary as a function of the socio-structural status of the group considered.

To this end, the conceptual and operational definitions of ethnic identity are first discussed and a situated perspective is put forth. Extending earlier work (see

Clément & Noels, 1992), situations across which feelings of ethnic identity vary are then defined, and patterns of identification with relevant ethnic groups examined. Second, in order to clarify the link between identity and language, the relations between situational domains of ethnic identity and the socio-structural status of the native language group are explored. Third, in the interest of clarifying the association between language competence, ethnic identification, and psychological well-being, these constructs' interrelations are investigated. In pursuing these questions, themes from two areas of research, the cross-cultural psychology of acculturation and the social psychology of language, are integrated.

Ethnic Identity: Conceptual and Measurement Issues

Ethnic identity can be considered to be a facet of acculturation. In the broad area of cross-cultural research,

> acculturation comprehends those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups (Redfield, Linton, & Herskovits, 1936, p. 149).

For the individual, these changes include variations in identity, language behaviour, perceptual and cognitive skills, personality, attitudes, and values (Berry, Trimble, & Olmedo, 1986), making acculturation a multidimensional phenomenon (cf. Edwards & Chisholm, 1987; Gardner, Przedzielewski, & Lysynchuk, 1994; Lanca, Roese, Alksnis, & Gardner, 1992; Mendoza, 1989; Olmedo, 1979, 1980). Ethnic identity, then, is one psychological aspect of acculturation that has a dynamic relation with intergroup contact.

The Definition of Ethnic Identity

Although ethnic identity can be distinguished from other facets of acculturation, there is little consensus concerning its definition (Leets, Giles, & Clément, 1994; Phinney, 1990; Ross, 1979). The reasons for this lacuna may be related to the difficulties in arriving at a general definition of ethnicity (cf. Bentley, 1987, 1991; Hraba & Hoiberg, 1983; Isajiw, 1985; Thomas, 1986; Yelvington, 1991) and/or because of the variety of theoretical perspectives that have looked at identification

processes in ethnic groups. These include, but are not limited to, social identity theory (eg. Tajfel, 1974, 1981; Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), psychodynamic stage-model perspectives (eg. Cross, 1971, 1978; Parham, 1989; Parham & Helms, 1985), symbolic interactionist frameworks (eg. White & Burke, 1988), and acculturation (pluralist-assimilationist) approaches (eg. Berry, 1990a, 1990b; Phinney, 1990).

Since Barth's analysis (1969), however, researchers generally adopt a subjective perspective whereby ethnic identity corresponds to that aspect of the self-concept that pertains to feelings of belonging to an ethnic group. In line with many other contemporary perspectives, the approach adopted here views ethnic identity as "a sense of group identity deriving from real or perceived common bonds such as language, race or religion" (Edwards, 1977, p. 254). This group can be described as "involuntary" (Isajiw, 1985, p. 14)[1], in the sense that group members undergo similar socialization processes. From this perspective, an "ethnic" group is equivalent to a "cultural" group. Ethnolinguistic identity is the specific instance where the ethnic group maintains a distinctive language and uses it to symbolize its identity.

As the above definition of ethnic identity indicates, ethnic identity is a function of socialization processes. This perspective (at times termed the primordialist perspective, see Liebkind, 1989a, 1989b), suggests that within each cultural group, a certain pattern of behaviours, or cultural traits, is normatively appropriate, and ethnic groups differ with regards to these practices (cf. Bentley, 1987, 1991; Thompson, 1989). Thus, patterns of conduct within a group comprise its culture, and the ethnic identity of a member of that group is based on those cultural traits.

At the same time, in many definitions of ethnic identity, at least two ethnic

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[1] Several other definitions of ethnic identity (eg. Edwards, 1985) include the criterion that this feeling of group membership be based on real or imagined common ancestry. This definition is not satisfactory because an assumption of much acculturation research is that, as a result of intercultural contact, individuals can potentially come to feel that they are a member of an ethnic group with which they share no common ancestry.

groups contribute to self-definitions of identity. Theorists from diverse backgrounds (eg. Barth, 1969; White & Burke, 1988; Turner et al., 1987; Edwards, 1985; Edwards & Chisholm, 1987) stress that ethnic identity, and social identity in general, are based on boundary constraints, such that one is defined in terms not only of what one *is* but also of what one *is not*. While the content of a culture (eg. language, religion, food) may change, an ethnic group can still be contrasted with another in spite of these changes. Because of this observation, proponents of the situationalist (Liebkind, 1989a, 1989b) or instrumentalist perspective (Yinger, 1985) on ethnic identity suggest that the contrastive differences between ethnic groups are essential to ethnic identity (eg. Devos & Ross, 1975; Tajfel, 1974, 1981; Tajfel & Turner, 1979; White & Burke, 1988). Thus, feelings of ethnic identity do not lie solely in the behaviour patterns of the ethnic group. With these considerations in mind, a more appropriate conceptualization of ethnic identity recognizes that, "ethnicity is a matter of a double boundary, a boundary from within, maintained by the socialization process and a boundary from without, established by the process of intergroup relations" (Isajiw, 1985, p. 15). A complete understanding of ethnic identification requires not only that identification with the original ethnic group be considered, but also that identification with other relevant ethnic groups be taken into account (cf. Epstein, 1978; Keyes, 1981).

Feelings of identification with either group are not, however, expected to be continuously salient. Okamura (1981) stressed the relevance of a situational analysis for issues concerning ethnicity (see also Brislin, 1981), and the importance of a situational analysis of ethnic identity has been reiterated over the last decade (cf. Elizur, 1984; Phinney, 1990, 1991). A handful of empirical studies have directly addressed the issue.

Christian, Gadfield, Giles, and Taylor (1976) varied situational saliency of ethnic identity by asking Welsh adolescents to write an essay about either a neutral topic or a topic concerning English-Welsh conflicts. Subjects who wrote the latter essay rated themselves on a semantic differential scale as more highly Welsh and accentuated the polarization of the English and Welsh groups. Elsewhere, Rosenthal, Whittle and Bell

(1988) asked Greek-Australian adolescents to write an essay either about the advantages or about disadvantages of their ethnic group membership or about a neutral topic. They found that sensitizing the respondents to their ethnic group membership through the essay topic resulted in increased salience of Greek identity. Rosenthal and Hrynevich (1985) found Greek- and Italian-Australian adolescents felt very much like members of the Greek or Italian community in settings involving this ethnic group (eg. with family/friends, at church, eating traditional foods). These same adolescents also felt very Australian when in Australian environments (eg. with Australian friends, at school, during leisure activities). Finally, in their study of Canadian Francophones, Côté, Noels and Clément (1991) found that interaction with an Anglophone interlocutor, rather than a Francophone or ethnically neutral partner, was related to an increase in English identification and an attenuation of French identification. Thus, situational cues of ethnicity influence the level of identification with one or another ethnic group. It follows that ethnolinguistic identity should be conceived as situationally bound, such that individuals move in and out of memberships as required by the immediate contextual constraints (Collier & Thomas, 1988; Heller, 1984, 1986, 1987; Liebkind, 1989a).

Limitations in the Measurement of Ethnic Identity

In spite of the suggestions that ethnic identity involves a situationally variable subjective self-definition in reference to at least two ethnic groups, it has not always been operationalized accordingly[2]. Three specific limitations can be identified, including the use of indices that (1) do not capture the subjective nature of ethnic identity, (2) do not pertain to at least two ethnic reference groups, and (3) do not reflect the situationally variable nature of ethnic identity.

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[2] In their review of over 10,000 articles on ethnic identity in psychology, sociology and education (as listed in PSYCLIT, SOCIOfile, and ERIC CDROM data bases) between 1974 and 1992, Leets, Giles and Clément (1994) found that 82% of the articles lacked any theoretical basis for the measurement instrument used. Moreover, 21% of the articles did not report any measure of identity.

The subjective nature of ethnic identity. Common methods of assessment (see Phinney, 1990; Smith, 1980) do not adequately assess the subjective nature of ethnic identity, either because they do not measure self-reported feelings of belonging or because they measure constructs that are not identity per se. These methods include definition by the researcher, categorical self-definition or self-labelling (eg. Dona, 1991; Driedger, Thacker, & Currie, 1982; Parsonson, 1987), appraisals of the level of similarity to one or another ethnic group (e.g. Christian, Gadfield, Giles, & Taylor, 1976; Rosenthal & Hrynevich, 1985), indices of evaluative attitudes towards the ethnic group and/or ethnic practices (e.g. Fathi, 1972; Ting-Toomey, 1981), evaluations of the level of ethnic involvement (e.g. Garcia & Lega, 1979), or a combination of these methods (e.g. Rosenthal & Feldman, 1992; Phinney, 1992; Teske & Nelson, 1973; Whittler, Calantone, & Young, 1991). Each of these procedures is problematic.

A first problem is that very few empirical studies included a subjective self-definition of identity. In fact, in their review of the definition of ethnicity in psychology, sociology and education, Leets, Giles, and Clément (1994) found that only 9% of the studies used a subjective definition. The most popular form of measurement was assignment of an individual to an ethnic category on the basis of his/her place of birth or parents' place of birth (42% of the studies reviewed). Researcher-assigned categorical labels, however, may not correspond to the subjects' own sentiments about their group membership. Similarly, even self-assigned categorical labels may be partly externally imposed. For example, calling oneself Black or German-Canadian may reflect less the level of ethnic identification than a recognition of societally imposed distinctions. Moreover, an exclusive label can be imprecise: for example, persons whose parents are from different ethnic groups may perceive themselves as part of two or more groups (Phinney, 1990). Thus, categorical labels, particularly those imposed by researchers, may not adequately assess feelings of group belonging.

Other measures are inappropriate because they do not pertain directly to identity. The use of evaluative reactions to ethnic group membership is an unsuitable

manner to assess ethnic identity because positive or negative evaluations of ethnic group membership do not necessarily reflect a person's sense of belonging to that ethnic group: a person may feel strongly that he/she is a member of a particular group but not like that group, such that there is a sense of belongingness that is not synonymous with acceptance, and the converse is also possible. Rather, this distinction between self-definition and self-evaluation would seem to parallel the distinction between self-concept and self-esteem (cf. Hattie, 1990), requiring separate strategies of measurement[3]. The present discussion will maintain a distinction between these two constructs, whereby *self-concept* refers to self-description and *self-esteem* refers to the positive affect associated with self-evaluation.

Ethnic involvement, in terms of language, friendship, social organization, religion, cultural traditions and politics, is the poorest of the identity measures. If behavioural indices are included in operational definitions of ethnic identity, it becomes impossible to examine the relations between identity and behaviour because behaviours are confounded in the assessment of the identity construct. These indices might better be conceptualised as alternative indices of acculturation (cf. Arce, 1981). The measurement of ethnic identity, then, must be developed to reflect the subjective nuances of the construct, without confounding it with other aspects of acculturation.

Multiple ethnic reference groups. A second problem in the measurement of ethnic identity concerns the use of single linear and bipolar scales (eg. Waddell & Cairns, 1986) to assess ethnic identity. These types of indices are problematic in two ways (cf. Sayegh & Lasrey, 1993). First, a linear index of the degree of identification with the original ethnic group does not reflect the fundamental assumption that at least two ethnic groups are relevant for ethnic identification. Second, bipolar indices do not allow for a proper appraisal of how the two ethnic identities are related

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[3] Although the social identity theory does not necessarily pertain to ethnic groups, these groups' relations are often addressed in this framework. Several scales developed to assess identity from this perspective also combine items that measure evaluations of the group with items that assess identity (eg. Brown, Condor, Mathews, Wade, & Williams, 1986; Karasawa, 1991).

because they preclude the possibility of determining the independence of the 2 identities. Thus, as long as both identities are assessed along the same continuum, variations with regards to one identity necessitate complementary variations with regards to the second identity.

Research findings concerning the relations between the two identities are generally inconsistent. Several studies report no relation between ethnic identification with the original ethnic group and the other relevant ethnic group, potentially supporting a bidimensional model (Andujo, 1988; Der Kabetian, 1980; Elias & Blanton, 1987; Feuerverger, 1989; Hutnick, 1986; Makabe, 1979; Oetting & Beauvais, 1991; Sayegh & Lasry, 1993; Ting-Toomey, 1981; Ullah, 1985; Zak, 1973, 1976). Other studies suggest that there is a relation between these 2 dimensions, generally negative, thereby supporting a bipolar model of ethnic identity (Elias & Blanton, 1987; Elizur, 1984; Clément & Noels, 1992; Clément, Gauthier, & Noels, 1993; Clément, Sylvestere, & Noels, 1991). Until this issue is resolved, at least two dimensions, one for each relevant ethnic group, must be operationalized.

Situational variations in ethnic identity.   A third limitation, which is the focus of the present study, pertains to the observation of situational variation in ethnic identity. In spite of repeated commentary on this phenomenon, little effort has been directed at systematically describing situational domains (cf. Phinney, 1991). Theorists from many different perspectives have suggested relevant domains. For example, social identity and self-categorization theorists (Hogg, & McGarty, 1990; Tajfel & Turner, 1979; Turner et al., 1987) maintain that group identity is pertinent in situations where members of a contrastive out-group are present, such as in instances of conflict or competition (cf. Oakes & Turner, 1987; Turner, 1982). In a similar vein, McGuire, McGuire, Child and Fujioka (1978) argue that ethnicity is most salient when in a setting where one is numerically distinct. Thus, these theorists distinguish settings in which members of other groups are present from settings in which they are not.

Other researchers interested in cultural and linguistic change also suggest that such a distinction between settings is relevant to feelings of ethnic identity. With

regards specifically to ethnolinguistic identity, Edwards (1977, 1985) has suggested that ethnicity is comprised of two situational facets, public and private. Public facets cf ethnicity include interactions with others in the community. Private facets encompass situations such as being at home with the family or religious rituals. Others, such as Gans (1979; see also Sprott, 1994), suggest that arenas for the symbolic expression of ethnicity potentially include food and politics. These symbolic aspects, however, are not, expected to intrude into public affairs, but to be limited to private settings. Finally, other more specific situations include the mass media (eg. Landry & Allard, 1990, 1991; Fitzgerald, 1992; Harvey, 1992) and the school or work environment (Landry & Allard, 1991; Markus & Kitayama, 1994). In the interest of understanding variations in feelings of ethnicity, situational variability in the construct must be systematically assessed.

Thus, current approaches to the operationalization of ethnic identity fall short of adequately reflecting ethnic identity as it is conceptualized by several theoretical perspectives. Three particularly noteworthy limitations are the failure to account for the subjective nature of ethnic identity, to consider at least two relevant groups as potential reference groups for ethnic identity, and to systematically assess situational variations in feelings of ethnic identity. An alternative approach is necessary to address some of these shortcomings.

A Self-Presentational Approach to Identity

Such an approach borrows from the self-presentational and impression management approaches to the self and identity (eg. Alexander & Beggs, 1986; Alexander & Rudd, 1981, 1984, Alexander & Wiley, 1984; Schlenker, 1980, 1985a, Schlenker & Wiegold, 1989; Swann, 1985, 1987). This approach, as with many recent developments in the study of the self-concept (see Banaji & Prentice, 1994, for review), recognizes the importance of the social context for the self and identity. According to Schlenker (1982),

> identity is a theory (or schema) that is constructed about how one is and should be perceived, regarded, and treated in social life (Schlenker, 1980). As such, it is an organization of knowledge about the self in actual and imagined social situations and relationships. It includes relevant facts, constructs,

beliefs, values, standards for conduct, and iconic components that provide a portrait of the individual as a social entity, aggregated over a variety of experiences. Immediate audiences have or develop such a theory of the actor, and actors possess such a theory of themselves (pp. 194-195).

Thus, identity is a conceptualization of the self that develops over time and social experience. It is not an immutable characteristic of the person, but rather a concept that can be developed as a result of experience.

Social interaction is critical to the development of identity. Individuals have goals in any social interaction, and will behave in a way that best supports the identity-image that will help them to attain that goal. Whether or not a goal is achieved depends upon the acceptability of that image to the interactant. Thus, the self is "formed and maintained through actual or imagined interpersonal agreement about what the self is like" (Schlenker & Weigold, 1989, p. 245). The implication of this assumption is that identity not only determines behaviour, but behaviour also affects identity through the reactions of others to that behaviour. Identities are thus based on social consensus about which identity is tenable in a particular interaction.

This negotiation process does not occur in a vacuum, but in particular social contexts. One important aspect of these contexts is the situation, as defined by social rules and norms (Argyle, Furnham, & Graham, 1981; Forgas, 1982; Frederiksen, 1972; Magnussen, 1971, 1981). Social psychological research has benefitted from situational analyses through the development of taxonomies (e.g. Côté, Clément, & Noels, 1990; Eckes, 1995; Fredericksen, 1972), the examination of scripts (e.g. Schank & Abelson, 1977) and relational schema (Baldwin, 1992), the investigation of psychological dimensions of situations (e.g. King & Sorrentino, 1983), and the elaboration of cognitive representations of interaction episodes (e.g. Forgas, 1979, 1982). For the present purposes, a situation is defined along the lines of a social episode, or a "consensual cognitive representation about recurring interaction sequences" (Forgas, 1988, p. 186). Consensual knowledge of the rules that govern recurring everyday interactions are useful to guide social behaviour, including interpersonal and intercultural communication. From this perspective, under most circumstances, individuals communicate any identity desired as long as the identity

conforms to the rules and norms of that situation. Identity, then, is negotiated between interactants within the constraints of socially-prescribed rules and norms governing interactions for different socially-defined situations (Jackson, 1988).

At the same time, the self-presentational perspective recognizes that individuals are likely to control the identities they project. It is generally believed that people create images that cast themselves in a positive light, in the interest of protecting, maintaining or enhancing self-esteem (Gecas, 1982; but see Swann, 1987). Schlenker (1982, 1985b) has suggested that individuals are motivated to manage the impressions or identities they present to others in a way which is self-beneficial -- that is, in a manner that leads to an interpretation that serves their values and goals. This desired identity image can only be achieved, however, if it is constructed within the constraints of reality or "believability" (Schlenker, 1985b). It might be expected, therefore, that people will claim, or feel inclined to negotiate, an image that allows them to be viewed in the best possible manner.

The self-presentational approach to identity described here, therefore, maintains that a person is motivated to act to his/her benefit within the constraints imposed by the situational norms. Moreover, it maintains that identity is not an immutable characteristic but subject to modification as a result of social negotiations. Presumably, while people act in a way that supports their goals, this behaviour will also affect the self-concept.

While this approach to the study of the self-concept is well represented in recent theoretical and empirical writings (for overviews, see Gergen, 1987, 1991; Lynch, Norem-Hebeisen, & Gergen, 1981; Scheibe, 1985; Schlenker, 1980, 1985, Breakwell, 1983; Yardley & Honess, 1987), social psychologists have not by and large extended it to the study of group identity in general nor ethnic identity in particular. Several of the premises of this approach are pertinent to the study of ethnic identity. In the next section, two issues, particularly the motivation to negotiate a self that is perceived in a favourable manner and the situational variability of identity, are addressed.

A Situated Approach to Ethnic Identity

The situated approach to ethnic identity is similar to self-presentational approaches to the self-concept in many respects. Like many constructivist accounts of cultural identity (eg. Applegate & Sypher, 1988; Collier & Thomas, 1988), it is maintained here that ethnic or cultural identity is negotiated between interactants who both have goals to achieve in a socio-communicative interaction. In addition, identities are not presumed to be given entities, but to develop through the course of social interaction. In line with the self-presentational approach, theorizing on the relations between ethnolinguistic groups has suggested that people desire to maintain an advantageous ethnolinguistic identity (see Bradac, 1990; Sachdev & Bourhis, 1990; Giles & Coupland, 1991; Giles, Coupland, & Coupland, 1991, for review). Moreover, the desired identity varies depending upon the situation and the socio-communicative behaviour characteristic of the interaction.

Achieving a "positive" image. The relative socio-structural status of the ethnic groups involved in an interaction is an important factor governing the selection of a desired identity (Tajfel, 1974, 1981; Giles & Johnson, 1981, 1987; Beebe & Giles, 1984; Giles, Garrett, & Coupland, 1989). According to ethnolinguistic identity theory (Beebe & Giles, 1984; Giles, Garrett, & Coupland, 1989; Giles & Johnson, 1981, 1987), individuals are motivated to maintain a "positive ethnolinguistic distinctiveness", which is determined by the social group to which they belong. Presumably, an attempt is made to identify with the group which evidences the greater "ethnolinguistic vitality" (cf. Giles, Bourhis, & Taylor, 1977). According to Giles, Bourhis, and Taylor (1977) ethnolinguistic vitality refers to those characteristics that will help to ensure the survival of a language group, including the group's social status (eg. economic, social and historical prestige), demographic representation (eg. numerical representation in a given region), and institutional support (eg. the extent to which educational and governmental agencies support the language group). Following this line of reasoning, majority group members are expected to maintain primary identification with their original (and dominant) ethnic group, whereas minority groups are expected to identify to a greater extent with the other relevant (and

dominant) ethnic group. In line with self-presentational approaches to identity, then, the desire to effect a self-advantageous mien determines the type of identification a person adopts; in the case of ethnic identity, a "positive" ethnic identity is generally associated with membership in a group with strong ethnolinguistic vitality.

Empirical research on this question suggests that identification with a group is indeed likely to increase to the extent that that group has strong relative vitality. Positive correlations between subjective estimates of group status and identification have been reported among Mexican-Americans in the United States (Gao, Schmidt, & Gudykunst, 1990, cited in Sachdev & Bourhis, 1992), Catalan speakers in Catalonia (Ytsma, Viladot, & Giles, 1994) and the Acadians of New Brunswick (Landry & Allard, 1994). Clément and Noels (1992) also found that majority groups identified highly with their membership groups and less with the other relevant group. Minority groups demonstrated attenuated identification with the original ethnic group and were less rejecting of the other ethnic group as a source of identification. Thus, it is expected that when a group's ethnolinguistic vitality increases, individuals' identification with that group also increases.

Situational variations in identity. The relation between socio-structural status and identity may be subject to situational variations. For example, Waddell and Cairns (1986) found that Catholic Irish indicated they felt more Irish more consistently across situations involving group-relevant themes than did Protestant Irish. These authors attributed this finding to the Catholic Irish group's status as a minority. In a similar vein, researchers adopting a social identity perspective (Tajfel & Turner, 1979) or related perspectives (eg. Turner et al., 1987; Turner, Oakes, Haslam, & McGarty, 1994) maintain that identity is likely to be most salient in intergroup contexts than in intragroup contexts (cf. Hinkle, Taylor, & Fox-Cardamone, 1989).

From a different perspective, Edwards (1977, 1985) proposed that visible and public facets of ethnicity are assimilated more quickly and more completely than those that are restricted to private domains, because the more private an ethnic marker is, the less it is affected by acculturative pressures. It might be expected, then, that in public situations, minority group members would evidence greater identification to the

other relevant group and less identification with the original language group than would majority group members. Consistent with this hypothesis, Clément and Noels (1992) found that identification with the native ethnic group was generally higher in more private domains. Contrary to this hypothesis, identification with the other ethnic group was generally lowest for Anglophones (a majority group) in more private domains but highest for Francophones (a minority group) in the more private domains. In spite of these conflicting results, it remains that feelings of ethnic identification vary across situations differently for majority and minority group members.

Summary and Implications for the Present Study

One goal of the present study is, therefore, to assess inter-situational variations in the level of identification to the original ethnic group and to the other ethnic group as a function of the ethnolinguistic vitality. More specifically, following the above discussion, it is expected that (1) a situational analysis will reveal the existence of public and private domains for both membership and alter group identities; (2) in line with Edward's (1985) discussion, identification with the original ethnic group will be greater in private domains than in public domains, and the converse pattern will occur with regards to identification with the other ethnic group; and (3) members of groups of lesser vitality will evidence higher levels of identification with the other ethnic group across domains than members of groups with greater status.

This section has considered several inconsistencies between current conceptualizations of ethnic identity and its operational definition. Although ethnic identity is widely recognized as referring to situationally variable, subjective feelings of belonging to at least two ethnic reference groups, social psychological research has seldom measured identity in light of these issues. In response to these concerns, a situated approach to ethnic identity, based on several of the premises of self-presentational approaches to the self, is presented here. Two premises of self-presentational approaches to identity are particularly pertinent to ethnic identity, including the idea that people are motivated to present a favourable image and that situational constraints influence the manifestation of identity. The self-presentational approach also maintains that identity and social behaviour are interlinked. In the next

section, we will consider if and how identity and, specifically, language behaviour are related.

Ethnic Identity, Language and Communication

According to Maas, Salvi, Arcuri, and Semin (1989), there are at least four reasons for the salience of language in ethnic relations: language can be a criterial characteristic of group membership, a sign of ethnic categorization, an emotional facet of identity, and a means of promoting ingroup cohesion. Although its importance is recognized, the relation between language and ethnic identity has been debated. Some suggest that language use is inextricably linked to the ethnic culture and thus to ethnic identity. Others, however, contest the necessity of this relationship. After a consideration of these views, it will be suggested that the link between language and identity is influenced by both socio-structural and situational variables.

The Language-Identity Link

Several researchers (e.g. Edwards, 1985; Lamy, 1978, 1979) claim that there is no necessary relation between language and ethnic identity. Particularly when examined from social identity and related perspectives (Tajfel & Turner, 1979; Turner et al. 1987), language is similarly one of many characteristics that can differentiate groups. Along a similar line, Edwards (1977, 1985, 1992) suggests that the maintenance of language for communicative purposes is not essential for the maintenance of feelings of own-group ethnic identification. Rather, with the loss of communicative language use, the language may adopt a symbolic importance. Even if this symbolic aspect should be lost, other ways of expressing ethnic identity can make up for the symbolic value of ethnicity carried by language, and thereby support ethnic group sentiments. From this perspective, the acquisition of a L2 with the simultaneous loss of original language as a communicative tool does not undermine sentiments of first language (L1) group identity.

Indeed, while several studies do suggest that language is often an important dimension of ethnic identity (eg. Driedger, 1975; Giles, Taylor, & Bourhis, 1977; Leclézio, Louw-Potgieter, & Souchon, 1985; Rosenthal & Hrynevich, 1985; Taylor,

Bassili, & Aboud, 1973), others indicate that it is not necessarily a defining feature of ethnic group membership. For example, Giles, Taylor, Lambert, and Albert (1976) found that Franco-Americans who did not speak French used cultural background as the prime dimension of ethnic identity, whereas Anglo-Americans and Franco-Americans who used French employed language as the prime dimension (cf. Caltabiano, 1984; Camalieri, 1983-84; Giles, Llado, McKirnan, & Taylor, 1979; Louw-Potgieter & Giles, 1987; Rosenthal & Hrynevich, 1985; Taft, 1973). Edwards and his colleagues (e.g. Edwards & Doucette, 1987; Edwards & Chisholm, 1987) found that several subjects in their studies used a hyphenated ethnolinguistic label for self-description, although they could not speak the language of both groups. Thus, other cultural features besides language, including physical characteristics and/or religious affiliation, can support a sense of ethnic identity (see also, Liebkind, 1992).

Several limitations of the above studies, however, undermine the conclusion that language has no link with identity. First, given the limitations in the operationalization of ethnic identity outlined earlier, some of the above mentioned studies include inadequate measures of identity. Furthermore, although some of this research demonstrated that language may or may not be a dimension of identity, it does not necessarily follow that the levels of endorsement of ethnic identity is as high when language is not included in its definition as when it is. Arguably, language may not be essential for feelings of ethnic identity, but it does not necessarily follow that language use is unrelated to feelings of ethnic identity. Members who long since relinquished their ethnic language may still recognize their affiliation with others who share the same heritage. At the same time, their feelings may be less than those who currently use the language.

As a point in fact, Clément, Gauthier and Noels (1993; see also Cameron & Lalonde, 1994) examined Franco-Ontarian adolescents who spoke primarily French or primarily English. Although both groups learned French as their native language, Francophones who spoke primarily English identified less strongly with the Francophone group than did Francophones who spoke primarily French. Thus, in line with the above critique, language use was related to the level of identification in such

a way that those who seldom used the ethnic group language identified less with that group than those who often used the language. Language use may not be necessary for a minimum level of affiliation with an ethnic group, but it can have implications regarding the level of feelings of ethnic identification beyond that point.

In contrast to the position that language and identity are not linked, other theorists maintain that language is foundational to ethnic identity. For example, Fishman (1989) claims that "at every stage, ethnicity is linked to language ... there is no escaping the primary symbol-system of our species, certainly not where the phenomenology of aggregational definition and boundary maintenance is involved, when ethnic being, doing and knowing are involved" (p. 7). Recently, arguments for the link between language and culture maintain that culture is negotiated through the communication practices of a particular group. According to Frank (1975, cited in Kim, 1988, p. 47), culture derives from patterns of transactional relations (p. 128) between members of a group, each of whom maintains constant interactions with others of that group. These interactions establish a common system of coding and decoding information about the world specific to the people under consideration. To the extent that these interactions are repeated, a culture is developed which consists of the "sum of the consensuses of the individual communication patterns manifest by the members of a society, giving coherence, continuity, and distinctive form to their way of life" (Kim, 1988, p. 47). Language, as the primary medium through which much of communication occurs, and ethnic identity are intimately linked in that cultural values, carried through language, affect how people perceive themselves, their culture, and their relationship to others.

Towards a Resolution

Adaptation to another culture, then, requires learning about that culture through communication with its members. Through increased experience with the community, and eventual acquisition of the cultural patterns, a sense of efficacy or agency with regards to interacting in that culture is developed. Clément's (1980, 1984, 1986; Clément & Kruidenier, 1985) social context model of L2 learning outlines this process in greater detail.

Accordingly, the nature of contact with members of the other culture and feelings of competence with regards to the linguistic system of the other community are related to L2 acquisition, and thus to the level of ethnolinguistic identification with both language groups. In multicultural contexts, where contact between language groups is possible, frequency and quality of contact influence self-perceptions of competence and anxiety in using a L2. High self-evaluations of L2 competence, combined with low feelings of anxiety while using the L2 are referred to as L2 self-confidence. These feelings of self-confidence, in turn, influence the extent to which energy is devoted to learning the L2 and, thereby, to the level of proficiency in the L2. In Clément's model, other, non-linguistic outcomes of this process include changes in the level of identification with the two language communities.

This relation between ethnic identity and language can be complex: many authors (eg. Clément, 1980, 1984, 1986; Giles & Byrne, 1982; Giles & Coupland, 1991; Giles, Garrett, & Coupland, 1987; Hall & Gudykunst, 1986; Lambert, 1975, 1978, 1987) contend that it depends upon the relative socio-structural status of the groups under consideration. Clément (1980, 1984, 1986, see also Lambert, 1975; Landry & Allard, 1990) suggests that when the original group's language is societally dominant and prestigious, and in no danger of replacement when the L2 is learned, the second language and identity will be acquired without the loss of the first language (L1) and identity. This phenomenon has been termed "integration" (Clément, 1980) or "additive bilingualism" (Lambert, 1975, 1987). On the other hand, when an individual's L1 is a minority, non-prestigious language, the minority group member is likely to lose the original language with the acquisition of the L2, with parallel patterns of change with regards to identification. This process is termed "assimilation" (Clément, 1980) or "subtractive bilingualism" (Lambert, 1975). Thus, increases in L2 behaviour and related variables are expected to be associated with heightened identification with the L2-group. They are expected to have little relation with L1-group identification in majority groups, but to be negatively associated with L1-group identification in minority groups.

Although Clément and Kruidenier (1985) confirmed the validity of the proposed

causal sequence between contact, linguistic self-confidence and L2 competence, they did not address the impact of these variables on identity. In related research, Landry and Allard (1990) addressed the issue of additive and subtractive bilingualism, using a similar type of explanatory framework (see Prujiner, Deshaies, Hamers, Blanc, Clément, & Landry, 1984). In their investigation of Canadian Francophones, these authors demonstrated that self-perceptions of L2 competence and identity are linked to the vitality of the Francophone group such that with decreased demographic representation, L1 competence and identity decrease and L2 competence and identity increase. Elsewhere these researchers showed that majority Anglophones did not lose their L1-group identity as a result of receiving schooling in the L2 (Landry & Allard, 1992). Thus, L2 proficiency and variables relevant to the development of language proficiency, particularly aspects of contact and self-confidence, are expected to be related to levels of ethnolinguistic identification, although the patterns of these relations are different for majority and minority groups.

Group vitality, however, may not be sufficient to explain patterns of additive and subtractive bilingualism. Vitality may interact with situational characteristics to affect the relation between L2 variables and ethnic identity. In line with the notion that patterns of communication are related to ethnic identification, and considering Edwards' distinction between public and private situations, it is expected that in a situation which includes the possibility of interethnic contact, and implicitly the question of L2 use, L2 identity is more likely to be related to language variables than in more private intragroup situations. A minority group may be required to use the L2 in more situations, and therefore, for that group, it is anticipated that the variables which predict L2 competence are correlated with L2-group identification across a wider spectrum of situations. Thus, in combination with the ethnolinguistic vitality of the group, another factor which is hypothesized to influence the relation between L2 behaviour and feelings of ethnic identity is the relative presence or absence of L2-group contact in a given situation.

Summary and Implications for the Present Study

Language and identity are linked, but the strength of this relation depends upon

the situation and the ethnolinguistic vitality of the group concerned. The perspective adopted here suggests that social behaviour, and in the case of language groups, language behaviour, is an important component of an identity negotiation process. Language is particularly relevant to ethnic identity when members of language groups must negotiate identity in situations of contact.

Following these considerations, a second purpose of this study is to explore how L2-group contact, and self-confidence in using the L2 are related to different domains of ethnolinguistic identity. It is first expected that, in line with the findings of Clément and Kruidenier (1985), the causal sequence whereby contact leads to linguistic confidence and L2 proficiency will be evident in both Anglophone and Francophone groups in situations of L2-group contact. Second, following the arguments of Clément (1980), Lambert (1975), and Landry and Allard (1990), the L2 variables will evidence a positive or no correlation with L1-group identification, and be positively related to L2-group identification indices in higher vitality groups. They will be negatively related to L1-group identification and positively related to L2-group identification in lower vitality groups. Third, the use of the L2 may be more prevalent in public situations (where there is more opportunity to interact with the L2-group) than private situations. It is therefore expected that contact and language indices are more strongly correlated with the identity indices in these situations than in other, less public domains. This pattern is expected particularly for higher vitality groups, since they likely experience little L2-group contact in private settings. Since lower vitality group members likely use the L2 across more situations, the language and contact variables are expected to correlate with identity across more domains for this group groups than for higher vitality groups.

Identity, Language and Emotional Adjustment

The above discussion of additive and subtractive bilingualism suggested that developing competence in the L2 is part of an acculturation process which has certain social psychological costs and benefits, particularly identity loss and gain. Several researchers maintain that developing L2 proficiency can also affect emotional

adjustment for better or for worse (eg. Lambert, 1975; Gardner, 1977). For the purposes of the present study, emotional adjustment is defined in line with other discussions of acculturation stress (eg. Berry & Kim, 1988; Phinney, 1991; Phinney, Lochner, & Murphy, 1990). It pertains, then, to mental health status, and may include physical, psychological and social aspects (Berry, Kim, Minde, & Mok, 1987). It may be positively defined as "well-being" (involving a positive sense of self, combined with the absence of stress symptoms, such as anxiety and depression, social alienation and anxiety, and psychosomatic symptoms) and negatively defined as psychological "distress". Thus, the final purpose of this study is to consider how variables relevant for L2 competence are related to emotional adjustment.

Whether between language groups or not, several authors contend that cross-cultural contact is a stressful event (Berry, 1990c; Berry & Annis, 1974; Berry & Kim, 1988; Dyal & Dyal, 1981; Porter & Washington, 1993). Anderson (1994) maintains that cross-cultural contact can be likened to many events in life that necessitate psychological and social adjustments to meet the demands of the new situation. When faced with new stressors, feelings of distress are likely to arise.

Indeed, individuals faced with dealing with another culture (eg. minority group members or cultural newcomers) have been shown to suffer a number of psychosocial disorders. For example, psychosomatic distress (Cawte, 1968; Harding & Looney, 1977), substance abuse (Gilbert & Cervantes, 1986; Schinke, Moncher, Palleja, & Zayas, 1988; Tseng & McDermott, 1981), and depression (Catanzaro & Moser, 1982; Erickson & Hoang, 1980; Mueck, 1983), as well as low levels of life satisfaction (Young, 1991); self-esteem (Padilla, Alvarez, & Lindholm, 1986; Padilla, Wagatsuma, & Lindholm, 1984; Phinney, 1991; Phinney & Chavira, 1992) and personal control (Bulhan, 1978; Dyal & Chan, 1985) are suggested to be problems in several aboriginal, immigrant, and refugee groups.

The results of some other studies, however, are not consistent with the claim that intergroup contact is associated symptoms of distress (Simoes & Binder, 1980; Hoppe, Leon, & Realini, 1989; Mavreas & Bebbington, 1990; Shuval, 1982; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988). For

example, some immigrants and refugees benefit from moving to a new culture through lessened persecution and an improved standard of living (for discussion see Furnham & Bochner, 1986). As pointed out by Young (1991), although certain individuals are at risk for psychological distress, this does not necessarily mean that distress will arise in all cases.

This point emphasizes that other factors must be implicated in the contact-distress relation. Many different skills and resources have been postulated to mediate the relation between the cross-cultural contact and stress (see E.M.J. Smith, 1985, for overview). One individual difference variable that pertains directly to intergroup relations is self-confidence in using the language of the L2-group.

The Role of Self-Confidence in Using the L2

Several researchers have considered the importance of communicative competence and self-confidence for cross-cultural adaptation (cf. Church, 1982; Deutsch & Won, 1963; Nicassio, 1985; Nishida, 1985; Redmond & Bunyi, 1993; Wong-Rieger, 1984). According to Kim (1988), since it is through communication that we learn to relate to the environment and are able to fulfil various human needs, adaptation to that environment takes place to the extent that we are able to communicate with the others in our social environment. If we are not capable of communicating with these people, adaptation is unlikely, and symptoms of distress are likely to arise. In a situation of intercultural contact, it becomes necessary to acquire the skills and knowledge necessary to operate effectively and appropriately in that culture (Rogler, Cortes, & Malgady, 1991; Tran, 1990a, 1990b).

Indeed, L2 variables, including a preference for, knowledge of and self-confidence in the L2, have been shown to be linked to lower levels of stress (Noels, Pon, & Clément, 1994; Chataway & Berry, 1989) and higher levels of satisfaction with the self and society and/or a higher sense of personal control (Noels, Pon, & Clément, 1994; Pak, Dion, & Dion, 1985; Dion, Dion, & Pak, 1990, 1992; Krause, Bennett, & Tran, 1989) in a variety of ethnic groups. Pesner and Auld (1980), for example, found that bilingual high school students have higher self-esteem than unilingual students. A closer examination of the results showed that the differences

pertain largely to social self-confidence, rather than general or academic self-esteem. These findings indicate that L2 self-confidence potentially mediates the influence of intergroup contact on emotional adjustment.

Following these considerations, it is hypothesized that self-confidence using the L2 is related to levels of stress and adjustment, such that, in general, increased self-confidence is negatively related to symptoms of distress (including feelings of stress, social anxiety, and depression) and positively related to levels of self-esteem.

Chapter Summary

The goal of this study is three-fold. First, given the limitations of current approaches to the conceptualisation and assessment of ethnic identity, the present study uses a situated ethnolinguistic identity approach to assess acculturation in majority and minority group members with a view to understanding variations in identity across situations. It is expected that (1) a situational analysis will reveal the existence of public and private domains for both L1-group and L2-group identities; (2) L1-group identification will be greater in private domains than in public domains, and the converse pattern will be true with regards to L2-group identification; and (3) members of groups of lesser status evidence higher levels of L2-group identification across domains than members of groups with greater status.

Second, because the relation between ethnic identity and L2 behaviour remains contested, the present study investigates how the situational conditions may influence the link between identity and L2 self-confidence for different vitality groups. Depending upon the likelihood of contact with members of the L2-group and hence the use of the L2 in a given situation, the strength of this association is situationally variable. It is expected that contact and language indices are more strongly correlated with the identity indices in public situations than in other, less public domains. Since lower vitality group members likely use the L2 across more situations, the language and contact variables are expected to correlate with identity across more domains for this group than for higher vitality groups.

Finally, although the social psychological effects of bilingualism on psychosocial

distress have received some theoretical attention, little empirical work has examined this issue. This study examines the link between contact, L2 self-confidence and emotional adjustment to better understand how L2 competence is related to increased self-esteem and lessened psychological distress.

Through these three goals, this study examines an aspect of bilingualism that has seldom been addressed -- namely, the social psychological manifestations of an "additive" or a "subtractive" bilingual experience.

CHAPTER 2

METHOD

The Context of Acculturation

The societal context of acculturation is an important determinant of cultural change (Baynard, 1978; Berry, 1990; Kim, 1988). Empirical findings in one context may not be true in another because societies' attitudes towards assimilation and cultural pluralism differ (Berry, 1984, 1986; Berry, Kim, & Boski, 1988; Westermeyer, 1986). This consideration requires that the acculturation context be clearly specified.

The present study takes place in Ottawa, Canada. Canada is a culturally diverse country and this diversity is reflected in the country's ideological position as stated in the Policy for Multiculturalism (1971). More specifically, an important mandate of this policy is to foster a "cultural mosaic" whereby ethnic groups can retain their cultural heritage and also participate in the broader Canadian society. Two important groups are the Francophone and Anglophone "founding members", for whom specific policies have been elaborated that enshrine the two groups as the official language groups of Canada. For example, following recommendations from the Royal Commission on Bilingualism and Biculturalism (1965-1970), the Official Languages Act (1988) promises federal government services in French and English for those areas where these minority groups exceed a concentration of 10% of the population. In spite of the considerable effort that has been made to equalize the status of the two groups, discrepancies do remain (see Bourhis, 1994, for an overview of French-English relations in Canada). In general, English Canada retains greater ethnolinguistic vitality in terms of most of the indices of ethnolinguistic vitality mentioned by Giles, Bourhis and Taylor (1977), although regional differences are evident (see De Vries, 1994).

The particular context chosen for this study is the University of Ottawa, located in the province of Ontario, Canada, near the border of the province of Québec. Ontario is officially unilingual English, although Francophones constitute a small (4.6%), but active, portion of the total population (Statistics Canada, 1992). Québec

is officially unilingual French, and Anglophones comprise 8.7% of its population (Statistics Canada, 1992). Straddling the Ontario-Québec border is the region of Ottawa-Hull, in which lies Ottawa, the capital of Canada, where the bilingual services of the federal government are housed. Ottawa-Hull has an Anglophone majority (53.5%), although there is a significant Francophone minority (32.9%; Statistics Canada, 1992). Thus, Francophone and Anglophone students enrolled at the University come from settings where they are members of majority or minority groups: respectively Québec and Ontario for Francophones and the converse for Anglophones.

The University of Ottawa is a bilingual institution and as such it encourages contact between English and French groups in several ways. Both groups have equal institutional status, although it is asserted in the Charter of the University (1965) that one mandate of the University is to shelter and promote French language and culture. In addition, at the time in which these data were collected, all students must fulfil L2 requirements before graduation from their programme of study. Such conditions are meant to induce students to interact with members of the other ethnolinguistic group.

In summary, then, the present context of acculturation promotes, in the immediate setting, equal interaction between groups and learning about the other group's culture and its language while maintaining the integrity of each ethnic group. On a more global level, although both groups can be considered to have high levels of ethnolinguistic vitality in the sense that they are official language groups, the vitality of the Anglophone group is greater than that of the Francophone group.

Subjects

An initial screening of the questionnaires showed that 923 participants met the criteria for inclusion in the study (i.e. born in Canada with either English and French as the native language). After eliminating subjects due to missing data and outlying cases (see the analyses described in Appendix A), 368 Anglophone and 432 Francophone respondents remained. All were students registered at the University of Ottawa. The mean age of the Anglophones was 20.5 years (SD = 3.81), and 26.4% were males. The language used most often was English by 94.8%, French by 1.4%, and both French and English by 1.9%. Students began the study of French at a mean

of 8.43 years (SD = 6.04), and studied the language for a mean of 12.08 years (SD = 4.85). Most were born in Ontario (75%), although 10.3% were born in Québec, 5.7% in Eastern Canada, and 9.0% in Western Canada. Most lived the longest part of their lives in Canada (83.4%), but 8.2% lived in Québec, 3.0% in Eastern Canada, and 5.4% in Western Canada.

The Francophones were a mean of 20.7 years old (SD = 4.74), and 26.9% were males. The language used most often was French (81.0%), followed by English (13.4%), and both French and English (4.9%). Students began the study of English at a mean of 8.36 years (SD = 6.04), and continued to formally learn the language for a mean of 12.24 years (SD = 5.52). Slightly over half (58.3%) were born in Québec and a similar proportion (58.8%) lived most of their lives there. The remainder were mostly were born in Ontario (37%) and lived in Ontario most of their lives (37.3%). Others were born in Eastern Canada (3.2%) and in Western Canada (1.4%). Similarly, 2.8% lived most of their lives in Eastern Canada, and 1.2% lived most of their lives in Western Canada[4].

Materials

The materials (see Appendices B and C) are derived from earlier studies from the fields of acculturation and the social psychology of language, and specifically, the social psychology of L2 learning. They include measures of contact with the L2-group, confidence and competence in the L2, identity, and psychological adjustment, in addition to demographic indices. The items of the scales Anxiety using the L2, Self-Confidence using the L2, Self-Esteem, and Social Anxiety, were intermixed and randomly presented in the first part of the questionnaire. Using 6-point Likert-type scales, the respondents indicated the extent to which they agreed or disagreed with the statement as representing their opinion. The scales were anchored at one end by 1 ("disagree strongly") and at the other end by 6 ("agree strongly"), such that a high

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[4] Through t-tests, the Francophone and Anglophone groups were compared with regards to their age, the age at which they began to learn the L2, and the length of time spent learning the L2. No differences were found between the two groups.

score indicated strong agreement with the item. The remaining scales were presented in separate subsections. The measures are discussed in greater detail below.

Contact with Second Language Group

Frequency and quality of contact with the second language group. Inspired by Labrie and Clément (1986) and Clément (1986), this index asks individuals to indicate on a scale of 1 to 7 how frequent their contacts with members of the L2 community across six situations, including interactions with the family, salesclerks, and students at school. Each frequency scale is followed by a scale to assess the quality of the contact in each situation. High scores on these scales mean very frequent and very high quality contact. The internal consistency of the scales is acceptable (Anglophones: Frequency of Contact: $a = .74$; Quality of Contact: $a = .83$; Francophones: Frequency of Contact: $a = .74$; Quality of Contact: $a = .82$).

Proportion of life spent with members of first language group. Using the same 6 situations as discussed above, participants indicated on a scale of 1 to 9 the percentage of their life is spent with members of the L1 community. A high score means a high percentage of time is spent with L1-group members. The internal consistency of this scale is rather low for both groups (Anglophones: $a = .61$; Francophones: $a = .61$).

Media exposure to the second language group. Respondents indicated the language of media to which they were exposed across 11 different types of media (eg. television, radio, newspapers, billboards), on a scale of 1 to 7, where 1 means "mostly L1 exposure" and 7 means "mostly L2 exposure". The reliability of this scale is very good for both groups (Anglophones: $a = .79$; Francophones: $a = .88$).

Second Language Self-Confidence and Proficiency

Indices of self-confidence in using the L2 were taken from Clément (1988).

Anxiety using the second language. This scale includes 8 items, 4 positively and 4 negatively worded, to assess the level of anxiety experienced while using the L2. Scores were reversed where necessary, so that a high score means low anxiety. The reliability of this scale is very good (Anglophones: $a = .81$; Francophones: $a = .92$), consistent with the reliability estimates provided by Clément (1988).

Self-Confidence using the second language. Participants' belief in their ability to use the L2 was assessed in terms of their level of agreement with 6 items. The scale evidences very high reliability (Anglophones: α = .93; Francophones: α = .85), in line with those reported by Clément (1988).

Self-evaluation of second language proficiency. Four 7-point items measured how well participants felt they can read, write, speak and understand the L2, from "not at all" to "fluently". The scales' reliability is excellent (Anglophones: α = .92; Francophones: α = .88), as demonstrated in earlier studies (see Clément, 1988).

Cloze test of second language proficiency. The Cloze tests of English and French proficiency were developed by the L2 Institute of the University of Ottawa for the placement of first-year University of Ottawa students in L2 classes. The Institute reports that the French test, Le musée Dostoïevski (α = .85), is highly correlated with the Institute's French Listening test (r = .74) and with the French Reading test (r = .73). The English test, Mother Teresa (α = .89), is highly correlated with the English Listening test (r = .73) and with the English Reading test (r = .77). Thus the Cloze tests represent valid indices of L2 comprehension.

Situated Ethnic Identity with the First and Second Language Groups.

Following other studies of situated identity, (cf. Clément, Gauthier, & Noels, 1993; Clément & Noels, 1992; Clément, Sylvestre, & Noels, 1991; Noels, Pon, & Clément, 1994; Sylvestre, 1992), identification with members of each language group was assessed in light of 22 everyday situations (see Table 2.1). These situations were derived from a preliminary study of typical situations encountered by university students (Clément & Noels, 1991, 1992). Each situation was followed by two 5-point scales. The first scale assessed L1-group identity and the second assessed L2-group identity, as in the example from the English questionnaire shown below:

When I listen to music, I feel...

| Not at all Anglophone | _0_ | _1_ | _2_ | _3_ | _4_ | Very Anglophone |

| Not at all Francophone | _0_ | _1_ | _2_ | _3_ | _4_ | Very Francophone |

Table 2.1
Items of the Situated Ethnic Identity Scale

1.   When I have contacts with other students ...

2.   When I read the newspaper ...

3.   When I chose the University of Ottawa ...

4.   When I listen to music ...

5.   When dealing with university personnel ...

6.   When dealing with merchants ...

7.   When thinking about relations between Anglophones and Francophones ...

8.   When I think about where I would want to settle down ...

9.   When I am with my friends ...

10. When I write for myself (not counting school work) ...

11. When I read for pleasure ...

12. When I think about my life's goals ...

13. When I participate in cultural activities ...

14. When I listen to the radio ...

15. When I prepare food ...

16. When I think about my future or present spouse ...

17. When I write my assignments ...

18. When I think about politics ...

19. When I watch the news on television ...

20. In my social contacts ...

21. When I am at home ...

22. When I travel ...

In accordance with the propositions elaborated earlier, these items are preceded by instructions which explain that, in any given situation, one might identify with both ethnic groups at the same time, with one group and not the other group, or with neither group at all. The answers allow the computation of two indices reflecting the level of identification with Anglophones and with Francophones, such that a high score indicates a high level of identification with that group. To be consistent with earlier studies, the items were rescaled from 1 to 5. The reliability of both scales is excellent (Anglophones: L1-Group Identity : a = .94; L2-Group Identity : a = .93; Francophones: L1-Group Identity : a = .92; L2-Group Identity : a = .95), consistent with previous studies of situated ethnic identity (eg. Clément & Noels, 1992).

Emotional Adjustment and Distress

Four indices of adjustment and distress were chosen for their theoretical significance, psychometric properties, and the extensiveness of use in previous studies of acculturation.

Self-esteem. Global self-esteem was assessed using Rosenberg's (1965) self-esteem scale. Students indicated on a Likert-type 6-point scale, the extent to which they agree or disagree with 10 statements (eg. "On the whole, I am satisfied with myself"). This scale evidences good reliability (Anglophones: a = .83; Francophones: a = .72), consistent with previous studies (see Blascovich & Tomaka, 1991, for review).

Psychological distress. The degree of distress felt within the last 4 or 5 days was assessed using the short version of Lemyre, Tessier, and Fillion's (1990) Mesure du stress psychologique - A (MSP-A; English version: Psychological Stress Measure - A). The subject indicated the extent to which 25 stress symptoms are self-descriptive on an 8-point scale, from "not at all" to "extremely" (eg. "I feel anxious, worried or distraught"; "I suffer from physical aches and pains: sore back, headaches, tensed neck and stomach aches"). Consistent with the psychometric data reported by Lemyre and her associates (Lemyre et al., 1990), this scale has excellent reliability (Anglophones: a = .93; Francophones: a = .92).

Depression. Depressive affect was assessed using the short form of the Beck

Depression Inventory (Beck, 1967; Beck & Beck, 1972). Thus, 12 items (one item pertaining to suicide ideation was eliminated) assessed the extent to which the participant has evidenced depressive symptoms in the last 7 days. The intervals were scaled from 1 to 4, such that a high score means high levels of depression. This instrument has acceptable psychometric properties (Anglophones: a = .74; Francophones: a = .71; see Shaver & Brennan, 1991, for a review of the psychometric characteristics of this instrument).

Social anxiety. Discomfort interacting with other people was assessed using Leary's (1983) Interaction Anxiousness Scale. Students indicated on a Likert-type 6-point scale, the extent to which they agree or disagree with 10 statements (eg. "I often feel nervous even in casual get-togethers"). This scale evidenced very good reliability (Anglophones: a = .84; Francophones: a = .85), consistent with the indices reported by Leary (1983).

Demographic Index of Relative Ethnolinguistic Vitality

As outlined by Giles, Bourhis, and Taylor (1977), a group's ethnolinguistic vitality is determined by its demographic representation, institutional support and social status. A demographic index of vitality was calculated on the basis of information given in the section on General Information (see below). The students were asked to indicate the city, province and country in which they lived the longest, and the population count for the number of speakers of French and English in that area was recorded from the Canadian census (Statistics Canada, 1992). A score of relative demographic status was calculated by dividing the figure for the participants' native language group by the figure for the other language group. The obtained ratio was used to create two Francophone groups and two Anglophone groups: those with greater relative status (quotient > 1.00), called a *majority* group, and those with lower status (quotient < 1.00), termed a *minority* group.

This division of the participants into high and low status groups resulted in the following breakdown: 33 minority Anglophones (4.13%), 335 majority Anglophones (41.88%), 174 minority Francophones (21.75%), and 258 majority Francophones

(32.25%)[5]. To verify that the relative vitality of the status groups were comparable across the 2 language groups, a 2 X 2 ANOVA was computed using as factors Status (minority vs. majority) and Native Language Group (Anglophone vs. Francophone). The interaction effect was not significant, but both main effects were: the vitality of the minority group (M = .34) was significantly different from the majority group (M = 24.87; $F_{1,798}$ = 65.83, p < .001), and Anglophones had higher vitality (M = 25.19) than Francophones (M = 12.84; $F_{1,798}$ = 4.87, p < .001). Because this finding concerning the language groups is possibly due to unequal cell sizes, the status groups' means were examined within each native language group. The means did not appear to differ appreciably: minority Francophones (M = .34) had scores similar to minority Anglophones' (M = .32), and majority Francophones (M = 21.27) had scores comparable to majority Anglophones' (M = 27.64).

To verify that this figure reflected other aspects of ethnolinguistic vitality, particularly institutional support (see Giles, Taylor & Bourhis, 1977), the data were cross-tabulated in terms of the province of origin (Québec vs. the rest of Canada) by demographic status (minority vs. majority) separately for Anglophones and Francophones. As can be seen in Table 2.2, the results of x^2 analyses were significant. An examination of the standardized residuals (see Norušis, 1990a) indicated that Anglophones who have low demographic status were likely to originate from Québec, whereas Anglophones with high status tended to come from outside Québec (x^2_1 = 99.41, p < .01). Francophones with low status came from outside Québec, whereas Francophones with high status were likely to come from Québec (x^2_1

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[5] The distribution of Anglophones and Francophones into status groups corresponds with the University figures regarding Anglophone and Francophone undergraduate students originating from within and outside Québec. From 1990 to 1994, an average of 4.1% of Anglophones originated from Québec and 56.8% from the rest of Canada. An average of 13.1% of Francophones came from Québec and 26.1% from the rest of Canada. Thus, the sample examined here includes a proportion of minority Anglophones and Francophones that is similar to the University undergraduate population. The majority groups differ from the University figures: Anglophones may have been undersampled and Francophones oversampled.

= 163.95, p < .01). Thus, this demographic index corresponds with provincial differences in the promotion of French and English.

In summary, relative demographic representation is a valid indicator of the construct of ethnolinguistic vitality. By including this demographic index of vitality, in addition to membership in a native language group (that is, French or English), it is possible to consider the effects of regional vitality and continental vitality, and the interaction between these two operational levels, on the dependent variables.

General Information

In the last section of the questionnaire, general information concerning the participant was gathered. Demographic variables such as age, sex, university programme and level were assessed, as were the native language, the language used most often, the place of birth and the place in which the participant lived longest, when they began to study the L2, and how long the L2 had been studied.

Procedure

Students were recruited from introductory classes in the Faculties of Arts, Social Sciences, Administration, and Science and Engineering over the course of 2 years. During regular class-time, they were requested to complete a pre-selection questionnaire and asked if they would like to participate in the larger study. Those people who agreed to participate were then contacted by telephone in order to arrange an appointment for a group testing session. They were paid $10.00 for their participation. Subjects were informed during administration of the pre-selection questionnaire, at the time of telephone contact, as well as during the principal testing session that participation in the study is completely voluntary, that all answers would be confidential, and that only group results would be reported.

Through this manner of subject recruitment, 2576 people were asked to participate, and 1295 agreed to be contacted by telephone to set up an appointment for the group testing session. Only people who fit the criteria for the study (i.e. people who were born and lived the longest part of their lives in Canada, and completed the questionnaire in their native language) were considered, including 277 Anglophone and 224 Francophone participants. This number, particularly for the

Table 2.2
Distribution of Anglophones and Francophones as a function of demographic status and province of origin

			Province of Origin	
			Québec	Outside Québec
a)	Anglophones			
Status	Minority	Count	23	10
		%	6.3	2.7
		s.r.[a]	12.4	-3.7
	Majority	Count	7	328
		%	1.9	89.1
		s.r.	-3.9	1.2
b)	Francophones			
Status	Minority	Count	7	167
		%	1.6	38.7
		s.r.	-7.2	5.5
	Majority	Count	154	104
		%	35.6	24.1
		s.r.	5.9	-4.5

[a]   s.r. = standardized residual

minority Anglophones ($\underline{n}$ = 18), was not sufficient for the purposes of the study.

A second attempt to recruit volunteers was made by asking students in introductory psychology classes to complete the questionnaire during regularly scheduled class time. In this manner, 156 Anglophone and 295 Francophoneparticipants were added to the subject pool[6]. Although this strategy did not greatly increase the size of the minority Anglophone group, it did raise the number of Francophones. As noted earlier, however, the size of the minority Anglophone group is proportionate to their demographic representation in the university.

To ensure that the subjects from the two testing sessions were from the same population, relevant demographic characteristics were compared across groups separately for Anglophones and Francophones[7]. A chi-square analysis showed that the proportion of participants who originated from within and outside the province of Québec were equivalent in each session (Anglophones: χ^2_1 = 2.23, $\underline{p}$ = .14; Francophones: χ^2_1 = 1.11, $\underline{p}$ = .29). As well, the results of χ^2 analyses showed that the same proportion of males and females were tested in each session (Anglophones: χ^2_1 = 0.57, $\underline{p}$ = .75; Francophones: χ^2_1 = 0.32, $\underline{p}$ = .57).

The results of t-tests showed that the groups were similar with regards to the relative demographic representation of the native language group in the place of origin (see Table 2.3). The Anglophone groups differed in age, such that the group tested earlier was older than the one tested later. The Francophone groups differed with regards to the length of time spent studying the L2, such that the later group spent longer learning the L2. An inspection of the means suggested, however, that despite the statistical differences between the groups, the magnitude of the differences was small. The differences would not seem to have extensive practical implications for the major analyses. Thus, the two groups were combined.

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[6] These numbers were eventually reduced after data screening (see Appendix A).

[7] Subjects who completed less than 50% of the measures or for whom census data on the place of lived longest were unavailable were eliminated from these analyses.

Overview of the Statistical Analyses

The purpose of the present study is to examine three issues. First, the situational domains of ethnic identity are delineated and variations in the level of ethnic identity across these domains considered. Second, in order to better understand the link between language and identity, the relations between identity domains and variables correlated with L2 acquisition and use are explored. Third, to clarify the association between intercultural contact and emotional adjustment, the mediating role of linguistic self-confidence is tested. Using SPSS/PC+ 5.0 (SPSS, Inc., 1992) and LISREL 7.2 (Joreskog & Sorbom, 1991) computer programs, the statistical techniques of factor analysis, analysis of variance and analysis of covariance structures are used to examine these issues, as outlined below.

The delineation of situational domains (Chapter 3). Confirmatory and exploratory factor analyses, conducted separately for Anglophone and Francophone groups, are used to delineate the domains of situated ethnic identity. The domains are compared with those found earlier by Clément and Noels (1992) in order to determine these domains' generalizability across samples.

Variations in identity, contact, and language (Chapter 4). Using analysis of variance techniques, variations in the level of identity across the domains established in the factor analytic studies are examined as a function of the ethnolinguistic vitality of the group (majority vs. minority Anglophone and Francophone groups). As well, the vitality groups are compared with regards to the amount of L2-group contact and L2 self-confidence and proficiency. Finally, the groups are compared with regards to the level of contact with the L2-group experienced across situational domains.

Identity, contact, L2 self-confidence and proficiency (Chapter 5). Structural equation modeling is used to assess the relations between contact and L2 self-confidence, on the one hand, and L2 proficiency and ethnic identity, on the other hand, separately for minority and majority Francophone groups and for the majority Anglophone group. Correlational analyses examine the relations between these variables in the minority Anglophone group.

Table 2.3
Demographic variables:
Means, standard deviations and t-values by subsample

	Subsample A			Subsample B			
	Mean (SD)	n		Mean (SD)	n		t
a) Anglophones							
Age (years)	20.88	(4.36)	258	19.86	(2.34)	144	3.08*
·Age began to learn L2 (years)	7.30	(4.01)	249	7.21	(4.95)	138	0.18
Years spent learning L2	11.85	(5.24)	258	12.56	(4.21)	138	-1.38
Relative demographic representation	26.85	(43.75)	258	22.92	(28.23)	144	0.97
b) Francophones							
Age (years)	21.18	(5.47)	217	20.32	(4.05)	252	1.88
Age began to learn L2 (years)	7.23	(3.68)	197	7.2ª	(4.54)	224	-0.12
Years spent learning L2	11.56	(6.06)	219	13.02	(6.07)	226	-2.71*
Relative demographic representation	13.64	(27.28)	219	12.17	(28.28)	254	0.58

* p < .01

Note: The t-values are corrected for unequal variances between groups where necessary.

__Contact, self-confidence, and emotional adjustment (Chapter 5).__ Structural equation modeling is also used to assess the relations between contact, L2 self-confidence and adjustment, for minority and majority Francophone groups and for the majority Anglophone group. Correlational analyses examine these variables' interrelations in the minority Anglophone group.

CHAPTER 3

THE FACTORIAL STRUCTURE
OF SITUATED ETHNIC IDENTITY

A first purpose of the present study was to examine how the situations under investigation interrelate to reveal broader situational domains of everyday experience. Although several theorists have proposed different domains as pertinent to ethnic identity (eg. Edwards, 1985; Gans, 1979), the most relevant discussion for the present purposes is that of Clément and Noels (1992). These authors found that the factor structure of Anglophone L1-group identity was relatively simple, consisting of two factors representing public and private situations. Francophone L1-group identity was more complex, including factorial domains pertaining to media situations, public situations, thinking about future goals, and pursuing private/literary interests. Anglophones and Francophones were very similar with regards to L2-group identity; both groups' identities included 5 types of situations, including the community context, the university environment, intimate settings, using the mass media, as well as a symbolic dimension. The goal of the present set of analyses is to determine whether these same situational domains characterize the patterns of identification in the present sample or if some other configuration better describes the data.

To delineate the situational domains, a three-step analysis was undertaken[8]. First, following the results of the exploratory factor analyses reported by Clément and Noels (1992, see Appendix D), four orthogonal-factors models were tested on the present data via confirmatory factor analyses (LISREL 7.2, Joreskog & Sorbom, 1991). These models included a 2-factor model for Anglophones' L1-group identity, a 5-factor model for Anglophones' L2-group identity, a 4-factor model for Francophones' L1-group identity and a 5-factor model for Francophones' L2-group identity.

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[8] Prior to the major analyses, preliminary analyses were conducted to screen the data for missing values, univariate and multivariate outliers, and violations of the assumptions of normality. These results are reported in Appendix A.

Second, alternative structural models, including single-factor models and correlated-factors models followed-up by post hoc model-fitting analyses, were examined in order to determine the best possible fit of the model to the data. Single-factor models were tested in order to determine whether ethnic identity might better be conceptualized as a global phenomenon, and not segmented into situational domains. The correlated factors models tested the possibility that the situational domains are linked, perhaps in a manner suggestive of a hierarchical structure of identity. Finally, for the models that showed a poor fit to the data, exploratory factor analysis (EFA) was used to consider alternative factorial structures.

For both Anglophone and Francophone groups, the appropriate covariance matrix was analyzed, using an all-X model, with 22 observed (X) variables and the number of latent factors (ξ) hypothesized for each group. The first model tested posited uncorrelated factors and uncorrelated error terms[9]. For the purpose of statistical identification, the first loading (λ) of each group of loadings designed to assess the same factor was fixed to 1.0 (see Joreskog & Sorbom, 1986). The analyses concerning Anglophone L1-group identity are reported in detail. To avoid redundancy, the remaining analyses were conducted in a similar manner, but only the more important details are given.

A note concerning the determination of goodness-of-fit of the model to the data is in order here. Goodness-of-fit was assessed in two ways. First, the χ^2 index serves as a statistical index of goodness-of-fit: nonsignificant χ^2 values indicate a good fit of the model to the data. Because χ^2 is often statistically significant with large sample sizes, alternative indices of fit have been developed, including the Comparison Fit Index (CFI; Bentler, 1990). This index assesses the hypothesized model's χ^2 relative to the χ^2 associated with a model in which each observed variables is postulated to

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[9] Consistent with the hypothesized model, the LISREL program specified that the factor loading (λ_x) matrix was specified as full and fixed with the appropriate loadings free, the factor variance/covariance (ϕ) matrix as diagonal and fixed with the diagonal elements (variances) free, and the error variance/covariance (θ_δ) matrix as symmetrical and fixed, with the variances free.

measure one independent factor (i.e. the null model), taking into account the two models' degrees of freedom. The values of the CFI range from 0 to 1.00, such that a value greater than .90 indicates a good fit of the model to the data (see Bentler, 1990; Byrne, 1994, p.55). A related index, the Parsimony Comparison Fit Index (PCFI; see Mulaik et al., 1989) additionally considers the relative benefit of model fit at the expense of the simplicity of the model. A value greater than .80 represents a good fit of the model to the data. A final index of fit is the ratio of the χ^2 index to the degrees of freedom. A good fit is indicated by a ratio of less than 2.00 (Byrne, 1989).

Factor Analyses of Anglophones' Situated Ethnic Identity

Confirmatory Factor Analysis of L1-Group Identity

Prior to the major confirmatory factor analysis, a preliminary analysis of the null model was conducted. A null model is one in which each observed variable is postulated to measure one independent factor, implying that there are no common factors (Gorsuch, 1983, p. 131). The χ^2 of this analysis (χ^2 = 4213.55, df = 231, p < .001; see Table 3.1, for a summary of the analyses described in this section), was significant, and the goodness-of-fit indices suggested that the null model fit the data poorly. Thus, the hypothesis that there is independence of measurement can be rejected and common factor models considered.

Following the null model analysis, the hypothesized 2-factor, orthogonal-factors model was examined. This model maintained that Anglophone L1-group identity could be described in terms of 2 uncorrelated factors representing a Private/Community and Public/Intergroup dimensions. Statistical indices showed that the model as a whole was a poor fit to the data (χ^2 = 1182.61 df = 209, p = .000). Two other models were then examined. First, a correlated-factors model, in which the factor variance/covariance matrix was specified as symmetrical and free, was a better fit to the data (χ^2 = 888.19, df = 208, p = .000). Second, in order to test whether the model was better described in terms of an uni-dimensional or a multi-dimensional structure, a single-factor solution was computed, the results of which yielded a

significantly poorer fit than the correlated factors solution (χ^2 = 962.66, df = 209, p = .000). Thus, of the 3 structural models tested, the best model to describe the data is the correlated 2-factors model.

To assess the acceptability of the 2-factor model, three aspects of the analysis will be discussed: (1) the acceptability of the measurement model, (2) the goodness-of-fit of the overall model, and (3) the goodness-of-fit of the estimates of the individual parameters.

Acceptability of the measurement model. An examination of the R^2 of each of the observed variables revealed that most of the items measure their respective factors quite well (R^2 = .108 to .657). The coefficient of determination (see Joreskog & Sorbom, 1986, p. III.10) was high (.974), suggesting that the reliability of the measurement model as a whole is good.

Goodness-of-fit of the overall model. Statistical indices of the adequacy of the model as a whole in representing the observed data were not satisfactory. As can be seen in Table 3.1, the χ^2 index was significant. The goodness of fit indices were below the cutoff of .90 (see Byrne, 1989), and the χ^2/df ratio did not reach a minimum acceptable level of 2.00 (χ^2/df = 4.27; see Byrne, 1989, p. 55). Thus, while this model represents an improvement in fit over the null model, there is still evidence of lack of fit.

As noted above, because of the sensitivity of the χ^2 likelihood ratio test and related indices (eg. GFI) to sample size, alternative indices of fit have been developed. These subjective guides also indicated a mediocre fit of the model to the data. The Comparison Fit Index (CFI = .83; see Bentler, 1990) was well below the lower-bound limit of .90 (see Bentler, 1990), and the Parsimony Comparison Fit Index (PCFI) did not reach an acceptable value of .80 (PCFI = .75; see Mulaik et al., 1989).

Table 3.1
Anglophones' L1-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	χ^2	df	χ^2/df	$\Delta\chi^2$[b]	Δdf	GFI[c]	CFI[d]	PCFI[e]
0	Null model	4213.55	231	18.24	--	--	.216	--	--
1	Model 1 (orth. factors)	1182.61	209	5.658	3030.86	22	.77	.76	.68
2	Model 2 (corr. factors)	888.19	208	4.270	294.50	23	.779	.829	.746
3	Model 3 (single-factor)	962.66	209	4.606	3250.89	22	.758	.811	.734
4	Model 2 with $\delta_{8,8}$ free	818.85	207	3.955	69.34	1	.797	.846	.758
5	Model 4 with $\delta_{20,18}$ free	764.29	206	3.710	54.56	1	.811	.860	.767
6	Model 5 with $\delta_{14,1}$ free	724.70	205	3.535	39.59	1	.817	.870	.772
7	Model 6 with $\delta_{10,3}$ free	693.50	204	3.399	31.20	1	.831	.877	.774
8	Model 7 with $\lambda_{21,1}$ free	669.58	203	3.298	23.92	1	.839	.883	.776
9	Model 8 with $\lambda_{17,1}$ free	645.51	202	3.195	24.07	1	.848	.889	.777
10	Model 9 with $\delta_{10,9}$ free	620.72	201	3.088	24.79	1	.855	.895	.779
11	Model 10 with $\delta_{7,3}$ free	597.32	200	2.986	23.40	1	.862	.900	.779
12	Model 11 with $\delta_{21,1}$ free	575.45	199	2.891	21.87	1	.866	.905	.780
13	Model 12 with $\delta_{20,12}$ free	552.97	198	2.792	22.48	1	.870	.911	.781
14	Model 13 with $\lambda_{10,1}$ free	535.86	197	2.720	17.11	1	.872	.915	.780
15	Model 14 with $\delta_{9,3}$ free	520.91	196	2.657	14.95	1	.877	.918	.779
16	Model 15 with $\delta_{18,12}$ free	506.34	195	2.596	14.57	1	.880	.922	.778
17	Model 16 with $\delta_{16,1}$ free	494.01	194	2.546	12.33	1	.883	.925	.777
18	Model 17 with $\delta_{21,3}$ free	481.39	193	2.494	12.62	1	.885	.928	.775
19	Model 18 with $\delta_{21,4}$ free	469.51	192	2.445	11.88	1	.887	.930	.773
20	Model 19 with $\delta_{22,6}$ free	456.65	191	2.390	12.86	1	.891	.933	.771
21	Model 20 with $\delta_{17,10}$ free	444.75	190	2.340	11.90	1	.894	.936	.770
22	Model 21 with $\lambda_{10,2}$ free	430.11	189	2.275	14.64	1	.898	.939	.768
23	Model 22 with $\lambda_{3,2}$ free	417.25	188	2.219	12.06	1	.901	.942	.767
24	Model 23 with $\lambda_{4,2}$ free	404.42	187	2.162	12.83	1	.902	.945	.766

Table 3.1, continued
Anglophones' L1-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[*]	χ^2	df	χ^2/df	$\Delta\chi^2$[b]	Δdf	GFI[c]	CFI[d]	PCFI[e]
25	Model 24 with $\delta_{18,11}$ free	391.25	186	2.103	13.17	1	.905	.948	.763
26	Model 25 with $\delta_{20,9}$ free	378.40	185	2.045	12.85	1	.909	.951	.761
27	Model 26 with $\delta_{20,10}$ free	365.64	184	1.987	12.76	1	.912	.954	.760
28	Model 27 with $\delta_{18,14}$ free	355.38	183	1.941	10.26	1	.915	.957	.758
29	Model 28 with $\delta_{12,4}$ free	346.19	182	1.902	9.19	1	.917	.959	.756
30	Model 29 with $\lambda_{7,2}$ free	335.81	181	1.855	10.38	1	.920	.961	.753
31	Model 30 with $\delta_{7,3}$ free	325.80	180	1.810	10.01	1	.922	.963	.750
32	Model 31 with $\delta_{8,7}$ free	316.33	179	1.767	9.47	1	.924	.966	.749
33	Model 32 with $\delta_{22,19}$ free	307.98	178	1.730	8.35	1	.926	.967	.745
34	Model 33 with $\delta_{10,7}$ free	298.47	177	1.686	9.51	1	.928	.969	.742
35	Model 34 with $\delta_{13,0}$ free	289.49	176	1.644	8.98	1	.930	.972	.741
36	Model 35 with $\delta_{21,3}$ free	280.77	175	1.604	8.72	1	.932	.973	.737
37	Model 36 with $\delta_{22,4}$ free	272.40	174	1.565	8.37	1	.934	.975	.734
38	Model 37 with $\delta_{19,0}$ free	264.22	173	1.527	8.81	1	.936	.977	.732
39	Model 38 with $\delta_{21,8}$ free	257.05	172	1.495	7.17	1	.937	.979	.729
40	Model 39 with $\delta_{10,14}$ free	249.84	171	1.461	7.21	1	.938	.980	.726
41	Model 40 with $\delta_{19,8}$ free	243.44	170	1.432	6.40	1	.940	.982	.723
42	Model 41 with $\delta_{17,7}$ free	236.76	169	1.401	6.68	1	.942	.983	.719
43	Model 42 with $\delta_{20,14}$ free	230.01	168	1.369	6.75	1	.943	.984	.716
44	Model 43 with $\delta_{20,17}$ free	222.69	167	1.334	7.32	1	.945	.986	.713
45	Model 44 with $\delta_{19,12}$ free	215.96	166	1.309	6.73	1	.946	.988	.710
46	Model 45 with $\lambda_{8,2}$ free	208.49	165	1.264	7.47	1	.949	.989	.710

[*] All models except the final model are significant at $\underline{p}$ < .01. The baseline model (#24) is printed in bold letters.
[b] All changes in χ^2 > 6.64 are significant at $\underline{p}$ < .01.
[c] Goodness of Fit Index
[d] Comparison Fit Index
[e] Parsimony Comparison Fit Index

Goodness-of-fit of the individual estimates. To examine the misfit in the model, the fit of the individual parameters was examined. A review of the t-values revealed that the parameter estimates were substantial; the magnitude of the t-value of all the estimates was greater than 2.00. Therefore it can be concluded that these are significant estimates of the hypothesized model (see Joreskog & Sorbom, 1986). However, the table of normalized residuals showed that 59 items were greater than 2.00, which is indicative of some discrepancy between the sample and hypothesized covariance matrices (see Joreskog & Sorbom, 1986). An examination of the modification indices indicated that 8 items in the factor loading matrix and 52 items in the error variance/covariance matrix were larger than 6.64 (the critical value of χ^2 at $\underline{p}$ < .01). Thus, the χ^2 could be expected to drop significantly if the restrictions imposed on any of these parameters were relaxed. In summary, these indices suggest that while the specified parameters are valid indicators of the underlying construct, changes could be made to improve the model's fit to the data.

Exploratory post hoc analyses. Additional analyses were conducted to explore whether relaxing the constraints on the parameters improved the model fit (see Byrne, 1989, for discussion of this analytic strategy). It should be noted that the analyses can no longer be considered "confirmatory" in the sense that they test a particular model, but rather "exploratory" in that they explore the relations between variables in a post hoc manner. Restrictions were relaxed one at a time, in a cumulative manner, effecting statistically significant improvements in the χ^2 index. These changes were only made where it was deemed to be conceptually appropriate and where the modification indices suggested that the change would make a significant difference. In the case of the factor loadings (λs), modification indices suggested that some observed variables tap other latent constructs well as their target construct (i.e. they crossload). If the cross-loading was consistent with the definition of the factor, it was allowed. Moreover, although the factorial structure was hypothesized to have uncorrelated error covariance terms, Byrne (1989) notes it is not uncommon to find

correlated error covariances, particularly in scales that employ a common method of measurement. Correlated errors, then, would not be unexpected across items from this measurement instrument. Thus, factor loadings and error covariances were the primary targets for change.

In total, 42 models were respecified (see Table 3.1), involving alterations to the loadings of 8 factor loadings (λ) and 34 error covariances (δ), until a nonsignificant fit was achieved ($\chi^2_{165} = 208.49$; $p > .01$). Subjective indices of fit indicated very good fit of the final model to the data (CFI = .99; GFI = .95), although this solution was not as parsimonious as desired (PCFI = .71). Individual parameters showed a good fit of the model to the data: the t-values were all significant except for one error covariance, standard errors were acceptable (.035 to .157), and only 9 variables had standardized residuals greater than 2.00.

Although this last model represents the best fit statistically, two issues must be addressed. First, with each additional change, the researcher risks capitalizing upon chance and thus the possibility of a Type I or Type II error (Byrne, 1989). Thus, these exploratory findings may not represent reliable phenomena. Second, the issue of parsimony must be addressed. Although the model value can be improved statistically, one might wonder about the practical significance of these additional parameters. An examination of the subjective indices of fit of the respecifications prior to the final model shows good fits of the model to the data well before the last respecification. Moreover, the respecifications, although statistically significant serve to complicate the model but do not represent substantive reconceptualization.

To assess the benefits of these alterations, the solutions of the initial, final and several intermediate models were compared in order to assess the sensitivity of various parameters in the model to the additional post hoc changes (see Byrne, 1989)[10]. Correlational analyses between the Maximum Likelihood (ML) estimates

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[10] Intermediate models were chosen on the basis of the goodness-of-fit indices and whether they made a substantive change to the solution (λ), not simply a measurement alteration (δ).

of the factor loadings (λs) of the various solutions were conducted. The results suggested that although there was a substantial change in the ML estimates between the first correlated factors solution and last solution (r = .54), there was little alteration between the Model 24 and the final estimates (r = .94; > .90 cutoff suggested by Byrne, 1989, p. 97). At the same time, Model 24 was substantially different from the initial model (r = .63). These results suggest then that a statistical and practically meaningful improvement to the model can be made by the 19th respecification, but that all subsequent changes do little to improve the model. Thus, it can be concluded that Model 24 adequately describes the data, and this model (termed the baseline model) will be used in subsequent analyses (see Figure 3.1 and Appendix D for a description of the baseline model with standardized estimates).

Goodness of fit of the baseline model. The baseline model, although statistically significant (χ^2_{187} = 404.42; p < .01), had acceptable levels of goodness-of-fit (GFI = .90; CFI = .95), and the parsimony fit index indicated that this model was simpler than the final solution (PCFI = .77). Individual parameters showed a good fit of the model to the data: the coefficient of determination was .981 (R^2s ranged from .124 to .672), there were 28 standardized residuals greater than 2.00, all t-values were significant, and the standard errors fell within an acceptable range (from .054 to .157). Thus, the proposed 2-factor structure is upheld, although modifications allowing for 15 correlated errors and 6 cross-loadings are necessary. The cross-loadings did not substantively change the meaning of the factors; one negative loading, Item 16 ("When I think about my future or present spouse ...) on Factor 2 (Public/Intergroup) suggests that such intimate settings are clearly differentiated from more formal, public situations where there is potential for contact with members of the L2-group.
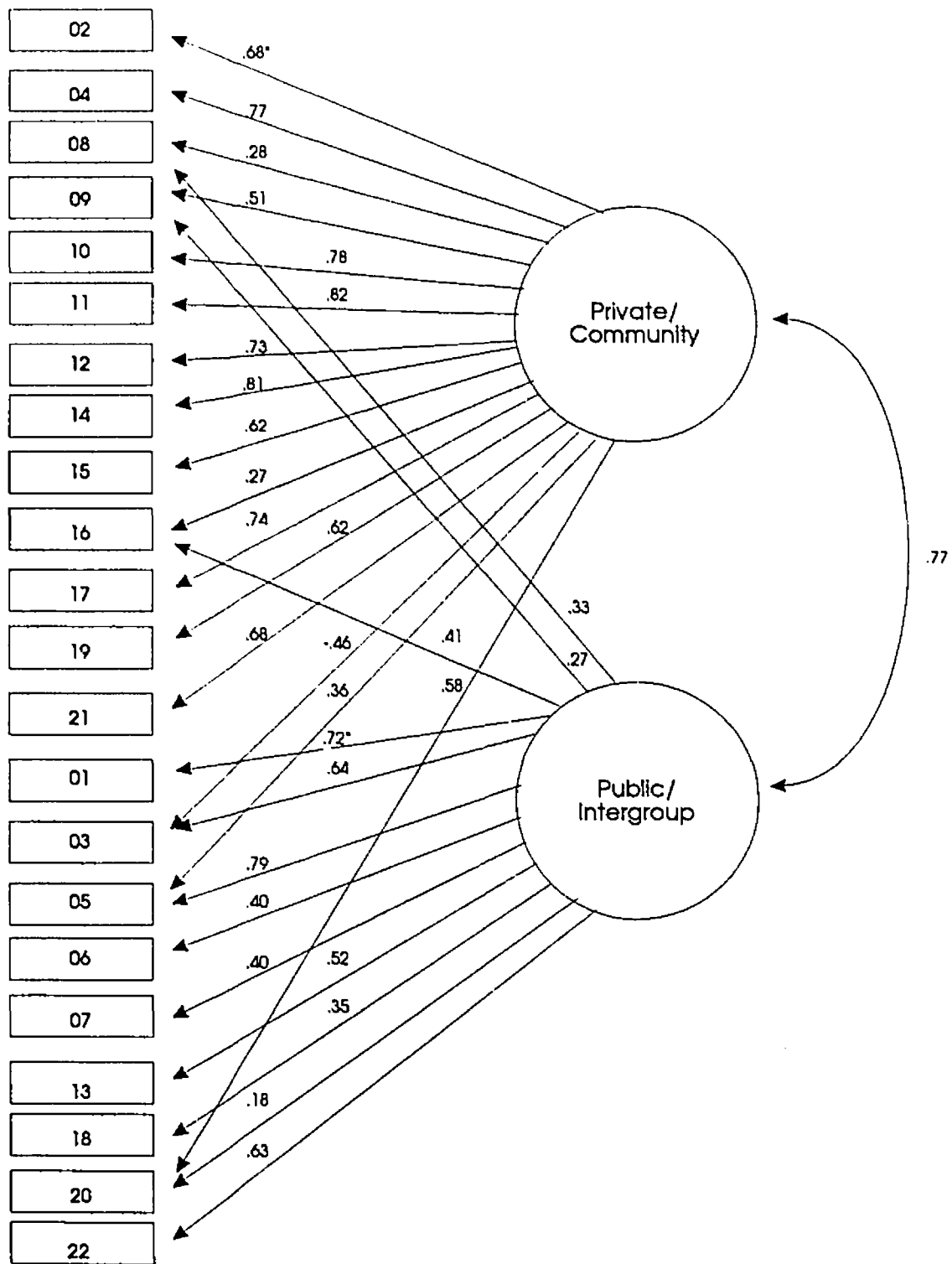
Figure 3.1: Baseline model of Anglophone L1-group identity with standardized estimates
(For presentation purposes, error variances and covariances are not shown, but are presented in Appendix D. Item numbers correspond with items in Table 2.1).
* This parameter was set to 1.00 for purposes of identification.

Confirmatory Factor Analysis of L2-Group Identity

A similar procedure as that described above was utilized to determine the factor structure of Anglophones' L2-group identity. The five hypothesized factors are Community, Symbolic, University Environment, Media and Private/Literary. The null model was a poor fit to the data. The proposed 5-orthogonal-factors model proved to be an improvement over the null model, but as with the analyses regarding L1-group identity, a 5-correlated-factors model was significantly better. A single-factor model was also tested, but the results suggested that the correlated 5-factor model was the better model (see Table 3.2 for a summary of the analyses).

An examination of the results indicated that the measurement model was acceptable. The R^2 for each of the observed variables indicated that these variables measured their factors moderately well (R^2 = .199 to .612), and the coefficient of determination was high (0.988), implying that the reliability of the measurement model as a whole is good. All of the t-values were significant, supporting the importance of each item as an indicator of its hypothesized latent construct. Nonetheless, the goodness-of-fit of the overall model was less than acceptable. The fit indices did not reach the criterion levels. Thirty-three items had high standardized residuals. Thus, modifications to the model are warranted in view of the lack of fit.

Exploratory post hoc analyses. In the same manner as that described with the previous data, exploratory *post hoc* analyses examined the misfit by relaxing restrictions one at a time in a cumulative manner until a statistically significant change was no longer viable. Thus, 24 modifications were made, relaxing restrictions on 19 error terms (δs) and 5 cross-loadings (λs). Although the final χ^2 was still significant, the other indices came closer to acceptable standards[11].

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[11] Attempts to make any changes after the 27th respecification resulted in problems such that matrices became non-positive definite. Because the subjective indices of fit were satisfactory, no further attempts were made to improve the model after this point.

Table 3.2
Anglophones' L2-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	x^2	df	x^2/df	Δx^{2} [b]	Δ df	GFI[c]	CFI[d]	PCFI[e]
0	Null model	3433.32	231	14.86	--	--	.249	--	--
1	Model 1 (orth. factors)	1506.05	209	7.21	1927.27	22	.683	.595	.538
2	Model 2 (corr. factors)	592.42	199	2.98	2840.90	32	.861	.877	.756
3	Model 3 (single-factor)	718.20	209	3.44	2715.12	22	.834	.841	.761
4	Model 2 with $\delta_{6,4}$ free	561.75	198	2.84	156.45	1	.869	.886	.759
5	Model 4 with $\delta_{16,2}$ free	534.66	197	2.71	27.09	1	.878	.895	.763
6	Model 5 with $\delta_{20,16}$ free	512.21	196	2.61	22.45	1	.882	.901	.764
7	Model 6 with $\delta_{16,1}$ free	492.45	195	2.53	19.76	1	.886	.907	.766
8	Model 7 with $\delta_{8,7}$ free	473.05	194	2.44	19.40	1	.890	.913	.767
9	Model 8 with $\delta_{16,13}$ free	462.38	193	2.40	10.67	1	.893	.916	.765
10	Model 9 with $\lambda_{13,3}$ free	442.76	192	2.31	19.62	1	.896	.922	.766
11	Model 10 with $\delta_{12,8}$ free	428.51	191	2.24	14.25	1	.899	.926	.766
12	Model 11 with $\delta_{17,8}$ free	414.33	190	2.18	14.18	1	.903	.930	.765
13	Model 12 with $\delta_{21,17}$ free	402.22	189	2.13	12.11	1	.907	.933	.763
14	Model 13 with $\delta_{12,10}$ free	390.06	188	2.07	12.16	1	.911	.937	.763
15	Model 14 with $\delta_{9,8}$ free	369.85	187	1.98	20.21	1	.914	.943	.763
16	Model 15 with $\delta_{11,3}$ free	360.45	186	1.94	9.40	1	.917	.946	.762
17	Model 16 with $\delta_{18,14}$ free	352.39	185	1.90	8.06	1	.918	.948	.759
18	Model 17 with $\delta_{7,6}$ free	344.54	184	1.87	7.85	1	.920	.950	.757
19	Model 18 with $\delta_{22,13}$ free	337.39	183	1.84	7.15	1	.921	.952	.754
20	Model 19 with $\delta_{9,4}$ free	330.68	182	1.82	6.71	1	.922	.954	.752
21	Model 20 with $\delta_{18,14}$ free	322.51	181	1.78	8.17	1	.923	.956	.749
22	Model 21 with $\lambda_{16,5}$ free	307.66	180	1.70	14.85	1	.927	.960	.748
23	Model 22 with $\lambda_{8,2}$ free	288.60	179	1.61	19.06	1	.931	.966	.749

Table 3.2, continued
Anglophones' L2-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	x^2	df	x^2/df	Δx^{2b}	Δdf	GFI[c]	CFI[d]	PCFI[e]
24	Model 23 with $\lambda_{b,b}$ free	281.05	178	1.58	7.01	1	.933	.968	.746
25	Model 24 with $\lambda_{8,b}$ free	273.50	177	1.55	7.55	1	.935	.970	.743
26	Model 25 with $\delta_{18,11}$ free	257.61	176	1.52	5.89	1	.936	.971	.740

[a]   All models are significant at p < .01. The baseline model (#26) is printed in bold letters.
[b]   All changes in x^2 > 6.64 are significant at p < .01.
[c]   Goodness of Fit Index
[d]   Comparison Fit Index
[e]   Parsimony Comparison Fit Index
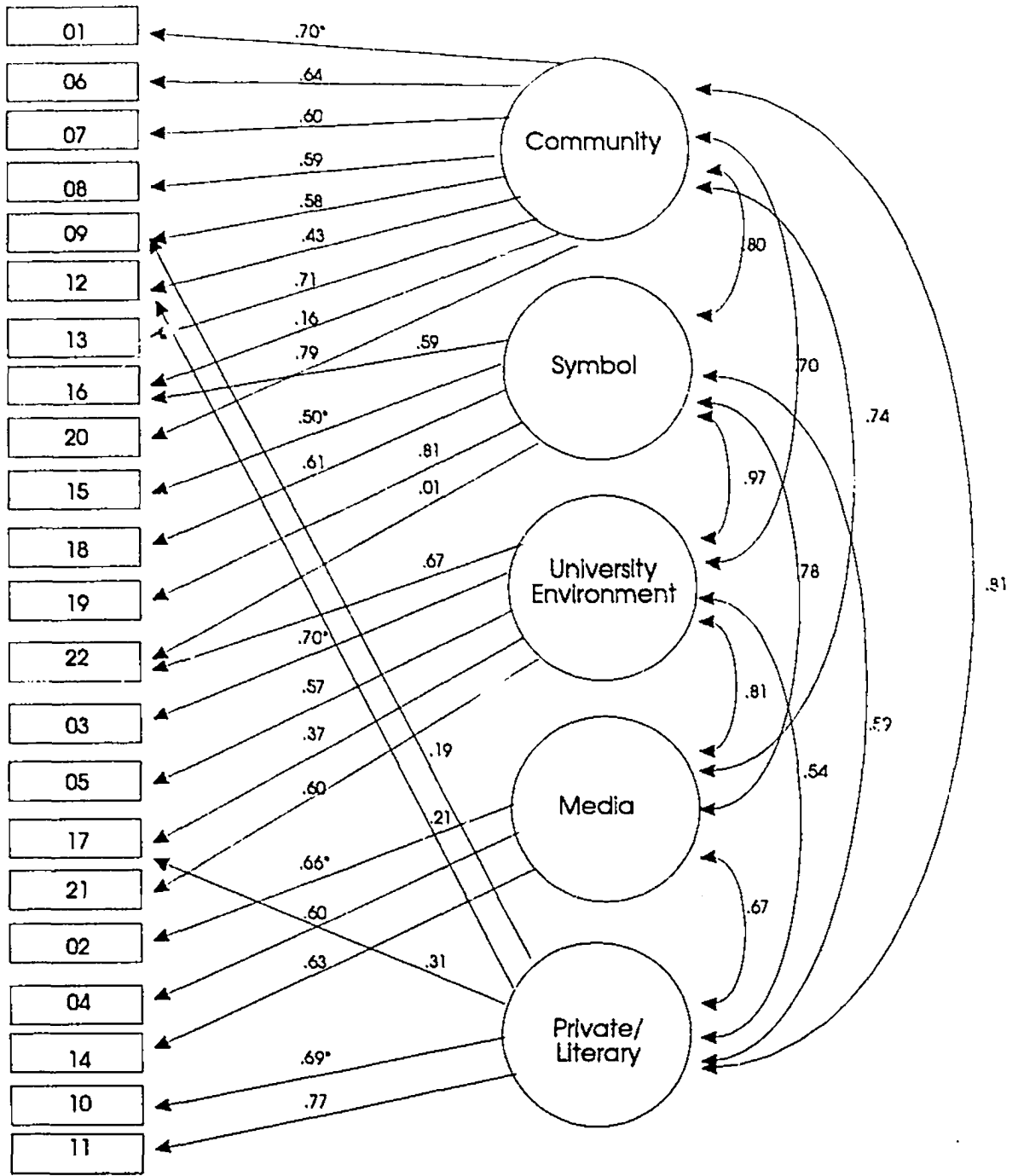
Figure 3.2: Baseline model of Anglophone L2-group identity
with standardized estimates

(For presentation purposes, error variances and covariances are not shown, but are presented in Appendix D. Item numbers correspond with items in Table 2.1.)
* This parameter was set to 1.00 for purposes of identification.

To assess the practical significance of these changes, sensitivity analyses were computed as described above. The correlation between the ML estimats of the factor loadings for the first and final models was r = .23. Several baseline models were tested, but although all were significantly different from the initial model, non approximated the final model (r < .90). Thus the final model (Model 26) was the baseline model.

Goodness-of-fit of the baseline model. A review of the R^2 of each of the observed variables revealed that most of the items measure their respective factors well (R^2 = .249 to .659), and the coefficient of determination was high (.997), suggesting that the good reliability of the overall measurement model. Although statistically significant, the model had acceptable levels of goodness-of-fit with regards to the subjective indices (>.90). The t-values were significant, except for 2 loadings in the factor loading (λ_x) matrix -- these variables actually loaded on other factors (see Items 16 and 22). Only 9 items had high standardized residuals. It should be noted that some standard errors were high (range = .032 to .343). Figure 3.2 presents the baseline model with standardized estimates (see also Appendix D).

Analyses of Factorial Congruence

To determine the extent to which the CFA solutions derived above correspond with the factor solutions presented by Clément and Noels (1992), a test of factorial congruence was conducted (see Harman, 1976). This test indicates the degree of similarity between factor loadings, taking into account the residual errors. The coefficients of factorial congruence[12] are presented in Table 3.3. It should be noted that the factors in the Clément and Noels (1992) were orthogonal to each other, whereas they were correlated in the present analysis. These analyses do not speak to the factors' intercorrelations but rather their pattern of loadings.

With regards to L1-group identity, the indices show that, row-wise, the factor

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[12] Like a correlation coefficient, the coefficients of congruence can vary from .00, indicating no similarity between factors, to |1.00|, indicating perfect similarity between factors (or perfect inverse agreement, if negative).

loadings of the present Private/Community factor is more congruent with the Private/Community factor than with the Public/Intergroup factor from the earlier study. As well, column-wise, the earlier Private/Community factor is more similar to the Private/Community factor than the Public/Intergroup factor from the present study. A similar pattern of results with regards to L2-group identity domains, whereby the highest coefficient row-wise and column-wise is that between the two similarly-defined factors, attests to the similarity of the present factors with the 1992 factors, relative to the relations with the other factors. Thus, the results indicate that the factors for Anglophone L1-group and L2-group identity found in the present investigation are very similar to those reported by Clément and Noels (1992).

Summary: Analyses of Anglophones' Identity

The results of the above analyses suggest that ethnic identity is not an unidimensional construct, but a multi-faceted phenomenon reflecting diverse situations. The number and kinds of situations, however, vary depending upon whether L1-group or L2-group identity is considered. More specifically, Anglophone L1-group identity can be described in terms of Public/Intergroup and Private/Literary domains, and L2-group identity can be described with regards to Community, Media, Symbolic, Private/Literary, and University Environment domains. Moreover, the patterns of identification of the present sample correspond with the 2-factor and 5-factor models described by Clément and Noels (1992) with regard to Anglophone L1-group and L2-group identity. Thus, these patterns of L1-group and L2-group identification are robust across samples of Anglophone students in a bilingual context.

Factor Analyses of Francophones' Situated Identity

Confirmatory Factor Analysis of L1-Group Identity

Having delineated the structure of Anglophones' ethnolinguistic identity, Francophones' identity is now considered. A similar strategy as that used with the Anglophone analysis was adopted. More particularly, the adequacy of the 4-factor, orthogonal-factors structure found by Clément and Noels (1992) for Francophone L1-group identity was tested, followed up by exploratory, post hoc analyses.

Table 3.3
Anglophones:
Coefficients of congruence between factors from Clément and Noels (1992) and standardized factor loading matrix from the baseline model determined in the confirmatory factor analysis

a)   L1-group identity

	Factors (Clément & Noels, 1992)	
	Private/ Community	Public/ Intergroup
Private/Community	.92	.54
Public/Intergroup	.39	.82

b)   L2-group identity

	Factors (Clément & Noels, 1992)				
	Community	Symbol.	University Environment	Media	Private/ Literary
Community	.82	.44	.49	.37	.33
Symbol.	.30	.69	.19	.29	.23
University Environment	.37	.33	.75	.18	.30
Media	.23	.24	.13	.75	.29
Private/ Literary	.22	.19	.27	.31	.78

A test of the null model revealed a poor fit of the model to the data (see Table 3.4 for a summary of the analyses described below), allowing the further testing of a common-factors model. The proposed 4-orthogonal-factors model included Media/Intergroup, Private/Literary, University Environment and Future Goals domains. The orthogonal-factors model was a better fit than the null model, but a correlated, 4-factors model proved to be the best fit. It was also a better fit than a single-factor model. Thus, the correlated-factors model was used in the subsequent analyses.

An examination of the results indicated that the measurement model was acceptable. The coefficient of determination was high (0.981), and individual R^2 ranged from .185 to .595. All t-values for the hypothesized parameters were significant. The goodness-of-fit of the overall model, however, was not satisfactory. The χ^2 index was significant, and the goodness-of-fit indices were somewhat low. There were 28 items with high standardized residuals. Thus, exploratory analyses were computed in the interest of better understanding the misfit in the model.

Exploratory post hoc analyses. In the same manner as that described with regards to the Anglophone analyses, exploratory *post hoc* analyses examined this misfit by relaxing restrictions one at a time in a cumulative manner, until a nonsignificant final model was obtained (see Table 3.4, for summary), and the goodness-of-fit indices were satisfactory. Thus, 30 modifications were made, relaxing restrictions on 25 error covariances (δs) and 5 factor loadings (λ). The sensitivity analyses showed that the correlation between the factor loadings of the initial correlated 2-factor solution and the final solution was low ($r = .44$), as was that between the initial and 8th respecified model ($r = .23$). However, the relation between this 8th respecified model (Model 11) and the final model was high ($r = .90$), and thus this model was chosen as the baseline model for use in subsequent analyses.

Goodness-of-fit of the baseline model. Although the baseline model (see Appendix D, for standardized estimates) evidences reliable measurement (R^2 ranged from .153 to .734; Coefficient of determination = .988), considerable misfit was evident. Eleven t-values were not significant, 17 items had standardized residuals greater than 2.00, and one standardized loading was greater than 1.00 ($\lambda_{(13,2)}$ =

Table 3.4
Francophones' L1-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	χ^2	df	χ^2/df	$\Delta\chi^2$[b]	Δdf	GFI[c]	CFI[d]	PCFI[e]
0	Null model	3832.34	231	16.59	--		--	.259	--
1	Model 1 (orthog. factors)	1596.65	209	7.639	2235.69	22	.736	.615	.556
2	Model 2 (correl. factors)	647.00	203	3.187	3185.34	28	.890	.877	.771
3	Model 3 (single-factor)	746.51	209	3.571	3085.83	22	.848	.851	.770
4	Model 2 with $\lambda_{10,3}$ free	563.40	202	2.789	83.60	1	.890	.900	.787
5	Model 4 with $\delta_{6,1}$ free	497.50	201	2.475	65.90	1	.903	.918	.798
6	Model 5 with $\delta_{12,11}$ free	480.38	200	2.401	17.12	1	.906	.922	.798
7	Model 6 with $\delta_{18,2}$ free	463.16	199	2.327	17.22	1	.908	.927	.799
8	Model 7 with $\delta_{18,17}$ free	444.16	198	2.243	19.00	1	.913	.932	.799
9	Model 8 with $\lambda_{12,1}$ free	429.86	197	2.182	14.30	1	.916	.935	.797
10	Model 9 with $\lambda_{9,1}$ free	415.27	196	2.118	14.59	1	.919	.939	.797
11	Model 10 with $\lambda_{13,3}$ free	394.98	195	2.025	20.29	1	.923	.944	.797
12	Model 11 with $\lambda_{3,3}$ free	380.01	194	1.958	14.97	1	.925	.948	.796
13	Model 12 with $\delta_{9,1}$ free	368.74	193	1.910	11.27	1	.927	.951	.795
14	Model 13 with $\delta_{21,9}$ free	358.50	192	1.867	10.24	1	.929	.954	.793
15	Model 14 with $\delta_{17,4}$ free	348.73	191	1.825	9.77	1	.931	.956	.790
16	Model 15 with $\delta_{2,1}$ free	339.64	190	1.787	9.09	1	.932	.958	.788
17	Model 16 with $\delta_{7,4}$ free	329.34	189	1.742	10.30	1	.934	.961	.786
18	Model 17 with $\delta_{21,20}$ free	321.28	188	1.708	8.06	1	.936	.963	.784
19	Model 18 with $\delta_{7,6}$ free	313.91	187	1.678	7.37	1	.937	.965	.781
20	Model 19 with $\delta_{9,6}$ free	305.17	186	1.640	8.74	1	.937	.967	.779
21	Model 20 with $\delta_{22,9}$ free	295.77	185	1.598	9.40	1	.939	.969	.776
22	Model 21 with $\delta_{17,9}$ free	287.57	184	1.562	8.20	1	.941	.971	.773
23	Model 22 with $\delta_{19,17}$ free	279.25	183	1.525	8.32	1	.942	.973	.771
24	Model 23 with $\delta_{17,10}$ free	268.35	182	1.474	10.90	1	.943	.976	.769

Table 3.4, continued
Francophones' L1-group Identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	x^2	df	x^2/df	Δx^2 [b]	Δdf	GFI[c]	CFI[d]	PCFI[e]
25	Model 24 with $\delta_{18,10}$ free	257.13	181	1.420	11.22	1	.947	.979	.767
26	Model 25 with $\delta_{20,18}$ free	249.16	180	1.384	7.97	1	.948	.981	.764
27	Model 26 with $\lambda_{6,4}$ free	240.04	179	1.341	9.12	1	.950	.983	.762
28	Model 27 with $\delta_{6,4}$ free	232.43	178	1.305	7.61	1	.951	.985	.759
29	Model 28 with $\delta_{18,13}$ free	224.66	177	1.269	7.77	1	.953	.987	.756
30	Model 29 with $\delta_{13,12}$ free	219.02	176	1.244	5.64	1	.954	.988	.756

[a] All models except the final model are significant at $\underline{p} < .01$. The baseline model (#11) is printed in bold letters.
[b] All changes in $x^2 > 6.64$ are significant at $\underline{p} < .01$.
[c] Goodness of Fit Index
[d] Comparison Fit Index
[e] Parsimony Comparison Fit Index

1.45). The standard errors ranged from 0.036 to 20.234. Thus, there is considerable misspecification in the model. Exploratory factor analyses, reported in greater detail below, were deemed necessary to further investigate the factorial structure of Francophones' L1-group identity.

Confirmatory Factor Analysis of L2-group Identity

As can be seen in Table 3.5, the assessment of Francophones' L2-group identity, revealed that the proposed 5-orthogonal-factors model, comprised of Community, Media, University Environment, Private/Literary, and Symbolic domains, and the single-factor model were improvements over the null model. The 5-correlated-factors model, however, proved to be the best-fitting model, and was therefore used in the subsequent analyses.

An examination of the results indicated that the measurement model was acceptable. The coefficient of determination was high (0.992), and individual R^2 ranged from .328 to .686. There were, however, 47 items with high standardized residuals, warranting exploratory model-fitting analyses.

Exploratory post hoc analyses. By relaxing restrictions on 22 error terms (δs) and 6 cross-loadings (λ), the goodness-of-fit indices were much improved, although the final χ^2 remained still significant. The sensitivity analyses showed that the correlation between the ML estimates of the factor loadings of the initial and final solutions was low (r = .034), however no intermediate model was deemed to be an acceptable baseline model. Thus, the final model (Model 30) was chosen as the baseline model for use in subsequent analyses.

Goodness-of-fit of the baseline model. The baseline model (see Appendix D) shows acceptable levels of goodness of fit in spite of the fact that it was statistically significant. It evidences reliable measurement (Coefficient of determination = .992; R^2 = .298 to .720). Only 6 items had standardized residuals greater than 2.00. Standard errors ranged from .042 to .519. There was, however, one t-value that was not significant, such that one factor loading did not load significantly on its hypothesized factor, but on the fourth factor. More importantly, misfit of the model was evident due to the out-of-range value of one loading in the standardized solution

Table 3.5
Francophones' L2-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	χ^2	df	χ^2/df	$\Delta\chi^{2\,b}$	Δdf	GFI[c]	CFI[d]	PCFI[e]
0	Null model	5180.92	231	22.43	--	--	.185	--	--
1	Model 1 (orthog. factors)	1954.87	209	9.35	3226.05	22	.590	.647	.585
2	Model 2 (correl. factors)	664.90	199	3.34	4516.02	32	.866	.906	.780
3	Model 3 (single-factor)	821.48	209	3.93	4359.44	22	.836	.876	.793
4	Model 2 with $\delta_{13,11}$ free	604.28	198	3.05	217.2	1	.876	.918	.787
5	Model 4 with $\lambda_{19,2}$ free	581.54	197	2.95	22.74	1	.881	.922	.786
6	Model 5 with $\delta_{9,1}$ free	568.37	196	2.90	13.17	1	.884	.925	.785
7	Model 6 with $\delta_{16,15}$ free	546.55	195	2.80	21.82	1	.889	.929	.784
8	Model 7 with $\delta_{10,1}$ free	523.55	194	2.70	23.00	1	.894	.933	.783
9	Model 8 with $\delta_{8,3}$ free	503.78	193	2.61	19.77	1	.897	.937	.783
10	Model 9 with $\delta_{18,16}$ free	480.56	192	2.50	23.22	1	.902	.942	.783
11	Model 10 with $\delta_{22,14}$ free	463.41	191	2.43	17.15	1	.905	.945	.781
12	Model 11 with $\delta_{14,13}$ free	446.61	190	2.35	16.80	1	.909	.948	.780
13	Model 12 with $\lambda_{8,4}$ free	429.91	189	2.28	16.70	1	.913	.951	.778
14	Model 13 with $\delta_{20,13}$ free	415.71	188	2.21	14.20	1	.917	.954	.776
15	Model 14 with $\delta_{4,2}$ free	404.27	187	2.16	11.44	1	.919	.956	.774
16	Model 15 with $\delta_{22,8}$ free	390.73	186	2.10	13.54	1	.921	.959	.772
17	Model 16 with $\delta_{8,4}$ free	379.39	185	2.05	11.34	1	.924	.961	.770
18	Model 17 with $\delta_{16,12}$ free	366.93	184	1.99	12.46	1	.926	.963	.767
19	Model 18 with $\delta_{21,6}$ free	356.40	183	1.95	10.53	1	.929	.965	.764
20	Model 19 with $\delta_{19,3}$ free	345.88	182	1.90	10.52	1	.931	.967	.762
21	Model 20 with $\delta_{19,2}$ free	336.09	181	1.86	9.79	1	.933	.969	.759
22	Model 21 with $\delta_{19,15}$ free	326.24	180	1.83	9.85	1	.934	.970	.756
23	Model 22 with $\delta_{15,7}$ free	317.26	179	1.78	8.98	1	.936	.972	.753
24	Model 23 with $\delta_{7,2}$ free	309.54	178	1.75	7.72	1	.938	.973	.750

Table 3.5, continued
Francophones' L1-group identity:
Summary of respecification steps in the confirmatory factor analysis

	Competing Models[a]	x^2	df	x^2/df	x^2 [b]	Δdf	GFI[c]	CFI[d]	PCFI[e]
25	Model 24 with $\delta_{16,4}$ free	301.90	177	1.71	7.64	1	.939	.975	.747
26	Model 25 with $\delta_{21,6}$ free	294.98	176	1.68	6.92	1	.940	.976	.744
27	Model 26 with $\lambda_{4,5}$ free	283.62	175	1.62	11.36	1	.942	.978	.741
28	Model 27 with $\lambda_{11,4}$ free	274.49	174	1.58	9.13	1	.943	.980	.738
29	Model 28 with $\lambda_{6,2}$ free	263.28	173	1.52	11.21	1	.945	.982	.735
30	Model 29 with $\delta_{13,6}$ free	256.23	172	1.49	7.05	1	.947	.983	.732
31	Model 30 with $\lambda_{1,4}$ free	248.53	171	1.45	7.70	1	.948	.984	.728

[a] All models are significant at $p < .01$. The baseline model (#31) is printed in bold letters.
[b] All changes in $x^2 > 6.64$ are significant at $p < .01$.
[c] Goodness of Fit Index
[d] Comparison Fit Index
[e] Parsimony Comparison Fit Index

$(\lambda_{(6,1)} = 1.16)$. Thus, as with Francophones' L1-group identity, this misfit suggests that further exploratory factor analyses are merited in order to further understand Francophones' L2-group identity.

Analyses of Factorial Congruence

To assess the extent to which the pattern of standardized factor loadings (λ_xs) corresponds with the factor structure described by Clément and Noels (1992), the matrices were compared using the coefficient of factorial congruence (Harman, 1976)[13]. As can be seen in Table 3.6, with regards to L1-group identity, the largest coefficients row-wise and column-wise range from .56 to .92, and showed correspondence between the similarly-defined factors from the two studies. Although these coefficients are the highest relative to the other coefficients, their values indicate that there is unsatisfactory replication for some factors.

With regards to L2-group identity, the largest coefficients row-wise and column-wise range from .59 to .80, for those factors that are similarly defined across the two studies. As with the L1-group identity results, the low value for one factor suggests that the Symbolic factor does not replicate well across the two groups. The results of the present analysis, therefore, only partially replicate those factors described by Clément and Noels (1992).

Summary: Confirmatory factor analyses of Francophones' identity

The results suggest that although it is possible to achieve a solution comparable to the 4-factor and 5-factor models of Francophone L1-group and L2-group identity as described by Clément and Noels (1992), but with considerable misfit. Given this evident misspecification, exploratory factor analyses are warranted to determine the factorial structure of the present data set.

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[13] It should be noted that the factor structure of Clément and Noels (1992) and that of the present study differ in that, in the earlier study, the solution involved orthogonal factors, and, in the present study, it involves correlated factors. Thus, this analysis of factorial congruence only assesses the similarity of the factor loadings across the two solutions, not the degree of interrelation between the factors.

Table 3.6
Francophones:
Coefficients of congruence between factors from Clément and Noels (1992) and standardized factor loading matrix from the baseline model determined in the confirmatory factor analysis

a)   L1-group identity

	Factors (Clément & Noels, 1992)			
	Media/ Intergroup	Private/ Literary	University Environment	Future Goals
Media/ Intergroup	.92	.45	.24	.26
Private/ Literary	.11	.56	.22	.21
University Environment	.12	.16	.61	.25
Future Goals	.17	.19	.20	.75

b)   L2-group identity

	Factors (Clément & Noels, 1992)				
	Community	Media	University Environment	Private/ Literary	Symbol.
Community	.75	.12	.29	.28	.37
Media	.32	.78	.16	.01	.21
Private/ Literary	.34	.20	.72	.23	.14
University Environment	.33	.35	.18	.71	.20
Symbol.	.47	.29	.09	.22	.59

Exploratory Factor Analyses of Francophones' L1-Group and L2-Group Identities

For both L1-Group and L2-group identity, the exploratory factor analyses involved Maximum Likelihood (ML) extraction, followed by oblique rotation.

L1-group identity. An initial run indicated that there were 3 factors with eigenvalues greater than 1.00[14], accounting for 43.1% of the variance in participants' responses. The χ^2 statistic was significant (χ^2 = 418.44, df = 168, p = .000; χ^2/df = 2.49). The factor pattern and factor correlation matrices, along with communalities for each loading and estimates of variance accounted for by each factor, are presented in Table 3.7.

Factor 1 was defined by 11 variables with factor pattern loadings greater than |.30| (Gorsuch, 1983). Francophones identified with the Francophone group in a similar manner whether they were with friends, social contacts, with other students, at home, preparing food, reflecting about the future, such as thinking about their life goals, future spouse, where they would like to settle down, or thinking about English-French relations, and when they write for themselves or do their school work. This combination of variables is called a Private/Future Goals dimension, a combination of 2 of the factors described by Clément and Noels (1992).

Eleven variables with factor pattern loadings greater than |.30| described Factor 2. Francophone identity was similar whether one was listening to music, the radio, watching the new on television, reading the newspaper, thinking of politics, travelling, dealing with merchants, writing assignments, preparing food, or participating in cultural activities. Because of the emphasis on media-related situations, this dimension was labelled a Media dimension.

Factor 3 was defined by 2 variables with factor pattern loadings greater than |.30|, in addition to a third variable which exclusively defined this factor but slightly below the cutoff (.27). L1-group identification when choosing the University of

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[14] Alternative models with 1, 2, 4, and 5 factor structures were also examined. On the basis of chi-square statistic, the percentage of variance accounted for by the solution, and the interpretability of the factor matrices, the 3-factor model was determined to be the best model.

Table 3.7
3-factor solution of exploratory factor analysis of Francophone L1-group identity

a) Factor pattern matrix, communalities, percentage of variance and indices of internal consistency

	Factors			
Variables	I*	II	III	h^2
When I am with my friends	.79	-.05	.12	.68
In my social contacts	.73	-.07	.21	.59
When I think about my life's goals	.68	.02	-.03	.47
When thinking about my future or present spouse	.66	.06	-.10	.47
When I am at home	.59	-.01	-.07	.32
When I am have contacts with other students	.53	.01	.40	.56
When thinking about where I would want to settle down	.52	.19	-.13	.42
When I write my assignments	.52	.02	.05	.31
When writing for myself (not counting school work)	.41	.35	-.12	.46
When I prepare food	.40	.34	-.24	.44
When thinking about relations between Anglophones and Francophones	.39	.13	.11	.29
When I listen to the radio	-.03	.75	.04	.54
When I listen to music	-.08	.73	-.04	.45
When I read the newspaper	.01	.68	.05	.49
When I watch the news on television	.11	.66	-.10	.53
When I read for pleasure	.15	.52	.01	.41
When I travel	.01	.51	.22	.37
When dealing with merchants	.09	.46	.27	.43
When I think about politics	.21	.37	.01	.30
When I participate in cultural activities	.24	.36	.20	.42
When dealing with university personnel	.07	.18	.45	.31
When I chose the University of Ottawa	.14	.19	.27	.22
Percentage of variance explained	36.7%	3.5%	2.8%	
R^2 - Index of internal consistency	.90	.88	.60	

b) Factor correlation matrix

Factor I	1.00		
Factor II	0.75	1.00	
Factor III	0.29	0.25	1.00

* Suggested factor labels: I   Private/Future Goals
   II   Media
   III   University Environment

Ottawa was similar to that felt when dealing with University personnel and when in contact with other students. This combination of variables was termed a <u>University Environment</u> dimension.

<u>L2-group identity</u>. Four factors were extracted, accounting for 54.2% of the variance[15]. The χ^2 statistic was significant (χ^2 = 343.95, <u>df</u> = 149, <u>p</u> < .01, χ^2/df = 2.31). The factor pattern and factor correlation matrices, along with communalities for each loading and estimates of variance accounted for by each factor, are presented in Table 3.8.

Factor 1 was defined by 11 variables with factor pattern loadings greater than |.30|. Francophones felt similarly with regards to their Anglophone identity whether they were with friends and having social contacts, thinking of politics and English-French relations, being involved in cultural activities and travelling, or thinking of their life goals, future spouse, or where they would like to settle down. Feelings of identity while watching news on TV, preparing food, at home also defined this factor. This combination of variables, similar to that reported by Clément and Noels (1992), suggested a <u>Community</u> dimension. It should be noted that some of the items that loaded on this factor defined the <u>Symbolic</u> factor found by Clément and Noels (1992).

Six variables with salient loadings defined Factor 2. The situations included in this factor generally reflected the use of media (eg. listening to radio or music, reading the newspaper, watching the news), but also dealing with merchants and reading for pleasure. The factor therefore seemed best described as a <u>Media</u> factor.

Factor 3 was defined by 5 variables with salient factor loadings. Whether reading or writing for pleasure, doing school assignments or being at home or with other students, Francophones felt similarly about their Anglophone identity. Because of the emphasis on solitary activities, this combination of variables might well be

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[15] An initial analysis indicated that 3 factors had eigenvalues greater than 1.00. However, an examination of alternative 2- and 4-factor models suggested that the 4-factor model was the best model, in terms of the differences between the solutions' chi-square statistic, the percentage of variance each solution accounted for, and the interpretability of the factor pattern matrices of each solution.

Table 3.8
4-factor solution of exploratory factor analysis of Francophone L2-group identity

a) Factor pattern matrix, communalities, percentage of variance and indicus of internal consistency

Variables	Factors				
	I*	II	III	IV	h^2
When I think about my life's goals	.69	.01	.07	-.13	.55
When I travel	.68	-.16	.15	-.02	.53
When I think of my present or future spouse	.65	.11	-.20	.05	.48
When I think about politics	.58	-.03	.05	-.09	.40
When I think about where I would want to settle down	.54	-.09	-.12	-.03	.48
In my social contacts	.53	-.17	-.20	-.08	.68
When I watch the news on T.V.	.47	-.33	-.08	.03	.56
When I am with friends	.47	-.04	-.25	-.16	.61
When thinking about rel. between Anglophones and Francophones	.47	-.12	-.01	-.21	.51
When I prepare food	.36	-.02	-.19	-.06	.30
When I participate in cultural activities	.36	-.22	-.09	-.13	.44
When I listen to the radio	.25	-.77	-.04	.13	.80
When I listen to music	.01	-.70	.03	-.19	.65
When dealing with merchants	.10	-.40	-.12	-.31	.55
When I write for myself	.08	-.12	-.69	-.04	.66
When I read for pleasure	.13	-.36	-.45	-.00	.59
When I write my assignments	.22	.13	-.43	-.29	.52
When I am at home	.30	.01	-.35	-.10	.41
When I chose the University of Ottawa	.19	.04	.10	-.65	.54
When dealing with university personnel	.02	-.09	-.05	-.61	.48
When I have contact with other students	.08	-.11	-.33	-.50	.68
When I read the newspaper	-.03	-.35	-.25	-.36	.53
Percentage of variance explained	45.8%	3.8%	2.6%	2.1%	
R^2 - Index of internal consistency	.89	.86	.80	.81	

b) Factor correlation matrix

FACTOR I	1.00			
FACTOR II	-0.58	1.00		
FACTOR III	-0.58	0.35	1.00	
FACTOR IV	-0.69	0.45	0.43	1.00

* Suggested factor labels: I Community; II Media; III Private/Literary; IV University Environment

labelled the Private/Literary dimension of Francophone L2-group identification.

Factor 4 was defined by 5 variables with factor pattern loadings greater than |.30|. Because the situations described by these items largely pertained to the university setting, the factor was termed a University Environment dimension.

Analyses of factorial congruence. To assess the similarity between the factors obtained through exploratory analyses and those obtained by Clément and Noels (1992), factorial congruence (Harman, 1965) was tested by comparing the loadings in the factor structure matrix with those from the factor matrix presented by Clément and Noels (1992). The results of the analyses for L1-group identity showed that the Media and University Environment factors are most highly correlated with the similarly named factor from the earlier study (see Table 3.9). The correlation between the Private/Future Goals dimensions was also the highest of the 3 present factors to relate to the 1992 Private/Literary factor, although the present Media factor was of about the same order. The Private/Future Goals factor also corresponded highly with the Future Goals factor, but also with the Media/Intergroup dimension. Overall, the results indicate that the 3 L1-group identification factors derived from the responses in the present sample are similar to 3 of the 4 factors found in the earlier study, although the overlap with other factors means that the replication is less than perfect.

The four L2-group identification factors found in the exploratory factor analyses were all most highly correlated ($r > .91$) with the similarly named factor from the earlier study, both row-wise and column-wise, with the exception of the University Environment factor ($r = .83$), which was also highly related to the Community ($r = .88$). Thus, with this limitation, the earlier results concerning Francophone L2-group identity are replicated, with the exception of the Symbolic domain.

Summary: Exploratory Factor Analyses of Francophones' Identity

The results of exploratory factor analyses indicated that the best model to describe Francophones' L1-group identity is a 3-factor solution, including the domains Private/Future Goals, Media, and University Environment. The results also showed that a 4-factor solution describes Francophones' L2-group identity, including the domains of Community, Private/Literary, Media, and University Environment. Tests

Table 3.9
Francophones:
Coefficients of congruence between factors from Clément and Noels (1992) and factor structure matrix from exploratory factor analysis

a)   L1-group identity

	Factors (Clément & Noels, 1992)			
	Media/ Intergroup	Private/ Literary	University Environment	Future Goals
Private/ Future Goals	.76	.81	.73	.77
Media	.87	.80	.63	.69
University Environment	.69	.53	.87	.51

b)   L2-group identity

	Factors (Clément & Noels, 1992)				
	Community	Media	University Environment	Private/ Literary	Symbol.
Community/ Future Goals	.92	.80	.73	.78	.80
Media	-.81	-.93	-.66	-.73	-.71
Private/ Literary	-.86	-.72	-.69	-.91	-.79
University Environment	-.88	-.76	-.83	-.77	-.78

of factorial congruity suggested that there was considerable correspondence between these factors and those reported by Clément and Noels (1992), although some factors overlap to a certain extent with nontarget factors from the previous solution. With this limitation in mind, caution must be used in directly comparing the factors from the two solutions.

Chapter Summary and Discussion

The purpose of this series of analyses was to explore how Anglophone and Francophone university students' feelings of ethnic identity can be understood in terms of situational domains. For Anglophones, the results of confirmatory factor analyses showed that L1-group identity can be described as a relatively undifferentiated structure, consisting of 2 factors representing Public/Intergroup and Private/Community situations, respectively. Anglophone L2-group identity, however, is more complex, with domains pertaining to Media situations, Community situations, thinking about Future Goals, pursuing Private/Literary interests, and Symbolic aspects. Moreover, the results of the tests of factorial congruence revealed that the factorial solutions found in the present study were similar to those reported by Clément and Noels (1992), pointing to the robustness of these dimensions across samples of university students in a bilingual context.

The results of the factor analyses indicated that Francophones conceptualize L1-group identity differently than do Anglophones. Confirmatory factor analyses did not support the proposed 4-factor structure for L1-group identity, nor the hypothesized 5-factor structure for L2-group identity. Exploratory factor analyses showed that, in fact, the present sample's identity pattern was better described in terms of 3-factor and 4-factor models for L1-group and L2-group identities, respectively. A comparison of the present factors with those presented by Clément and Noels (1992) indicated that the Private/Future Goals is a conglomeration of the 2 separate dimensions found by Clément and Noels (1992). The University Environment and Media domains for L1-group identity were comparable to the similarly named dimensions from the earlier study, although the Media domain showed some overlap with the Private/Literary domain. The L2-group identity Community,

<u>Media</u>, <u>Private/Literary</u> domains, and, to a lesser extent, the <u>University Environment</u> domain were found to be similar to those domains identified in the earlier study. The structure of the <u>Symbolic</u> domain was not replicated.

These findings provide additional support for Clément and Noels' (1992) assertion that, although ethnic identity may include both public and private spheres, situational representations of identity can also be more complex. Certainly, Anglophone L1-group identity is readily described by these two dimensions. Francophone L1-group identity, however, shows a more diversified pattern, including specific situations, such as the media and the university context, in addition to private situations. Caution is advised, however, in equating these domains across samples. Apparently there are some dissimilarities between samples in the conceptualization of ethnic identity, and thus conclusion reached with regards to one sample may not be tenable in another sample.

This difference between language groups in the configuration of identity may be due to differences in the extent to which its members are exposed to and implicated in social networks with L2-group members. Inclusion in a social network requires not only frequent exposure to the L2 group, but also the communicative abilities to interact effectively with that group. As a continental majority group, Anglophones may have relatively little interaction with Francophones, and seldom be faced with changing their language behaviour in order to accommodate Francophones. In fact, because of their higher status, even when Anglophones encounter Francophones they may not be required to adapt to their French interlocutor through linguistic convergence (Bourhis, 1984a; 1984b; Moise & Bourhis, 1994; see Giles & Coupland, 1991, for review). The issue of ethnicity, therefore, may not readily become obvious to them.

As a minority group with more opportunity for interaction with L2-group members and greater normative obligation to use the English, Francophones may be required to alter their behaviour more often. As a result of the increased incidence of language negotiation, identity issues may be more salient. With greater attention to and practice in negotiating ethnicity across more situations, their schema for situated

L1-group identity is not differentiated (Kihlstrom & Cantor, 1984; Kihlstrom, Cantor, Albright, Chew, Klein, & Neidenthal, 1988) in the same manner as Anglophones'. Thus, group vitality may determine the intergroup interaction patterns, and eventually the configuration of ethnic identity along situational lines.

Just as L1-group identity may be more elaborated than the public-private dimension, so too is L2-group identity. Both Francophones and Anglophones show a complex configuration which reflects the specific social situations of the community, the university environment, the media and private situations. Thus, private and public aspects of identity are evident, but they can be more precisely defined. Public interactions in the university setting can be distinguished from public interactions with others from the community. Although media usage might be considered a personal decision, identity in this context can be distinguished from identity in other intimate settings.

It is possible that these fine distinctions arise as a result of different experiences with the L2-group across settings. For example, choices about language use and identity negotiation in the community may be governed by norms that are quite dissimilar from those in an institution with a mandate to promote bilingualism and biculturality. As well, the availability of media services in a particular region could potentially affect identification, depending upon whether the group is well or poorly served by that media. Variations in the degree of exposure to the L2-group across situations and the need to negotiate a linguistic identity across situations foster the emergence of a situationally differentiated ethnic identity.

Anglophones and Francophones differed in their L2-group identities in that the configuration of Anglophone identity also includes an independent symbolic facet. As described by Gans (1979), symbolic ethnicity involves visible cultural attributes that may be contrasted with comparable features of another group. For Francophones, this symbolic aspect was integrated into specific situations, particularly the Community dimension. Although this finding is contrary to Gans' suggestion that the symbolic facet would be entertained in more intimate settings, it may be that when there is the opportunity for contact with the L2-group, symbols of ethnicity are

displayed so as to contrast with the other group. Anglophones and Francophones may differ in the manifestation of this facet because of their relative vitality. As a minority group faced with issues of ethnicity on a regular basis, ethnicity is a part of most life domains for Francophones. As a majority group seldom confronted with issues of ethnicity, Anglophones' conceptualization of ethnicity may be abstract and distal, not well woven into everyday life. At the same time, because this dimension replicated least well across studies, further research is necessary to verify its importance as an independent domain of situated identity.

In summary, consistent with earlier results, the findings of the analyses concerning the factorial structure of situated ethnolinguistic identity demonstrate that identity may contain not only public and private dimensions, but also a multitude of other dimensions. Furthermore, the pattern of L1-group and L2-group identities may be differently configured. Ethnic differences in the configuration of the L1-group identities may be due to differences in social status and the amount of involvement with the L2-group. At the same time, Anglophones differ little from Francophones with regards to the dimensions of L2-group identity, with the exception of the Symbolic domain.

It has been proposed that these differences in the complexity and aspects of the ethnic self-schema relate to the amount of experience the individual has with the L2-group, both in terms of the frequency of contact and the ease with which the L2 is used. Variations in the amount of exposure to the L2 group and in the extent of identification, in turn, could well be an outcome of group vitality, such that a lower vitality groups have greater exposure to the L2-group than higher vitality groups. These conclusions rest at this point on the particular clusters displayed by a number of situational identification ratings. They presuppose, however, differential levels of endorsement of L1-group and L2-group identification among the groups considered here. The discussion, therefore, turns to a consideration of mean differences.

CHAPTER 4

VARIABILITY IN THE LEVELS OF
IDENTITY, LANGUAGE AND CONTACT

The results discussed in the previous chapter demonstrated that ethnic identity is construed differently across settings. It may therefore be that the extent of ethnic identification is also situationally variable. Such variability, it has been argued, is linked to group vitality because of group differences in the amount of L2-group contact and L2 use. To examine this premise in greater detail, two sets of analyses were conducted using the MANOVA procedure provided by SPSS/PC 5.0 (SPSS Inc., 1992). First, the mean level of identification in each domain was compared across minority and majority ethnolinguistic groups. Second, levels of L2-group contact and L2 competence were assessed as a function of the native language group and demographic status. In a follow-up analysis, the frequency of L2-group contact was examined as a function of the situation of contact and the status characteristics of the language group considered. In this manner, the influence of ethnolinguistic vitality on both identity and exposure to the L2-group are addressed.

Analyses of Variance: L1-Group and L2-Group Identities

In order to investigate intergroup differences in identity, indices for the domains identified in the previous chapter were compiled for each participant. Accordingly, for Anglophone L1-group identity, a mean score for each domain was calculated on the basis of the items that were hypothesized to define each factor in the confirmatory factor analysis. Thus, for L1-group identity, 13 items were included in the Private/Literary index (Items 2, 4 , 8 , 9, 10, 11, 12, 14, 15, 16, 17, 19 and 21; see Table 2.1), and 9 items were included in the Public/Intergroup index (Items 1, 3, 5, 6, 7, 13, 18, 20, and 22). For Francophone L1-group identity, scores for each domain determined in the exploratory factor analysis were derived by taking the mean of those items that loaded most highly on their respective factors. Media was defined by 9 items (Items 4, 14, 19, 11, 2, 22, 6, 18, and 13). Because one item defining

the University Environment had a less salient loading than desired (below |.30|), the substantial cross-loading on this factor was included in this index rather than in the Private/Future Goals index. Thus, Private/Future Goals was defined by 10 items (Items 7, 8, 9, 10, 12, 15, 16, 17, 20 and 21), and University Environment was defined by 3 items (Items 1, 3 and 5). For both Anglophones and Francophones, indices for L2-group identity included only those items that were common to both groups for the 4 similarly defined factors[16] . Thus, the Community domain was defined by 6 items (items 7, 8, 9, 12, 13 and 20), Media by 2 items (items 4 and 14), University Environment by 2 items (items 3 and 5), and Private/Literary by 2 items (items 10 and 11). For Anglophones, the Symbolic domain was defined by 3 items (items 15, 18 and 19). The reliabilities of these subscales appear in Table 4.1.

L1-group identification

Anglophones. To assess differences in the level of identification across the situational domains as a function of the vitality of each group, a split-plot ANOVA was computed[17]. This analysis included an identity *Domain* factor (i.e. Public/Intergroup vs. Private/Community) as a within-subjects factor, and demographic *Status* (minority vs. majority) as a between-subjects factor. The only significant effect was a main effect due to *Domain* (see summary table presented in Table 4.2). L1-group identification was higher in the Public/Intergroup domain (M = 4.07, SD = 0.74) than the Private/Community domain (M = 3.88, SD = 1.07; $F_{(1,353)}$ = 11.51, p < .001).

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[16] With the exception of two items, these items were the same as those used to define each domain by Clément and Noels' (1992; see Appendix D). The earlier study demonstrated that these items were invariant measurement indices of their latent constructs across the two language groups.

[17] An inspection of the univariate homogeneity of variance tests indicated that the assumption of homogeneity of variance was not violated (Box's M = 6.16, χ^2_3 = 6.02, p = .11; see Norušis, 1990b). The validity of the results were further confirmed by comparing a random subsample of 32 subjects from the majority group with 32 subjects from the minority group. The results indicated that only the main effect for the *Domain* within-subjects factor ($F_{1,62}$ = 4.23, p < .05) was significant. The means showed the same pattern as that reported for the complete sample.

Table 4.1
Summary of identity domains derived from factor analyses and Cronbach α coefficients of subscales

Identification to L1-group

	Francophones		Anglophones	
	Definition	Cronbach α	Definition	Cronbach α
Factor 1	Future Goals /Private	.86	Private /Community	.93
Factor 2	Media	.86	Public /Intergroup	.82
Factor 3	University Environment	.62	--	

Identification to L2-group

	Francophones		Anglophones	
	Definition	Cronbach α	Definition	Cronbach α
Factor 1	Community	.88	Community	.83
Factor 2	University Environment	.69	Media	.69
Factor 3	Media	.83	University Environment	.67
Factor 4	Private /Literary	.77	Private /Literary	.74
Factor 5	--		Symbolic	.62

Table 4.2
ANOVA summary table: Anglophones' L1-group identity as a function of demographic status and situational domain

Source	SS	df	MS	F
WITHIN CELLS	499.58	353	1.42	
Status	4.80	1	4.80	3.39
WITHIN CELLS	92.52	353	.26	
Domain	3.02	1	3.02	11.51*
Status by Domain	.16	1	.16	.60

*   p < .001

<u>Francophones.</u>   A split-plot ANOVA was conducted on the Francophones' L1-group identity scores to examine the effects of the identity *Domain* (<u>Private/Future Goals</u> vs. <u>Media</u> vs. <u>University Environment</u>) within-subjects factor and the *Status* (minority vs. majority) between-subjects factor on feelings of identity.

As can be seen from the ANOVA summary table (see Table 4.3), the results yielded significant main effects for both *Domain* and *Status*, as well as a significant interaction effect[18]. In general, Francophones identified most with the L1-group in the <u>University Environment</u> ($\underline{M}$ = 4.47, $\underline{SD}$ = 0.69), significantly less in the <u>Private/Future Goals</u> domain ($\underline{M}$ = 4.18, $\underline{SD}$ = 0.82), and least in the <u>Media</u> domain ($\underline{M}$ = 3.80, $\underline{SD}$ = 0.94). Minority Francophones ($\underline{M}$ = 3.95, $\underline{SD}$ = 0.73) identified less with the L1-group than did majority Francophones ($\underline{M}$ = 4.28, $\underline{SD}$ = 0.66).

To help understand the interaction effect (see Figure 4.1), post hoc Tukey's HSD procedure was performed on the means (see results in Appendix F). The results of these analyses demonstrated that minority and majority Francophones identified equally with the Francophone group in the <u>University Environment</u>, and in fact their identity was highest in this domain. Identity in the <u>Private/Future Goals</u> domain was lower than in the <u>University Environment</u>, but higher than in the <u>Media</u> domain. Minority Francophones' L1-group identification significantly lower than the majority Francophones' in the <u>Private/Future Goals</u> and <u>Media</u> domains, but not in the <u>University Environment</u>.

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[18] Despite the unequal cell sizes, the homogeneity of variance assumption was upheld. Box's $\underline{M}$ was not significant (Box's $\underline{M}$ = 12.67; χ^2_{6} = 12.56, $\underline{p}$ = .051), and the Greenhouse-Geisser ϵ was .94, well above the .70 minimum level recommended by Stevens (1992, p. 475). The results were further confirmed by testing random subsamples of 33 subjects from each group, as described in Appendix E.

Table 4.3
ANOVA summary table: Francophones' L1-group identity as a function of demographic status and situational domain

Source	SS	df	MS	F
WITHIN CELLS	594.02	416	1.43	
Status	32.92	1	32.92	23.06*
WITHIN CELLS	211.88	832	.25	
Domain	99.75	2	49.87	195.85*
Status by Domain	6.78	2	3.39	13.32*

* $p < .001$

Figure 4.1
Francophones' mean L1-group identity as a function
of demographic status and situational domain
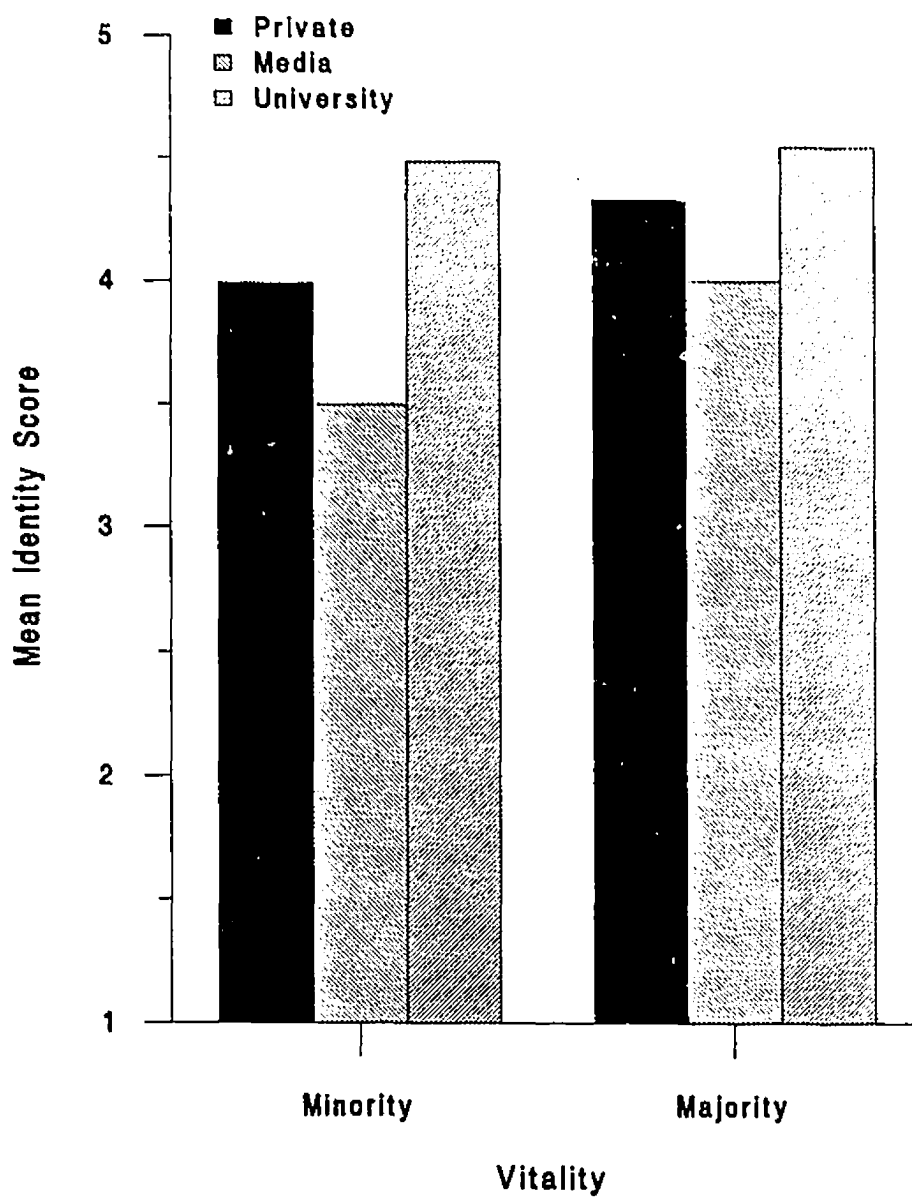
L2-Group Identification

To assess the effects of group status and language group on variations in identity across domains, a 2 X 2 X 4 split-plot ANOVA was conducted on the identity scores, with *Native Language Group* (Anglophone vs. Francophone) and demographic *Status* (Majority vs. Minority) as the between-subjects factors, and the four *Domains* common to Anglophones and Francophones (University Environment, Community, Media and Private/Literary) as the within-subjects factor. As can be seen in Table 4.4, all main and interaction effects were significant, except for the *Status* X *Native Language Group* effect[19]. In general, minority groups ($\underline{M}$ = 3.03, $\underline{SD}$ = 1.01) felt more a like a member of the L2-group than did majority groups ($\underline{M}$ = 2.20, $\underline{SD}$ = 0.88), and Francophones ($\underline{M}$ = 2.81, $\underline{SD}$ = 1.02) felt more like members of the L2-group than did Anglophones ($\underline{M}$ = 1.96, $\underline{SD}$ = 0.72). Participants felt most like a member of the L2-group in the Media domain ($\underline{M}$ = 2.69, $\underline{SD}$ = 1.46), less so in the Community ($\underline{M}$ = 2.43, $\underline{SD}$ = 1.01) and the University Environment ($\underline{M}$ = 2.37, $\underline{SD}$ = 1.12) domains, and least in the Private domain ($\underline{M}$ = 2.17, $\underline{SD}$ = 1.31).

Because it is the highest order interaction, the 3-way interaction will be discussed here. The results of Tukey tests (see Appendix F) indicated that Francophones identified more highly with their L2-group than did Anglophones, particularly with regards to the Media and Private/Literary domains and the Community domain (see Figure 4.2). Status had little effect on Anglophones' identification, with the exception of lower identification for minority group members in Media situations. It influenced Francophones' in all areas except the University Environment, such that minority group members identified more strongly with the L2-group than did the majority group members. The language groups differed in the extent to which they

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[19] Because of the disparity between the number of subjects in each cell and because the assumption of univariate homogeneity of variance may have been violated for the between-subject's factors (Box' $\underline{M}$ = 192.13, χ^2_{30} = 187.99, $\underline{p}$ < .01; Greenhouse-Geisser ϵ = .89), a second 2 X 2 X 5 split-plot ANOVA was computed on 33 subjects randomly sampled from each of the larger groups. These results largely confirmed the findings reported here (see Appendix E).

Table 4.4
ANOVA summary table: L2-group identity as a function of native language group, demographic status, and situational domain

Source	SS	df	MS	F
WITHIN CELLS	2269.06	767	2.96	
Status	78.83	1	78.83	26.49**
Native Language Group	196.18	1	196.18	66.31**
Native Language Group by Status	5.88	1	5.88	1.99
WITHIN CELLS	1301.61	2301	.57	
Domain	47.19	3	15.73	27.81**
Status by Domain	7.84	3	2.61	4.62*
Native Language Group by Domain	167.78	3	55.93	98.87**
Native Language Group by Status by Domain	6.72	3	2.24	3.96*

* $p < .01$
** $p < .001$

Figure 4.2
Mean L2-group identity as a function of demographic
status, native language group and situational domain
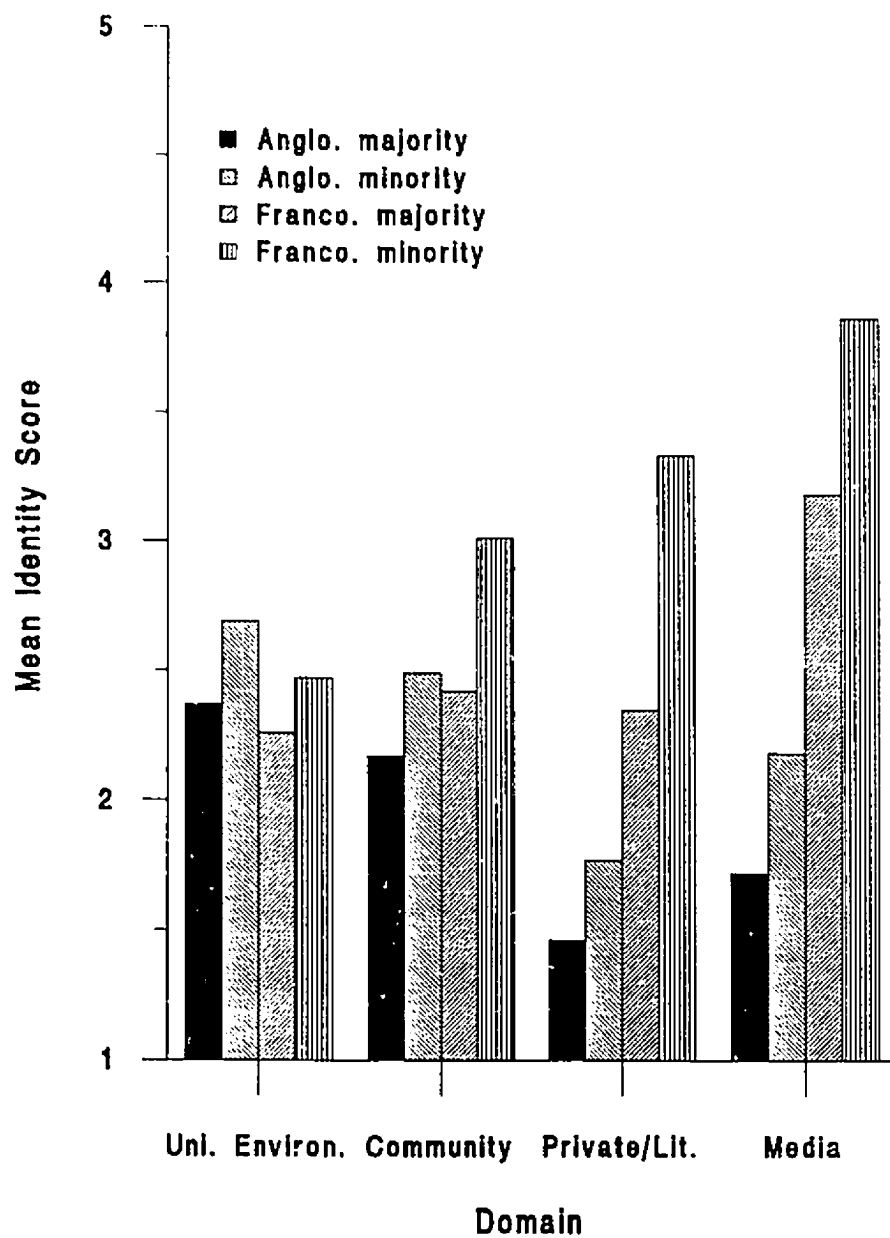
endorsed L2-group identification across the domains. For Anglophones, identification was highest in the Community and University Environment, and lower with regards to Media situations and Private situations. For Francophones, identification was higher in the Media domain than all other domains. Also, for minority Francophones, identification in the Private/Literary domain was higher than in the Community domain but lower than in the Media domain. In addition, relative to all other domains, L2-group identification was lowest in the University Environment. The 4 groups did not differ with regards to L2-group identity in the University Environment domain.

Because the Symbol dimension was not evident in the factor analyses of the Francophone L2-group identity scores, Anglophones and Francophones could not be compared with regard to the level of identity in this domain. Instead the analyses focused on minority and majority Anglophones. Levene's test for equality of variances showed that the 2 groups differ in the variability of the scores (F = 3.95, p = .048). After correcting for this discrepancy, the results of a t-test showed that there was no difference between groups ($t_{33.45}$ = 1.32, p =.196). Thus, minority and majority Anglophones identify equally with the L2-group in the Symbol domain (M = 2.29, SD = 1.10 and M = 2.02, SD = 0.84, respectively).

Summary of the Identity Analyses

These findings indicate that the ethnolinguistic group of origin and the demographic status within that group have implications for the level of identification with both the L1- and L2-groups across situations. For Anglophones, L1-group identification is higher in public situations than in private situations, and, likewise for Francophones, L1-group identification is highest in the relatively public setting of the university environment, lower in private settings, and lowest with regards to situations concerning the mass media. All groups identify with the L2-group more or less equivalently in the 2 more public situations of the Community and the University Environment. They diverge however with regards to the Private/Literary and Media domains. In these settings the full effect of ethnolinguistic vitality is evident: whereas the group with the highest vitality, the majority Anglophones, identifies least with the L2-group, the group with the lowest vitality, the minority Francophones,

identifies most with the L2-group. Groups of middling vitality, minority Anglophones and majority Francophones, have intermediate levels of identity.

Having established that identity varies as an interactive function of native language group, demographic status and the situation, the focus of the analyses turns to consider these variables' relations with L2-group contact and L2 competence.

Analyses of Variance: Language and Contact

To determine the extent to which the participants endorsed the various contact and language indices as a function of ethnolinguistic vitality, two analyses were conducted. The first assessed the amount of contact and language competence reported by each of the four groups concerned. The second assessed the amount of contact with the L2-group as a function of the social situations and group vitality.

Contact and Language as a Function of Language Group and Demographic Status

The first analysis was a 2X2 MANOVA, with *Native Language Group* (Anglophone vs. Francophone) and *Status* (minority vs. majority) as between-subjects factors. The 8 dependent variables were <u>Self-Confidence using the L2</u>, <u>Anxiety using the L2</u>, <u>Self-Evaluation of L2 Proficiency</u>, <u>L2 Proficiency (Cloze Test)</u>, <u>Frequency</u> and <u>Quality of Contact with the L2 Group</u>, <u>Proportion of Life Spent with the L1-Group</u>, and <u>Media Exposure to the L2-Group</u>.

The results showed a significant multivariate interaction effect (<u>Pillai's</u> = .023; $F_{(8,7836)}$ = 2.36; p < .02)[20]. An examination of the univariate results, using a Bonferroni correction in order to avoid Type I error due to the multiple comparisons (p < ((α/number of dependent variables) = (.05/8) = .006)), revealed a significant difference between groups on <u>Media exposure</u> at the univariate level ($F_{(1,796)}$ = 8.02). The results of a discriminant functions analysis for this interaction showed that the

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[20] Box's M test was significant, suggesting heterogeneity of variance between groups (Box's M = 639.43, x^2_{108} = 614.01, p < .001; Greenhouse-Geiser ϵ = .89). The results were corroborated, however, by a similar MANOVA conducted on random subsamples of 33 participants from each of the 4 groups (N = 132). Details of this analysis are presented in Appendix E.

only correlation between the predictor and canonical variables greater than $|.30|$ was Media Exposure (r = .65; see Table 4.4 for a summary of the discriminant functions analyses discussed in this section), indicating that this variable defines the function that discriminates between the four groups (Tabachnick & Fidell, 1989, p. 539)[21].

An inspection of the means using Tukey's HSD procedure showed that majority Anglophones (M = 2.12, SD = .64) have less media exposure to the L2-group than do the minority Anglophones (M = 2.56, SD = .68; q = 3.70) or the majority Francophones (M = 4.18, SD = 1.21; q = 37.74). Minority Francophones have more (M = 5.17, SD = .97) exposure than the majority Francophones (q = 15.33) or the minority Anglophones (q = 20.83).

Given the proliferation of English media in North America and the relative lack of French media (see Harvey, 1992; Laramée, 1993), these results are consistent with the interpretation that Anglophones have little exposure to the French culture through the media. As a result, they do not identify with Francophones in this domain. Without the French resources, minority Francophones must also use English media, contributing to higher L2-group identification and lower L1-group identification. Majority Francophones may have, to a certain extent, counterbalanced the influx of English media by developing the local French media (i.e. in Québec). Hence their degree of exposure to English media is moderated, with corresponding attenuation of L1-group identification loss and L2-group identification gain. Moreover, with more linguistically mixed media in the local region, minority Anglophones' identification L2-group identity is elevated relative to majority Anglophones.

Significant main effects were also found for Status (Pillai's = .14; $F_{(8,783)}$ = 16.48; p < .001) and Native Language Group (Pillai's = .50; $F_{(8,783)}$ = 96.93; p < .001). Inspection of the univariate results, using a Bonferroni correction, showed that the 2 status groups differed in terms of Frequency of Contact, Media Exposure,

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[21] To arrive at a discriminant function that distinguishes between the 4 groups simultaneously, the linear combination of variables that maximizes the ratio of the effect to error sums-of-squares is derived. The number of functions that can be found is equivalent to the degrees of freedom for the interaction term (Norušis, 1990b).

Table 4.5
Pooled Within-Cells Correlation Matrix and Correlations between Predictor and Canonical Variables by Effect

	Pooled Within-Cells Correlation Matrix							Correlation with Canonical Variable by Effect		
	1	2	3	4	5	6	7	Native Language X Status	Native Language	Status
1 Anxiety using the L2 (reverse scored)								-.23	.33	.64
2 Self-Confidence using the L2	.69							-.20	.35	.62
3 Self-Evaluation	.71	.84						-.12	.44	.73
4 L2 Proficiency (Cloze)	.41	.58	.58					.20	.12	.60
5 Frequency of Contact with L2-group	.29	.24	.30	.16				-.19	.03	.68
6 Quality of Contact with L2-group	.25	.19	.23	.15	.29			.20	-.05	.19
7 Prop. of life spent with L1-group	-.28	-.21	-.30	-.17	-.64	-.19		-.01	-.02	-.74
8 Media exposure to the L2-group	.31	.30	.35	.18	.35	.18	-.41	.65	.86	.65
Eigenvalue								.02	.98	.17
Canonical Correlation								.15	.70	.38

Determinant = .0306
Bartlett's test of sphericity = 2763.55, p < .01

88

Proportion of Life Spent with the L1-Group, Self-Confidence using the L2, Anxiety using the L2, Self-Evaluation of L2 Proficiency, and L2 Proficiency. A follow-up discriminant functions analysis showed that these 7 variables all correlated highly with the canonical variable (i.e. > |.30|). As can be seen from the means presented in Table 4.6, relative to the majority group, minority groups had more contact with the L2-group, spent less time with the L1-group, were more comfortable and competent in the L2. Thus, consistent with expectations, the minority group has greater exposure to the L2-group in terms of contact and of L2 self-confidence.

Anglophones and Francophones differed from each other with regards to Media Exposure, Self-Confidence and Anxiety using the L2, Self-Evaluation of L2 Proficiency and L2 Proficiency. A follow-up discriminant functions analysis showed that the two language groups could be distinguished on the basis of a function largely defined by Media Exposure, Self-Evaluation, and, to a lesser extent, Anxiety and Self-confidence using the L2. At the univariate level (see Table 4.7), Francophones had less anxiety and more self-confidence using the L2, higher self-evaluation of their L2 competence, and greater L2 proficiency. Francophones also had more media exposure to the L2-group. As might be expected for this continental minority group, Francophones have greater skill and ease in the L2 and more exposure to the L2-group media. They are equivalent to Anglophones on the other contact indices.

Summary of the analysis of language and contact variables. Consistent with the hypothesis that vitality is linked to variations in L2-group contact and the development of L2 competence, the results of the MANOVA on the language and contact variables demonstrated that minority groups experience more contact and a greater sense of linguistic competence than do majority groups. In an analogous manner, Francophones were found to have a greater sense of linguistic competence than Anglophones. Contact with the L2-group, then, is not sufficient to distinguish between groups. This finding suggests that the nature of that contact, and particularly patterns of language behaviour, may be more important for understanding aspects of intergroup relations, including variations in ethnic identity.

Table 4.6
Minority vs. Majority Groups:
Means, standard deviations, and *F*-values for univariate analyses of variance

| Variable | Demographic Status | | $F_{1,796}$ |
	Minority M (SD)	Majority M (SD)	
Anxiety using the L2 (reverse scored)	4.99 (0.89)	3.90 (1.13)	53.58*
Self-Confidence using the L2	5.59 (0.68)	4.36 (1.36)	50.82*
Self-Evaluation of L2 Proficiency	6.36 (0.91)	4.85 (1.41)	70.20*
L2 Proficiency (Cloze)	24.17 (3.41)	19.81 (5.40)	47.84*
Frequency of Contact with L2-group	3.93 (1.17)	2.98 (1.14)	62.02*
Quality of Contact with L2-group	5.56 (0.96)	5.37 (1.05)	4.77
Prop. of life spent with L1-group	6.07 (1.03)	6.95 (0.94)	73.08*
Media exposure to the L2-group	4.75 (1.33)	3.01 (1.38)	55.39*

* $p < .006$

Table 4.7
Anglophone vs. Francophone Groups:
Means, standard deviations, and F-values for univariate analyses of variance

Variable	Language Group		
	Anglophone M (SD)	Francophone M (SD)	$F_{1,798}$
Anxiety using the L2 (reverse scored)	3.53 (1.04)	4.74 (0.97)	85.73*
Self-Confidence using the L2	3.92 (1.39)	5.32 (0.88)	93.23*
Self-Evaluation of L2 Proficiency	4.30 (1.32)	6.04 (1.02)	151.08*
L2 Proficiency (Cloze)	19.52 (5.90)	22.14 (4.43)	11.73*
Frequency of Contact with L2-group	2.98 (1.17)	3.43 (1.22)	0.80
Quality of Contact with L2-group	5.48 (1.00)	5.36 (1.05)	1.78
Prop. of life spent with L1-group	6.89 (1.02)	6.58 (1.04)	0.20
Media exposure to the L2-group	2.16 (0.66)	4.57 (1.22)	584.44*

* $p < .006$

An interaction between the native language group and demographic status was evident only for the <u>Media</u> effect. Relative to Anglophones, Francophones reported that they encounter much more media in the L2. Although minority Anglophones felt they were exposed to more L2 media than did their majority counterparts, the difference between status groups was much more marked for Francophones. Thus, with decreasing vitality in the North American context, there is a simultaneous increase in the amount of media exposure to the dominant ethnic group.

<u>Frequency of L2-Group Contact as a Function of Situational Domain, Language Group and Demographic Status</u>

To assess variations in the frequency of contact with the L2-group across situations, a 2 X 2 X 3 ANOVA was computed on the frequency of contact scores using *Native Language Group* (Anglophone vs. Francophone) and *Status* (minority vs. majority) as between-subjects factors, and situational *Domain* as the third factor. To create the levels of the third factor, the 6 items of the frequency of contact index were recombined to reflect 3 situations. Thus, mean scores were calculated, with 3 items to represent <u>Private</u> situations (contact with family, intimate relations, and friends), 2 items for <u>Public</u> situations (contact with salesclerks, neighbours), and one item for the <u>University Environment</u> (contact with other students).

The results of this ANOVA yielded significant main effects for *Situation* and for *Status*, as well as significant interaction effects for *Native Language Group* by *Situation* and for *Status* by *Situation* (see Table 4.8)[22]. Overall, participants had less contact with the L2-group in <u>Private</u> ($\underline{M}$ = 3.10, $\underline{SD}$ = 1.48) situations than in <u>Public</u> ($\underline{M}$ = 3.73, $\underline{SD}$ = 1.60) and <u>University</u> settings ($\underline{M}$ = 3.54, $\underline{SD}$ = 1.88), although they had equal amounts of contact in the latter 2 settings. As noted above, minority groups have more contact than majority groups ($\underline{M}$ = 3.93, $\underline{SD}$ = 1.17, and $\underline{M}$ = 2.98, $\underline{SD}$ = 1.14, respectively).

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[22] The assumption of homogeneity of variance was upheld (Box's $\underline{M}$ = 15.21, χ^2_8 = 15.14, $\underline{p}$ > .01; Greenhouse-Geisser ϵ = .95).

Table 4.8
ANOVA summary table: Frequency of L2-group contact as a function of native language group, demographic status and situational domain

Source	SS	df	MS	F
WITHIN CELLS	3449.88	779	4.43	
Native Language Group	5.10	1	5.10	1.15
Demographic Status	172.95	1	172.95	39.05*
Native Language Group by Status	.23	1	.23	.05
WITHIN CELLS	2535.02	1558	1.63	
Domain	76.94	2	38.47	23.64*
Native Language Group by Domain	27.86	2	13.93	8.56*
Status by Domain	22.19	2	11.10	6.82*
Native Language Group by Status by Domain	5.65	2	2.83	1.74

* $p < .001$

As presented in Figure 4.3, the results of Tukey-HSD tests on means of the *Native Language Group* by *Situation* interaction (see Appendix F) showed that Francophones have more contact with the L2-group than do Anglophones in both Public and Private settings, but not in the University setting. Anglophones have less contact with the L2-group in the Private than in the Public setting, and more contact in the University setting than in the Public setting. Francophones have more contact in the Public setting than in either the Private or University settings, and have equivalent amounts of contact in these latter 2 settings.

As shown in Figure 4.4, the results of Tukey-HSD tests on means of the *Status* by *Situation* interaction (see Appendix F) indicated that the minority group has more contact with the L2-group than does the majority in both Public and Private settings, but not in the University setting. The majority group has less contact with the L2-group in the Private than the Public or the University settings, and an equal amount in the latter two settings. The minority group has more contact in the Public setting than in either the Private or University settings, and has similar amounts of contact in these latter two settings.

Summary of the analyses of L2-group contact. The variations in the levels of contact as a function of status and language group are consistent with Edwards' (1985) contention that the private domain is more sheltered from contact than public settings. Moreover, it supports the hypothesis that minority groups and Francophone groups experience more contact with the L2-group in both public and private situations relative to majority and Anglophone groups, respectively. The results also demonstrate the impact of the institutional promotion of biculturalism. For the majority and Anglophone groups, this setting provides more contact than would be available in their personal lives, and, in the case of Anglophones, more than in daily interactions with the community. For Francophones and minority groups, this context lessens the amount of contact to the level experienced in more intimate settings. This institutional context, then, equalizes the amount of contact for groups of different status, such that there are no appreciable differences between them.

Figure 4.3
Frequency of L2-group contact as a function of situational
domain and native language group
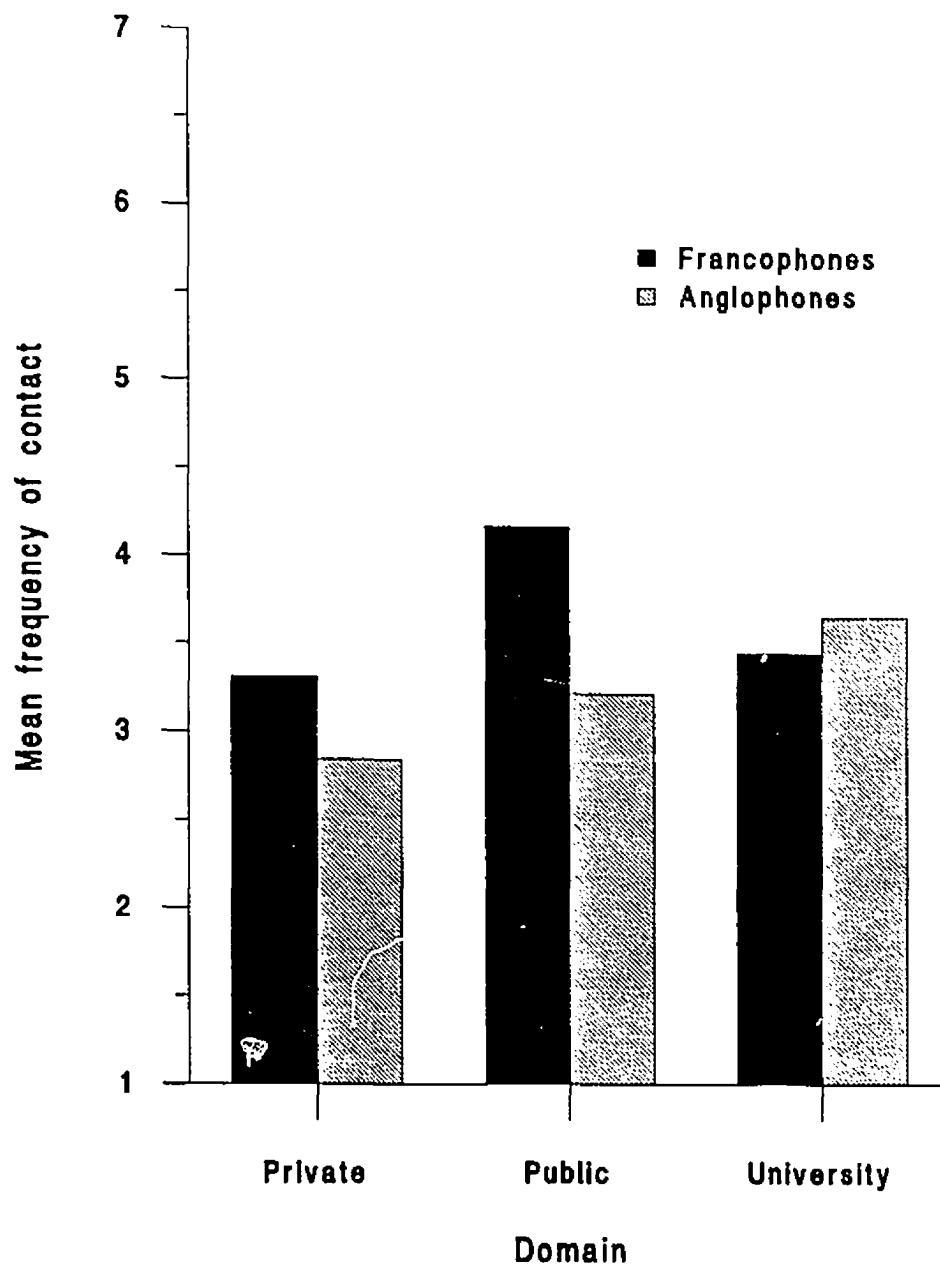
Figure 4.4
Frequency of L2-group contact as a function of situational
domain and demographic status
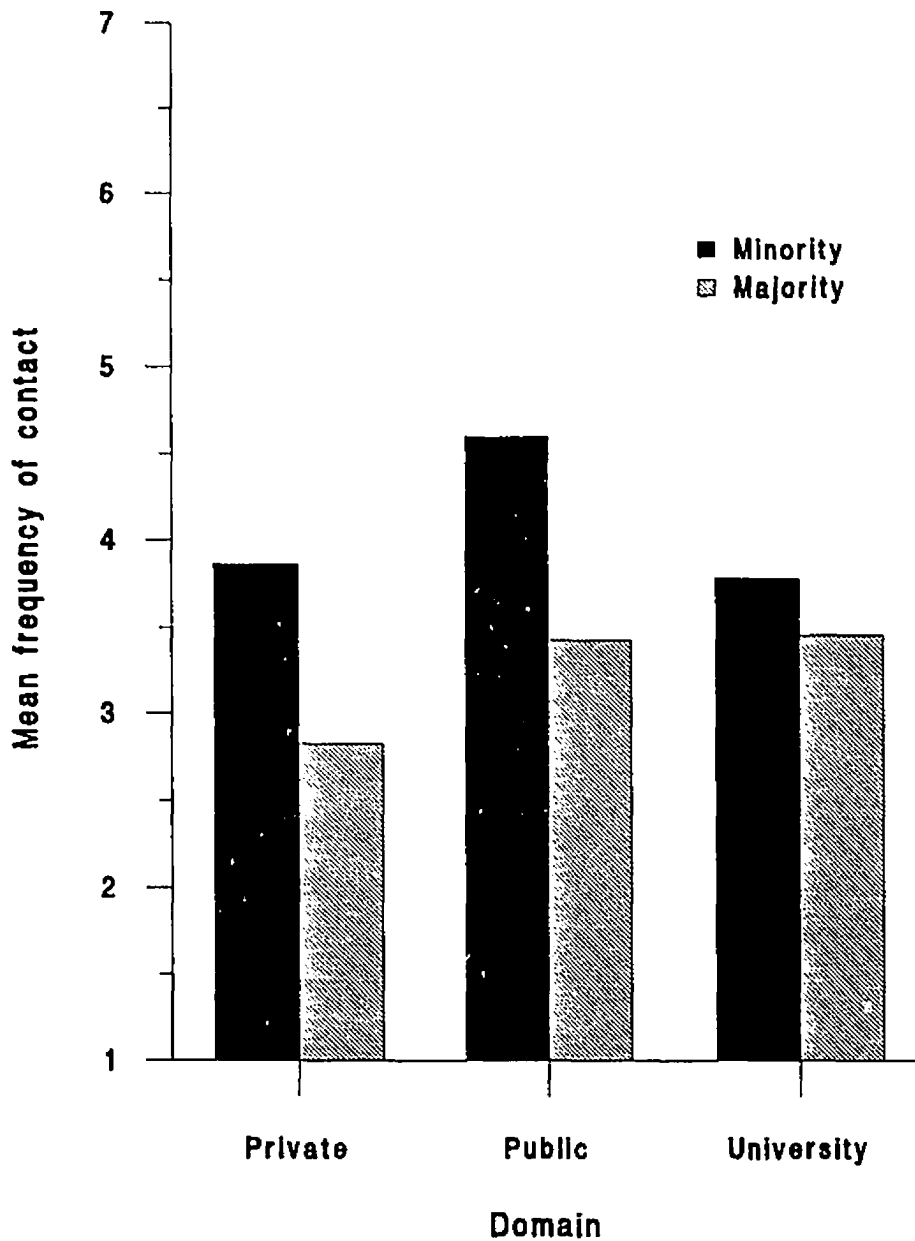
Chapter Summary and Discussion

It was expected that (1) following Edward's (1985) discussion, identification with the membership group should be greater in private domains than in public domains, and the converse pattern will occur with regards to identification with the other ethnic group; and (2) members of groups of lower status are expected to evidence higher levels of identification with the target group across domains than members of groups with greater status. These expectations were not entirely fulfilled by the present results. Other factors, particularly contextual norms that promote the equality of both groups (i.e. suggest that both groups have high vitality), appear to attenuate the effects of demographic status.

Consistent with expectations, group vitality corresponds with patterns of L2-group identity, particularly in the private and media domains. In private settings, the full effects of vitality on identification with the L2-group are evident: the minority Francophones are most inclined to identify with the L2-group and the majority Anglophones are least inclined to identify with the L2-group, while the two groups of intermediate vitality fall between these two extremes. Correspondingly, minority Francophones identify less with the L1-group than majority Francophones with regards to L1-group identity in the Private/Literary domain. The interpretation of Anglophone L1-group identity in the Private/Community domain is complicated due to the lack of a significant interaction effect. The means show, however, that minority group (M = 3.58, SD = 1.16) identify less with the L1-group than does majority group (M = 3.91, SD = 1.05) in the private domain. Thus, in the private domain lower vitality corresponds with increased identification with the L2-group, and decreased identification with the L1-group.

A similar pattern of findings is evident for the Media domain. Minority Francophones identify less with the Francophone group and more with the English group in this domain than do their majority counterparts. Similarly, minority Anglophones identify more with the Francophone group in this context than majority Anglophones, although both these groups identify less with the L2-group than do the Francophone groups. In the private and media contexts, then, vitality differences in

the tendency to identify with the L2-group are evident. Francophones, particularly minority Francophones will identify with Anglophones and give up the French identity. As well, Anglophones, particularly majority Anglophones, will identify with the Anglophones and not identify with the Francophone group.

Contrary to expectations, the effect of group vitality on identity is lessened in the more public settings. It was expected that L1-group identity would be higher in private than in public situations, because identity in the private situation would be protected from the pressures of acculturative contact. Rather, L1-group identification is highest in the university environment for Francophones, and in the public environment for Anglophones. Moreover, L2-group identity does not necessarily show the effects of acculturative pressures in the high contact situations: although Anglophones do identify more with the L2-group in these settings relative to other settings, Francophones identify less with the L2-group than in other settings. Such findings suggest that other contextual factors operate to affect identity.

One explanation for this finding is that situational norms in intergroup settings attenuate the relation between vitality and identity. According to DeRidder and Tripathi (1992), for groups that have been co-existing in a society for a long period of time,

> each existing group has developed explicit and/or implicit norms that stipulate how its members ought to act and react towards members of the other groups. These norms are known to members of each group. Usually, group members tacitly assume that these norms are respected (p. 4).

Language choice is one kind of intergroup behaviour subject to normative controls (Bourhis, 1984c; Gallois & Callan, 1991; McKirnan & Hamayan, 1984). Since ethnic groups are most likely to meet in public settings, the norms for intergroup behaviour should be operative in these settings as opposed to private settings.

The moderating influence of situational norms on feelings of ethnic identity is particularly striking with regards to identity in the university context. Here, norms for equality in intergroup relations have been formalized through an explicit policy of bilingualism and biculturalism. This institutional promotion of both languages and

cultures essentially maintains that English and French are valued equally. Thus, the particular structure of the university promotes the vitality of both groups.

Consistent with the idea that the institutional context promotes a high level of vitality for both groups, Francophones' L1-group identity is high relative to other domains. Moreover, the minority Francophones identify with the L1-group at the same level as the majority group. For majority Anglophones, the University Environment is combined with the Public/Intergroup domain. Again, interpretation of the means in this domain is somewhat complicated by the failure to find an effect for demographic status. Consistent with the interpretation that intergroup norms reduce the effects of vitality, the difference between the majority (M = 4.09, SD = .75) and minority groups (M = 3.85, SD = .68) is somewhat attenuated relative to the Private/Community domain. Thus, this context which promotes equal contact and equality of status between the groups, heightens L1-group identity and effectively diminishes the status effects evident in other settings.

The institutional context also has implications for L2-group identity. Because both groups are considered to have high vitality, Anglophones identify more with the Francophones in the university context relative to other domains. Conversely, Francophones diminish their degree of identification to Anglophones in that context. The egalitarian norm which distinguishes it from the other unsheltered situations thus equalizes the level of identification with the L2-group.

This explanation raises the question of the mechanism mediating the effects of vitality and contextual norms on identity. The further analyses of the contact and language data point to a possible answer. The patterns of identification correspond with the patterns of language self-confidence and contact across vitality groups and in the case of contact, across domains. Consistent with the idea that these identity patterns are due to different opportunities for contact, lower vitality groups experience more contact in public and private situations than higher vitality groups. Corresponding with the levelling-off of identity in the university context, the degree of contact is similar for between groups in this setting. Consistent with the idea that the process by which one comes to identify with the interlocutor is through a

language negotiation process, minority and Francophone groups are more comfortable in the L2 than are majority and Anglophone groups. These findings, then support the likelihood that the L2 will be used. When the circumstances promote interaction with the L2 group, linguistic accommodation and acculturation to the other group will result. The extent of this impact, however, is moderated by contextual norms regarding language behaviour.

These findings, then support the hypothesis that vitality determines the amount of contact with the L2 group and the likelihood that L1 and L2 will be used. When the circumstances promote interaction with the L2-group, linguistic accommodation and acculturation to the other group will result. The extent of this impact, however, is moderated by contextual norms regarding language behaviour. The above interpretation depends upon the link between contact, language and identity, but these analyses have not directly examined these variables' interrelations. The discussion turns now to consider more precisely the manner by which these variables are linked in the process of acculturation.

CHAPTER 5

THE RELATIONS BETWEEN
CONTACT, LANGUAGE, IDENTITY AND DISTRESS

The analyses discussed above demonstrate that the vitality of a language group is related to ethnic identity on the one hand, and to L2-group contact and L2 self-confidence, on the other. It was suggested that the link between group vitality and identity is mediated by the amount of L2-group interaction experienced, although the relation between contact and identity was not specifically addressed. This chapter focuses on that issue.

The hypotheses tested in the present analysis follow the basic tenets of Clément's (1980) model. Accordingly, more contact with the L2-group is associated with greater self-confidence in using the L2. Self-confidence is, in turn, hypothesized to predict the levels of both L2 proficiency and ethnic identity[23]. Consistent with the notion of *additive bilingualism*, it is generally expected that, for majority groups, greater self-confidence is associated with greater L2-group identity and positively or not associated with L1-group identity. For minority groups, in line with the idea of *subtractive bilingualism*, higher self-confidence is linked with more L2-group identity, but also with less L1-group identity.

It was further hypothesized that the language and contact variables are not relevant to all domains of identity but depend upon the degree of exposure and L2 use implicit in that situation. Thus, Anglophone and majority groups have more L2-group contact in public relative to private settings. As a result, language and contact may be linked with feelings of identity in this domain. In contrast, Anglophones have relatively little contact with the L2-group in private settings, and thus these variables may have little relevance for identity in these domains. Relative to Anglophone and majority groups, Francophone and minority groups have more contact across more

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[23] Clément (1980) suggests that motivation to learn the L2 is a mediator between self-confidence and L2 competence. Because the participants were not necessarily engaged in formal language classes, this variable is not included here.

domains. Language and contact variables may not only be pertinent to identity in public settings but also to identity in more intimate settings.

A second issue examined here concerns the relation between contact, linguistic self-confidence and feelings of psychological adjustment. As was suggested in Chapter 1, it is expected that communicative competence in the L2 is a precursor to psychological well-being for persons in situations of inter-ethnic contact (cf. Kim, 1988). Thus, greater L2 self-confidence is expected to be linked with better psychological adjustment.

The first purpose of the present set of analyses, therefore, is to assess the relative contribution of contact and language variables to feelings of ethnic identity across domains. A second purpose is to assess the proposed mediational role of communication competence variables, particularly linguistic self-confidence, in the link between contact and distress variables. The strategy adopted to address these issues is structural equation modelling. Structural equation modelling tests the posited correlations between variables simultaneous manner, taking into account the inter-relations between all variables. Thus, it is an appropriate technique to address the hypothesized relations between the variables of interest here.

To run a full structural equation model using Maximum Likelihood techniques, a large sample size (ideally greater than 200 subjects) is required, with a minimum of 5-10 subjects per estimated parameter (Bentler, 1994; Bollen, 1989; Loehlin, 1992; Pedhauzer, 1982). With 22 items for *L1-group identity* and approximately 12 for *L2-group Identity*, along with the various indices of <u>Contact</u> (3 indices), <u>Language</u> (3 indices for self-confidence and 1 for proficiency), and <u>Distress</u> (4 indices), the minimum sample size necessary would be approximately 225. Because this condition was not met in the case of the minority groups, it was decided to adopt a more conservative approach and examine this question by analysing the relations between observed variables. In this case, the ratio of observed variables to subjects is 13.4:1 for minority Francophones, 19.9:1 for majority Francophones, and 25.8:1 for majority Anglophones. Due to its small size, the minority Anglophone subsample was untestable. For this group, the intercorrelations between the variables of interest are

presented later for descriptive purposes.

A note regarding the limitations of this choice of statistical method is in order (see Bollen, 1989; Pedhauzer, 1982, for more detailed discussions). In a full structural equation model, multiple observations for each latent construct are made. This strategy allows one to estimate the reliability with which the latent construct is assessed and hence to determine relations between latent constructs while taking into account the errors in measurement. Path analysis does not employ multiple observations of behaviour, and hence does not allow for the estimation of measurement error. As a result, only the relations between observed variables are ·considered, and these relations may contain measurement error. The results of these analyses, therefore, likely yield less exact estimates than could be expected using a full structural equation analysis.

Prior to these analyses, composite scores for contact, self-confidence and distress were calculated by standardizing the indices, reversing items where necessary, and computing a mean score on the relevant indices. This was done separately for *Contact* (including Frequency and Quality of contact with the L2-group, and Proportion of Life Spent with the L1-group), *Self-Confidence* (Anxiety and Self-confidence using the L2, and Self-Evaluation of L2 proficiency), and *Distress* (Psychological Distress, Depression, Social Anxiety and Self-Esteem). The identity scores were the same as described in the means analysis. Thus, for Anglophones, there were 2 intercorrelated indices for *L1-Group Identity* (Public/Intergroup and Private/Community) and 5 intercorrelated indices for *L2-group Identity* (Community, Symbolic, University Environment, Media, and Private/Literary). For Francophones, there were 3 intercorrelated *L1-Group Identity* indices (Future Goals/Private, Media, and University Environment) and 4 intercorrelated *L2-Group Identity* indices (Community, University Environment, Media, and Private/Literary).

Structural Equation Modelling
with Observed Variables

The proposed models were tested on the appropriate covariance matrix using LISREL 386 - 7.20 (Joreskog & Sorbom, 1992), for the majority Anglophone and both minority and majority Francophone groups. The results of these analyses are discussed separately for each group in terms of the goodness-of-fit of the overall model and of the estimates of the individual parameters.

Majority Anglophones An examination of the results from the initial run indicated that although the x^2 index was significant ($x^2_{(34)} = 128.74$, $p < .001$; x^2/df = 3.79), the goodness of fit indices were satisfactory (GFI = .95; CFI = .92). Thus, the proposed model, which is a better fit relative to the null model ($x^2_{55} = 1279.04$, $p < .001$), adequately described the relations between variables (see Figure 5.1 and Table 5.1). An inspection of the t-values suggested that while most of the proposed estimates are important to the model, the path from Self-Confidence to Private/Community L1-group identity domain ($\beta_{1,3}$) was not. After fixing the nonsignificant path to 0, the fit was still good ($x^2_{(35)} = 130.25$, $p < .001$; x^2/df = 3.72; GFI = .95; CFI = .92). Thus, L2-group Contact predicts Self-Confidence which in turn predicts positively L2 Proficiency and negatively psychological Distress. Self-Confidence also predicts greater L2-group identity in all domains and less L1-group identity in the Public/Intergroup domain.

Majority Francophones. The hypothesized model was a reasonable fit to the data (GFI = .92; CFI = .91), in spite of its statistical significance ($x^2_{(36)} = 127.68$, $p < .001$; x^2/df = 3.55; see Figure 5.2 and Table 5.2). It was also a better fit than the null model ($x^2_{(55)} = 1091.05$, $p < .001$). The t-values showed that the proposed estimates are important to the model.

Like the majority Anglophones, more L2-group Contact predicts more Self-Confidence, which in turn predicts greater L2 Proficiency and less psychological Distress. More Self-Confidence also corresponds to greater L2-group identity in all domains. Unlike the majority Anglophones, Self-Confidence is negatively related to L1-group identity in all domains.
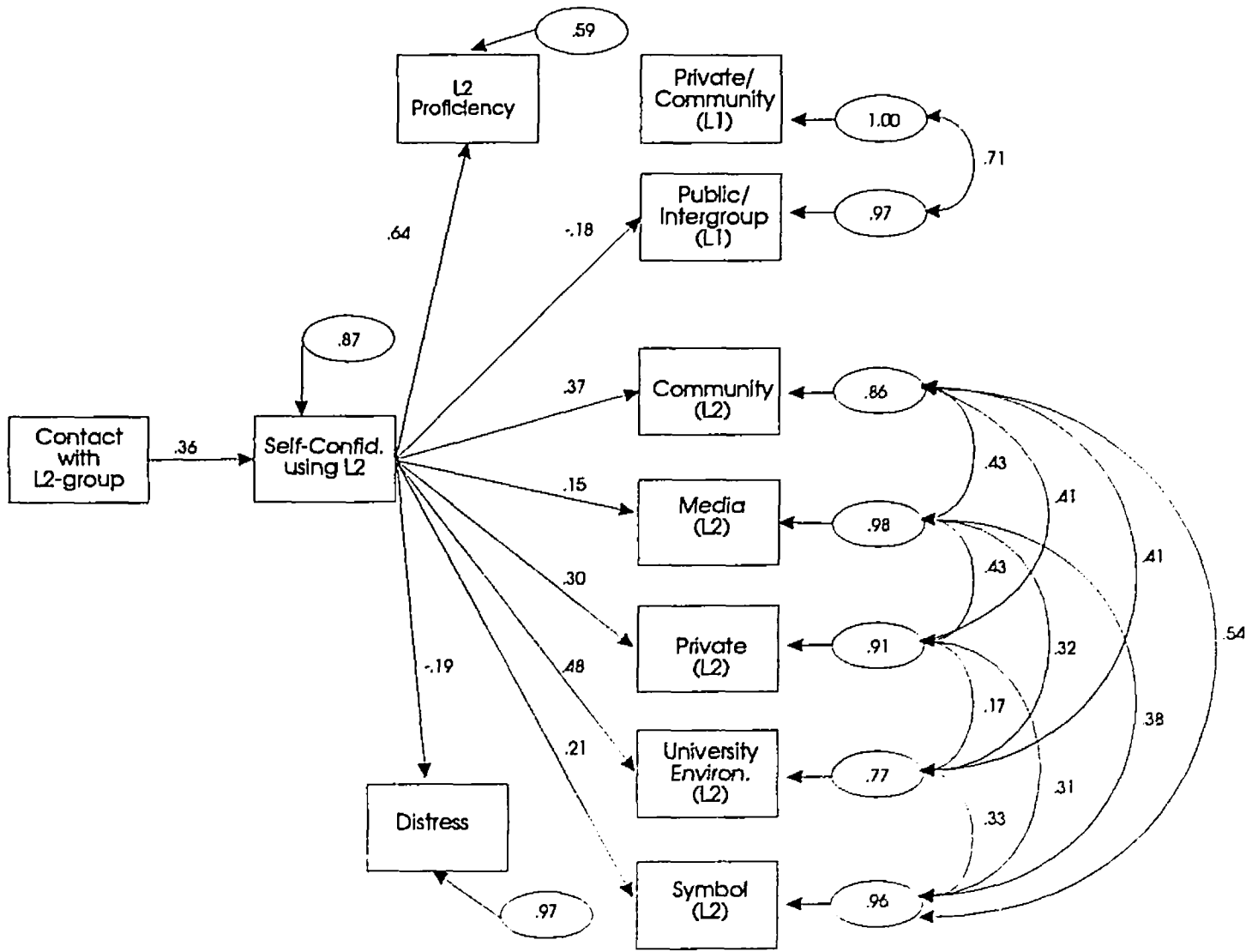
FIGURE 5.1
Majority Anglophones:
Final Model of the Acculturation Process with Standardized Estimates

Table 5.1
<u>Majority Anglophones:</u> <u>Correlations between identity domains, self-confidence, contact, distress and L2 proficiency</u>

| Variables | Variables | | | | | | | | | | |
	1(a)	1(b)	2(a)	2(b)	2(c)	2(d)	2(e)	3	4	5	6
1. <u>L1-Group Identity</u>											
a. Private/Community	1.00										
b. Public/Intergroup	.72	1.00									
2. <u>L2-Group Identity</u>											
a. Community	.22	.11	1.00								
b. Media	.16	.08	.49	1.00							
c. Private/ Literary	.07	-.03	.52	.47	1.00						
d. University Environment	.18	.03	.58	.39	.31	1.00					
e. Symbolic	.21	.09	.62	.41	.37	.43	1.00				
3. <u>Self-Confidence</u>	-.07	-.23	.37	.15	.30	.48	.21	1.00			
4. <u>L2-Group Contact</u>	-.18	-.22	.42	.16	.20	.26	.24	.36	1.00		
5. <u>Distress</u>	.05	.15	-.01	.03	-.06	-.10	.00	-.19	-.13	1.00	
6. <u>L2 Proficiency (Cloze)</u>	-.08	-.17	.22	.15	.23	.27	.21	.64	.23	-.04	1.00

<u>n</u> = 335
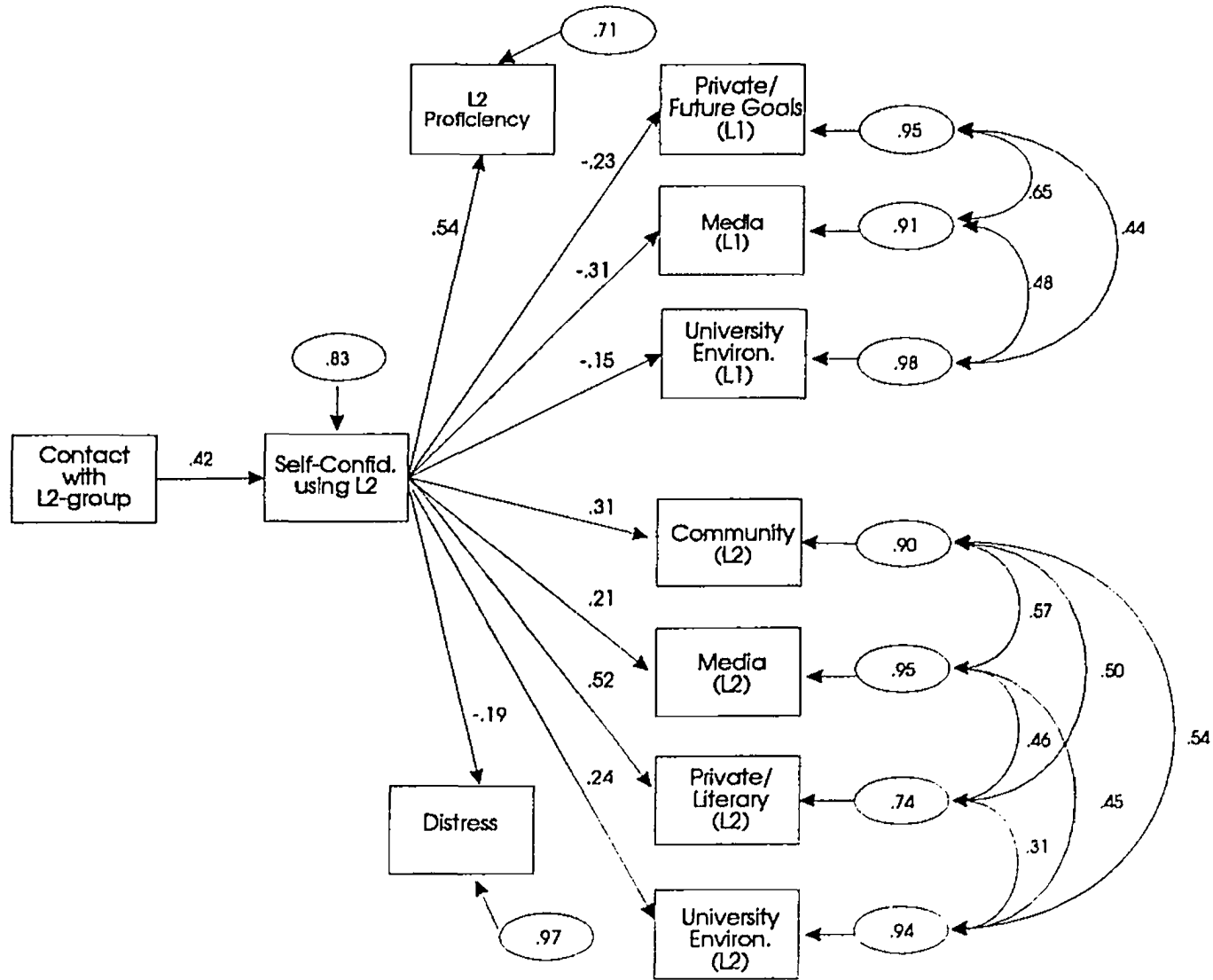
Figure 5.2
Majority Francophones:
Final Model of the Acculturation Process with Standardized Estimates

Table 5.2
Majority Francophones: Correlations between identity domains, self-confidence, contact, distress and L2 proficiency

| Variables | Variables | | | | | | | | | | |
	1(a)	1(b)	1(c)	2(a)	2(b)	2(c)	2(d)	3	4	5	6
1. L1-Group Identity											
a. Private/ Future Goals	1.00										
b. Media	.72	1.00									
c. University Environment	.47	.53	1.00								
2. L2-Group Identity											
a. Community	.02	-.12	-.07	1.00							
b. Media	.10	-.09	-.01	.64	1.00						
c. Private/ Literary	-.20	-.32	-.14	.66	.57	1.00					
d. University Environment	.06	-.09	-.16	.61	.50	.43	1.00				
3. Self-Confidence	-.23	-.31	-.15	.31	.21	.51	.24	1.00			
4. L2-Group Contact	-.27	-.30	-.05	.40	.27	.42	.27	.42	1.00		
5. Distress	-.00	-.10	-.08	.02	.04	-.03	.02	-.19	-.02	1.00	
6. L2 Proficiency (Cloze)	-.25	-.25	-.09	.12	.06	.30	.10	.54	.22	-.00	1.00

$n = 258$

108

Minority Francophones. Although it was statistically significant $(\chi^2_{(36)} =$ 136.87; $\underline{p} < .001$; χ^2/df $= 3.80$), other indices of fit showed that proposed model was a moderately good fit to the data (GFI $= .89$; CFI $= .86$), although to a lesser degree than for the majority groups. It was, however, a significantly better fit than the null model $(\chi^2_{(55)} = 751.61$; $\underline{p} < .001$; χ^2/df $= 13.67$). T-values of the estimated parameters indicate that neither the path from Self-Confidence to University Environment $(\beta_{4,1})$ nor from Self-Confidence to the Media domain of L2-group identity $(\beta_{6,1})$ is significant.

To investigate the misfit, the modification indices were examined. Additional paths were added between the exogenous variable and two endogenous variables: particularly the path between Contact and L2-group identity in the Community domain, and between Contact and L1-group identity in the Private/Future Goals domain were freed $(\chi^2_{(34)} = 116.22$, $\underline{p} < .001$; GFI $= .90$; CFI $= .88$). It was reasoned that minority Francophones may have such a high level of competence in the L2 that comfort using this language may be a less relevant issue for identity, although L2-group contact may still retain some acculturative implications. Thus direct paths from contact to identity were considered viable. With these changes and the nonsignificant paths set to zero, there was a significantly improved fit of the model to the data $(\chi^2_{(36)} = 117.64$, $\underline{p} < .001$; GFI $= .89$; CFI $= .88$; see Figure 5.3 and Table 5.3).

In summary, like the other 2 groups, then, more L2-group Contact predicts greater Self-Confidence. Greater Contact also directly predicts variations in L1-group identity in the Private/Future Goals and L2-group identity in the Community setting. Self-Confidence predicts higher L2 Proficiency and less psychological distress. It also generally predicts heightened L2-group identity and lessened L1-group identity, but not in all domains. Both the L1-group identity in the University Environment and L2-group identity in the Media domains are unrelated to Self-Confidence.
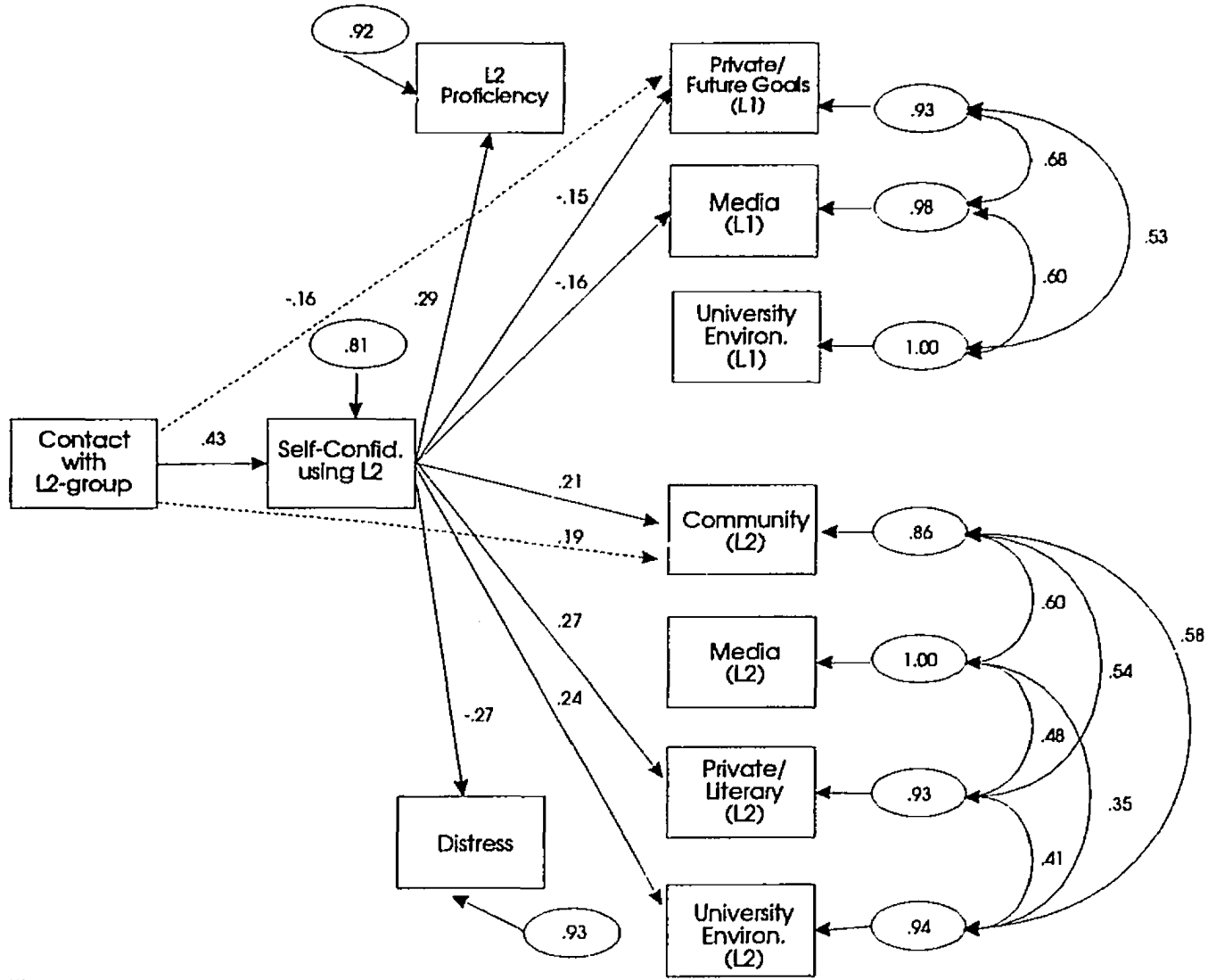
Figure 5.3
Minority Francophones:
Final Model of the Acculturation Process with Standardized Estimates
(Post hoc paths are presented in broken lines.)

Table 5.3
Minority Francophones: Correlations between identity domains, self-confidence, contact, distress and L2 proficiency

	Variables										
Variables	1(a)	1(b)	1(c)	2(a)	2(b)	2(c)	2(d)	3	4	5	6
1. L1-Group Identity											
a. Private/Future Goals	1.00										
b. Media	.74	1.00									
c. University Environment	.62	.54	1.00								
2. L2-Group Identity											
a. Community	-.02	-.06	-.03	1.00							
b. Media	.05	-.05	.17	.63	1.00						
c. Private/Literary	-.16	-.21	-.09	.65	.49	1.00					
d. University Environment	-.04	-.01	-.14	.65	.36	.48	1.00				
3. Self-Confidence	-.26	-.20	-.08	.31	.05	.29	.25	1.00			
4. L2-Group Contact	-.43	-.34	-.25	.48	.28	.39	.26	.43	1.00		
5. Distress	-.01	-.03	.08	-.13	.03	.08	-.16	-.27	-.14	1.00	
6. L2 Proficiency (Cloze)	-.23	-.08	-.09	.05	-.07	.14	.08	.29	.14	-.12	1.00

$n = 178$

111

Correlational Analyses

Minority Anglophones. For comparison purposes, the hypothesized causal path was examined in the minority Anglophones by looking at the correlations between the relevant constructs. As presented in Figure 5.4 and in Table 5.4, the correlations between Contact, Self-Confidence and all L2-group identity domains, and between Self-Confidence and L2-Proficiency were statistically significant. The relation between Contact and Self-Confidence approached statistically significant levels ($r = .18$, $p = .16$, one-tailed). Thus, the hypothesized links between contact, self-confidence, and L2 proficiency are upheld. Self-Confidence is linked with L2-group identity in all domains, but there are no significant relations between Self-Confidence and L1-group identity in either domain, suggestive of a process of additive bilingualism. Finally, Self-Confidence is unrelated to Distress.

Chapter Summary and Discussion

The results of the present set of analyses indicate that self-confidence mediates the effect of L2-group contact not only on L2 proficiency but also on feelings of ethnic identity. Furthermore, the relation between self-confidence and identity depends upon the language group considered. For Anglophones, this pattern of relations could be described as "additive" bilingualism, but for Francophones it is better termed "subtractive" bilingualism. Developing L2 self-confidence can only be considered subtractive, however, insofar as it pertains to identity: generally greater comfort in using the L2 is associated with better adjustment.

Consistent with the findings of Clément and Kruidenier (1985), the proposed model, whereby contact with the L2-group leads to linguistic self-confidence is generally upheld in all groups. As well, increased self-confidence is related to L2-competence. These results are analogous to those in other areas of research that emphasize the role of self-perceptions of competence and self-efficacy in the regulation of behaviour (see Sternberg & Kolligian, 1990, for overview). Self-confidence, then, plays a pivotal role in the development of L2 proficiency.
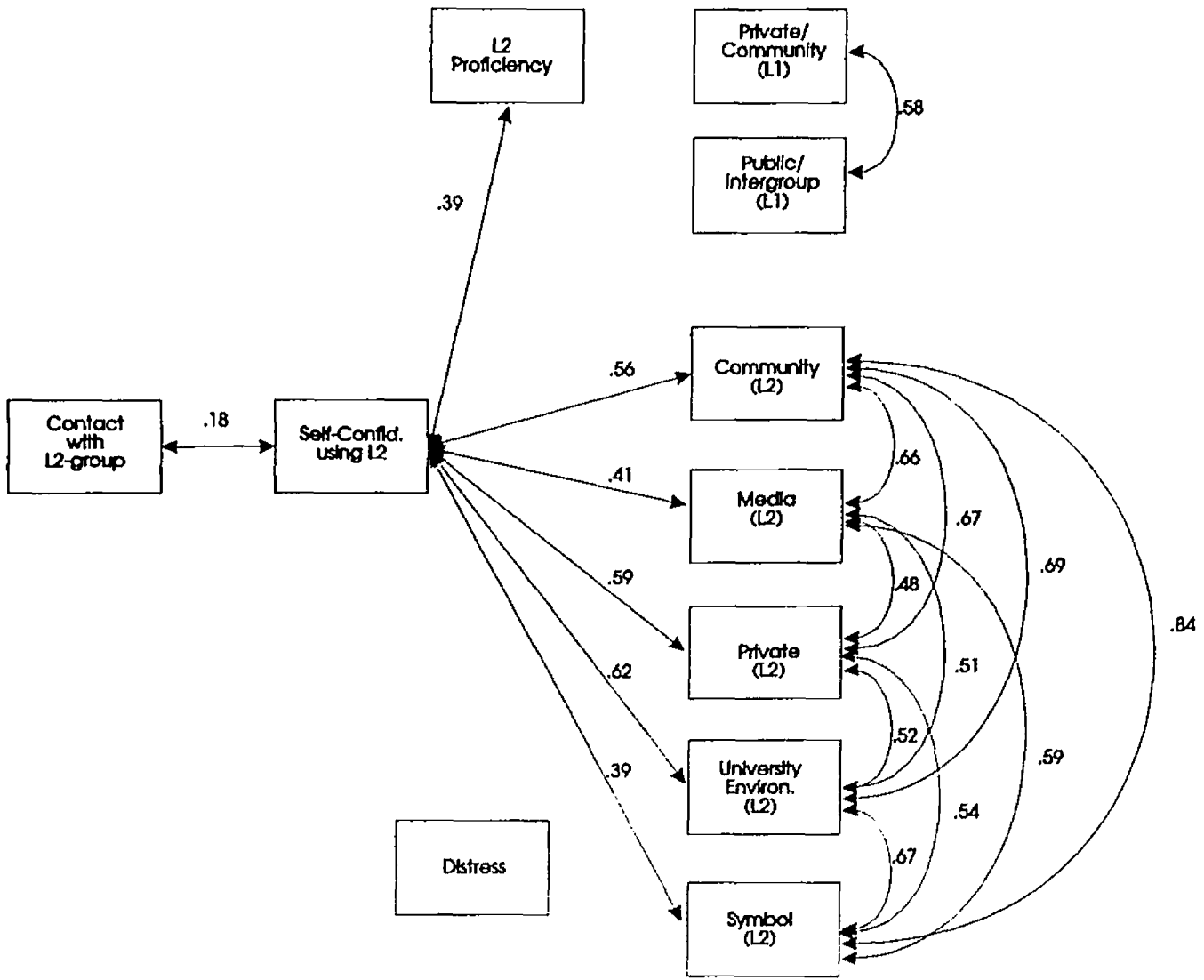
FIGURE 5.4
Minority Anglophones:
Model of the Acculturation Process with Correlations

Table 5.4
Minority Anglophones: Correlations between identity domains, self-confidence, contact, distress and L2 proficiency

	Variables										
Variables	1(a)	1(b)	2(a)	2(b)	2(c)	2(d)	2(e)	3	4	5	6

1. L1-Group Identity

	1(a)	1(b)	2(a)	2(b)	2(c)	2(d)	2(e)	3	4	5	6
a. Private/Community	1.00										
b. Public/Intergroup	.58	1.00									

2. L2-Group Identity

	1(a)	1(b)	2(a)	2(b)	2(c)	2(d)	2(e)	3	4	5	6
a. Community	.48	.31	1.00								
b. Media	.43	.13	.66	1.00							
c. Private/ Literary	.26	.06	.67	.48	1.00						
d. University Environment	.35	.01	.69	.51	.52	1.00					
e. Symbolic	.41	.13	.84	.59	.54	.67	1.00				
3. Self-Confidence	.19	-.09	.56	.41	.59	.62	.39	1.00			
4. L2-Group Contact	-.18	-.37	.23	.41	.23	.05	.31	.18	1.00		
5. Distress	.07	.20	.08	.01	-.11	.14	-.06	-.02	-.16	1.00	
6. L2 Proficiency (Cloze)	-.04	-.15	.24	.06	.11	.16	.10	.39	.15	.09	1.00

n = 33

114

Self-confidence is also related to feelings of identity, but in different ways depending upon the situation and the vitality group considered. It was expected that the language and contact variables would be less relevant in private situations than in public situations due to lower L2-group contact in the former situations. It was further expected that lower status groups would evidence more language-identity links across situations. The findings suggest some qualifications to the hypotheses. As a first point, the situational effects were mostly evident with regards to L1-group identity. Corresponding patterns did not necessarily affect L2-group identity. Moreover, as noted earlier this pattern differed for Anglophones and Francophones ·and thus these groups will be considered below under separate headings.

Anglophones: Evidence of Additive Bilingualism

For Anglophones, developing greater competence in the L2 is associated with greater L2-group identity. It is also associated with lessened L1-group identity in public settings, but not in private situations. This finding suggests that the private domain is sheltered from acculturative influences (cf. Edwards, 1985). In public situations, where there is more contact with members of the L2-group, and perhaps more L2 accommodation to the French interlocutor, L1-group identity is compromised.

These findings qualify Clément's (1980) hypotheses (see also Lambert, 1975, Landry & Allard, 1990) that the majority group would experience additive bilingualism in the sense that they would gain a second language and culture without losing their first language and culture. Although language competence is not detrimental to more intimate feelings of ethnic identification to the native language group, it does undermine L1-group identity in the public domain.

Additive bilingualism in its traditional sense is more evident in the minority Anglophone group. It should first noted that the interpretation of the findings regarding this group must be tempered by the caveat that, due to the small sample size, the correlations may not be stable across samples. For members of this group, developing L2 competence is associated with a new identity across all domains, but not necessarily with a lessened L1-group identity. This finding is unexpected for a minority group (cf Clément, 1980; Lambert, 1975). It must be recognized, however,

that although these individuals may be regional minorities, from a continental perspective they have all the status conferred upon Anglophones in North America. As a result, they are in a position where they have ample opportunity for the contact with the L2-group necessary to acquire a second language and culture, but at the same time they may be secure enough with their English group membership such that there is little loss of that identity.

L2 competence is also a positive experience for majority Anglophones in the sense that it is linked to emotional adjustment, defined in terms of greater self-esteem, less depression, stress and social anxiety through feelings of self-confidence in using the L2. Thus, consistent with Kim's (1988) position, acquiring communication competence in the L2 contributes to psychological health. Kim (1988, p. 88) has emphasized the importance of a positive affect towards being involved in a new culture for successful adaptation to the culture, and this premise is consistent with the present results. Apparently, having the linguistic skills alone does not suffice for psychological well-being; the individual must also feel that he or she can use these skills well. With this confidence in communicative abilities, better adaptation is likely to ensue. Thus, greater ease in using a L2 is additive in the sense that it directly affects well-being.

Francophones: Evidence of Subtractive Bilingualism

In contrast to the Anglophones, the pattern of correlations between self-confidence and identity for Francophones is better described as "subtractive" bilingualism. Generally, L2 self-confidence predicts greater L2-group identity, and also foretells lessened L1-group identity. Unlike the majority Anglophones, majority Francophones not only experience L2-group identity gain, but L1-group identity loss in all domains. As a continental minority group, these individuals may have more exposure to the L2-group across domains, and hence identity is affected over a wider range of situations.

Minority Francophones seem to benefit from contexts designed to protect the cultural heritage of the group. Although this group also demonstrates the general pattern of subtractive bilingualism, self-confidence is not related significantly to L1-

group identity in the university environment. This is consistent with the interpretation that, through its equal promotion of both French and English, the university context buffers the individual's identity from the acculturative influences of L2-group contact and language use.

Self-confidence is also uncorrelated with L2-group identity in the media domain. This lack of relationship may be due to this group's high degree of proficiency in the L2 and to the almost compulsory use of English media. With little choice in media services, the English media must be used regardless of the competence level. Hence high levels of media exposure may nullify the link between identity and self-confidence for minority groups.

The high level of proficiency in the minority group may also explain why the model did not fit them as well, and why contact has direct effects on identity in some cases. With very high levels proficiency in the L2, there may be little variation in the level of comfort experienced by these individuals. As a result, they are more readily able to switch languages, and language use is less of an indicator of identity. In essence, language choice has less significance for identity negotiation than for other groups. Nonetheless, the significant indirect paths still suggest that language has some relevance for identity.

Generally, then, with regards to the relation between self-confidence and identity, Francophones experience subtractive bilingualism. The pattern of relations between contact, self-confidence and distress is not, however, consistent with this interpretation. Greater L2 self-confidence is linked directly to better psychological adjustment. Thus, consistent with Kim's (1988) hypothesis, greater comfort in using the L2 is associated with psychological well-being across the two status groups. Bilingualism, therefore must be considered additive in the sense that it leads to better adjustment. Learning English may consequently present a double-bind for Francophones: it contributes to not only to psychological well-being but also to identity loss in some domains (cf. Boekestijn, 1988). These two outcomes must be weighed in arriving at a decision to develop and use English.

Summary

The results of these correlational analyses lend support to the proposed social psychological model of the acculturation process. Feeling more competent in the L2 contributes to both actual proficiency and psychological adjustment. The relation between contact with another group and identity is mediated by linguistic self-confidence. Moreover, the results demonstrate that L2 self-confidence is linked to identity in different domains so as to suggest that situational factors affect the relations.

These results contribute to a broader picture of bilingualism by indicating that becoming proficient in a L2 has implications not only for cognitive development (see Cummins, 1976, 1984), but also for social psychological development. While the relations between L2 learning and social psychological variables such as attitudes have been well demonstrated (eg. Lambert & Tucker, 1972; Gardner, 1985; Gardner & Clément, 1990, for overview), this study extends much previous research by demonstrating a link between L2 competence and feelings of identity. In addition, the social psychological impact of developing a L2 has implications for emotional adjustment. Thus, consistent with the position of Landry and Allard (1990), bilingualism can be "additive" or "subtractive" with regards to several social psychological characteristics, including identity and well-being. It is important to note, however, that the particular pattern is not solely determined by the vitality of the group (eg. Clément, 1980; Lambert, 1974), but also by the situation in which contact takes place.

CHAPTER 6

GENERAL DISCUSSION AND CONCLUSION

The issues surrounding language planning are manifold (see Kaplan, 1994, for a recent overview), but a central theme concerns the importance of language for feelings of ethnic identity. Is language linked to identity, and if so, what are the conditions that affect this relationship? Under what conditions can L2 competence be considered an "additive" experience, contributing to a more flexible self-concept and better psychological adjustment? When is it a "subtractive" phenomenon, undermining the self-concept and well-being? In an attempt to answer these questions, the research reported here was first meant to examine the situational variability of ethnic identity as a function of ethnolinguistic group vitality. The second goal was to investigate the relations between intergroup contact, language self-confidence and identity across situations. The third purpose was to examine the relations between contact, self-confidence and psychological adjustment.

The results support the premise that ethnic identity is situationally variable, and that these fluctuations are related to ethnolinguistic vitality. Moreover, vitality is linked to patterns of L2-group contact and L2 self-confidence. The latter variables may mediate the relation between vitality and identity, such that increased contact and language use lead to variations in L1-group and L2-group identities. Increased contact and self-confidence are also associated with better psychological well-being. These findings have implications for both the conceptualization of ethnic identity, and for the understanding of additive and subtractive bilingualism.

The Conceptual and Operational Definitions of Ethnic Identity

Ethnic identity cannot be presumed to be a global, unidimensional construct. A multi-dimensional structure, reflecting a diversity of situations, more accurately represents individuals' feelings of group membership. Moreover, the configuration of situations differs across language groups. This has both theoretical and methodological implications.

From a theoretical viewpoint, conceptualization of the ethnic self-concept must

take into account its multidimensional complexities. It was found that variations in ethnic identity are not restricted to feelings about the L1-group, but are also evident for feelings regarding the L2-group. One implication of this finding is that any particular combination of these identities may be evident in a given situation. For example, minority Francophones could maintain 2 identities at equal levels in the media context, but clearly differentiate between identities in more public settings. Clearly, these results undermine any broad, sweeping conclusion about identity variation and change.

In accordance with Edwards' (1985) hypothesis, a distinction can be made between public and private domains on the basis of the likelihood of contact with members of another ethnic group. The existence of other domains, however, suggests that the public/private distinction is not sufficient to describe the domains of ethnic identity. These other domains can, furthermore, be characterized by particular intergroup interaction dynamics. For example, although it can be considered a public setting, the university is distinct due to the institutionalization of biculturalism and bilingualism. The apparent effect of this policy is to equalize the level of L2-group contact and, correspondingly, the level of identification with the L2-group across the vitality groups. Thus, the institutional context may override the effects of status on identity.

The media is another domain in which differences in exposure to the L2-group can be clearly observed to correspond with variations in identity. The media domain is unusual in that it cannot be readily characterized as public or private: although it is created by and represents the broader society, media use in private settings is a personal choice. Meyrowitz (1986, cited by Fitzgerald, 1992) suggests that, because of this blurring of the boundaries between the public and private domains, the media is an effective vehicle for cultural assimilation. The more important point for the present discussion, however, is that although public and private domains of life are relevant to ethnic identity, other domains that do not fall readily into this typology also have significant implications.

The domains described in the present study correspond in many ways with

those discussed by Clément and Noels (1992). In both studies an attempt was made to delineate situations in an empirical manner by asking individuals how they conceptualized identity across a variety of different situations, rather than by assuming that specific, theoretically chosen situations were adequate to describe identity variations. By using this strategy, it was possible to discern several situations that may have theoretical importance. Certainly future research should consider media and specific language contexts, like the educational context, as important domains, distinct from the public and private domains that have already received considerable theoretical attention. As the results of this study and the Clément and Noels (1992) study showed, these additional domains may be important arenas for ethnolinguistic identity maintenance and change, a fact that would not have been readily evident if only public and private domains had been assessed.

From a methodological perspective, the complexity of the ethnic self-concept implies that the measurement of ethnic identity is not adequate if categorical or single-item scales representing global identity are used. Rather, the evidence presented here suggests that because L1-group and L2-group identities can be construed differently, identification to both groups must be measured (cf. Sayegh & Lasry, 1992; Leets, Giles, & Clément, 1994). Moreover, since identification with each ethnic group is be situationally variable, multiple item indices, including situations relevant to the population under consideration, are necessary for a complete assessment of feelings in ethnic identity (cf. Leets, Giles, & Clément, 1994).

As well as reflecting on the structure and internal dynamics of identity, the results suggest a mechanism for its genesis and variation. Edwards (1985) and others have suggested that ethnicity and language are not necessarily linked. The evidence presented here suggests that this may be true, particularly in situations where there is less opportunity for contact with the L2-group. At the same time, this does not preclude the possibility that identity is closely tied to language in situations of contact. The results here suggest that in situations where there is a greater likelihood of contact, the interlocutor feels more like a member of the L2-group and, possibly less like a member of the L1-group. Moreover, lower group vitality contributes to

increased contact across situations, and correspondingly a greater likelihood that this pattern will be evident across situations.

The patterns of findings are consistent with the framework of situated ethnic identity elaborated in this paper. Situated ethnic identity would suggest that identity is negotiated through interactions with others. In the case of an ethnolinguistic group, this negotiation is likely carried out through language choices, at least in part. With increased contact with the L2 group, the likelihood of linguistically accommodating to the L2-group member increases, and concurrently the level of identification with that group. Moreover, particularly for the lower vitality Francophone groups, this accommodation to a higher status group corresponds with lessened L1-group identity. Thus, situational and societal factors affect the level of contact with the L2-group, which is a necessary condition for ethnic identity negotiation processes.

This identity negotiation process may itself be modulated by the normative characteristics of the situation. In the present context, these norms promote equality between groups by encouraging both groups maintain their original group identity, and reducing the effects of vitality on L2-group identity. This reduction in the influence of vitality has different repercussions for the two language groups. For Francophones it de-emphasizes the importance of an English identity relative to other domains. For Anglophones, it raises the importance of the French culture. From the perspective of the situated identity approach, the usual cues about group status that would be affect the negotiation process are obscured; individuals are required to negotiate language and identity in a way that recognizes the equal status of the two groups. Thus, normative standards attenuate the influences of vitality on identity, perhaps through the same identity negotiation process, but without the status cues.

In summary, ethnic identity is a multidimensional construct. Its dimensions are characterized by the different dynamics of intercultural interactions and potentially the presence of norms for socio-communicative behaviour.

"Additive" and "Subtractive" Bilingualism and the Acculturation Process

The covariation of vitality, contact, self-confidence, identity and distress have implications for the understanding of the acculturation process and notions of

"additive" and "subtractive" bilingualism. As intimated in the above discussion and consistent with the discussions of Lambert (1975), Clément (1980; 1984) and Landry and Allard (1992), the results of the correlational analyses demonstrated that contact and language behaviour are related to identity. Two distinct patterns of identity are apparent, and these patterns correspond with the vitality of the native language group. The acculturation experience of Anglophones can well be described as "additive" bilingualism: acquiring a L2 is associated with stronger feelings of identification with the L2-group, and generally unrelated to feelings of L1-group identity. The acculturation experience of Francophones, however, can well be described as "subtractive" bilingualism: acquiring a L2 is not only associated with feeling more like a member of the L2-group, but also with feeling less like a member of the L1-group.

At the same time, situational aspects moderate these patterns of "additive" and "subtractive" bilingualism. Specifically, the situational influences must be taken into account. For majority Anglophones, bilingualism is additive to the extent that L1-group identity in the private domain is not affected by L2 self-confidence. Developing a L2, however, is subtractive in situations of contact with members of the L2-group. This would suggest that restricted contact with the L2-group in private situations is necessary to prevent identity loss.

Situational considerations are also important for "subtractive bilingualism". Contact and language variables are not relevant to identity in the university domain for minority Francophones. In line with findings from other recent studies (cf. Landry & Allard, 1991; Wright & Taylor, 1995), these results suggest that educational programs can effectively shelter minority students from several effects of intergroup contact. What is not clear, however, is whether the effects of the school ambience extend to identity in other areas of life. As Edwards (1993) suggests, the prevailing societal and economic forces could well override the influences of a heritage language program. Nonetheless, at least within the school setting, the process of L1-group identity loss as a result of intergroup contact and L2 competence can be moderated.

Although bilingualism may be "subtractive" when considering the language-

identity link, this interpretation does not well generalize to the relation between language and emotiona' adjustment. Consistent with Kim's (1988) contention that L2 competence facilitates well-being by providing a skill to meet daily needs and desires, for all groups except the minority Anglophone group, greater ease in the L2 is associated with better psychological adjustment. With regards to adjustment, becoming more comfortable using a L2 is an additive phenomenon.

This finding also indirectly supports Edward's (1993) argument that language and identity shift come about as a result of the pursuit of pragmatic goals, rather than ideological desires. He states that since individuals are ultimately preoccupied with survival, personal security and well-being, "to the extent ... a language hinders these things it will be deemed a negotiable commodity. Thus language shift among minority groups occurs most frequently for pragmatic and mundane reasons" (p. 130). The present data suggest that, in a situation of contact, developing ease in a L2 may have the practical benefit of allaying feelings of distress. It is plausible that, as the L2-identity is developed, L1-identity attrition occurs, at least for lower vitality groups (cf. Noels, Pon, Clément, 1994). In the pursuit of well-being, the trade-off may be a loss of L1-group identity.

Directions for Future Research

The findings of the present study point to several avenues for future research. First, the situational structure of identity is complex and not necessarily configured in the same way for all groups. Nonetheless, future research might well consider examining certain domains more closely. For example, as noted earlier, media exposure clearly discriminates between vitality groups, suggesting that it plays an important role in the acculturation process (cf. Jun, 1984). To date, however, social psychologists have rarely examined the link between media use and ethnic identity in any great detail (cf. Clément, Noels, & George, 1994; Subveri-Velez, 1986). This lacuna clearly warrants attention.

Second, the intergroup context examined in the present study pertained to a specific regional and institutional context predominated by two groups with high vitality. At the same time, it is clear that representation of the majority Anglophone

group is much greater than representation of the minority Anglophone group, while the two Francophone groups are more equally represented. The particular demographic configuration of the minority and majority groups in this context posed some difficulties for data collection and statistical analysis. More importantly, it is possible that, due to this unequal representation of the two language groups, the intergroup dynamics are different than those found in settings where the two groups are more or less equally represented. As a central theme of this study has been contextual influences, it is important to conduct further research in milieux which vary in terms of ethnic composition.

Third, because of the study's correlational design, the causal relations between variables can not be ascertained. Structural equation modelling is a more powerful technique for assessing causality than simple correlations because it tests the relations between variables while statistically controlling for the effects of other variables. However, other steps could bolster the causal arguments made here. Because random assignment of subjects to natural language groups is impossible, the next best step would be to assess the relevant variables over time, in a longitudinal design. This strategy of data collection, combined with structural equation modelling techniques, would allow for stronger causal inferences.

Fourth, additive and subtractive bilingualism are clearly social psychological phenomena as well as cognitive phenomena (cf. Landry & Allard, 1990). L2 competence not only relates to identity but also to feelings of well-being. The present study did not, however, examine how the patterns of identity are connected to psychological distress. Many acculturation theorists claim that patterns of acculturation are linked to well-being in different ways. For example, Berry (1990, Berry, Kim, Minde, & Mok, 1987) and others (eg. de Domanico, Crawford, & De Wolfe, 1994; Hamers & Blanc, 1989; Sanchez & Fernandez, 1993; Szapocznik, Kurtines, & Fernandez, 1980) suggest that biculturality (i.e. integration) is related to better well-being whereas rejecting both cultures (i.e. deculturation or marginalization) may be related to distress. Elsewhere, Phinney (1991) has suggested that it is important to develop a mainstream identity in addition to an ethnic identity in order

to maintain high levels of self-esteem. The diversity of factorial structures across L1-group and L2-group identities precluded an examination of this interaction on a situational level. Future research might therefore consider this issue more closely.

Comprehension of this issue might be further enhanced by examining more specifically intercultural aspects of mental health, such as feelings of anomie (Lambert, 1974) or collective self-esteem (eg. Luhtanen & Crocker, 1991; see also Wright & Taylor, 1995). The focus of the present study was on general well-being because this has been the focus of much acculturation research. However, by looking at the mediational role of these group-related adjustment variables in the link between patterns of acculturation and general well-being, a more detailed understanding of acculturative stress is possible.

<u>Conclusion</u>

Adequate language planning depends upon a sound consideration of the understanding of identity and language and of the role they play in the process of acculturation. The findings of the present study support and extend many recent developments in the study of acculturation (eg. Elias & Blanton, 1987; Phinney, 1990; Szazapocnik, Scopetta, Kurtines, & Aranalde, 1987) and of the social psychology of intergroup relations (eg. Edwards & Chisholm, 1987; Gurin, Hurtado, & Peng, 1994) that maintain that ethnic identity is multifaceted, and its link with language complex. Identity was shown here to be situationally variable, affected by the complex interplay of normative, interpersonal and societal dynamics Moreover, the mediating role of self-confidence is not only relevant to the manifestation of identity, but also to L2 proficiency and psychological well-being.

While contact and L2 competence generally have an acculturative relationship with identity, additive bilingualism is possible for language groups with high vitality. It is also possible to shelter minority groups from the influences of contact through institutional support, and thereby reduce the subtractive nature of their experience. However, since better L2 skills and confidence are also associated with better well-being, language policies and programs must be judiciously examined to ensure that the L2 is not undermined in contexts where that language is important to meet

everyday needs. If it is, these policies and programs could be detrimental to those for whom they were designed to help.

CHAPTER 7

REFERENCES

Alexander, C.N., & Beggs, J.J. (1986). Disguising personal inventories: A situated identity strategy. Social Psychology Quarterly, 49, 192-200.

Alexander, C.N., & Rudd, J. (1981). Situated identities and response variables. In J.T. Tedeschi (Ed.) Impression management theory and social psychological research. (pp. 83-103). New York: Academic Press.

Alexander, C.N., & Rudd, J. (1984). Predicting behaviors from situated identities. Social Psychology Quarterly, 47, 172-177.

Alexander, C.N. & Wiley, M.G. (1981). Situated activity and identity formation. In M. Rosenberg & R. Turner (Eds.) Social psychology: Sociological perspectives. New York: Basic Books.

Allison, D.B., Gorman, B.S., & Primavera, L.H. (1993). Some of the most common questions asked of statistical consultants: Our favorite responses and recommended readings. Genetic, Social and General Psychology Monographs, 26, 155-185.

Anderson, L.E. (1994). A new look at an old construct: Cross-cultural adaptation. International Journal of Intercultural Relations, 18, 293-328.

Andujo, E. (1988). Ethnic identity of transethnically adopted Hispanic adolescents. Social Work, 33, 531-535.

Applegate, J.L., & Sypher, H.E. (1988). A constructivist theory of communication and culture. In Y.Y. Kim & W.B. Gudykunst (Eds.) Theories in intercultural communication (pp. 41-65). Newbury Park, CA: Sage.

Arce, C. (1981). A reconsideration of Chicano culture and identity. Daedalus, 110, 177-192.

Argyle, M., Furnham, A., & Graham, J.A. (1981). Social situations. New York: Cambridge University Press.

Baldwin, M.W. (1992). Relational schemas and the processing of social information. Psychological Bulletin, 112, 461-484.

Banaji, M.R., & Prentice, D.A. (1994). The self in social contexts. Annual Review of

Psychology, 45, 297-332.

Barth, F. (1969). Ethnic groups and boundaries. London: Allen & Unwin.

Baynard, M.P. (1978). Ethnic identity and stress: The significance of sociocultural context. Spanish Speaking Mental health Research Center Monograph Series, 7, 109-123.

Beck, A.T. (1967). Depression: Causes and treatment. Philadelphia: University of Philadelphia Press.

Beck, A.T., & Beck, A.W. (1972). Screening depressed patients in family practice: A rapid technic. Postgraduate Medicine, 52, 81-85.

Beebe, L., & Giles, H. (1984). Speech accommodation theories: A discussion in terms of second language acquisition. International Journal of the Sociology of Language, 46, 5-32.

Bentler, P.M. (1990). Comparative fit indexes in structural models. Psychological Bulletin, 107, 238-246.

Bentler, P.M. (1994). EQS: Structural equations program manual. Los Angeles: BMDP Statistical Software.

Bentley, G.C. (1987). Ethnicity and practice. Comparative Studies in Society and History, 29, 24-55.

Bentley, G.C. (1991). Response to Yelvington. Comparative Studies in Society and History, 32, 169-.

Berry, J.W. (1984). Multicultural policy in Canada: A social psychological analysis. Canadian Journal of Behavioural Science, 16, 353-370.

Berry, J.W. (1986). Multiculturalism and psychology in plural societies. In L.H. Ekstrand (Ed.), Ethnic minorities and immigrants in cross-cultural perspective. Lisse: Swets and Zeitlinger.

Berry, J.W. (1990a). Psychology of acculturation: Understanding individuals moving between cultures. In R.W. Brislin (Ed.) Applied cross-cultural psychology. Newbury Park, CA: Sage.

Berry, J.W. (1990b). Psychology of acculturation. In J.J. Berman (Ed.) The Nebraska Symposium on Motivation, 1989: Cross-cultural perspectives. Lincoln, NE: University of Nebraska Press.

Berry, J.W. (1990c). Acculturation and adaptation: A general framework. In W.H. Holtzman, & T.H. Bornemann (Eds.) Mental health of immigrants and refugees. Austin, TX: Hogg Foundation for Mental Health.

Berry, J.W., & Annis, R.C. (1974). Acculturative stress: The role of ecology, culture and differentiation. Journal of Cross-cultural Psychology, 5, 382-406.

Berry, J.W., & Kim, U. (1988). Acculturation and mental health. In P. Dasen, J.W. Berry & N. Sartorius (Eds.) Health and cross-cultural psychology. London: Sage.

Berry, J.W., Kim, U., & Boski, P. (1988). Psychological acculturation of immigrants. In Y.Y. Kim, & W.B. Gudykunst (Eds.) Cross-cultural adaptation: Current approaches. Newbury Park, CA: Sage.

Berry, J.W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. International Migration Review, 21, 491-511.

Berry, J.W., Trimble, J., & Olmedo, E. (1986). Assessment of acculturation. In W.J. Lonner & J.W. Berry (Eds.) Field methods in cross-cultural research. Newbury Park, CA: Sage.

Blascovich, J., & Tomaka, J. (1991). Measures of self-esteem. In J.P. Robinson, P.R., Shaver, & L.S. Wrightsman (Eds.) Measures of personality and social psychological attitudes. (pp. 115-160). San Diego, CA: Academic Press.

Boekestijn, C. (1988). Intercultural migration and the development of personal identity: The dilemma between identity maintenance and cultural adaptation. International Journal of Intercultural Relations, 12, 83-105.

Bollen, K.A. (1989). Structural equations with latent variables. New York: John Wiley.

Bourhis, R.Y. (1984a). Conflict and language planning in Québec. Clevedon: Multilingual Matters.

Bourhis, R.Y. (1984b). Cross-cultural communication in Montréal: Two field studies since Bill 101. International Journal of the Sociology of Language, 46, 33-47.

Bourhis, R.Y. (1986). Language planning and language use in Québec. Paper presented at the II International Catalan Language Congress, Lleida, Catalonia, Spain.

Bourhis, R.Y. (1994). Introduction and overview of language events in Canada. International Journal of the Sociology of Language, 102, 5-36.

Bourhis, R.Y., Giles, H., & Tajfel, H. (1973) Language as a determinant of Welsh identity. European Journal of Social Psychology, 3, 447-460.

Bradac, J.J. (1990). Language attitudes and impression formation. In H.G. Giles and W.P. Robinson (Eds.) Handbook of language and social psychology (pp. 387 - 412). Chicester: John Wiley.

Breakwell, G.M. (1983, Ed.). Threatened identities. Chichester: John Wiley & Sons.

Brislin, R.W. (1981). Cross-cultural encounters, face-to-face interaction. New York: Pergamon Press.

Brown, R.J., Condor, F, Mathew, A., Wade, G., & Williams, J.A. (1986). Explaining intergroup differentiation in an industrial organization. Journal of Occupational Psychology, 59, 273-286.

Bulhan, H.A. (1978). Reactive identification, alienation, and locus of control among Somali students. Journal of Social Psychology, 104, 69-80.

Byrne, B.M. (1989). A primer of LISREL: Basic applications and programming for confirmatory factor analytic models. New York: Springer Verlag.

Byrne, B.M. (1994). Structural equation modelling with EQS and EQS/Windows: Basic concepts, applications, and programming. Thousand Oaks, CA: Sage.

Caltabiano, N.J. (1984). Perceived differences in ethnic behaviour: A pilot study of Ital-Australian Canberra residents. Psychological Reports, 55, 867-873.

Camalieri, C. (1983-84). Les étudiants étrangers en France et leur discours sur l' identité culturelle. Bulletin de psychologie, 37, 287-297.

Cameron, J.E., & Lalonde, R.N. (1994). Self-ethnicity, and social group memberships in two generations of Italian Canadians. Journal of Personality and Social Psychology, 20, 514-520.

Canada (1970). Report of the Royal Commission on Bilingualism and Biculturalism: Preliminary Report. Ottawa: Queen's Printer.

Canada (1988). Official Languages Act. Ottawa: House of Commons of Canada.

Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees in Canada (1988). After the door has been opened: Mental health issues affecting immigrants and refugees in Canada. Ottawa, ON: Health and Welfare Canada.

Catanzaro, A., & Moser, R.J. (1982). Health status of refugees from Vietnam, Laos, and Cambodia. Journal of the American Medical Association, 247, 1303-1307.

Cawte, J.E. (1968). Personal discomfort in Australian Aborigines. Australian and New Zealand Journal of Psychiatry, 2, 69-79.

Chataway, C.J., & Berry, J.W. (1989). Acculturation experiences, appraisal, coping and adaptation: A comparison of Hong Kong Chinese, French, and English students in Canada. Canadian Journal of Behavioural Science, 21, 295-309.

Christian, J., Gadfield, N.J., Giles, H., & Taylor, D.M. (1976). The multidimensional and dynamic nature of ethnic identity. International Journal of Psychology, 11, 281-291.

Church, A.T. (1982). Sojourner adjustment. Psychological Bulletin, 91, 540-572.

Clément, R. (1980). Ethnicity, contact and communicative competence in a second language. In H. Giles, W.P. Robinson & P.M. Smith (Eds.), Language: Social psychological perspectives. Oxford: Pergamon Press.

Clément, R. (1984). Aspects socio-psychologiques de la communication inter-ethnique et de l'identité sociale. Recherches sociologiques, 15, 293-312.

Clément, R. (1986). Second language proficiency and acculturation: An investigation of the effects of language status and individual characteristics. Journal of Language and Social Psychology, 5, 271-290.

Clément, R. (1988). Échelles d'attitude et de motivation reliées aux raports inter-éthniques. [Scales of attitude and motivation related to inter-ethnic relations]. (Tech. Rep.), University of Ottawa, Ottawa.

Clément, R., Gauthier, R., & Noels, K.A. (1993). Choix langagiers en milieu minoritaire : attitudes et identité concomitantes. Canadian Journal of Behavioural Science, 25, 149-164.

Clément, R., & Kruidenier, B.G. (1985). Aptitude, attitude and motivation in second language proficiency: A test of Clément's model. Journal of Language and Social Psychology, 4, 21-37.

Clément, R., & Noels, K.A. (1991). Langue, statut et acculturation: une étude d'individus et de groupes en contact. In M. Lavallée, F. Ouellet, & F. Larose (Eds.) Identité, culture et changement social. Paris: Éditions l'Harmattan.

Clément, R., & Noels, K.A. (1992). Towards a situated approach to ethnolinguistic identity: the effects of status on individuals and groups. Journal of Language and Social Psychology, 11, 203-232.

Clément, R., Noels, K.A., & George, K. (1994). Media influence in minority group acculturation. Paper presented at the Fifth International Conference on Language and Social Psychology, Brislin, Australia, July 6 - 9, 1994.

Clément, R., Sylvestre, A., & Noels, K.N. (1991). Modes d'acculturation et identité située : le cas des immigrants haïtiens de Montréal. Etudes ethniques canadiennes, 23, 81-94.

Collier, M.J., & Thomas, M. (1988). Cultural identity: An interpretive perspective. In Y.Y. Kim & W.B. Gudykunst (Eds.) Theories in Intercultural Communication. Newbury Park, CA: Sage.

Cook, R.D., & Weisberg, S. (1974). Residuals and influence in regression. New York: Chapman Hall.

Côté, P., Clément, R., & Noels, (1990, May-June). Vers un taxonomie des relations interpersonelles et les activités et les conversations qui les définissent. Poster presented at the Annual Convention of the Canadian Psychological Association, Ottawa, Ontario.

Côté, P., Noels, K.A., & Clément, R. (1991, November). Changements d'identifications culturelle : le rôle de l'appartenance culturelle du locuteur. Poster presented at the 14th Annual conference of the Société québécoise pour la recherche en psychologie, Trois-Rivières, Québec.

Crawford, J. (1992). Language loyalties: A sourcebook on the Official English controversy. Chicago: University of Chicago Press.

Cross, W. (1971). The Negro to Black conversion experience: Towards a psychology of Black liberation. Black World, 20, 13-27.

Cross, W. (1978). The Thomas and Cross models of psychological nigrescence. A literature review. Journal of Black Psychology, 4, 13-31.

Cummins, J. (1976). The influence of bilingualism on cognitive growth: A synthesis of research findings and explanatory hypotheses. Working Papers on Bilingualism, 9, 1-43.

Cummins, J. (1984). Bilingualism and cognitive functioning. In S. Shapson & V. D'Oyley (Eds.) Bilingual and multicultural education. Clevedon: Multicultural

Matters.

de Domanico, Y.B., Crawford, I., & De Wolfe, A.S. (1994). Ethnic identity and self-concept in Mexican-American adolescents: Is bicultural identity related to stress or better adjustment. Child and Youth Care Forum, 23, 197-206.

De Vries, J. (1994). Canada's official language communities: An overview of the current demolinguistic situation. International Journal of the Sociology of Language, 105/106, 37-68.

Der Karabetian, A. (1980). Relation of two cultural identities of Armenian-Americans. Psychological Reports, 47, 123-128.

DeRidder, R., & Tripathi, R.C. (Eds.)(1992). Norm violation and intergroup relations. Oxford: Clarendon Press.

Deutsch, S.E., & Won, G.Y.M. (1963). Some social factors in the adjustment of foreign nationals in the United States. Journal of Social Issues, 19, 115-122.

Devos, G.A., & Ross, R. (1975). Ethnic identity. Mansfield.

Dion, K.K., Dion, K.L., & Pak, A.W. (1990). The role of self-reported language proficiencies in the cultural and psychosocial adaptation among members of Toronto, Canada's Chinese Community. Journal of Asian Pacific Communication, 1, 173-189.

Dion, K.L., Dion, K.K., & Pak, A.W. (1992). Personality-based hardiness as a buffer for discrimination-related stress in members of Toronto' Chinese Community. Canadian Journal of Behavioural Sciences, 24, 517-536.

Dona, G. (1991). Acculturation and ethnic identity of Central American refugees in Canada. Hispanic Journal of Behavioral Sciences, 13, 230-231.

Driedger, L. (1975). In search of cultural identity factors: A comparison of ethnic students. Canadian Review of Sociology and Anthropology, 12, 150-162.

Driedger, L. (1976). Ethnic self-identity: A comparison of ingroup evaluations. Sociometry, 39, 131-141.

Driedger, L., Thacker, C., & Currie, R. (1982). Ethnic identification: Variations in regional and national preferences. Canadian Ethnic Studies, 14, 57-68.

Dyal, J.A., & Dyal, R.Y. (1981). Acculturation, stress and coping: Some implications for research and education. International Journal of Intercultural Relations, 5,

135

301-327.

Dyal, J.A., & Chan, C. (1985). Stress and distress: A study of Hong Kong Chinese and Euro-Canadian students. Journal of Cross-Cultural Psychology, 16, 447-466.

Eckes, T. (1995). Features of situations: A two-mode clustering study of situation prototypes. Personality and Social Psychology Bulletin, 21, 366-374.

Edwards, J. (1977). Ethnic identity and bilingual education. In H.Giles (Ed.) Language, Ethnicity and Intergroup Relations. London: Academic Press.

Edwards, J. (1985). Language, society and identity. Oxford: Basil Blackwell.

Edwards, J. (1992). Language in group and individual identity. In G.M. Breakwell (Ed.) Social psychology of identity and the self concept (pp. 129-146). San Diego: Academic Press.

Edwards, J. (1993). Identity and language in the Canadian educational context. In M. Danesi, K.McLeod, & S. Morris (Eds.) Heritage languages and education: The Canadian experience. Oakville, ON: Mosaic.

Edwards, J. (1993-1994). Language policy and planning in Canada. Annual review of Applied Linguistics, 14, 126-136.

Edwards, J., & Chisholm, J. (1987). Language, multiculturalism and identity: A Canadian study. Journal of Multilingual and Multicultural Development, 8, 391-408.

Edwards, J., & Doucette, E. (1987). Ethnic salience, identity and symbolic ethnicity. Canadian Ethnic Studies, 19, 52-62.

Edwards, J., & Sheam, C. (1987). Language and identity in Belgium: Perceptions of French and Flemish students. Ethnic and Racial Studies, 10, 135-148.

Elias, N., & Blanton, J. (1987). Dimensions of ethnic identity in Israeli Jewish families living in the United States. Psychological Reports, 60, 367-375.

Elizur, D. (1984). Facet analysis of ethnic identity: The case of Israelis residing in the United States. The Journal of General Psychology, 111, 259-269.

Epstein, A.L. (1978). Ethos and identity. London: Tavistock.

Erickson, R.V., & Huong, G.N. (1980). Health problems among Indochinese refugees.

American Journal of Public Health, 70, 1003-1006.

Fathi. A. (1972). Some aspects of changing ethnic identity of Canadian Jewish youth. Jewish Social Studies, 34, 23-30.

Feuerverger, G. (1989). Jewish-Canadian ethnic identity and non-native language learning: A social-psychological study. Journal of Multilingual and Multicultural Development, 10, 327-357.

Fishman, J.A. (1989). Language and ethnicity in a minority sociolinguistic perspective. Clevedon: Multilingual Matters.

Fitzgerald, T.K. (1992). Media, ethnicity and identity. In P. Scannell, P. Schlesinger, & C. Spark (Eds.) Culture and power: A media, culture and society reader. London: Sage.

Forgas, J.P. (1979). Social episodes: The study of interaction routines. New York: Academic Press.

Forgas, J.P. (1982). Episode cognition: Internal representations of interaction routines. In L. Berkowitz (Ed.) Advances in Experimental Social Psychology, Vol. 15 (pp. 59-101). New York: Academic Press.

Forgas, J.P. (1988). Episode representations in intercultural communication. In Y.Y. Kim & W.B. Gudykunst (Eds.) Theories in intercultural communication (pp.186-212). Newbury Park, CA: Sage.

Frederiksen, N. (1972). Toward a taxonomy of situations. American Psychologist, 114-123.

Furnham, A., & Bochner, S. (1986). Culture shock: Psychological reactions to unfamiliar environments. New York: Methuen.

Gallois, C., & Callan, V.J. (1991). Interethnic accommodation: The role of norms. In H. Giles, J. Coupland, & N. Coupland (Eds.) Contexts of Accommodation: Developments in applied sociolinguistics (pp. 245-269). Cambridge: Cambridge University Press.

Gans, H. (1979). Symbolic ethnicity. Ethnic and Racial Studies, 2, 1-20.

Gao, G., Schmidt, K.L., & Gudykunst, W.B. (1990, June). Strength of ethnic identity and perceptions of ethnolinguistic vitality. Paper presented at the 40th International Communication Association Convention, Dublin.

Garcia, M., & Lega, L. (1979). Development of a Cuban ethnic identity questionnaire. Hispanic Journal of Behavioral Sciences, 1, 247-261.

Gardner, R.C. (1977). Social factors in second language acquisition and bilinguality. In W.H. Coons, D.M. Taylor, and M. Tremblay (Eds.) The individual, language and society in Canada. Ottawa, ON: The Canada Council.

Gardner, R.C. (1985). Social psychology and second language learning: The role off attitudes and motivation. London: Arnold.

Gardner, R.C., & Clément, R. (1990). Social psychological perspectives on second language acquisition. In H.G. Giles and W.P. Robinson (Eds.) Handbook of language and social psychology (pp. 495-517). Chicester: John Wiley.

Gardner, R.C., & Przedzielewski, E., & Lysynchuk (1990). A multidimensional investigation of acculturation and language proficiency. Research bulletin No. 692. London, Canada: University of Western Ontario, Department of Psychology, May.

Garrett, P., Giles, H., & Coupland, N. (1987). The contexts of language learning: Extending the intergroup model of second language acquisition. In P. Ting-Toomey (Ed.), Language communication and culture. (13th Annual of International and Intercultural Communication) Newbury Park, Calif.: Sage.

Gecas, V. (1982). The self concept. Annual Review of Sociology, 8, 1-33.

Gergen, K.J. (1987). Toward self as relationship. In K. Yardley and T. Honess (Eds.) Self & Identity: Psychosocial perspectives (pp. 53-64). Chichester: John Wiley & Sons.

Gergen, K.J. (1991). The saturated self: Dilemmas of identity in contemporary life. America: Basic Books.

Gilbert, M,J, & Cervantes, R.C. (1986). Patterns and practices of alcohol use among Mexican Americans: A comprehensive review. Hispanic Journal of Behavioral Sciences, 8, 1-60.

Giles, H., Bourhis, R.Y., & Taylor, D.M. (1977). Towards a theory of language in ethnic group relations. In H. Giles (Ed.) Language, ethnicity and intergroup relations. New York: Academic Press.

Giles, H., & Byrne, J.L. (1982). An intergroup approach to second language acquisition. Journal of Multilingual and Multicultural Development, 1, 17-40.

Giles, H., & Coupland, N. (1991). Language: Contexts and consequences. Pacific Grove, CA: Brooks/Cole.

Giles, H., Coupland, N., & Coupland, J. (1991). Contexts of accommodation: Developments in applied sociolinguistics. Cambridge: Cambridge University Press.

Giles, H., & Johnson, P. (1981). The role of language in ethnic group relations. In J.C. Turner & H. Giles (Eds.). Intergroup behaviour (pp. 199-241). Oxford: Blackwell.

Giles, H., & Johnson, P. (1987). Ethnolinguistic identity theory: a social psychological approach to language maintenance. International Journal of the Sociology of Language, 68, 69-99.

Giles, H., Llado, N., McKirnan, D., & Taylor, D. (1979). Social identity in Puerto Rico. International Journal of Psychology, 14, 185-201.

Giles, H., Taylor, D.M., & Bourhis, R.Y. (1977). Dimensions of Welsh identity. European Journal of Social Psychology, 7, 165-174.

Giles, H., Taylor, D.M., Lambert, W.E., & Albert, G. (1976). Dimensions of ethnic identity: An example from northern Maine. Journal of Social Psychology, 100, 11-19.

Gorsuch, R.L. (1983). Factor analysis. Hillsdale, NJ: Lawrence Erlbaum.

Gurin, P., Hurtado, A., & Peng, T. (1994). Group contacts and ethnicity in the social identities of Mexicanos and Chicanos. Personality and Social Psychology Bulletin, 20, 521-532.

Hakuta, K. (1986). Mirror of language: The debate on bilingualism. New York: Basic Books.

Hall, B.J., & Gudykunst, W.B. (1986). The intergroup theory of second language ability. Journal of Language and Social Psychology, 5, 291-302.

Hamers, J.F., & Blanc, M.H.A. (1989). Bilinguality and bilingualism. New York: Cambridge University Press.

Harding, R., & Looney, J.G. (1977). Problems of South East Asian children in a refugee camp. American Journal of Psychiatry, 137, 101-117.

Harman, H.H. (1976). Modern factor analysis. Chicago: University of Chicago Press.

Harvey, F. (Ed)(1992). Médias francophones hors Québec et identité: Analyses, essais, temoignages. Québec, PQ: Institut québécois de recherche sur la culture.

Hattie, J. (1990). Self-concept. Hillsdale, NJ: Lawrence Erlbaum.

Heller, M. (1984). Language and ethnic identity in a Toronto French-language school. Canadian Ethnic Studies, 16, 1-14.

Heller, M. (1986). The role of language in the formation of ethnic identity. In J.S. Phinney & M.J. Rotheram (Eds.) Children's ethnic socialization: Pluralism and development. Newbury Park: Sage.

Heller, M. (1987). Language and identity. In U. Ammon, N. Dittmar & K.J. Mattheier (Eds.), Sociolinguistics (pp.780-784). Berlin: Walter de Grugter.

Hertel, B.R. (1976). Minimizing error variance introduced by missing data routines in survey analysis. Sociological Methods and Research, 4, 459-474.

Hinkle, S., Taylor, L.A., & Fox-Cardamone, L. D. (1989). Intragroup differentiation and intergroup differentiation: A multicomponent approach. British Journal of Social Psychology, 28, 305-317.

Hogg, M.A., & McGarty, C. (1990). Self-categorization and social identity. In D. Abrams & M.A. Hogg (Eds.) Social identity theory: Constructive and critical advances (pp. 28-47). London: Harvester Wheatsheaf.

Hoppe, S.K., Leon, R.L., & Realini, J.P. (1989). Depression and anxiety among Mexican Americans in a family health center. Social Psychiatry and Psychiatric Epidemiology, 24, 63-68.

Hraba, J., & Hoiberg, E. (1983). Ideological origins of modern theories of ethnicity. Sociological Quarterly, 24, 381-391.

Hurtado, A., & Gurin, P. (1987). Ethnic identity and bilingualism attitudes. Hispanic Journal of Behavioral Sciences, 9, 1-18.

Hutnik, N. (1986). Patterns of ethnic minority identification and modes of social adaptation. Ethnic and Racial Studies, 9, 150-167.

Isajiw, W.W. (1985). Definitions of ethnicity. In Bienvenue & Goldstein (Eds.) Ethnicity and Ethnic Relations. Toronto: Butterworths.

Jackson (1988). Social psychology: Past and present. Hillsdale, NJ: Lawrence

Erlbaum.

Jöreskog, K.G., & Sörbom, D. (1986). LISREL 7: A guide to the program and applications. Chicago: SPSS.

Jöreskog, K.G., & Sörbom, D. (1991). 386 - LISREL 7.2. Chicago: Scientific Software.

Judd, C.M., McClelland, G.H., & Culhane, S.E. (1995). Data analysis: Continuing issues in the everyday analysis of psychological data. Annual Review of Psychology, 46, 433-465.

Jun, S. (1984). Communication patterns among young Korean immigrants. International Journal of Intercultural Relations, 8, 373-389.

Kaplan, R.B. (1993/1994). Language policy and planning: Fundamental issues. Applied Review of Applied Linguistics, 14, 3-19.

Karasawa, M. (1991). Toward an assessment of social identity: The structure of group identification and its effects on in-group evaluations. British Journal of Social Psychology, 30, 293-307.

Keyes, C.F. (Ed.) (1981). Ethnic change. Washington: University of Washington Press.

Kihlstrom, J.F., & Cantor, N. (1984). Mental representations of the self. In L. Berkowitz (Ed.) Advances in experimental social psychology (Vol. 17, pp. 2-48). New York: Academic Press.

Kihlstrom, J.F., Cantor, N., Albright, J.S., Chew, B.R., Klein, S.B., & Niedenthal, P.M. (1988). Information processing and the study of the self. In L. Berkowitz (Ed.) Advances in experimental social psychology (Vol. 21, pp. 145-180). New York: Academic Press.

Kim, Y.Y. (1988). Communication and cross-cultural adaptation. Clevedon, Avon: Multilingual Matters.

King, G.A., & Sorrentino, R.M. (1983). Psychological dimensions of goal-oriented interpersonal situations. Journal of Personality and Social Psychology, 44, 140-162.

Krause, N., Bennett, J., & Tran, T.V. (1989). Age differences in the acculturation process. Psychology and Aging, 4, 321-332.

Labrie, N., & Clément, R. (1986). Ethnolinguistic vitality, self-confidence and second language proficiency: An investigation. Journal of Multilingual and Multicultural Development, 7, 269-282.

Lambert, W.E. (1975). Culture and language as factors in learning and education. In A. Wolfgang (Ed.) Education of immigrant students. Toronto: Ontario Institute for Studies in Education.

Lambert, W.E. (1978). Cognitive and socio-cultural consequences of bilingualism. Canadian Modern Language Review, 34, 537-547.

Lambert, W.E. (1987). The effects of bilingual and bicultural experiences on children's attitudes and social perspectives. In P. Homel, M. Palij, & D. Aaronson (Eds.) Childhood bilingualism: Aspects of linguistics, cognitive, and social development (pp. 197-221). Hillsdale, NJ: Erlbaum.

Lambert, W.E., & Tucker, G.R. (1972), Bilingual education of children: The St. Lambert experiment. Rowley, MA: Newbury House.

Lamy, P. (1978). Bilingualism and identity. In J. Hass & W. Shaffin (Eds.)Shaping identity in Canadian society. Scarborough, ON: Prentice-Hall.

Lamy, P. (1979). Language and ethnolinguistic identity: The bilingualism question. International Journal of the Sociology of Language, 20, 23-36.

Lanca, M., Roese, N.J., Alksnis, & Gardner, R.C. (1992, June). Acculturation in a multicultural society. Paper presented at the Annual Convention of the Canadian Psychological Association, Quebec City.

Landry, R., & Allard R. (1990). Contact des langues et développement bilingue : un modèle macroscopique. The Canadian Modern Language Review, 46, 5527-553.

Landry, R., & Allard, R. (1991). Can schools promote additive bilingualism in minority group children? In L. Malave and G. Duquette (Eds.) Lnaguage, culture and cognition: A collection of studies in first and second language acquisition for educators in Canada and the United States (pp. 198-231). Clevedon: Multilingual Matters.

Landry, R., & Allard, R. (1992). Ethnolinguistic vitality and the bilingual development of minority and majority group students. In W. Fase, K. Jaspaert, & S. Kroon (Eds.) Maintenance and loss of minority languages. Amsterdam: John Benjamin.

Landry, R., & Allard, R. (1994). Diglossia, ethnolinguistic vitality, and language behavior. International Journal of the Sociology of Language, 108, 15-42.

Landry, R., Allard, R., & Théberge, R. (1991). School and family French ambience and the bilingual development of Francophone Western Canadians. Canadian Modern Language Review, 47, 876-913.

Laramée, A. (Ed.)(1993). Les communications au Québec. Montréal, PQ: Éditions Saint-Martin.

Leary, M.R. (1983). Social anxiousness: The construct and its measurement. Journal of Personality Assessment, 47, 66-75.

Leclézio, M.K., Louw-Potgieter J., & Souchon, M.B.S. (1985). The social identity of Mauritian immigrants in South Africa. Journal of Social Psychology, 126, 61-69.

Leets, L., Giles, H., & Clément, R. (1994). The ethnicity quandary: Conceptual and measurement issues. Multilingua. Manuscript in press.

Lemyre, L., Tessier, R., & Filion, L. (1990). Mesure du stress psychologique (MSP): Manuel d'utilisation. Brossard, PQ: Éditions Behaviora.

Liebkind, K. (1989a). Conceptual approaches to ethnic identity. In K. Liebkind (Ed.) New Identities in Europe. Hants, England: Gower.

Liebkind, K. (1989b). The identity of a minority. Journal of Multilingual and Multicultural Development, 10, 47-57.

Liebkind, K. (1992). Ethnic identity -- Challenging the boundaries of social psychology. In G.M. Breakwell (Ed.) Social psychology of identity and the self concept. (pp. 147-185). San Diego: Academic Press.

Loehlin, J.C. (1992). Latent variable models: An introduction to factor path, and structural analysis. Hillsdale, N.J.: Lawrence Erlbaum.

Louw-Potgieter, J., & Giles, H. (1987). Afrikaner Identity: Diversity among the right. Journal of Multilingual and Multicultural Development, 8, 283-292.

Luhtanen, R., & Crocker, J.E. (1991). A collective self-esteem scale: Self-evaluation of one's social identity. Personality and Social Psychology Bulletin, 18, 302-318.

Lynch, M.D., Norem-Hebeisen, A.A., & Gergen, K.J. (1981). Self-concept: Advances

in theory and research. Cambridge, MA: Ballinger.

Maas, A., Salvi, D., Arcuri, L., & Semin, G. (1989). Language use in intergroup contexts: The linguistic intergroup bias. Journal of Personality and Social Psychology, 57, 981-993.

Magnusson, D. (1971). An analysis of situational dimensions. Perceptual and Motor Skills, 31, 851-867.

Magnusson, D. (1981). Toward a psychology of situations: An interactional perspective. Hillsdale, NJ: Lawrence Erlbaum.

Makabe, T. (1979). Ethnic identity scale and social mobility: The case of Nisei in Toronto. The Canadian Review of Sociology and Anthropology, 16, 136-145.

Markus, H.R., & Kitayama, S. (1994). A collective fear of the collective: Implications for selves and theories of selves. Personality and Social Psychology Bulletin, 20, 568-579.

Mavreas, V., & Bebbington, P. (1989). Acculturation and psychiatric disorder: A study of Greek Cypriot immigrants. Psychological Medicine, 20, 941-951.

McGuire, W.J., McGuire, C.V., Child, P., & Fujioka, T. (1978). Salience of ethnicity in the spontaneous self-concept as a function of one's ethnic distinctiveness in the social environment. Journal of Personality and Social Psychology, 36, 511-520.

McKirnan, D.J., & Hamayan, E.V. (1984). Speech norms and perceptions of ethno-linguistic group differences: Toward a conceptual and research framework. European Journal of Social Psychology, 14, 151-168.

Mendoza, R.H. (1989). An empirical scale to measure type and degree of acculturation in Mexican-American adolescents and adults. Journal of Cross-Cultural Psychology, 20, 372-385.

Moïse, L.C., & Bourhis, R.Y. (1994). Langage et ethnicité: Communication interculturelle à Montréal 1977-1991. Canadian Ethnic Studies, 26.

Mueck, M. (1983). Caring for South East Asian refugee patients in the USA. American Journal of Public Health, 73, 431-438.

Mulaik, S.A., James, L.R., Van Alstine, J., Bennett, N., Lind, S., and Stilwell, C.D. (1989). Evaluation of goodness-of-fit indices for structural equation models. Psychological Bulletin, 105, 430-445.

Muthén, B., & Kaplan, D. (1985). A comparison for some methodologies for the factor analysis of non-normal Likert variables. British Journal of mathematical and Statistical Psychology, 38, 171-189.

Nicassio, P.M. (1985). The psychosocial adjustment of the Southeast Asian refugee: An overview of empirical findings and theoretical models. Journal of Cross-Cultural Psychology, 16, 153-173.

Nishida, H. (1985). Japanese intercultural communication competence and cross-cultural adjustment. International Journal of Intercultural Relations, 9, 247-269.

Noels, K.A., Pon, G., & Clément, R. (1994). Attitudes, identity, language and stress: the acculturation experience of Chinese university students in Ottawa. Manuscript submitted for publication.

Norušis, M.J./SPSS Inc. (1990a). SPSS/PC+ Statistics 4.0. Chicago, IL: SPSS Inc.

Norušis, M.J./SPSS Inc. (1990b). SPSS/PC+ Advanced Statistics 4.0. Chicago, IL: SPSS Inc.

Oakes, P.J., & Turner, J.C. (1987). The salience of social categories. In J.C. Turner, M.A. Hogg, P.J. Oakes, S.D., Reicher, & M.S. Wetherell (1987). Rediscovering the social group: A self-categorization theory. Oxford: Basil Blackwell.

Oetting, E.R., & Beauvais, F. (1991). Orthogonal cultural identification theory: The cultural identification of minority adolescents. The International Journal of Addictions, 25, 655-685.

Okamura, J.Y. (1981). Situational ethnicity. Ethnic and Racial Studies, 4, 452-465.

Olmedo, E.L. (1979). Acculturation: A psychometric perspective. American Psychologist, 11, 1061-1070.

Olmedo, E. (1980). Quantitative models of acculturation: An overview. IN A.M. Padilla (Ed.) Acculturation: Theory, models and some new findings. Boulder, CO: Westview Press.

Padilla, A.M., Alvarez, M., & Lindholm, K.J. (1986). gerenational status and personality factors as predictors of stress in students. Hispanic Journal of Behavioral Science, 8, 275-288.

Padilla, A.M., Lindholm, K.J., Chen, A., Duran, R., Hakuta, K., Lambert, W., & Tucker, G.R. (1991). The English-Only Movement: Myths, reality and

implications for psychology. American Psychologist, 46, 120-130.

Padilla, A.M., Wagatsuma, Y., & Lindholm, K.J. (1984). Acculturation and personality as predictors of stress in Japanese and Japanese-Americans. Journal of Social Psychology, 125, 295-305.

Pak, A.W., Dion, K.L., & Dion, K.K. (1985). Correlates of self-confidence with English among Chinese students in Toronto. Canadian Journal of Behavioural Science, 17, 369-380.

Parham, T.A. (1989). Cycles of psychological nigrescence. The Counselling Psychologist, 17, 187-226.

Parham, T.A., & Helms, J.E. (1985). The relation of racial identity attitudes to self-actualization and affective states of Black students. Journal of Counselling Psychology, 32, 431-440.

Parsonson, K. (1987). Intermarriages: Effects on the ethnic identity of offspring. Journal of Cross-Cultural Psychology, 18, 363-371.

Pedalino Porter, R. (1990). Forked tongue. New York: Basic Books.

Pedhazur, E.J. (1982). Multiple regression in behavioral research. Toronto: Holt, Rinehart, & Winston.

Pesner, J.W., & Auld, F. (1980). The relationship between bilingual proficiency and self-esteem. International Journal of Intercultural Relations, 4, 339-351.

Phinney, J.S. (1990). Ethnic identity in adolescents and adults: Review of research. Psychological Bulletin, 108, 499-514.

Phinney, J.S. (1991). Ethnic identity and self-esteem: A review and integration. Hispanic Journal of Behavioral Sciences, 13, 193-208.

Phinney, J.S. (1992). The Multigroup Ethnic Identity Measure: A new scale for use with diverse groups. Journal of Adolescent Research, 7, 156-176.

Phinney, J.S., & Chavira, V. (1992). Ethnic identity and self-esteem: An exploratory longitudinal study. Journal of Adolescence, 15, 271-281.

Phinney, J.S., Lochner, B.T., & Murphy, R. (1990). Ethnic identity development and psychological adjustment in adolescence. In A. Rubin-Stiffman & L.E. Davis (Eds) Ethnic issues in adolescent mental health. Newbury Park: Sage.

Pool, J. (1979). Language planning and identity planning. International Journal of the Sociology of Language, 20, 5-21.

Porter, J.R., & Washington, R.E. (1993). Minority identity and self-esteem. Annual Review of Sociology, 19, 139-161.

Prujiner, A., Deshaies, D., Hamers, J.F., Blanc, M., Clément, R., & Landry, R. (1984). Variation du comportement langagier lorsque deux langues sont en contact. Québec: International Centre for Research on Bilingualism.

Redfield, R., Linton, R., & Herskovits, M.J. (1936). Memorandum on the study of acculturation. American Psychologist, 38, 149-152.

Redmond, M.V., & Bunyi, J.M. (1993). The relationship of intercultural communication competence with stress and the handling of stress as reported by international students. International Journal of Intercultural Relations, 17, 235-254.

Rogler, L.H., Cortes, D.E., & Malgady, R.G. (1991). Acculturation and mental health status among Hispanics: Convergence and new directions for research. American Psychologist, 46, 585-597.

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Rosenthal, D., & Hrynevich, C. (1985). Ethnicity and ethnic identity: A comparative study of Greek-. Italian-, and Anglo-Australian adolescents. International Journal of Psychology, 20, 723-742.

Rosenthal, D., & Feldmen, S. (1992). The nature and stability of ethnic identity in Chinese youth: Effects of length of residence in two cultural contexts. Journal of Cross-cultural Psychology, 23, 214-227.

Rosenthal, D., Whittle, J., & Bell, R. (1988). The dynamic nature of ethnic identity among Greek-Australian adolescents. Journal Social Psychology, 129, 249-258.

Ross, J.A. (1979). Language and mobilization of ethnic identity. In H. Giles & B. Saint-Jacques (Eds.) Language and ethnic identity. Oxford: Pergamon Press.

Sachdev, I., & Bourhis, R. (1990). Biliguality and multilinguality. In H.G. Giles and W.P. Robinson (Eds.) Handbook of language and social psychology (pp. 293-308). Chicester: John Wiley.

Sachdev, I., & Bourhis, R.Y. (1992). Ethnolinguistic vitality: Some motivational and cognitive considerations. In M. Hogg & D. Abrams (Eds.) Group Motivation: Social psychological perspectives London, England: Harvester Wheatsheaf.

Sanchez, J.I., & Fernandez, D.M. (1993). Acculturative stress among Hispanics: A bidimensional model of ethnic identification. Journal of Applied Social Psychology, 23, 654-668.

Sayegh, L., & Lasry, J.C. (1993). Immigrants' adaptation in Canada: Assimilation, acculturation, and orthogonal cultural identification. Canadian Psychology, 34, 98-109.

Schank, R., & Abelson, R. (1977). Scripts, plans, goals, and understanding. Hillsdale, NJ: Lawrence Erlbaum.

Scheibe, K.E. (1985). Historical perspectives on the presented self. In B. Schlenker (Ed.) The self and social life (pp. 33-64). New York: McGraw-Hill.

Schinke, S.P., Moncher, M.S., Palleja, J., & L.H. Zayas. (1988). Hispanic youth, substance abuse and stress: Implications for prevention research. International Journal of the Addictions, 23, 809-826.

Schlenker, B.R. (1980). Impression management: The self-concept, social identity, and interpersonal relations. Monterey, CA: Brooks/Cole.

Schlenker, B.R. (1982). Translating actions into attitudes: An identity-analytic approach to the explanation of social conduct. In L. Berkowitz (Ed.) Advances in Experimental Social Psychology, Vol. 15 (pp. 59-101). New York: Academic Press.

Schlenker, B.R. (1985a). Introduction: Foundation of the self in social life. In B. Schlenker (Ed.) The self and social life (pp. 1-26). New York: McGraw-Hill.

Schlenker, B.R. (1985b). Identity and self-identification. In B. Schlenker (Ed.) The self and social life (pp. 65-99). New York: McGraw-Hill.

Schlenker, B.R., & Weigold, M.F. (1989). Goals and the self-identification process: Constructing desired identities. In L. Pervin (Ed.) Goal concepts in personality and social psychology (pp. 243-290). Hillsdale, NJ: Lawrence Erlbaum.

Shaver, P.R., & Brennan, K.A. (1991). Measures of depression and loneliness. In J.P. Robinson, P.R., Shaver, & L.S. Wrightsman (Eds.) Measures of personality and social psychological attitudes. (pp. 195-289). San Diego, CA: Academic Press.

Shuval, J.T. (1982). Migration and stress. In L. Goldberger and S. Breznitz (Eds.) Handbook of stress: Theoretical and clinical aspects. New York: Free Press.

Simoes, M., & Binder, J. (1980). A socio-psychiatric field study among Portuguese emigrants in Switzerland. Social Psychiatry, 15, 1-7.

Smith, E.M.J. (1985). Ethnic minorities: Life stress, social support, and mental health. The Counselling Psychologist, 13, 537-579.

SPSS, Inc. (1992). SPSS/PC+ 5.0. Chicago, IL: Scientific Software.

Sprott, J.E. (1994). "Symbolic ethnicity" and Alaska natives of mixed ancestry living in Anchorage: Enduring group or a sign of impending assimilation. Human Organization, 53, 311-322.

Statistics Canada (1992). Home language and mother tongue. Ottawa: Industry, Science and Technology Canada, 1991 Census of Canada. Catalogue number 93-317.

Sternberg, R.J., & Kolligian, J. (Eds.)(1990). Competence conisdered. New Haven: Yale University Press.

Stevens, J. (1992). Applied multivariate statistics for the social sciences. Hillsdale, NJ: Lawrence Erlbaum.

Subveri-Velez, F.A. (1986). The mass media and ethnic assimilation and pluralism: A review and research proposal with a special focus on Hispanics. Communication Research, 13, 71-96.

Swain, M., & Lapkin, S. (1991). Additive bilingualism and French immersion education: The roles of language proficiency and literacy. In A.G. Reynolds' (Ed.) Bilingualism, multiculturalism and second language learning: The McGill conference in honour of Wallace E. Lambert. Hillsdale, NJ: Lawrence Erlbaum.

Swann, W.B. (1985). The self as architect of social reality. In B. Schlenker (Ed.) The self and social life (pp. 100-125). New York: McGraw-Hill.

Swann, W.B. (1987). Identity negotiation: Where two roads meet. Journal of Personality and Social Psychology, 53, 1038-1051.

Sylvestre, A. (1992). Modes d'acculturation, stress acculturatif et race : le cas des jeunes étudiants haitiens de la première et de la seconde générations de Montréal. Unpublished Masters thesis, Université de Montréal.

Szapocznik, J., Kurtines, W.M., & Fernandez, T. (1980). Bicultural involvement and adjustment in Hispanic-American youths. International Journal of Intercultural Relations, 4, 353-365.

Szapocznik, J. Scopetta, Kurtines, W., & Aranalde, M. (1987). Theory and measurement of acculturation. Interamerican Journal of Psychology, 12, 113-130.

Tabachnick, B.G., & Fidell, L.S. (1989). Using multivariate statistics. Cambridge: Harper & Row.

Taft, H. (1973). Migration: Problems of adjustment and assimilation in immigrants. In P. Watson (Ed.) Psychology and race. Chicago: Aldine, 1973.

Tajfel, H. (1974). Social identity and intergroup behaviour. Social Science Information, 13.

Tajfel, H. (1981). Human groups and social categories. London: Cambridge University Press.

Tajfel, H., & Turner, J.C. (1979). An integrative theory of intergroup conflict. In W.G. Austin, & S. Worchel (Eds.) The social psychology of intergroup relations, Monterey, CA: Brooks-Cole.

Taylor, D.M., Bassili, J.N., & Aboud, F.E. (1976). Dimensions of ethnic identity: An example from Quebec. Journal of Social Psychology, 89, 185-192.

Teske, R., & Nelson, B. (1973). Two scales for the measurement of Mexican-American identity. International Review of Modern Sociology, 3, 192-203.

Thomas, D.R. (1986). Culture and ethnicity: Maintaining the distinction. Australian Journal of Psychology, 38, 371-380.

Thompson, R.H. (1989). Theories of ethnicity: A critical appraisal. New York: Greenwood.

Ting-Toomey, S. (1981). Ethnic identity and close friendship in Chinese-American college students. International Journal of Intercultural Relations, 5, 383-406.

Tran, T.V. (1990a). Language acculturation among older Vietnamese refugee adults. Gerontologist, 30, 94-99.

Tran, T.V. (1990b). Sex differences in English language acculturation and learning strategies among Vietnamese adults aged 40 and over in the United States.

Sex Roles, 19, 747-758.

Tseng, W.S., & McDermott, J.F. (1981). Culture, mind and therapy. New York: Brunner-Mazel.

Turner, J.C. (1982). Towards a cognitive redefinition of the social group. In H. Tajfel (Ed.) Social identity and intergroup relations. Cambridge: Cambridge University Press.

Turner, J.C., Hogg, M.A., Oakes, P.J., Reicher, S.D., & Wetherell, M.S. (1987). Rediscovering the social group: A self-categorization theory. Oxford: Basil Blackwell.

Turner, J.C., Oakes, P.J., Haslam, S.A., & McGarty, C. (1994). Personality and Social Psychology Bulletin, 20, 454-463.

Ullah, P. (1985). Second generation Irish youth: Identity and ethnicity. New Community, 12, 310-320.

Waddell, N., & Cairns, E. (1986). Situational perspectives of social identity in Northern Ireland. British Journal of Social Psychology, 25, 25-31.

Westermeyer, J. (1986). Two self-rating scales for depression in Hmong refugees: Assessment in clinical and nonclinical samples. Journal of Psychiatric Research, 20, 103-113.

White, C.L., & Burke, P.J. (1987). Ethnic role identity among black and white college students: An interactionist approach. Sociological Perspectives, 30, 310-331.

Whittler, T.E., Calantone, R.J., & Young, M.R. (1991). Strength of ethnic affiliation: Examining Black identification with Black culture. The Journal of Social Psychology, 131, 461-467.

Wong-Rieger, D. (1984). Testing a model of emotional and coping responses to problems in adaptation: Foreign students at a Canadian university. International Journal of Intercultural Relations, 8, 153-184.

Wright, S.C., & Taylor, D.M. (1995). Identity and the language of the classroom: Investigating the impact of heritage versus second language instruction on personal and collective self-esteem. Educational Psychology, 87, 241-252.

Yardley, K., & Honess, T. (1987). Self and identity: Psychosocial perspectives. Chichester: John Wiley & Sons.

Yinger, J.M. (1985). Ethnicity. Annual Review of Sociology, 11, 151-180.

Yelvington, K.A. (1991). Ethnicity as practice? A comment on Bentley. Comparative Studies in Society and History, 32, 158-168.

Young, M. (1991). The adjustment of Salvadoran refugees: Stressors, resources and well-being. Unpublished doctoral dissertation, University of Western Ontario, London, Canada.

Ytsma, J., Viladot, M.A., & Giles, H. (1994). Ethnolinguistic vitality and ethnic identity: Some Catalan and Frisian data. International Journal of the Sociology of Language, 105/106, 63-78.

Zak, I. (1973). Dimensions of Jewish-American identity. Psychological Reports, 33, 891-900.

Zak, I. (1976). Structure of ethnic identity of Arab-Israeli students. Psychological Reports, 38, 239-246.

APPENDIX A

PRELIMINARY ANALYSES

Preliminary Analyses on All Variables

Prior to the major analyses, the data were reviewed for missing data, the presence of outliers, violations of the assumptions of normality and linearity, as well as the presence of multicollinearity. Because the major analyses consider Anglophone and Francophone groups separately, as well as minority and majority groups within these language groups, the screening analyses were done separately for both language groups and then separately for minority and majority Anglophone and Francophone groups. The results are discussed in more detail below.

Missing Values

Because of the questionnaire's length, it was not unusual for subjects to have missed questionnaire sections or parts of sections. For this reason, a 2-step approach to dealing with missing data was adopted. First, participants who did not complete at least 50% of the items on at least 8 of the 16 measures (50%), or for whom the required census data were not available, were dropped from the sample. This procedure eliminated 18 Anglophones and 28 Francophones (8% of the total sample).

The remaining data were again reviewed using the SPSSPC EXAMINE programme. The results indicated that 68 subjects (18.5%) from the majority Anglophone group, 4 (11.4%) individuals from the minority Anglophone group, 45 (16.2%) from the majority Francophone group, and 18 (9.2%) from the minority Francophone group were missing data. Because the missing data on average (15.4%) met the 15% cutoff point proposed by Hertel (1976; see also Allison, Gorman, & Primavera, 1993), the missing values were replaced with an estimated score in order that these cases be retained for the major analyses. If the participant completed 50% or more of the items on a scale, a scale mean score was calculated on the basis of the items that were completed. If less than 50% of the items on that scale were completed[24], the missing score was substituted with the mean calculated for those

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[24] There was a tendency for there to be more missing data for the Quality of Contact index and the Cloze test. Because the Quality of Contact measure did not include a "not applicable" category for situations where the participant had no contact

subjects with complete data from the appropriate vitality group. Thus, the scale scores in these cases were inferred from the group mean.

Outliers

The data were reviewed to identify outlying cases. The subjects were first divided into the 4 vitality groups, which were examined independently for the presence of univariate and multivariate outliers. These groups were then combined into language groups and re-examined.

Multivariate outliers. As a first step, outlying cases were assessed in terms of their position on a scatterplot of Studentized residuals. Nine outliers were determined in this manner, and they were deleted from the analyses. Multivariate outliers were assessed using the SPSS/PC REGRESSION programme by regressing the 14 dependent variables onto the subject number. The influence of each case was determined using Cook's distance (Cook & Weisberg, 1974). Cook's distance assesses the influence of a case on the regression line by removing cases one at a time to determine the extent to which the case alters the regression line. If the case causes a significant shift in the regression line, it is identified as an outlying variable and removed from the analysis (Stevens, 1992; Judd, McClelland, & Culhane, 1995). No cases were identified as significantly influencing the regression line. Mahalanobis' distance was used to determine any unusual patterns of response. 17 outliers were identified with Mahalanobis' distance greater than χ^2_{14} = 39.25 (p < .001). These cases were eliminated from the subsequent analyses.

Univariate outliers.   Using boxplots generated by the SPSS/PC EXAMINE program, 49 cases with values greater than 3 deviations from the group mean were identified across the 14 variables in all four vitality groups and in the two native

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with the L2-group (eg. family or intimate relations), it is not unexpected that there would be some missing data on this variable. As well, because the Cloze test was placed at the end of the questionnaire, due to time constraints it was the most likely instrument to be incomplete.

language groups[25]. These outliers appeared to be random occurrences, since they were not concentrated on any one particular variable nor was any one subject a particularly frequent outlier. In order to avoid violations of the assumption of normality, all 49 individuals were excluded from the major analyses.

Normality, linearity, homoscedasticity, and multicollinearity

The data were examined for violations of the assumption of normality as reflected in skewness and kurtosis values and histograms generated by SPSS/PC FREQUENCIES programme. This assessment was done separately for each of the groups. Generally, the average skewness and kurtosis values were below the |1.00| criterion (Muthèn & Kaplan, 1985), and the histograms suggested that the variables approximated a normal distribution (for skewness and kurtosis values of all variables, see Tables A.1 and A.2)[26]. Linearity was assessed through inspection of bivariate scatterplots (Tabachnick & Fidell, 1989). Because it was not feasible to examine 14*14 scatterplots, 20 randomly chosen scatterplots were examined. The scatterplots suggested no curvilinear relations between variables.

Finally, the correlation matrices for each vitality group and each native language group were examined for multicollinearity. None of the matrices generated by the SPSS/PC FACTOR program contained bivariate correlations above |.90|, the squared multiple correlations of each variable with all other variables were well below 1.00,

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[25] Removal of these cases revealed more univariate outliers (see Tabachnick & Fidell, 1989, pp. 66-68). Since in large sample sizes it is likely that some cases will fall outside of 3 standard deviations (Tabachnick & Fidell, 1989, p. 68), it is plausible that despite their distance from the group mean, these values represent valid cases. Indeed examination of the histograms for each of the variables did not reveal any appreciably extreme scores. It was then decided to remove only the univariate outliers identified in the first run.

[26] The exception to this pattern was the minority Francophones who showed a high mean level of self-confidence in the L2, combined with negatively skewed and highly kurtotic distribution of scores. This pattern suggests that this group of Francophones has a high level of self-confidence with very little variation within the group. Such a finding is not unexpected for this minority group living in an English-dominated social context.

Table A.1
Anglophones: Descriptive Statistics for All Variables

Variable	Minority[a]				Majority[b]				Total[c]			
	Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.
Contact and Language												
Frequency of contact w. L2-group	3.93	1.21	-.62	.49	2.89	1.13	.02	.68	2.98	1.17	-.02	.66
Quality of contact w. L2-group	5.61	1.02	-1.07	-.32	5.47	1.00	-.15	-.55	5.48	1.00	-.23	-.52
Proportion of life spent w. L1-group	6.12	1.11	-.16	-.62	6.97	.97	-.30	-.34	6.89	1.02	-.03	-.43
Media exposure	2.56	.67	.10	-.58	2.11	.64	-.02	.46	2.15	.66	-.22	.37
Anxiety using L2	4.29	1.16	.10	-.46	3.46	1.00	-.21	.30	3.53	1.04	-.29	.28
Confidence using L2	4.75	1.16	-.07	-.80	3.84	1.38	-.73	-.41	3.92	1.39	-.69	-.44
Self-evaluation of L2 proficiency	5.23	1.25	-.78	-.15	4.21	1.29	-.49	.06	4.30	1.32	-.51	.05
L2 proficiency (Cloze test)	22.32	5.42	-.72	.65	19.25	5.88	-.73	.42	19.52	5.90	-.72	-.43
Identity												
L1-group identity	3.71	.88	.10	-.78	3.98	.89	.15	-.92	3.96	.89	.10	-.89
L2-group identity	2.36	.96	-.45	.55	1.97	.67	.08	.74	2.00	.71	.33	.81
Adjustment												
Self-esteem	5.32	.54	-.24	-.92	5.16	.66	.26	-.88	5.17	.65	.29	-.90
Interpersonal anxiety	2.92	.82	-.93	-.01	3.02	.86	-.50	.14	3.01	.85	-.53	.13
Depression	1.34	.23	.35	.80	1.39	.29	.30	.88	1.39	.29	.37	.13
Stress	3.00	1.08	-.69	.34	3.43	1.21	-.38	.41	3.39	1.21	-.38	.41

Note: L1 = First Language; L2 = Second Language; SD = Standard Deviation; Kurt. = Kurtosis; Skew. = Skewness
[a] N=33; [b] N=335; [c] N=368

Table A.2

Francophones: Descriptive Statistics for All Relevant Variables

Variable	Minority[a]				Majority[b]				Total[c]			
	Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.
Contact and Language												
Frequency of contact												
w. L2-group	3.93	1.16	-.16	.41	3.10	1.15	-.27	.54	3.43	1.22	-.27	.43
Quality of contact												
w. L2-group	5.56	.95	-.38	-.33	5.23	1.10	-.10	-.51	5.36	1.05	-.04	-.50
Proportion of life												
spent w. L1-group	6.07	1.02	.04	-.24	6.93	.90	-.36	-.27	6.58	1.04	-.05	-.35
Media exposure	5.17	.97	-.49	-.33	4.17	1.21	-.41	.08	4.57	1.22	-.52	-.21
Anxiety using L2	5.12	.77	.55	-1.01	4.48	1.01	-.55	-.40	4.74	.97	-.26	-.67
Confidence using L2	5.75	.38	2.14	-1.69	5.03	.99	.67	-1.13	5.32	.88	2.46	-1.65
Self-evaluation of												
L2 proficiency	6.58	.63	1.57	-1.58	5.68	1.07	-.52	-.52	6.04	1.02	.06	-.94
L2 proficiency												
(Cloze test)	24.52	2.76	.60	.65	20.54	4.62	-.02	.47	22.14	4.43	.47	-.80
Identity												
L1-group identity	3.84	.76	-.05	-.60	4.21	.72	.36	-.97	4.06	.76	.05	-.78
L2-group identity	3.06	.94	-.54	-.06	2.40	.88	-.65	.30	2.66	.96	-.67	.19
Adjustment												
Self-esteem	5.29	.56	.35	-.88	5.29	.53	.69	-.91	5.29	.54	.53	-.90
Interpersonal anxiety	2.76	1.04	-.74	.35	2.92	.98	-.70	.14	2.86	1.01	-.75	.21
Depression	1.37	.29	-.17	.66	1.33	.26	.37	.85	1.35	.27	.12	.77
Stress	3.51	1.18	-.67	.21	3.45	1.19	-.26	.37	3.47	1.19	-.44	.31

Note: L1 = First Language; L2 = Second Language; SD = Standard Deviation; Kurt. = Kurtosis; Skew. = Skewness
[a] N = 174; [b] N = 258; [c] N = 432

and the matrices' determinants were sufficiently larger than 0 so that inversion difficulties did not arise. These indices suggest that the correlation matrices used in the present analyses were not multicollinear.

In summary, after the elimination of cases due to missing and outlying data, 800 cases were retained for the major analyses, including 33 minority Anglophones, 335 majority Anglophones, 174 minority Francophones, and 258 majority Francophones. These data examinations demonstrate that the variables adequately conform to the assumptions of normality, linearity and multicollinearity that underlie univariate and multivariate techniques.

Preliminary Analyses of the Situated Ethnic Identity Scale Items

The items of the Situated Ethnic Identity Scale were reviewed to check for missing data, the presence of univariate and multivariate outliers, violations of the assumptions of normality and linearity, as well as the presence of multicollinearity. These analyses were conducted separately for Anglophones' and Francophones' L1-group and L2-group identity.

Means, standard deviations, skewness and kurtosis values are presented in Table A-3 and A-4. Generally, the skewness and kurtosis values approximated an average value of |1.00| (Muthèn & Kaplan, 1985), although some non-normality was evident for some variables, particularly for Francophone L1-group identity. These items seemed to pertain mostly to the school environment (eg. items 3, 5, 7, and 13). This pattern of findings would suggest that there is little variation in the level of Francophones' L1-group identity in the university setting: Francophones seem to have a unified view of the university as a promoter of L1-group identity. A transformation of the data was deemed undesirable because asymptotic distribution-free estimates require a very large sample size, and because transformation of this set of data would inhibit the comparison of identity scores with those of the Anglophone group. This characteristic of the distribution of the identity scores must be recognized as a limitation of the present study.

Table A.3
Anglophones:
Descriptive Statistics for Situated Ethnic Identity Items

		L1-group Identity*				L2-group Identity*			
	Item	Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.
1.	When I have contacts with other students ...	4.17	1.19	1.50	-1.54	1.80	0.99	0.46	1.09
2.	When I read the newspaper ...	4.33	1.21	2.39	-1.89	1.73	1.02	0.45	1.20
3.	When I chose the University of Ottawa ...	3.88	1.20	0.20	-0.98	2.58	1.25	-0.92	0.25
4.	When I listen to music ...	4.07	1.50	0.04	-1.31	1.68	1.04	1.46	1.50
5.	When dealing with university personnel ...	4.30	1.04	1.75	-1.56	2.22	1.30	-0.52	0.78
6.	When dealing with merchants ...	4.18	1.22	1.52	-1.58	1.95	1.08	0.15	0.55
7.	When thinking about relations between Anglophones and Francophones ...	4.01	1.17	0.57	-1.15	2.32	1.22	-0.81	0.50
8.	When I think about where I would want to settle down ...	3.46	1.54	-1.15	-0.59	2.14	1.24	-0.64	0.71
9.	When I am with my friends ...	4.11	1.33	0.77	-1.45	1.98	1.14	-0.05	0.95
10.	When I write for myself (not counting school work) ...	4.22	1.39	0.87	-1.57	1.42	0.84	4.88	2.23
11.	When I read for pleasure ...	4.25	1.36	1.26	-1.68	1.52	0.89	2.58	1.75
12.	When I think about my life's goals ...	3.63	1.57	-0.99	-0.76	2.19	1.28	-0.80	0.66
13.	When I participate in cultural activities ...	3.99	1.20	0.88	-1.28	2.31	1.14	-0.73	0.48
14.	When I listen to the radio ...	4.11	1.37	0.54	-1.40	1.85	1.04	0.78	1.18
15.	When I prepare food ...	3.01	1.76	-1.76	-0.05	1.77	1.15	0.62	1.32
16.	When I think about my future or present spouse ...	3.43	1.61	-1.33	-0.51	2.14	1.22	-0.48	0.75
17.	When I write my assignments ...	4.05	1.46	0.11	-1.30	1.60	0.98	2.05	1.66
18.	When I think about politics ...	3.79	1.37	-0.26	-0.97	2.28	1.23	-0.89	0.49
19.	When I watch the news on television ...	3.98	1.27	0.40	-1.21	2.05	1.05	-0.61	0.63
20.	In my social contacts ...	4.12	1.19	1.24	-1.45	2.19	1.12	-0.19	0.72
21.	When I am at home ...	3.86	1.60	-0.78	-0.96	1.62	1.08	1.93	1.71
22.	When I travel ...	4.18	1.14	1.59	-1.52	2.46	1.20	-0.90	0.31

Note: L1 = First Language; L2 = Second Language; SD = Standard Deviation; Kurt. = Kurtosis; Skew. = Skewness
*n = 346

159

Table A.4
Francophones:
Descriptive Statistics for Situated Ethnic Identity Items

		L1-group Identity*				L2-group Identity*			
Item		Mean	SD	Kurt.	Skew.	Mean	SD	Kurt.	Skew.
1.	When I have contacts with other students ...	4.34	1.01	2.97	-1.81	2.45	1.30	-0.84	0.50
2.	When I read the newspaper ...	3.78	1.45	-0.72	-0.85	2.71	1.55	-1.48	0.24
3.	When I chose the University of Ottawa ...	4.56	0.85	6.29	-2.42	2.33	1.28	-0.91	0.51
4.	When I listen to music ...	3.35	1.48	-1.28	-0.34	3.55	1.47	-1.01	-0.60
5.	When dealing with university personnel ...	4.50	.87	3.94	-1.99	2.34	1.27	-0.80	0.57
6.	When dealing with merchants ...	3.76	1.27	-0.52	-0.74	3.28	1.43	-1.22	-0.28
7.	When thinking about relations between Anglophones and Francophones ...	4.41	0.93	2.65	-1.69	2.48	1.36	-1.02	0.42
8.	When I think about where I would want to settle down ...	4.00	1.30	0.25	-1.19	2.58	1.35	-1.03	0.36
9.	When I am with my friends ...	4.33	1.09	2.68	-1.82	2.49	1.41	-1.10	0.44
10.	When I write for myself (not counting school work) ...	4.24	1.19	1.32	-1.55	2.38	1.51	-1.18	0.58
11.	When I read for pleasure ...	3.81	1.38	-0.61	-0.85	3.11	1.56	-1.47	-0.16
12.	When I think about my life's goals ...	4.15	1.28	0.98	-1.48	2.70	1.41	-1.28	0.19
13.	When I participate in cultural activities ...	4.25	1.07	2.21	-1.63	2.67	1.29	-0.98	0.27
14.	When I listen to the radio ...	3.51	1.44	-1.03	-0.53	3.37	1.52	-1.26	-0.42
15.	When I prepare food ...	3.36	1.76	-1.61	-0.41	1.92	1.31	0.01	1.14
16.	When I think about my future or present spouse ...	4.04	1.38	0.22	-1.27	2.46	1.41	-1.16	0.45
17.	When I write my assignments ...	4.46	0.99	4.28	-2.15	2.27	1.30	-0.70	0.67
18.	When I think about politics ...	3.89	1.47	-0.36	-1.06	2.36	1.37	-0.94	0.57
19.	When I watch the news on television ...	3.64	1.42	-0.83	-0.70	3.08	1.49	-1.41	-0.07
20.	In my social contacts ...	4.30	1.01	2.54	-1.67	3.02	1.34	-1.15	-0.06
21.	When I am at home ...	4.48	1.11	3.99	-2.26	1.83	1.21	0.47	1.30
22.	When I travel ...	4.10	1.22	0.91	-1.37	3.17	1.41	-1.19	-0.19

Note: L1 = First Language; L2 = Second Language; SD = Standard Deviation; Kurt. = Kurtosis; Skew. = Skewness
*n = 409

The data were reviewed for missing data using the SPSS/PC EXAMINE programme. The results indicated that 22 subjects (5.3%) from the Anglophone group and 23 (5.1%) individuals from the Francophone group were missing data. Because the percentage of missing data in both groups was low (Hertel, 1976; see also Allison, Gorman, & Primavera, 1993) and because they appeared to be largely scattered throughout the sample, these missing cases were deleted from the analyses involving the identity items.

The presence of univariate outliers was assessed through an examination of histograms for each of the items. No cases were markedly detached from the rest of the distribution. Multivariate outliers were assessed using the SPSS/PC REGRESSION programme by regressing the 22 dependent variables onto the subject number. All cases in all groups yielded a Cook's D value well below 1.00 (Stevens, 1992). Thus, no cases were identified as significantly influencing the regression line.

Finally, the correlation matrices for each language group were examined to ensure that multicollinearity was not present (see Tables A.5 to A.8). None of the 4 22-variable matrices generated by the SPSS/PC FACTOR program contained bivariate correlations above |.90|, the squared multiple correlation of each variable with all other variables were well below 1.00, and the determinant of each correlation matrix was larger than 1. These indices suggest that multicollinearity is not a problem in these correlation matrices. On the basis of the above findings, these data were deemed acceptable for the statistical procedures to be used in the major analyses.

Table A.5
Anglophones:
Correlations between L1-group identity items

	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
01	1.00																					
02	.59	1.00																				
03	.49	.36	1.00																			
04	.43	.55	.34	1.00																		
05	.34	.25	.33	.11	1.00																	
06	.51	.52	.44	.54	.28	1.00																
07	.22	.25	.22	.24	.20	.28	1.00															
08	.34	.26	.34	.45	.15	.41	.37	1.00														
09	.51	.48	.40	.57	.15	.54	.32	.37	1.00													
10	.43	.56	.37	.57	.08	.48	.18	.46	.59	1.00												
11	.43	.59	.37	.63	.08	.55	.20	.38	.59	.78	1.00											
12	.44	.43	.42	.63	.14	.45	.27	.37	.54	.53	.55	1.00										
13	.29	.23	.32	.26	.20	.31	.32	.58	.36	.25	.26	.38	1.00									
14	.45	.53	.34	.63	.08	.56	.27	.36	.59	.65	.71	.57	.38	1.00								
15	.37	.37	.37	.48	.13	.38	.29	.43	.43	.46	.45	.57	.38	.49	1.00							
16	.46	.34	.37	.46	.18	.33	.33	.51	.49	.42	.39	.56	.36	.44	.58	1.00						
17	.48	.52	.37	.55	.22	.50	.22	.56	.53	.61	.64	.56	.27	.58	.47	.42	1.00					
18	.20	.14	.23	.19	.18	.14	.47	.37	.21	.12	.16	.29	.27	.17	.37	.39	.15	1.00				
19	.43	.48	.32	.44	.15	.40	.37	.26	.39	.49	.51	.60	.37	.54	.42	.46	.44	.41	1.00			
20	.50	.37	.35	.54	.13	.49	.26	.21	.36	.63	.49	.55	.36	.55	.43	.52	.55	.23	.42	1.00		
21	.42	.42	.31	.53	.04	.41	.21	.29	.39	.48	.56	.46	.24	.58	.52	.44	.50	.24	.43	.50	1.00	
22	.45	.26	.45	.31	.24	.40	.29	.29	.34	.31	.26	.40	.43	.37	.31	.39	.29	.28	.33	.41	.29	1.00

Determinant = .000048
Bartlett's Test of Sphericity = 3352.05, $p < .01$
N = 348

*Note: Items numbers correspond with items in Table 2.1 (Chapter 2)

Table A.6
Anglophones:
Correlations between L2-group identity items

	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
01	1.00																					
02	.39	1.00																				
03	.50	.45	1.00																			
04	.34	.39	.40	1.00																		
05	.54	.26	.51	.23	1.00																	
06	.51	.38	.45	.25	.53	1.00																
07	.40	.35	.47	.26	.31	.33	1.00															
08	.37	.34	.36	.33	.20	.28	.36	1.00														
09	.54	.45	.44	.41	.37	.43	.41	.44	1.00													
10	.31	.36	.29	.28	.17	.35	.29	.26	.42	1.00												
11	.39	.44	.33	.42	.22	.32	.31	.30	.44	.53	1.00											
12	.39	.36	.40	.29	.24	.31	.34	.53	.40	.36	.37	1.00										
13	.46	.34	.51	.33	.35	.39	.48	.44	.43	.33	.31	.40	1.00									
14	.35	.43	.33	.58	.29	.34	.23	.31	.40	.37	.40	.31	.38	1.00								
15	.31	.17	.24	.19	.24	.26	.24	.32	.30	.29	.23	.29	.39	.19	1.00							
16	.41	.33	.37	.40	.26	.26	.36	.48	.51	.29	.29	.47	.47	.35	.39	1.00						
17	.47	.36	.39	.24	.35	.37	.35	.32	.40	.39	.40	.40	.39	.26	.30	.34	1.00					
18	.30	.27	.32	.24	.32	.32	.41	.35	.35	.24	.24	.37	.42	.31	.28	.42	.20	1.00				
19	.43	.47	.39	.41	.32	.38	.39	.39	.41	.27	.27	.34	.40	.46	.23	.32	.32	.53	1.00			
20	.57	.41	.49	.39	.45	.53	.47	.40	.67	.36	.36	.42	.56	.39	.31	.54	.45	.40	.50	1.00		
21	.37	.30	.37	.30	.28	.41	.35	.37	.48	.40	.31	.38	.45	.30	.34	.50	.35	.28	.29	.45	1.00	
22	.44	.33	.48	.34	.46	.49	.39	.37	.43	.24	.40	.33	.51	.34	.26	.36	.33	.36	.39	.55	.38	1.00

Determinant = .000005
Bartlett's Test of Sphericity = 4113.82, p < .01
N = 348

*Note: Items numbers correspond with items in Table 2.1 (Chapter 2)

Table A.7
Francophones:
Correlations between L1-group identity items

	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
01	1.00																					
02	.36	1.00																				
03	.36	.15	1.00																			
04	.28	.44	.27	1.00																		
05	.39	.28	.33	.23	1.00																	
06	.41	.43	.23	.28	.38	1.00																
07	.37	.29	.31	.25	.22	.32	1.00															
08	.34	.42	.25	.37	.13	.33	.37	1.00														
09	.62	.42	.29	.39	.30	.44	.43	.37	1.00													
10	.38	.43	.19	.38	.25	.32	.35	.53	.46	1.00												
11	.37	.47	.22	.47	.19	.44	.32	.38	.43	.49	1.00											
12	.40	.30	.29	.31	.23	.37	.44	.35	.37	.52	.58	1.00										
13	.41	.37	.37	.40	.28	.48	.38	.32	.53	.41	.40	.38	1.00									
14	.39	.39	.29	.63	.24	.41	.34	.38	.38	.52	.35	.42	.43	1.00								
15	.30	.44	.20	.36	.12	.38	.33	.28	.44	.39	.44	.45	.36	.41	1.00							
16	.43	.32	.25	.34	.22	.33	.33	.33	.36	.51	.41	.38	.43	.32	.37	1.00						
17	.40	.38	.26	.22	.29	.26	.29	.29	.42	.40	.44	.34	.50	.41	.36	.49	1.00					
18	.29	.42	.26	.27	.17	.32	.33	.33	.36	.42	.40	.33	.38	.29	.28	.33	.38	1.00				
19	.38	.42	.24	.41	.22	.46	.33	.29	.31	.37	.32	.33	.35	.42	.33	.38	.38	.22	1.00			
20	.54	.42	.24	.31	.30	.43	.29	.37	.37	.43	.42	.50	.37	.39	.52	.40	.36	.29	.48	1.00		
21	.30	.26	.18	.26	.19	.26	.37	.28	.42	.69	.44	.43	.50	.47	.38	.36	.43	.39	.35	.38	1.00	
22	.37	.37	.25	.31	.28	.44	.32	.32	.30	.47	.37	.31	.36	.28	.31	.38	.40	.25	.32	.36	.27	1.00

Determinant = .000083
Bartlett's Test of Sphericity = 3755.64, p < .01
N = 409

*Note: Items numbers correspond with items in Table 2.1 (Chapter 2)

Table A.8
Francophones:
Correlations between L2-group identity items

	1*	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
01	1.00																					
02	.61	1.00																				
03	.53	.42	1.00																			
04	.48	.49	.38	1.00																		
05	.51	.41	.53	.41	1.00																	
06	.57	.57	.38	.56	.50	1.00																
07	.55	.46	.44	.43	.46	.50	1.00															
08	.51	.40	.43	.44	.34	.43	.51	1.00														
09	.65	.48	.45	.45	.42	.53	.57	.55	1.00													
10	.57	.46	.32	.37	.37	.44	.41	.51	.55	1.00												
11	.52	.54	.30	.49	.40	.53	.45	.48	.47	.62	1.00											
12	.48	.38	.49	.42	.42	.47	.52	.56	.55	.42	.46	1.00										
13	.49	.48	.43	.43	.38	.47	.44	.46	.47	.42	.48	.43	1.00									
14	.48	.52	.32	.71	.36	.56	.50	.49	.50	.46	.56	.45	.52	1.00								
15	.40	.37	.28	.30	.34	.29	.37	.35	.38	.37	.38	.35	.42	.35	1.00							
16	.48	.36	.34	.31	.34	.39	.42	.50	.53	.44	.42	.42	.45	.37	.44	1.00						
17	.56	.43	.42	.29	.44	.39	.42	.38	.48	.56	.46	.44	.38	.31	.40	.43	1.00					
18	.46	.41	.35	.35	.36	.36	.45	.39	.44	.33	.37	.46	.44	.40	.38	.41	.40	1.00				
19	.49	.54	.39	.47	.39	.50	.52	.45	.51	.43	.55	.44	.46	.63	.40	.43	.46	.53	1.00			
20	.64	.56	.42	.51	.47	.60	.55	.51	.70	.55	.59	.58	.52	.58	.39	.55	.52	.50	.60	1.00		
21	.48	.39	.35	.29	.37	.41	.39	.37	.52	.48	.43	.40	.34	.38	.36	.45	.49	.26	.45	.49	1.00	
22	.44	.42	.40	.45	.38	.52	.48	.46	.43	.35	.43	.57	.45	.51	.32	.43	.38	.44	.54	.59	.38	1.00

Determinant = .0000003
Bartlett's Test of Sphericity = 5077.21, p < .01
N = 409

*Note: Items numbers correspond with items in Table 2.1 (Chapter 2)

APPENDIX B

**INSTRUMENTS USED
IN THE ENGLISH QUESTIONNAIRE[1]**

[1]   Published instruments have been omitted from this appendix.

DIRECTIONS FOR THE USE OF THE LIKERT-TYPE SCALES

The following section contains a number of statements with which some people agree and others disagree. There are no right or wrong answers since many people have different opinions. Please rate how much you personally agree or disagree with these statements -- how much they reflect how you feel or think personally. Use the following scale:

Strongly Disagree 1	Moderately Disagree 2	Slightly Disagree 3	Slightly Agree 4	Moderately Agree 5	Strongly Agree 6

For each statement, write in the left margin the number corresponding to the amount of your agreement or disagreement. Note, there is no right or wrong answer. All that is important is that your indicate your personal feeling.

SELF-CONFIDENCE IN USING FRENCH
(CLÉMENT, 1988)

1. I really believe that I am capable of reading and understanding most texts in French.

2. In my opinion, I know enough French to be able to write comfortably.

3. Personally, I believe that I know enough French to speak correctly.

4. I am very confident in my ability to write French correctly.

5. I feel that I can understand someone speaking French quite well.

6. I believe that my knowledge of French allows me to cope with most situations where I have to use that language.

ANXIETY WHILE USING FRENCH
(CLÉMENT, 1988)

1. When I make a telephone call, I get mixed up if I have to speak French.

2. Every time that I meet a French-speaking person and I speak with him/her in French, I feel relaxed.

3. I feel uneasy whenever I speak French.

4. In a restaurant, I feel calm and confident when I have to order a meal in French.

5. I feel confident and relaxed when I have to ask for directions in French.

6. I feel comfortable when I speak French among friends where there are people who speak English and people who speak French.

7. I get shy speaking French with a superior.

8. I get nervous every time I have to speak in French to a salesclerk.

PROPORTION OF LIFE
SPENT WITH MEMBERS OF THE FIRST LANGUAGE GROUP

For each of the following domains of activity, please evaluate the proportion of Anglophones and non-Anglophones with whom you are in contact.

In my family:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

In my intimate relations:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

In my neighbourhood:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

Among my friends:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

Among the students with which I have regular social contact:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

Among the salesclerks in the stores I go to:

Not at all   Completely
Anglophone ___ ___ ___ ___ ___ ___ ___ ___ ___ Anglophone
      0%   25%   50%   75%   100%

FREQUENCY AND QUALITY OF CONTACT
WITH THE SECOND LANGUAGE GROUP

For these same domains, evaluate the frequency and quality of your contacts with Francophones.

In my family:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

In my intimate relations:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

In my neighbourhood:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

Among my friends:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

Among the students with which I have regular social contact:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

Among the salesclerks in the stores I go to:

Not at all frequent ___ ___ ___ ___ ___ ___ ___ Extremely frequent

Not at all pleasant ___ ___ ___ ___ ___ ___ ___ Extremely pleasant

MEDIA EXPOSURE TO THE SECOND LANGUAGE GROUP

Describe the kind of media to which you are exposed.

Television:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Radio:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Films/Movies:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Music:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Newspapers:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Magazines:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Books:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Theatre/plays:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Road signs:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Billboards:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

Advertising flyers:

Mostly English ___ ___ ___ ___ ___ ___ ___ Mostly French

SELF-EVALUATIONS OF SECOND LANGUAGE PROFICIENCY
(CLÉMENT, 1988)

Indicate your response to the following statements by crossing out the number which most corresponds to your evaluation. For example, if you think that you can read "a little" French, cross out the line marked (2), like this:

1.   I read French...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
not at all		a little		quite well		fluently

Please evaluate the following aspects:

1.   I read French...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
not at all		a little		quite well		fluently

2.   I understand French...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
not at all		a little		quite well		fluently

3.   I write French...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
not at all		a little		quite well		fluently

4.   I speak French...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
not at all		a little		quite well		fluently

SITUATED ETHNOLINGUISTIC IDENTITY
(CLÉMENT & NOELS, 1992)

The purpose of the next section of the questionnaire is to examine interpersonal relations and ethnic identity by asking your opinions regarding different types of interactions. Several researchers agree that an individual's identity may change depending upon the situation that he/she is in. For example, in some situations you could identify yourself as an Anglophone, in other situations as a Francophone, whereas in others you may not identify with either of these two groups.

On the pages which follow, you will find several situations. In each case, evaluate your level of identification to each of the two groups. For example, in one situation, you may identify yourself as very "Anglophone", and not at all "Francophone". In this case you would mark the extreme ends of the scale in the following manner.

1. **You are visiting a neighbour and you are talking about your children.**

Not at all Anglophone	(0)	(1)	(2)	(3)	(4) Very Anglophone
Not at all Francophone	(0)	(1)	(2)	(3)	(4) Very Francophone

In other situations you may not identify with either of these two groups: that is, your language group identity may not be important in this situation. In this case you would use the two scales in the following manner:

1. **You are visiting a neighbour and you are talking about your children.**

Not at all Anglophone	(0)	(1)	(2)	(3)	(4) Very Anglophone
Not at all Francophone	(0)	(1)	(2)	(3)	(4) Very Francophone

In other situations, you may identify with both groups at the same time. In this case you would use the two scales in the following manner:

1. **You are visiting a neighbour and you are talking about your children.**

Not at all Anglophone	(0)	(1)	(2)	(3)	(4) Very Anglophone
Not at all Francophone	(0)	(1)	(2)	(3)	(4) Very Francophone

In still other situations, you may feel a little "Anglophone" and a little "Francophone". Each scale, therefore, can be used independently of the other. That is, if you feel slightly "Anglophone" you can also feel slightly "Francophone".

It is important that you remember that the language used in a situation is not necessarily an index of identity. For example, in one situation, you could speak French but feel very "Anglophone" or you could speak English but not identify yourself at all as a member of a language group. We ask you to give your first impression of yourself, as you are, without reference to who you would like to be or who you would have liked to have been. There are no right or wrong answers.

1. When I have contacts with other students, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very Francophone

2. When I read the newspaper, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very Francophone

3. When I chose the University of Ottawa, I felt...

Not at all
Anglophone ___ ___ ___ ___ ___ Very Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very Francophone

4. When I listen to music, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very Francophone

5. When dealing with university personnel, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very Francophone

6. When dealing with salesclerks, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very
Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very
Francophone

7. When thinking about relations between Anglophones and Francophones, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very
Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very
Francophone

8. When I think about where I would want to settle down, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very
Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very
Francophone

9. When I am with my friends, I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very
Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very
Francophone

10. When I write for myself (not including school work), I feel...

Not at all
Anglophone ___ ___ ___ ___ ___ Very
Anglophone

Not at all
Francophone ___ ___ ___ ___ ___ Very
Francophone

11. When I read for pleasure, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___ Very
Anglophone

Not at all
Francophone ___   ___   ___   ___   ___ Very
Francophone

12. When I think about my life's goals, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___ Very
Anglophone

Not at all
Francophone ___   ___   ___   ___   ___ Very
Francophone

13. When I participate in cultural activities, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___ Very
Anglophone

Not at all
Francophone ___   ___   ___   ___   ___ Very
Francophone

14. When I listen to the radio, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___ Very
Anglophone

Not at all
Francophone ___   ___   ___   ___   ___ Very
Francophone

15. When I prepare food, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___ Very
Anglophone

Not at all
Francophone ___   ___   ___   ___   ___ Very
Francophone

16.   When I think about my future or present spouse, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___   Very
                                                           Anglophone

Not at all
Francophone ___   ___   ___   ___   ___   Very
                                                           Francophone

17.   When I write my assignments, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___   Very
                                                           Anglophone

Not at all
Francophone ___   ___   ___   ___   ___   Very
                                                           Francophone

18. When I think about politics, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___   Very
                                                           Anglophone

Not at all
Francophone ___   ___   ___   ___   ___   Very
                                                           Francophone

19. When I watch the news on television, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___   Very
                                                           Anglophone

Not at all
Francophone ___   ___   ___   ___   ___   Very
                                                           Francophone

20.   In my social contacts, I feel...

Not at all
Anglophone ___   ___   ___   ___   ___   Very
                                                           Anglophone

Not at all
Francophone ___   ___   ___   ___   ___   Very
                                                           Francophone

21. When I am at home, I feel...

Not at all   Very
Anglophone ___   ___   ___   ___   ___ Anglophone

Not at all   Very
Francophone ___   ___   ___   ___   ___ Francophone

22. When I travel, I feel...

Not at all   Very
Anglophone ___   ___   ___   ___   ___ Anglophone

Not at all   Very
Francophone ___   ___   ___   ___   ___ Francophone

GENERAL INFORMATION

1. Age: _____

2. Gender: Male ___ Female ___

3. What is your mother tongue (the first language you learned)?
   ___ 1. English
   ___ 2. French
   ___ 3. Other
   If other, please specify _____

4. What language do you speak most often?
   ___ 1. English
   ___ 2. French
   ___ 3. Other
   If other, please specify _____

5. Where were you born? City/town: _____

   Province: _____ Country: _____

6. In what region have you lived most of your life? City/town_____

   Province: _____ Country: _____

7. At what age did you begin to learn French? _____ years.

8. How long have you been learning French? _____ years.

9. Do you speak a third language? Yes ___ No ___

   If yes, please specify _____

APPENDIX C

INSTRUMENTS USED
IN THE FRENCH QUESTIONNAIRE[1]

[1]   Published instruments have been omitted from this appendix.

Dans les pages qui suivent vous trouverez un certain nombre d'affirmations avec lesquelles certaines personnes sont d'accord et d'autres non. Il n'y a pas de bonne ou de mauvaise réponse, étant donné que chacun a le groit d'avoir des opinions personnelles. Indiquez la mesure dans laquelle vous êtes d'accord avec ces affirmations -- à quel point ces affirmations reflètent vos sentiments ou vos pensées. Utilisez l'échelle suivante:

Désapprouve tout à fait	désapprouve légèrement	Désapprouve très légèrement	Approuve très légèrement	Approuve légèrement	Approuve fortement
1	2	3	4	5	6

Pour chacune des affirmations suivantes, inscrivez dans <u>la marge de gauche le chiffre correspondant à votre opinion</u>. Notez qu'il n'y a pas de bonne ou de mauvaise réponse; tout ce qui est important, c'est que vous donniez votre opinion personnelle.

CONFIANCE EN SOI PAR RAPPORT À L'USAGE DE L'ANGLAIS
(CLÉMENT, 1988)

1. Je crois sincèrement être capable de lire et de comprendre la plupart des textes écrits en anglais.

2. D'après moi, je connais assez la langue anglaise pour pouvoir l'écrire convenablement.

3. Personnellement, je crois que je sais assez l'anglais pour le parler correctement.

4. Je suis très confiant en ma capacité d'écrire correctement en anglais.

5. J'ai l'impression que je suis capable de bien comprendre quelqu'un parlant anglais.

6. Je crois que ma connaissance de l'anglais me permet de faire face à la plupart des situations où je dois utiliser cette langue.

ANXIÉTÉ LIÉE À L'USAGE DE L'ANGLAIS
(CLÉMENT, 1988)

1. Lorsque je place un appel téléphonique, je me mêle si je dois parler anglais.

2. Chaque fois que je rencontre une personne de langue anglaise et que je lui parle, je suis détendu(e).

3. Je me sens mal à l'aise toutes les fois que je parle anglais.

4. Je me sens calme et sûr(e) de moi quand je dois commander un repas en anglais dans un restaurant.

5. Je me sens confiant(e) et détendu(e) quand je dois demander ma route en anglais.

6. Je me sens à l,aise lorsque je parle anglais dans une réunion d'amis où il y a des gens qui parlent anglais et des gens qui parlent français.

7. Parler anglais avec un supérieur me gêne beaucoup.

8. Je deviens nerveux(se) chaque fois que je dois m'adresser en anglais à un vendeur.

<u>IDENTITÉ ETHNOLINGUISTIQUE SITUÉE</u>
<u>(CLÉMENT & NOELS, 1992)</u>

S.V.P. LIRE CES DIRECTIVES AVEC SOIN AVANT DE CONTINUER
Cette section du questionnaire a pour but de faciliter l'étude des relations interpersonnelles et de l'identité ethnique par l'entremise de vos opinions sur différents types d'interactions. Plusieurs chercheurs sont d'accord pour dire que l'identité des individus change selon la situation dans laquelle ils (elles) se trouvent. Par exemple, dans certaines situations vous pouvez vous identifier comme francophone, dans d'autres situations comme anglophone, et dans d'autres situations à ni l'un ni l'autre de ces deux groupes.

Vous trouverez dans les pages qui suivent une série de situations. Dans chacun des cas, évaluez votre <u>niveau d'identification aux deux groupes</u>. Par exemple, dans une situation, vous pourriez vous identifier comme très "francophone", mais pas du tout "anglophone". Dans ce cas, cochez les extrémités des deux échelles comme ceci:

1.   **Vous rendez visite à un(e) voisin(e) et vous parlez de vos enfants.**

Pas du tout					Très
francophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**francophone**
Pas du tout					Très
anglophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**anglophone**

Dans d'autres situations, vous pourriez ne vous identifier à ni l'un ni l'autre des deux groupes: votre identité langagière ne serait pas importante dans cette situation. Dans ce cas, vous utiliseriez les deux échelles de la manière suivante:

1.   **Vous rendez visite à un(e) voisin(e) et vous parlez de vos enfants.**

Pas du tout					Très
francophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**francophone**
Pas du tout					Très
anglophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**anglophone**

Dans d'autres situations, vous pourriez vous identifier aux deux groupes simultanément. Dans ce cas, vous utiliseriez les deux échelles, comme suit: (par exemple)

1.   **Vous rendez visite à un(e) voisin(e) et vous parlez de vos enfants.**

Pas du tout					Très
francophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**francophone**
Pas du tout					Très
anglophone	_(0)_	_(1)_	_(2)_	_(3)_	_(4)_	**anglophone**

Dans d'autres situations encore, vous pourriez vous sentir un peu "francophone" et/ou un peu "anglophone". Chaque échelle peut être utilisée indépendamment de l'autre. Ainsi, si vous vous sentez très peu "francophone", vous pourriez aussi vous sentir très peu "anglophone".

Il est important de vous souvenir que la langue utilisée dans une situation n'est pas nécessairement un indice de l'identité. Par exemple, dans une situation, vous pourriez parler anglais mais vous sentir "francophone", ou vous pourriez parler français mais ne vous identifier comme membre d'aucun groupe linguistique. Nous vous demandons de donner votre première impression de vous-même, tel que vous êtes, sans référence à ce que vous voudriez être ou auriez été. Il n'y a pas de bonne ni de mauvaise réponse.

1.   Lorsque j'ai des contacts avec d'autres étudiants, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

2.   Lorsque je lis le journal, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

3.   Lorsque j'ai choisi l'Université d'Ottawa, je me sentais...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

4.   Lorsque j'écoute la musique, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

5.   Lorsque je m'adresse au personnel universitaire, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

6. Lorsque je fais affaire avec des vendeurs, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

7. Lorsque je pense aux relations entre francophones et anglophones, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

8. Lorsque je pense à l'endroit ou je voudrais m'établir, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

9. Lorsque je suis avec mes ami(e)s, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

10. Lorsque j'écris pour moi (en excluant les travaux scolaires), je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

11.   Lorsque je lis pour le plaisir, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

12.   Lorsque je pense à mes objectifs de vie, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

13.   Lorsque je participe à des activités culturelles, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

14.   Lorsque j'écoute la radio, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

15.   Lorsque je prépare de la nourriture, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

16.   Lorsque je pense à mon (ma) futur(e) ou présent(e) conjoint(e) ou partenaire, je me sens...

Pas du tout   Très
francophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ francophone

Pas du tout   Très
anglophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ anglophone

17.   Lorsque j'écris mes travaux, je me sens...

Pas du tout   Très
francophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ francophone

Pas du tout   Très
anglophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ anglophone

18.   Lorsque je pense à la politique, je me sens...

Pas du tout   Très
francophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ francophone

Pas du tout   Très
anglophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ anglophone

19.Lorsque j'écoute les nouvelles à la télévision, je me sens...

Pas du tout   Très
francophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ francophone

Pas du tout   Très
anglophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ anglophone

20.   Dans mes contacts sociaux, je me sens...

Pas du tout   Très
francophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ francophone

Pas du tout   Très
anglophone __(0)__   __(1)__   __(2)__   __(3)__   __(4)__ anglophone

21. Lorsque je suis à la maison, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

22. Lorsque je voyage, je me sens...

Pas du tout   Très
francophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ francophone

Pas du tout   Très
anglophone _(0)_   _(1)_   _(2)_   _(3)_   _(4)_ anglophone

PROPORTION OF LIFE SPENT
WITH MEMBERS OF THE FIRST LANGUAGE GROUP

Pour chacun des domaines d'activité suivants, veuillez évaluer la proportion de francophones et de non-francophones:

Dans ma famille:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

Dans mes relations intimes:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

Dans mon quartier:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

Parmi mes copains/copines:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

Parmi les étudiant(e)s que je côtoie régulièrement:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

Parmi les vendeurs avec lesquels je fais affaire:

Aucun   Tous
francophone ___ ___ ___ ___ ___ ___ ___ ___ ___ francophones
      0%   25%   50%   75%   100%

FREQUENCY AND QUALITY OF CONTACT
WITH THE SECOND LANGUAGE GROUP

Pour les mêmes domaines, évaluez la fréquence et la qualité de vos contacts avec des anglophones. (Cochez le tiret approprié.)

Dans ma famille:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

Dans mes relations intimes:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

Dans mon quartier:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

Parmi mes ami(e)s:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

Parmi les étudiant(e)s que je côtoie régulièrement:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

Parmi les marchands avec lesquels je fais affaire:

Pas du tout fréquents ___   ___ ___ ___ ___ ___ ___   Extrêmement fréquents

Pas du tout agréables ___   ___ ___ ___ ___ ___ ___   Extrêmement agréables

MEDIA EXPOSURE TO THE SECOND LANGUAGE GROUP

Décrivez chacun des médias auquel vous êtes exposé. (Cochez le tiret approprié.)

La télévision:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

La radio:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les films:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

La musique:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les journaux:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les revues:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les livres:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

La théâtre:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

La signalisation routière:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les panneaux publicitaires:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

Les circulaires publicitaires:

Surtout en français __ __ __ __ __ __ __ Surtout en anglais

SELF-EVALUATIONS OF SECOND LANGUAGE PROFICIENCY
(CLEMENT, 1988)

Indiquer vos réponses aux affirmations qui suivent en encerclant le chiffre correspondant à votre évaluation. Par exemple, si vous pensez que vous pouvez écrire un peu l'anglais, vous devez encercler le chiffre (2) ainsi:

1.   Je lis l'anglais...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
pas du tout		un peu		assez bien		couram- ment

S'il vous plaît, évaluez les aspects suivants:

1.   Je lis l'anglais...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
pas du tout		un peu		assez bien		couram- ment

2.   Je comprends l'anglais...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
pas du tout		un peu		assez bien		couram- ment

3.   J'écris en anglais...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
pas du tout		un peu		assez bien		couram- ment

4.   Je parle l'anglais...

(0) :	(1) :	(2) :	(3) :	(4) :	(5) :	(6)
pas du tout		un peu		assez bien		couram- ment

INFORMATION GÉNÉRALE

1. Age: _____

2. Sexe: M ____ F ____

3. Quelle est la première langue que vous avez apprise?
____ 1. anglais
____ 2. français
____ 3. autre
    Si autre, indiquez, s.v.p.
_____

4. Quelle langue utilisez-vous le plus souvent?
____ 1. anglais
____ 2. français
____ 3. autre
    Si autre, indiquez, s.v.p.
_____

5. Où êtes-vous né(e)? Ville/village _____

Province: _____ Pays: _____

6. Dans quelle localité avez-vous vécu la plus grande partie de votre vie?

Ville/village: _____

Province: _____ Pays: _____

7. À quelle âge avez-vous commencé à apprendre l'anglais? _____ ans.

8. Combien d'années apprenez-vous l'anglais? _____ ans.

9. Parlez-vous une troisième langue? Oui ____ Non ____

Si oui, s.v.p. indiquez: _____

APPENDIX D

SUPPLEMENTS TO THE
FACTOR ANALYSES CONDUCTED IN CHAPTER 3

Appendix I Varimax rotated factor matrices: Identification to membership group

Items	Anglophones			Francophones			
	I	II		I	II	III	IV
When I . . .							
1. have contacts with other students	0.43	0.59*		0.17	0.25	0.73*	−0.05
2. read the newspaper	0.61*	0.33		0.43	0.46*	0.23	−0.03
3. chose the University of Ottawa	0.18	0.66*		0.12	−0.04	0.35*	0.15
4. listen to music	0.77*	0.18		0.65*	0.06	0.06	0.14
5. deal with university personnel	−0.01	0.38*		0.15	0.14	0.35*	0.05
6. deal with merchants	0.33	0.55*		0.66*	0.02	0.19	0.06
7. think about relations between Anglophones and Francophones	0.21	0.64*		0.41*	−0.03	0.30	0.12
8. think about where I would want to settle down	0.57*	0.50		0.26	0.13	−0.01	0.68*
9. am with friends	0.59*	0.53		0.08	0.43*	0.38	0.29
10. write for myself	0.82*	0.11		0.15	0.59*	−0.02	0.23
11. read for pleasure	0.84*	0.18		0.44	0.78*	−0.24	−0.02
12. think about my life's goals	0.60*	0.35		0.08	0.27	0.28	0.33*
13. participate in cultural activities	0.27	0.70*		0.39*	0.16	0.13	0.26
14. listen to the radio	0.56*	0.44		0.65*	0.14	0.07	0.15
15. prepare food	0.62*	0.31		0.20	0.44*	0.16	0.06
16. think about future or present spouse	0.50*	0.47		0.20	0.12	0.18	0.51*
17. write my assignments	0.76*	0.26		−0.07	0.56*	0.35	0.10
18. think about politics	0.36	0.61*		0.38*	0.23	0.13	0.10
19. watch the news on television	0.59*	0.47		0.76*	0.26	0.07	0.04
20. in my social contacts	0.42	0.67*		0.33	0.30	0.52*	0.35
21. am at home	0.73*	0.30		−0.04	0.34*	0.13	0.26
22. travel	0.38	0.58*		0.46*	0.06	0.16	0.15

*This item was used in the computation of the identity index.

Appendix II   Varimax rotated factor matrices: Identification to target group

Items	Anglophones					Francophones				
	I	II	III	IV	V	I	II	III	IV	V
When I . . .										
1. have contacts with other students	0.51*	0.17	0.41	0.28	0.27	0.40*	0.19	0.35	0.23	0.36
2. read the newspaper	0.35	0.26	0.09	0.45	.0.34	0.09	0.42	0.12	0.34	0.33
3. chose the University of Ottawa	0.42	0.08	0.55*	0.20	0.10	0.38	0.20	0.41*	0.14	0.01
4. listen to music	0.24	0.13	0.14	0.65*	0.20	0.22	0.72*	0.13	0.03	0.05
5. deal with university personnel	0.24	0.20	0.74*	0.05	0.04	0.17	0.03	0.79*	0.11	0.11
6. deal with merchants	0.51	0.25	0.32	0.14	0.09	0.11	0.60	0.43	0.06	0.19
7. think about relations between Anglophones & Francophones	0.55	0.32	0.26	0.26	0.07	0.34	0.25	0.35	0.13	0.07
8. think about where I would want to settle down	0.68*	0.11	0.10	0.23	0.18	0.62*	0.29	0.14	0.12	0.22
9. am with friends	0.65*	0.03	0.28	0.17	0.34	0.54*	0.12	0.21	0.26	0.35
10. write for myself	0.17	0.04	0.20	0.30	0.57*	0.27	0.14	0.12	0.64*	0.05
11. read for pleasure	0.11	0.27	0.06	0.14	0.74*	0.11	0.47	-0.02	0.56*	0.25
12. think about my life's goals	0.54*	0.22	0.22	0.21	0.03	0.70*	0.20	0.14	0.13	0.15
13. participate in cultural activities	0.48*	0.48	0.23	0.17	-0.01	0.57*	0.29	0.05	0.23	0.04
14. listen to the radio	0.22	0.24	0.09	0.72*	0.11	0.30	0.83*	-0.04	0.11	0.02
15. prepare food	0.22	0.49*	-0.04	0.17	0.26	0.28	0.11	0.09	0.11	0.68*
16. think about future or present spouse	0.67*	0.23	0.19	0.17	0.08	0.63*	0.17	0.15	0.11	0.17
17. write my assignments	0.22	0.11	0.48*	0.32	0.28	0.32	0.01	0.26*	0.44	0.21
18. think about politics	0.15	0.68*	0.26	0.07	0.08	0.18	0.31	0.07	0.18	0.37*
19. watch the news on television	0.20	0.65	0.11	0.36	0.19	0.19	0.64	0.09	0.21	0.16
20. in my social contacts	0.69*	0.25	0.18	0.11	0.21	0.53*	0.24	0.18	0.26	0.28
21. am at home .	0.35	0.22	0.40	-0.05	0.34	0.41	0.00	0.17	0.34	0.13
22. travel	0.39	0.48	0.34	0.11	0.18	0.42	0.41	0.28	-0.02	0.22

*This item was used in the computation of the identity index.

Table D.3
Anglophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

	Variables	Factors	
		I*	II
a)	**Factor loading (LX) matrix**		
1	When I read the newspaper ...	.68	.00
2	When I listen to music...	.77	.00
3	When I think about where I would want to settle down ...	.28	.33
4	When I am with my friends ...	.51	.27
5	When I write for myself (not counting school work) ...	.78	.00
6	When I read for pleasure ...	.82	.00
7	When I think about my life's goals ...	.73	.00
8	When I listen to the radio ...	.81	.00
9	When I prepare food ...	.62	.00
10	When I think about my future or present spouse ...	.27	.41
11	When I write my assignments ...	.74	.00
12	When I watch the news on television ...	.62	.00
13	When I am at home ...	.68	.00
14	When I have contacts with other students ...	.00	.72
15	When I chose the University of Ottawa ...	.00	.64
16	When dealing with university personnel ...	-.46	.79
17	When dealing with merchants ...	.36	.40
18	When thinking about relations between Anglophones and Francophones ...	.00	.40
19	When I participate in cultural activities ...	.00	.52
20	When I think about politics ...	.00	.35
21	In my social contacts ...	.58	.18
22	When I travel ...	.00	.63

b)   Factor correlation (PHI) matrix

	I	II
FACTOR 1	1.00	
FACTOR 2	.77	1.00

* Suggested factor labels: I   Private/Community
                            II   Public/Intergroup

Anglophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

c)   Error variance/covariance (TD) matrix

	Items					
Items*	01	02	03	04	05	06
01	.54					
02	.00	.40				
03	.00	.00	.67			
04	.00	.00	.00	.45		
05	.00	.00	.00	.00	.39	
06	.00	.00	.00	.00	.14	.33
07	.00	.00	.14	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	.00	.00	.13	.00	.00	.00
10	.00	.00	.16	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	.20	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.13	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	-.12	.00	.00	.10	-.08	.00
22	.00	.00	.00	.00	.00	-.08

	07	08	09	10	11	12
07	.47					
08	.00	.34				
09	.00	.00	.61			
10	.00	.00	.19	.59		
11	.00	.00	.00	.00	.46	
12	.00	.00	.00	.00	.00	.61
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	-.12	.00	.00
18	.00	.00	.00	.00	.00	.16
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.24
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

Anglophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	.54					
14	.00	.48				
15	.00	.00	.59			
16	.00	.00	.00	.73		
17	.00	.00	.00	.00	.50	
18	.00	.00	.00	.00	.00	.84
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.32
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	19	20	21	22
19	.73			
20	.00	.88		
21	.00	.00	.47	
22	.00	.00	.00	.61

* Item numbers correspond with items in factor loading matrix

Table D.4
Anglophones:
Standardized LISREL estimates of the baseline model of L2-group identity items

		Factors				
	Variables	I*	II	III	IV	V
a)	Factor loading (LX) matrix					
01	When I have contacts with other students	.70	.00	.00	.00	.00
02	When I deal with merchants	.64	.00	.00	.00	.00
03	When I think about relations between Anglophones and Francophones	.60	.00	.00	.00	.00
04	When I think about where I would want to settle down	.59	.00	.00	.00	.00
05	When I am with friends	.58	.00	.00	.00	.19
06	When I think about my life's goals	.43	.00	.00	.00	.21
07	When I participate in cultural activities	.71	.00	.00	.00	.00
08	When I think about my future or present spouse	.16	.59	.00	.00	.00
09	In my social contacts	.79	.00	.00	.00	.00
10	When I prepare food	.00	.50	.00	.00	.00
11	When I think about politics	.00	.61	.00	.00	.00
12	When I watch the news on televisions	.00	.81	.00	.00	.00
13	When I travel	.00	.01	.67	.00	.00
14	When I chose the University of Ottawa	.00	.00	.70	.00	.00
15	When I deal with university personnel	.00	.00	.57	.00	.00
16	When I write my assignments	.00	.00	.37	.00	.31
17	When I am at home	.00	.00	.60	.00	.00
18	When I read the newspaper	.00	.00	.00	.66	.00
19	When I listen to music	.00	.00	.00	.60	.00
20	When I listen to the radio	.00	.00	.00	.63	.00
21	When I write for myself	.00	.00	.00	.00	.69
22	When I read for pleasure	.00	.00	.00	.00	.77

b) Factor correlation (PHI) matrix

FACTOR 1	1.00				
FACTOR 2	.80	1.00			
FACTOR 3	.97	.70	1.00		
FACTOR 4	.81	.78	.74	1.00	
FACTOR 5	.67	.54	.59	.81	1.00

* Suggested factor labels:

I   Community
II   Symbolic
III   University Environment
IV   Media
V   Private/Literary

Anglophones:
Standardized LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix

			Items			
Items*	01	02	03	04	05	06
01	.51					
02	.00	.59				
03	.00	.00	.65			
04	.00	.00	.00	.66		
05	.00	.00	.00	.00	.48	
06	.00	.00	.00	.19	.00	.65
07	.00	.00	.00	.00	-.07	.00
08	.00	-.15	.00	.00	.00	.00
09	.00	.00	.00	-.07	.12	.00
10	.00	.00	.00	.00	.00	.00
11	.00	.00	.12	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.15	.14	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	.50					
08	.00	.47				
09	.00	.00	.37			
10	.00	.00	.00	.75		
11	.00	.00	.00	.00	.63	
12	.00	-.26	.00	-.17	.00	.34
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.13	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

Anglophones:
Standardized LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	.54					
14	.00	.52				
15	.07	.00	.67			
16	.00	.00	.00	.63		
17	.00	.00	.00	.00	.64	
18	.00	.11	.00	.00	.00	.56
19	.00	.09	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.12	.00
22	.11	.00	.00	.00	.00	.00

	19	20	21	22
19	.64			
20	.20	.60		
21	.00	.00	.52	
22	.00	.00	.00	0

* Item numbers correspond with items in factor loading matrix

TABLE D.5
Francophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

	Variables	Factors			
		I*	II	III	IV
a)	**Factor loading (LX) matrix**				
1.	When I listen to music ...	.57	.00	.00	.00
2.	When dealing with merchants ...	.65	.00	.00	.00
3.	When thinking about relations between Anglophones and Francophones ...	.52	.00	.00	.00
4.	When I participate in cultural activities ...	.65	.00	.00	.00
5.	When I listen to the radio ...	.67	.00	.00	.00
6.	When I think about politics ...	.57	.00	.00	.00
7.	When I watch the news on television ...	.70	.00	.00	.00
8.	When I travel ...	.59	.00	.00	.00
9	When I read the newspaper ...	.54	.10	.00	.00
10.	When I am with my friends ...	.00	.01	.85	.00
11.	When I write for myself (not counting school work) ...	.00	.64	.00	.00
12.	When I read for pleasure ...	.69	-.01	.00	.00
13.	When I prepare food ...	.00	1.45	-.89	.00
14.	When I write my assignments ...	.00	.55	.00	.00
15.	When I am at home ...	.00	.55	.00	.00
16.	When I have contacts with other students ...	.00	.00	.72	.00
17.	When I chose the University of Ottawa ...	.00	.00	.39	.00
18.	When dealing with university personnel ...	.00	.00	.41	.00
19.	In my social contacts ...	.00	.00	.78	.00
10.	When I think about where I would want to settle down ...	.00	.00	.00	.67
21.	When I think about my life's goals ...	.00	.00	.00	.72
22.	When I think about my future or present spouse ...	.00	.00	.00	.71

b)	**Factor correlation (PHI) matrix**				
	FACTOR 1	1.00			
	FACTOR 2	.88	1.00		
	FACTOR 3	.80	.92	1.00	
	FACTOR 4	.81	.93	.82	1.00

* Suggested factor labels:
    I   Media/Intergroup
    II   Private/Literary
    III   University Environment
    IV   Future Goals

Francophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

c)   Error variance/covariance (TD) matrix

	Items					
Items*	01	02	03	04	05	06
01	.67					
02	.00	.58				
03	.00	.00	.73			
04	.00	.00	.00	.58		
05	.25	.00	.00	.00	.55	
06	.00	.00	.00	.00	.00	.67
07	.00	.00	.00	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.16	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	.52					
08	.00	.65				
09	.00	.00	.60			
10	.00	.00	.00	.27		
11	.00	.00	.00	.00	.59	
12	.00	.00	.00	.00	.19	.53
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

Francophones:
Standardized LISREL estimates of the baseline model of L1-group identity items

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	.46					
14	.00	.70				
15	.00	.00	.70			
16	.00	.00	.00	.49		
17	.00	.00	.00	.00	.85	
18	.00	.00	.00	.00	.18	.83
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	19	20	21	22
19	.39			
20	.00	.55		
21	.00	.00	.48	
22	.00	.00	.00	.50

* Item numbers correspond with items in factor loading matrix

Table D.6
Francophones:
Standardized LISREL estimates of the baseline model of L2-group identity items

	Variables	I*	II	III	IV	V
				Factors		

a) Factor loading (LX) matrix

	Variables	I*	II	III	IV	V
1.	When I have contacts with other students ...	.57	.00	.00	.24	.00
2.	When I think about where I would want to settle down ...	.69	.00	.00	.00	.00
3.	When I am with my friends ...	.80	.00	.00	.00	.00
4.	When I think about my life's goals ...	.09	.00	.00	.00	.63
5.	When I participate in cultural activities ...	.65	.00	.00	.00	.00
6.	When I think about my future or present spouse ...	1.16	-.54	.00	.00	.00
7.	In my social contacts ...	.85	.00	.00	.00	.00
8.	When I am at home ...	.22	.00	.00	.46	.00
9.	When I travel ...	.69	.00	.00	.00	.00
10.	When I read the newspaper ...	.00	.72	.00	.00	.00
11.	When I listen to music ...	.00	.86	.00	-.22	.00
12.	When dealing with merchants ...	.00	.75	.00	.00	.00
13.	When I listen to the radio ...	.00	.73	.00	.00	.00
14.	When I watch the news on television ...	.00	.74	.00	.00	.00
15.	When I chose the University of Ottawa ...	.00	.00	.61	.00	.00
16.	When dealing with university personnel ...	.00	.00	.60	.00	.00
17.	When thinking about relations between Anglophones and Francophones ...	.00	.00	.73	.00	.00
18.	When I write for myself (not counting school work) ...	.00	.00	.00	.76	.00
19.	When I read for pleasure ...	.00	.58	.00	.18	.00
20.	When I write my assignments ...	.00	.00	.00	.76	.00
21.	When I prepare food ...	.00	.00	.00	.00	.55
22.	When I think about politics ...	.00	.00	.00	.00	.64

b) Factor correlation (PHI) matrix

	1.00				
FACTOR 1	1.00				
FACTOR 2	.92	1.00			
FACTOR 3	.94	.91	1.00		
FACTOR 4	.82	.77	.80	1.00	
FACTOR 5	.91	.84	.96	.81	1.00

* Suggested factor labels:

I	Community
II	Media
III	University Environment
IV	Private/Literary
V	Symbolic

<u>Francophones:</u>
<u>Standardized LISREL estimates of the baseline model of L2-group identity items</u>

c)   Error variance/covariance (TD) matrix

	Items					
Items*	01	02	03	04	05	06
01	.38					
02	.00	.53				
03	.00	.00	.36			
04	.00	.11	.00	.49		
05	.00	.00	.00	.00	.58	
06	.00	.00	.00	.00	.00	.52
07	.00	-.07	.00	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	-.06	.00	-.12	.11	.00	.00
10	.10	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.06	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.07	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.08	.00	.00	.00	.00
19	.00	.00	-.08	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.09	.11
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	.28					
08	.00	.58				
09	.00	.00	.53			
10	.00	.00	.00	.48		
11	.00	.00	.00	.00	.51	
12	.00	.00	.00	.00	.00	.44
13	.00	.00	.00	.00	.20	.00
14	.00	.00	.00	.00	.00	.00
15	-.07	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.10
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	-.11	.00	.00	.00	.00

<u>Francophones:</u>
<u>Standardized LISREL estimates of the baseline model of L2-group identity items</u>

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	.47					
14	.11	.46				
15	.00	.00	.63			
16	.00	.00	.17	.64		
17	.00	.00	.00	.00	.47	
18	.00	.00	.00	.00	.00	.43
19	.00	.00	-.09	.00	.00	.14
20	-.09	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.13	.00	.00	.00	.00

	19	20	21	22
19	.47			
20	.00	.42		
21	.00	.00	.70	
22	.00	.00	.00	.60

* Item numbers correspond with items in factor loading matrix

Table D.7
Anglophones:
T-values associated with LISREL estimates of the baseline model of L1-group identity items

	Variables	Factors	
		I*	II
a)	**Factor loading (LX) matrix**		
1	When I read the newspaper ...	.00*	.00
2	When I listen to music...	13.20	.00
3	When I think about where I would want to settle down ...	3.36	3.85
4	When I am with my friends ...	6.60	3.60
5	When I write for myself (not counting school work) ...	13.27	.00
6	When I read for pleasure ...	13.85	.00
7	When I think about my life's goals ...	12.51	.00
8	When I listen to the radio ...	13.82	.00
9	When I prepare food ...	10.79	.00
10	When I think about my future or present spouse ...	3.26	4.87
11	When I write my assignments ...	12.64	.00
12	When I watch the news on television ...	10.95	.00
13	When I am at home ...	11.74	.00
14	When I have contacts with other students ...	.00	.00*
15	When I chose the University of Ottawa ...	.00	11.07
16	When dealing with university personnel ...	-4.09	6.52
17	When dealing with merchants ...	4.55	4.82
18	When thinking about relations between Anglophones and Francophones ...	.00	7.03
19	When I participate in cultural activities ...	.00	8.95
20	When I think about politics ...	.00	6.19
21	In my social contacts ...	6.80	2.40
22	When I travel ...	.00	10.83

b)	**Factor correlation (PHI) matrix**		
	FACTOR 1	7.02	
	FACTOR 2	7.44	7.39

* Suggested factor labels: I   Private/Community
                                    II   Public/Intergroup

*This estimate was set to 1.00 for purposes of identification.

Anglophones:
T-values associated with LISREL estimates of the baseline model of L1-group identity items

c) Error variance/covariance (TD) matrix

	Items					
Items*	01	02	03	04	05	06
01	12.41					
02	.00	11.85				
03	.00	.00	12.66			
04	.00	.00	.00	12.09		
05	.00	.00	.00	.00	11.51	
06	.00	.00	.00	.00	5.63	11.25
07	.00	.00	4.61	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	.00	.00	3.68	.00	.00	.00
10	.00	.00	4.40	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	6.14	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	3.72	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	-4.38	.00	.00	3.53	-3.76	.00
22	.00	.00	.00	.00	.00	-3.22

	07	08	09	10	11	12
07	12.16					
08	.00	11.42				
09	.00	.00	12.59			
10	.00	.00	5.36	12.21		
11	.00	.00	.00	.00	12.10	
12	.00	.00	.00	.00	.00	12.59
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	-3.91	.00	.00
18	.00	.00	.00	.00	.00	3.87
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	5.62
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

<u>Anglophones:</u>
<u>T-values associated with LISREL estimates of the baseline model of L1-group identity items</u>

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	12.40					
14	.00	10.75				
15	.00	.00	11.69			
16	.00	.00	.00	10.48		
17	.00	.00	.00	.00	12.00	
18	.00	.00	.00	.00	.00	12.74
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	6.37
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	19	20	21	22
19	12.39			
20	.00	12.85		
21	.00	.00	12.21	
22	.00	.00	.00	11.79

* Item numbers correspond with items in factor loading matrix

Table D.8
Anglophones:
T-values associated with LISREL estimates of the baseline model of L2-group identity items

		Factors				
	Variables	I*	II	III	IV	V
a)	Factor loading (LX) matrix					
01	When I have contacts with other students	.00*	.00	.00	.00	.00
02	When I deal with merchants	11.23	.00	.00	.00	.00
03	When I think about relations between Anglophones and Francophones	10.53	.00	.00	.00	.00
04	When I think about where I would want to settle down	10.30	.00	.00	.00	.00
05	When I am with friends	8.32	.00	.00	.00	2.83
06	When I think about my life's goals	5.80	.00	.00	.00	2.78
07	When I participate in cultural activities	12.40	.00	.00	.00	.00
08	When I think about my future or present spouse	1.26	3.64	.00	.00	.00
09	In my social contacts	13.86	.00	.00	.00	.00
10	When I prepare food	.00	.00*	.00	.00	.00
11	When I think about politics	.00	7.46	.00	.00	.00
12	When I watch the news on televisions	.00	7.64	.00	.00	.00
13	When I travel	.00	-.17	7.85	.00	.00
14	When I chose the University of Ottawa	.00	.00	.00*	.00	.00
15	When I deal with university personnel	.00	.00	9.65	.00	.00
16	When I write my assignments	.00	.00	5.17	.00	.00
17	When I am at home	.00	.00	10.19	.00	4.06
18	When I read the newspaper	.00	.00	.00	.00*	.00
19	When I listen to music	.00	.00	.00	9.37	.00
20	When I listen to the radio	.00	.00	.00	9.83	.00
21	When I write for myself	.00	.00	.00	.00	.00*
22	When I read for pleasure	.00	.00	.00	.00	10.70

b)   Factor correlation (PHI) matrix

FACTOR 1	7.28				
FACTOR 2	6.61	4.28			
FACTOR 3	8.79	6.21	6.96		
FACTOR 4	7.83	6.29	6.82	6.15	
FACTOR 5	7.16	5.53	6.35	7.36	6.45

* Suggested factor labels:
    I   Community
    II   Symbolic
    III   University Environment
    IV   Media
    V   Private/Literary
*This parameter was set to 1.00 for purposes of identification.

Anglophones:
T-values associated withe LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix

	Items					
Items*	01	02	03	04	05	06
01	12.03					
02	.00	12.29				
03	.00	.00	12.52			
04	.00	.00	.00	12.46		
05	.00	.00	.00	.00	11.70	
06	.00	.00	.00	4.88	.00	12.51
07	.00	.00	.00	.00	-2.35	.00
08	.00	-4.70	.00	.00	.00	.00
09	.00	.00	.00	-2.66	4.01	.00
10	.00	.00	.00	.00	.00	.00
11	.00	.00	3.23	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	4.36	4.28	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	11.95					
08	.00	7.94				
09	.00	.00	10.88			
10	.00	.00	.00	11.69		
11	.00	.00	.00	.00	11.90	
12	.00	-5.75	.00	-3.74	.00	5.85
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	3.81	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

Anglophones:
T-values associated with LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	11.05					
14	.00	11.09				
15	1.91	.00	12.08			
16	.00	.00	.00	12.18		
17	.00	.00	.00	.00	12.01	
18	.00	3.17	.00	.00	.00	10.31
19	.00	2.82	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	3.87	.00
22	3.17	.00	.00	.00	.00	.00

	19	20	21	22
19	10.97			
20	4.45	10.57		
21	.00	.00	9.77	
22	.00	.00	.00	7.54

* Item numbers correspond with items in factor loading matrix

TABLE D.9
Francophones:
T-values associated with LISREL estimates of the baseline model of L1-group identity items

	Variables	Factors			
		I*	II	III	IV
a)	**Factor loading (LX) matrix**				
1.	When I listen to music ...	.00*	.00	.00	.00
2.	When dealing with merchants ...	10.18	.00	.00	.00
3.	When thinking about relatiohs between Anglophones and Francophones ...	8.63	.00	.00	.00
4.	When I participate in cultural activities ...	10.15	.00	.00	.00
5.	When I listen to the radio ...	13.39	.00	.00	.00
6.	When I think about politics ...	9.33	.00	.00	.00
7.	When I watch the news on television ...	10.64	.00	.00	.00
8.	When I travel ...	9.53	.00	.00	.00
9	When I read the newspaper ...	4.10	.00*	.00	.00
10.	When I am with my friends ...	.00	.06	5.41	.00
11.	When I write for myself (not counting school work) ...	.00	8.50	.00	.00
12.	When I read for pleasure ...	5.11	-.10	.00	.00
13.	When I prepare food ...	.00	0.83	-2.95	.00
14.	When I write my assignments ...	.00	0.85	.00	.00
15.	When I am at home ...	.00	0.85	.00	.00
16.	When I have contacts with other students ...	.00	.00	.00*	.00
17.	When I chose the University of Ottawa ...	.00	.00	7.42	.00
18.	When dealing with university personnel ...	.00	.00	7.77	.00
19.	In my social contacts ...	.00	.00	14.74	.00
10.	When I think about where I would want to settle down ...	.00	.00	.00	.00*
21.	When I think about my life's goals ...	.00	.00	.00	12.33
22.	When I think about my future or present spouse ...	.00	.00	.00	12.15

b)   **Factor correlation (PHI) matrix**

FACTOR 1	5.96			
FACTOR 2	0.85	0.42		
FACTOR 3	0.81	0.85	7.95	
FACTOR 4	7.81	0.85	8.68	7.09

* Suggested factor labels: I   Media/Intergroup
                             II   Private/Literary
                             III   University Environment
                             IV   Future Goals
* This parameter was set to 1.00 for purposes of identification.

<u>Francophones:</u>
<u>T-values associated with LISREL estimates of the baseline model of L1-group identity items, continued</u>

c)   Error variance/covariance (TD) matrix

			Items			
Items*	01	02	03	04	05	06
01	13.38					
02	.00	13.01				
03	.00	.00	13.65			
04	.00	.00	.00	13.01		
05	6.83	.00	.00	.00	12.80	
06	.00	.00	.00	.00	.00	13.42
07	.00	.00	.00	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.16	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	12.61					
08	.00	13.34				
09	.00	.00	13.13			
10	.00	.00	.00	7.86		
11	.00	.00	.00	.00	13.24	
12	.00	.00	.00	.00	5.98	12.23
13	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

c) Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	6.32					
14	.00	13.65				
15	.00	.00	13.65			
16	.00	.00	.00	12.12		
17	.00	.00	.00	.00	13.95	
18	.00	.00	.00	.00	4.10	13.95
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00

	19	20	21	22
19	10.86			
20	.00	12.19		
21	.00	.00	11.36	
22	.00	.00	.00	11.59

* Item numbers correspond with items in factor loading matrix

Table D.10
Francophones:
T-values associated with LISREL estimates of the baseline model of L2-group identity items

	Variables	I*	II	III	IV	V
				Factors		

a) Factor loading (LX) matrix

No.	Variables	I*	II	III	IV	V
1.	When I have contacts with other students ...	.00*	.00	.00	2.99	.00
2.	When I think about where I would want to settle down ...	6.93	.00	.00	.00	.00
3.	When I am with my friends ...	7.23	.00	.00	.00	.00
4.	When I think about my life's goals ...	0.35	.00	.00	.00	9.24
5.	When I participate in cultural activities ...	6.87	.00	.00	.00	.00
6.	When I think about my future or present spouse ...	4.88	-2.95	.00	.00	.00
7.	In my social contacts ...	7.31	.00	.00	.00	.00
8.	When I am at home ...	2.26	.00	.00	4.31	.00
9.	When I travel ...	6.86	.00	.00	.00	.00
10.	When I read the newspaper ...	.00	.00*	.00	.00	.00
11.	When I listen to music ...	.00	9.33	.00	-2.63	.00
12.	When dealing with merchants ...	.00	14.55	.00	.00	.00
13.	When I listen to the radio ...	.00	14.05	.00	.00	.00
14.	When I watch the news on television ...	.00	14.30	.00	.00	.00
15.	When I chose the University of Ottawa ...	.00	.00	.61	.00	.00
16.	When dealing with university personnel ...	.00	.00	.60	.00	.00
17.	When thinking about relations between Anglophones and Francophones ...	.00	.00	.73	.00	.00
18.	When I write for myself (not counting school work) ...	.00	.00	.00	.00*	.00
19.	When I read for pleasure ...	.00	7.07	.00	2.07	.00
20.	When I write my assignments ...	.00	.00	.00	14.07	.00
21.	When I prepare food ...	.00	.00	.00	.00	.00*
22.	When I think about politics ...	.00	.00	.00	.00	9.51

b) Factor correlation (PHI) matrix

FACTOR 1	3.65				
FACTOR 2	6.10	8.14			
FACTOR 3	6.00	8.71	62.24		
FACTOR 4	6.14	8.93	8.20	8.25	
FACTOR 5	5.75	7.90	7.62	7.87	5.95

* Suggested factor labels:

I	Community
II	Media
III	University Environment
IV	Private/Literary
V	Symbolic

* This parameter was set to 1.00 for purposes of identification.

Francophones:
T-values associated with LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix

Items[a]	Items					
	01	02	03	04	05	06
01	12.84					
02	.00	13.34				
03	.00	.00	12.44			
04	.00	3.89	.00	10.32		
05	.00	.00	.00	.00	13.68	
06	.00	.00	.00	.00	.00	10.88
07	.00	-3.30	.00	.00	.00	.00
08	.00	.00	.00	.00	.00	.00
09	-2.42	.00	-5.05	3.89	.00	.00
10	3.97	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	2.42	.00
14	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	2.50	.00	.00
16	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00
18	.00	3.18	.00	.00	.00	.00
19	.00	.00	-3.85	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	2.69	3.34
22	.00	.00	.00	.00	.00	.00

	07	08	09	10	11	12
07	11.73					
08	.00	12.74				
09	.00	.00	13.26			
10	.00	.00	.00	12.71		
11	.00	.00	.00	.00	11.50	
12	.00	.00	.00	.00	.00	12.40
13	.00	.00	.00	.00	6.98	.00
14	.00	.00	.00	.00	.00	.00
15	-2.99	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	3.68
17	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	-3.65	.00	.00	.00	.00

Francophones:
T-values associated with LISREL estimates of the baseline model of L2-group identity items

c)   Error variance/covariance (TD) matrix, continued

	13	14	15	16	17	18
13	12.83					
14	4.64	12.58				
15	.00	.00	12.73			
16	.00	.00	13.12	12.77		
17	.00	.00	.00	.00	10.74	
18	.00	.00	.00	.00	.00	10.37
19	.00	.00	-3.40	.00	.00	6.37
20	-4.09	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00
22	.00	4.63	.00	.00	.00	.00

	19	20	21	22
19	12.84			
20	.00	10.08		
21	.00	.00	12.97	
22	.00	.00	.00	11.69

* Item numbers correspond with items in factor loading matrix

APPENDIX E

SUPPLEMENTARY ANALYSES
TO ANALYSES OF VARIANCE
PRESENTED IN CHAPTER 4

Supplementary Analyses to
Analyses of Variance
Presented in Chapter 4

Because of the unequal cell sizes, the analyses of variance on the identity scores were redone, using equal-sized samples. To do this, approximately 33 subjects were randomly sampled from the appropriate vitality group and compared with another randomly selected group of 33 from the complementary vitality group. The results of these analyses are described in greater detail below.

L1-Group Identity

Anglophones. The validity of the results of the 2 X 2 ANOVA on Anglophones' L1-group identity were confirmed by comparing a random subsample of 32 subjects from the majority group with 32 subjects from the minority group. The results indicated that only the main effect for the Domain within-subjects factor ($F_{1,62}$ = 4.23, p < .05) was significant. The means showed the same pattern as that reported for the complete sample.

Francophones. A comparison of a random subsample of 33 subjects with the majority group and 33 subjects from the minority group yielded similar findings as those found with the complete sample: the main effect for Domain and the interaction effect Status X Domain were significant ($F_{2,128}$ = 63.29, p < .001, and $F_{2,128}$ = 4.97, p < .01, respectively), but the main effect for Status was not. The means showed the same pattern as that reported for the complete sample.

L2-Group Identity

Because of the disparity between the number of subjects in each cell and because the assumption of univariate homogeneity of variance may have been violated for the between-subject's factors (Box' M = 192.13, χ^2_{30} = 187.99, p < .01; Greenhouse-Geisser ϵ = .89), a second 2 X 2 X 5 split-plot ANOVA was computed. 33 subjects were randomly sampled from each of the larger groups. In this analysis the homogeneity of variance assumption was met (Box' M = 52.33, χ^2_{30} = 49.28, p = .02; Greenhouse-Geisser ϵ = .88). The results showed significant main effects for Native Language Group ($F_{(1,123)}$ = 19.74, p < .01), Status ($F_{(1,123)}$ = 10.11, p < .01), and Domain ($F_{(3,369)}$ = 11.95, p < .01), as well as 2-way interaction for Native

Language Group by *Domain* ($F_{(3,369)}$ = 24.64, p < .01). Although the 3-way interaction only approached significance ($F_{(3,369)}$ = 2.18, p = .091), the means showed a similar pattern to that found with the larger sample sizes. Because of this similar trend and because the failure to find a significant interaction may be due to lack of power, it was concluded that the pattern of results in the complete sample are valid despite the differences in cell sizes.

MANOVA: Language and Contact

An inspection of the results of Box's M test suggested heterogeneity of variance (Box's M = 639.43, χ^2_{108} = 614.01, p < .001) between vitality groups. The results were corroborated, however, by a similar MANOVA conducted on random subsamples of 33 participants from each of the 4 groups (N = 132). These results showed no significant interaction effect, a significant multivariate effect due to Status (Pillai's = .31; $F_{(14,115)}$ = 6.78; p < .001) and a significant effect due to Native Language Group (Pillai's = .81; $F_{(14,115)}$ = 33.42; p < .001). Inspection of the univariate results using a Bonferroni correction showed that, in the case of the Status effect, the minority and majority groups differed with regards to Frequency of Contact ($F_{(1,128)}$ = 21.64; p < .001), Proportion of Life Spent with the L1-Group ($F_{(1,128)}$ = 36.94; p < .001), Media Exposure ($F_{(1,128}$ = 18.41; p < .001), Self-Confidence and Anxiety using the L2 ($F_{(1,128)}$ = 21.05; p < .001; and $F_{(1,128)}$ = 18.39; p < .001, respectively), Self-Evaluation of L2 competence ($F_{(1,128)}$ = 30.84; p < .001), and L2 Competence ($F_{(1,128)}$ = 11.87; p < .001). Inspection of the means indicated that the four groups differed from each other in the same manner as that described in the analyses for the larger sample.

In the case of the Native Language Group effect, Anglophones and Francophones differed with regards to Media Exposure ($F_{(1,128)}$ = 273.15; p < .001), and the 3 self-confidence indices (Self-Confidence: $F_{(1,128)}$ = 36.64; p < .001; Anxiety: $F_{(1,128)}$ = 22.23; p < .001; Self-Evaluation: $F_{(1,128)}$ = 61.59; p < .001). Again, inspection of the means indicated that these differences between groups were similar to those found in the larger analyses, with the exception that Anglophones and Francophones did not differ with regards to their score on the Cloze test ($F_{(1,128)}$ = 2.89; p = .092). Thus, despite the differences in sample sizes, the results of the

analyses on the complete sample appear to be valid.

Summary

In general, the analyses on the smaller, but equal-sized, subsamples yield similar results to those reported with the larger sized samples. These results, then, point to the validity of the analyses reported in Chapter 4.

APPENDIX F

RESULTS OF TUKEY-HSD ANALYSES

For all of the analyses reported below, the abbreviation of the index corresponds with the full title as outlined in the legend below.

LEGEND

UE	University Environment
PUB	Public
COMM	Community
MEDIA	Media
MAJ	Majority Group
MIN	Minority Group
F	Francophone Group
A	Anglophone Group
PRIV	Anglophones L1-group identity: Private/Community
	Francophones L1-group identity: Private/Future Goals
	L2-group identity: Private/Literary

TABLE F.1
Results of Tukey-HSD analyses
comparing Francophones' L1-group identity means
for *Domain* main effect

Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. PRIV	4.47	4.18	11.74	3
UE vs. MEDIA	4.47	3.80	27.27	3
PRIV vs. MEDIA	4.18	3.80	15.54	3

Note: The critical value of the studentized range statistic at 3 steps is $q_{(.)} = 4.12$ ($p < .01$).

TABLE F.2
Results of Tukey-HSD analyses
comparing Francophones' L1-group identity means
for 2-way interaction effect

Minority Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. PRIV	4.38	3.98	10.64	3
UE vs. MEDIA	4.38	3.50	23.05	3
PRIV vs. MEDIA	3.98	3.50	12.41	3

Majority Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. PRIV	4.52	4.32	6.43	3
UE vs. MEDIA	4.52	4.01	16.32	3
PRIV vs. MEDIA	4.32	4.01	9.89	3

Private/Future Goals Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MAJ vs. MIN	4.32	3.98	6.09	2

Media Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MAJ vs. MIN	4.01	3.50	8.96	2

University Environment Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MAJ vs. MIN	4.52	4.38	2.48	2

Note: The critical value of the studentized range statistic at 2 steps is q_{i-i} = 3.64 and at 3 steps is q_{i-i} = 4.12 (p < .01).

TABLE F.3
Results of Tukey-HSD analyses
comparing L2-group identity means
for *Domain* main effect

All groups: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MEDIA vs. COMM	2.69	2.45	8.81	4
MEDIA vs. UE	2.69	2.37	11.93	4
MEDIA vs. PRIV	2.69	2.17	19.32	4
COMM vs. COMM	2.45	2.37	3.12	4
COMM vs. UE	2.45	2.17	10.51	4
UE vs. PRIV	2.37	2.17	7.39	4

Note: The critical value of the studentized range statistic at 4 steps is $q_{(\ldots)}$ = 4.40 ($p < .01$).

TABLE F.4
Results of Tukey-HSD analyses
comparing L2-group identity means
from 3-way interaction effect

Minority Anglophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. COMM	2.69	2.49	1.49	4
UE vs. MEDIA	2.69	2.18	3.80	4
UE vs. PRIV	2.69	1.77	6.85	4
COMM vs. MEDIA	2.49	2.18	2.31	4
COMM vs. PRIV	2.49	1.77	5.36	4
MEDIA vs. PRIV	2.18	1.77	3.05	4

Minority Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MEDIA vs. PRIV	3.86	3.33	9.31	4
MEDIA vs. COMM	3.86	3.01	14.40	4
MEDIA vs. UE	3.86	2.47	24.43	4
PRIV vs. COMM	3.33	3.01	5.62	4
PRIV vs. UE	3.33	2.47	15.12	4
COMM vs. UE	3.01	2.47	9.49	4

Majority Anglophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. COMM	2.37	2.17	4.79	4
UE vs. MEDIA	2.37	1.72	15.56	4
UE vs. PRIV	2.37	1.46	21.79	4
COMM vs. MEDIA	2.17	1.72	10.77	4
COMM vs. PRIV	2.17	1.46	17.00	4
MEDIA vs. PRIV	1.72	1.46	6.23	4

Results of Tukey-HSD analyses, continued

Majority Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MEDIA vs. COMM	3.18	2.42	15.99	4
MEDIA vs. PRIV	3.18	2.35	17.47	4
MEDIA vs. UE	3.18	2.26	19.36	4
COMM vs. PRIV	2.42	2.35	1.47	4
COMM vs. UE	2.42	2.26	3.37	4
PRIV vs. UE	2.35	2.26	1.89	4

Community Domain: Minority Anglophones vs. Minority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.01	2.49	3.47	2

University Environment: Minority Anglophones vs. Minority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	2.47	2.69	1.48	2

Media Domain: Minority Anglophones vs. Minority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
F vs. A	3.86	2.18	11.26	2

Private/Literary Domain: Minority Anglophones vs. Minority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
F vs. A	3.33	1.77	10.46	2

Results of Tukey-HSD analyses, continued

Community Domain: Minority Anglophones vs. Majority Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	2.49	2.17	2.23	2

University Environment Domain: Minority Anglophones vs. Majority Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	2.69	2.37	2.23	2

Media Domain: Minority Anglophones vs. Majority Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	2.18	1.72	3.20	2

Private/Literary Domain: Minority Anglophones vs. Majority Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	1.77	1.46	2.16	2

Community Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.01	2.42	7.79	2

University Environment Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	2.47	2.26	2.77	2

Results of Tukey-HSD analyses, continued

Media Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.86	3.18	8.98	2

Private/Literary Domain: Minority Francophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.33	2.35	12.94	2

Community Domain: Majority Anglophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
A vs. F	2.17	2.42	3.87	2

University Environment Domain: Majority Anglophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
A vs. F	2.37	2.26	1.70	2

Media Domain: Majority Anglophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
A vs. F	1.72	3.18	22.58	2

Private/Literary Domain: Majority Anglophones vs. Majority Francophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
A vs. F	1.46	2.35	13.76	2

Note: The critical value of the studentized range statistic at 2 steps is $q_{(=)}$ = 3.64 and at 4 steps is $q_{(=)}$ = 4.40 (p < .01).

TABLE F.5

Results of Tukey-HSD analyses
comparing frequency of L2-group contact means
for *Domain* main effect

All groups: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
PUB vs. UE	4.17	3.44	11.68	3
PUB vs. PRI	4.17	3.31	13.77	3
UE vs. PRI	3.44	3.41	2.10	3

Note: The critical value of the studentized range statistic at 3 steps is $q_{(\infty)}$ = 4.12 (p < .01).

TABLE F.6

Results of Tukey-HSD analyses
comparing frequency of L2-group contact means
from 2-way interaction effects

Francophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
PUB vs. UE	4.17	3.44	11.68	3
PUB vs. PRI	4.17	3.31	13.77	3
UE vs. PRI	3.44	3.41	2.10	3

Anglophones: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
UE vs. PUB	3.65	3.21	6.53	3
UE vs. PRI	3.65	2.84	11.99	3
PUB vs. PRI	3.21	2.84	5.46	3

Minority Group: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
PUB vs. PRI	4.60	3.86	8.28	3
PUB vs. UE	4.60	3.78	9.17	3
PRI vs. UE	3.86	3.78	0.90	3

Majority Group: Comparison across domains

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
PRI vs. PUB	3.45	3.42	0.51	3
PRI vs. UE	3.45	2.83	11.56	3
PUB vs. UE	3.42	2.83	11.25	3

Results of Tukey-HSD analyses, continued

Public Domain: Francophones vs. Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
F vs. A	3.31	2.84	5.78	2

Private Domain: Francophones vs. Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
F vs. A	4.17	3.21	11.71	2

University Domain: Francophones vs. Anglophones

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
F vs. A	3.44	3.65	2.56	2

Public Domain: Minority vs. Majority Groups

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.86	2.83	11.22	2

Private Domain: Minority vs. Majority Groups

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	4.60	3.42	12.72	2

University Domain: Minority vs. Majority Groups

VARIABLES	MEANS CONTRASTED		Q-STAT	MAX. STEPS
MIN vs. MAJ	3.78	3.45	3.56	2

Note: The critical value of the studentized range statistic at 2 steps is $q_{(a)}$ = 3.64 and at 3 steps is $q_{(a)}$ = 4.12 (p < .01).