Linguistic Landscape and Ethnolinguistic VitalityAn Empirical Study

Article *in* Journal of Language and Social Psychology · March 1997
DOI: 10.1177/0261927X970161002

2 authors:

Rodrigue Landry
Université de Moncton
95 PUBLICATIONS **1,658** CITATIONS
SEE PROFILE

Richard Y. Bourhis
Université du Québec à Montréal
146 PUBLICATIONS **5,724** CITATIONS
SEE PROFILE

LINGUISTIC LANDSCAPE AND ETHNOLINGUISTIC VITALITY
An Empirical Study

RODRIGUE LANDRY
Université de Moncton
RICHARD Y. BOURHIS
Université du Québec à Montréal

Linguistic landscape *refers to the visibility and salience of languages on public and commercial signs in a given territory or region. It is proposed that the linguistic landscape may serve important informational and symbolic functions as a marker of the relative power and status of the linguistic communities inhabiting the territory. Using the theoretical framework of ethnolinguistic vitality, it was hypothesized that the experience of the linguistic landscape by members of a language group may contribute to social psychological aspects of bilingual development. Factor analysis results show that the linguistic landscape emerges as a distinct factor separate from other measures of linguistic contacts. This factor was an important correlate of subjective ethnolinguistic vitality representing perceptions of the vitality of the in-group language in various domains. The study also found relations between the Linguistic Landscape factor and degree of in-group language use, especially in institutional settings, suggesting a "carryover effect" of the linguistic landscape on language behavior.*

The aim of this article is threefold. First, it will introduce the concept of linguistic landscape by examining the sociolinguistic aspects of this emerging notion in the field of language planning (Bourhis, 1992; Leclerc, 1989). In the second part of the article, the concept of linguistic landscape will be discussed as it relates to the notion of ethnolinguistic vitality (EV) (Giles, Bourhis, & Taylor, 1977; Sachdev & Bourhis, 1993) and a model of bilingual development proposed by Landry and Allard

AUTHORS' NOTE: *This research was conducted thanks to a grant from the Social Science and Humanities Research Council of Canada (SSHRC # 410-93-0480) to Rodrigue Landry, Richard Bourhis, and Réal Allard. The authors would like to thank James Bradac, Jacques Leclerc, and Stéphane Perrault for their comments on earlier drafts of this article.* *Comments or requests for reprints should be addressed to: Rodrigue Landry, Faculté des Sciences de l'Éducation, Université de Moncton, Moncton, Nouveau Brunswick, Canada, E1A 3E9, (506) 858-4400, Fax number (506) 858-4317, E-mail LANDRYRO@umoncton.ca or to: Richard Y. Bourhis, Département de Psychologie, Université du Québec à Montréal, C.P. 8888, Succ. Centre-Ville, Montréal, Québec, Canada, H3C 3P8, (514) 987-3000 ext. 4852, Fax number (514) 987-7953, E-mail Bourhis.Richard@UQAM.CA.*

JOURNAL OF LANGUAGE AND SOCIAL PSYCHOLOGY, Vol. 16 No. 1, March 1997 23-49

(1990, 1992a). The third part of the article will present results exploring how experience with the linguistic landscape is related to the vitality perceptions and language behaviors of French Canadian minorities across Canada. Taken together, the conceptual and empirical issues presented in this article demonstrate the need to consider the issue of linguistic landscape as an important sociolinguistic factor contributing to the vitality of competing ethnolinguistic groups in multilingual settings.

THE CONCEPT OF LINGUISTIC LANDSCAPE

It is in the language planning field that issues related to the notion of linguistic landscape first emerged. Language planners in Belgium (Verdoot, 1979) and in Québec (Corbeil, 1980) were among the first to recognize the importance of marking the boundaries of linguistic territories through the regulation of language use on public signs including billboards, street signs, and commercial signs (Leclerc, 1989), as well as in place names.

In Belgium, language conflicts between the French- and the Flemish-speaking communities were addressed through the adoption of what is known as the territorial solution to language problems (Bourhis, 1984; Bourhis, Giles, Leyens, & Tajfel, 1979; Nelde, Labrie, & Williams, 1992). Belgium was divided, which created two self-administered unilingual territories made up of the Flemish-speaking community in the north (Flanders) and the French-speaking community in the south (Wallonia). Administration and public services including schooling were provided only in Flemish in Flanders and only in French in Wallonia (McRae, 1982). The national capital of Belgium, Brussels, was declared officially bilingual and provided services in both languages to its citizens (Witte & Beardsmore, 1986). The linguistic boundary between the Flemish and the Walloon territory needed to be clearly demarcated, and it is through the systematic use of unilingual public signs in Flemish and French, respectively, that the identity of each region was made most salient as one crossed the linguistic frontier. It is to this Belgian case that we owe the origin of the concept of linguistic landscape as a marker of the geographical territory occupied by distinctive language communities within multilingual states.

In an exhaustive study of recent language laws across the world, Leclerc (1994) noted that more than 30 countries and regional states have adopted laws regulating aspects of their linguistic landscape. Laws *specifically* regulating the language of public signs have been passed in countries such as Algeria, Austria, Canada, Columbia, Estonia, Finland, France, Indonesia, Italy, Mexico, Norway, Russia, Spain, Switzerland, and Turkey. Nonsovereign regional states such as Massachusetts, Northern Ireland, and Québec have also passed laws

regulating the language of public signs within their respective territories (Leclerc, 1994). It must be noted, nevertheless, that in general, language planners have paid little attention to the notion of linguistic landscape in their theoretical and practical activities related to corpus and status language planning (Cobarrubias & Fishman, 1983; Cooper, 1989; Eastman, 1983; Tollefson, 1991). It is to redressing this situation that we devote the first part of this article, which includes a discussion of the notion of linguistic landscape. The language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings combines to form the linguistic landscape of a given territory, region, or urban agglomeration. The linguistic landscape of a territory can serve two basic functions: an informational function and a symbolic function.

THE INFORMATIONAL FUNCTION

The most basic informational function of the linguistic landscape is that it serves as a distinctive marker of the geographical territory inhabited by a given language community (Bourhis, 1992). The linguistic landscape also serves to delineate the territorial limits of the language group it harbors relative to other linguistic communities inhabiting adjoining territories. Consistent use of a single language within the linguistic landscape of a territory can contribute to clear-cut language boundaries between adjoining language groups in a given geographical region. Well-established language boundaries can stabilize relations between rival language groups by clearly delineating the administrative territories where members of the language group can expect to use and receive government and private sector services in their own language. Thus the linguistic landscape serves to inform in-group and out-group members of the linguistic characteristics, territorial limits, and language boundaries of the region they have entered.

The prevalence of a specific language on public signs also serves an informational function inasmuch as it indicates that the language in question can be used to communicate and obtain services within public and private establishments located in the pertinent territory. Thus public signs written in one's own language outside and inside commercial and government buildings convey the expectation that one can be served in the in-group language within such establishments (Maurais & Plamondon, 1986). Personal frustration and a sense that one's own-group language is not respected can be experienced, however, when the language of public signs is not matched by services in the corresponding language within the establishments in question. Such discrepancies are most likely to occur in bilingual or multilingual environments in which the relative status and functions of competing languages are unstable and remain to be legitimized consensually.

Given that language territories are rarely linguistically homogeneous, the linguistic landscape can also provide information about the sociolinguistic composition of the language groups inhabiting the territory in question. Public signs can be unilingual, bilingual, or multilingual, thus reflecting the diversity of the language groups present in the given territory. The predominance of one language on public signs relative to other languages can reflect the relative power and status of competing language groups (Bourhis, 1992). In such a situation, one may find that the majority of public signs are written in the language of the dominant language group, whereas only a few public signs are found in the language of the weaker language groups. In some cases, only the language of the dominant group may be found on outside public signs, whereas the weaker language may coexist with the dominant language on signs inside state and private buildings. Alternatively, one may find that public signs are written bilingually with the language of the dominant group being displayed more prominently on each sign than the language of the weaker groups. It is the case that the dominant language of public signs is often the language of the majority group inhabiting the territory or administrative region in question (Maurais & Monnier, 1996); however, the prevailing language of public signs may sometimes be the language of a dominant minority that can impose its own language on another language group even if this latter group forms a majority of the population.

In a diglossic situation, the high-status language used for formal functions is more likely to be found on public signs than is the language used for lower-status functions such as in the home and local community (Bourhis, 1979, 1992). This may be the case even if the high-status language is spoken only by a minority of the population within the administrative region in question. The configuration of languages present in the linguistic landscape therefore can provide important information about the diglossic nature of a particular bilingual or multilingual setting. Thus, before communicating interpersonally with a single inhabitant, one can use the linguistic landscape as an indicator of the power and status relationship that exists between the various language groups present within a given administrative or geographical region.

At this point, it is useful to distinguish between private signs and government signs (Leclerc, 1989). Private signs include commercial signs on storefronts and business institutions (e.g., retail stores and banks), commercial advertising on billboards, and advertising signs displayed in public transport and on private vehicles. Government signs refer to public signs used by national, regional, or municipal governments in the following domains: road signs, place names, street names, and inscriptions on government buildings including ministries, hospitals, universities, town halls, schools, metro stations, and public parks. It is through its language policy for government signs that the

state can exert its most systematic impact on the linguistic landscape of the territory under its jurisdiction. In contrast, the state may exert less control over the language of private signs. This is the case because both the content and the language of private signs are often seen by the courts as being part of an individual's freedom of speech, whereas government signs are rarely considered as a constituent part of individual freedom of expression (Bourhis, 1992, 1994; Bourhis & Landry, n.d.; Woehrling, 1993).

Together, government signs and private signs contribute to the linguistic landscape of a region or territory (Leclerc, 1989). In some cases, the language profile of private signs and government signs may be quite similar and thus contribute to a consistent and coherent linguistic landscape. There are instances, however, in which the language of private signs is quite discordant with the language profile of government signs. More often than not, there is greater language diversity in private signs than in government signs (Leclerc, 1989). The greater the discrepancy between the language of government signs and the language of private signs, the less coherent will be the character of the linguistic landscape. Sociolinguistically, language diversity in private signs may most realistically reflect the multilingual nature of a particular territory, region, or urban agglomeration. As such, the diversity of languages present in the linguistic landscape can be seen as a concrete manifestation of the linguistic and cultural diversity of the ethnolinguistic groups inhabiting a particular administrative territory or region.

THE SYMBOLIC FUNCTION

It is reasonable to propose that the absence or presence of one's own language on public signs has an effect on how one feels as a member of a language group within a bilingual or multilingual setting (Bourhis, 1992). Having one's own language enshrined on most private and government signs should contribute to the feeling that the in-group language has value and status relative to other languages within the sociolinguistic setting. Thus inclusion of the in-group language on public signs can serve a symbolic function that is affectively charged and that complements the informational function of the linguistic landscape (Québec, 1996). The symbolic function of the linguistic landscape is most likely to be salient in settings where language has emerged as the most important dimension of ethnic identity (Sachdev & Bourhis, 1990). It is in such settings that the presence of the in-group language in the linguistic landscape can contribute most directly to the positive social identity of ethnolinguistic groups.

The notion of linguistic landscape can also be linked to the concept of objective and subjective ethnolinguistic vitality (Bourhis, Giles, &

Rosenthal, 1981; Giles et al., 1977). The prevalence of the in-group language on public signs can symbolize the strength or vitality of one's own language group on the demographic and institutional control front relative to other language communities within the intergroup setting. Thus public signs in the in-group language imply that the demographic weight of the in-group is substantial enough to warrant such signs in the linguistic landscape. Public signs in the in-group language imply that one's own group has gained a measure of institutional control within key sectors of the economy, mass media, and state functions such as education, health, defense, and the civil administration. Public signs in the in-group language can also symbolize the vitality of the ethnolinguistic group in other institutional support domains such as cultural production and commercial and religious activities. Thus the presence or absence of rival languages in specific domains of the linguistic landscape can come to symbolize the strength or weakness of competing ethnolinguistic groups in the intergroup setting.

Exclusion of the in-group language from public signs can convey a message to the effect that one's own language is not valued and has little status within society. Further, such exclusion conveys the notion that the in-group language is of little use for conducting public affairs, thus reinforcing a diglossic situation to the advantage of the dominant language. Absence of the in-group language on public signs may also consolidate a sociolinguistic norm leading group members to use their own-group language in an ever-declining range of language domains. In combination with other measures of exclusion (e.g., banning the teaching of the minority language in schools), absence of the in-group language from the linguistic landscape can lead group members to devalue the strength of their own language community, weaken their resolve to transmit the in-group language to the next generations, and sap their collective will to survive as a positively distinctive ethnolinguistic group (Bourhis, 1984, 1992).

Absence of the minority language on public signs may lead activists to lobby local or national authorities to include the minority language on government signs. Such demands may be backed by graffiti campaigns designed to add the subordinated language on existing road signs, place names, and state buildings situated within the existing or ancestral linguistic zone of the minority group. More radical graffiti campaigns may block out or deface existing signs in the dominant language and replace them with script in the minority language. Dominant group authorities often control the police and judicial apparatus needed to repress such graffiti campaigns, though the financial cost of replacing defaced public signs may be such that authorities may eventually reach a compromise regarding the language of public signs. Recent graffiti campaigns for the inclusion of minority languages on public signs have occurred in regions such as the Basque Country in France and Spain, Catalonia, Québec, and Wales. Thus, despite the

seemingly static nature of public signs, graffiti campaigns can provide a dynamic portrait of both current and past conflicts over the language of public signs within a given region or administrative territory.

The prevalence of one's own language on public signs can fulfill an informational and symbolic function that can encourage group members to value and use their own language in a broad range of interpersonal and institutional settings. One can propose that the systematic use of the in-group language on public signs may result in a *carryover effect* that can contribute to the emergence or maintenance of a sociolinguistic norm favoring greater use of the in-group language in an increasing range of language functions extending from private to more public domains of language use (Bourhis, 1992). The prevalence of the in-group language on public signs contributes to the status of the in-group language, which in turn affects how group members perceive the strength and vitality of their own language group. However, the role of the linguistic landscape in affecting group vitality perceptions and language use patterns remains to be documented empirically as it relates to other sociolinguistic factors contributing to language maintenance and language shift (Fishman, 1991).

From an intergroup perspective (Bourhis, 1979; Bourhis & Gagnon, 1994), it is likely that rival language groups will compete to assert the "visibility" of their respective languages within the linguistic landscape. As seen earlier, such competition for "visibility" on public signs serves both symbolic and informational functions from the point of view of both the dominant and subordinate language groups within a particular urban, regional, or national territory. The share of visibility allocated to rival languages on private and government signs can be seen as the product of competing forces exerted by dominant and subordinate language groups inhabiting a given territory. More often than not, it is the dominant language group that can most systematically impose its own language on the linguistic landscape of a given territory (Bourhis, 1979). Given that it is the dominant language group that can most effectively control the state apparatus regulating the language of public signs, one can consider the relative position of competing languages in the linguistic landscape as a measure of how the dominant group treats the linguistic minorities inhabiting the given territory (Bourhis, 1984, 1994).

LINGUISTIC LANDSCAPE AND BILINGUAL DEVELOPMENT

As proposed in the previous section, the linguistic landscape may act as the most observable and immediate index of the relative power and status of the linguistic communities inhabiting a given territory. If this is so, the linguistic landscape may also exert a strong influence

on community members' cognitive representation of the relative power and status of these communities. As seen earlier, most pertinent to these two assumptions is the theoretical construct of EV and the distinction between "objective vitality" and "subjective vitality" (Giles et al., 1977; Bourhis et al., 1981). Giles et al. (1977) defined EV as the sociostructural factors that affect a group's ability to behave and survive as a distinct and active collective entity within multilingual settings. These factors were grouped under the categories of demography, institutional support, and status, which correspond to the underlying concepts of number, power, and status within the intergroup relation literature (Sachdev & Bourhis, 1990, 1991, 1993). The weaker the position of an ethnolinguistic group relative to more dominant ethnolinguistic out-groups on these socio-structural factors, the stronger the likelihood that this group will tend to assimilate linguistically and cease to exist as a distinct ethnolinguistic collectivity. The sociostructural factors thus delineate what may be termed the objective vitality of an ethnolinguistic group. Group members' cognitive representation or perception of the relative vitality of different groups was termed *subjective ethnolinguistic vitality* (Bourhis et al., 1981; Harwood, Giles, & Bourhis, 1994; Sachdev & Bourhis, 1993).

In a subsequent theoretical development, Landry and Allard (1984, 1990, 1992a) incorporated the notions of objective and subjective vitality in a macroscopic model of the determinants of additive and subtractive bilingualism. As can be seen at the top of Figure 1, L1 refers to the individual's first language, whereas L2 is a second language that a speaker may acquire or associate with. As can be seen at the bottom of Figure 1, contact with L1 and L2 may foster states of bilingual development that may range from the maintenance of unilingualism in L1 to total linguistic assimilation in L2, with additive or subtractive bilingualism as possible intermediary outcomes of ethnolinguistic contact.

As can be seen in the model, the sociostructural factors of EV constitute a sociological level of influence on the process of bilingual development (Giles et al., 1977; Bourhis et al., 1981). The relative EV of each ethnolinguistic community influences bilingual development by limiting or expanding the individual network of linguistic contacts (INLC) with the L1 and L2 communities. In other words, the relative vitality of a linguistic community is hypothesized to determine the quantity and quality of opportunities for contacts with each ethnolinguistic group. Without a sufficient degree of EV, members of linguistic groups may not have the necessary opportunities to experience the INLC that foster the psychological disposition to learn and use the L1 or L2 language. It is at the psychological and language behavior levels

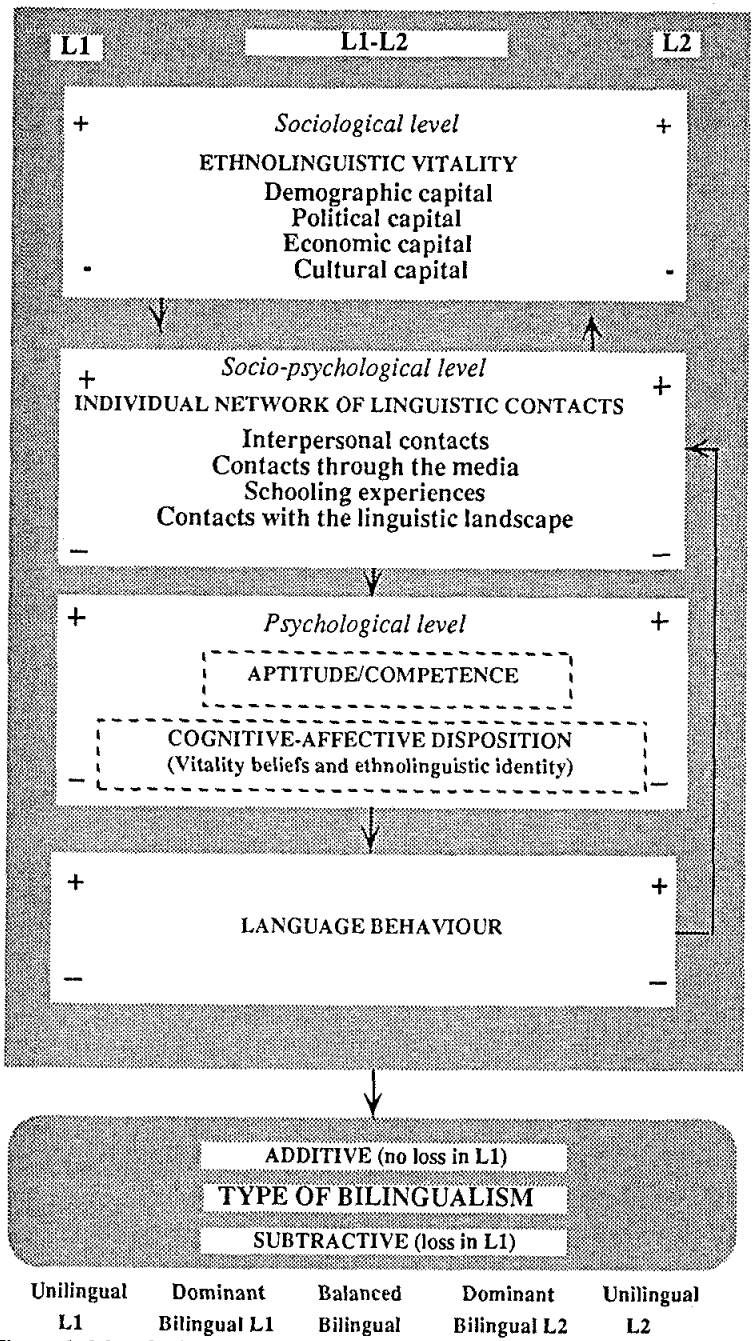

Figure 1. Model of the determinants of additive and subtractive bilingualism.

of the model that the outcome of bilingual development may be assessed as being additive or subtractive. When INLC in L2 have no detrimental effects on L1 maintenance and L1 cultural identity, the outcome of bilingualism may be described as an "additive" process. When INLC with the second language have detrimental effects leading to lower levels of development in L1 and eventual linguistic and cultural assimilation, bilingualism may be termed "subtractive" (Lambert, 1975).

At the sociological level, the sociostructural factors constituting EV (Giles et al., 1977) have been regrouped in terms of four types of "linguistic capital": demographic, political, economic, and cultural (Bourdieu, 1980; Prujiner et al., 1984). As proposed by Giles et al. (1977), the overall objective vitality of each language group can be estimated by assessing the strength of capital in each of these domains. Several measures can be used to assess the relative demographic capital of a community: the number and the proportion of group members relative to the overall population, the degree of concentration of group members within a territory, the relative birth rate, the degree of endogamy and exogamy, and rates of emigration and immigration. Political capital can be assessed by taking measures of the institutional support enjoyed by ethnolinguistic groups at various levels of government and public affairs. The political capital of a language group can also be assessed by monitoring the degree of use of the language in government functions and services including government signs, as well as by assessing the quantity and quality of language rights and the incorporation of these rights in administrative policies and language laws. Additionally, political capital can be assessed by analyzing the position of group members in the hierarchical decision-making structure of the society in question and by estimating the relative power of lobbyists, pressure groups, and other organized social movements representing the language group. Economic capital is reflected by the use of a group's language in the various aspects of commerce and industry, including commercial signs contributing to the linguistic landscape. Language groups who control important sectors of financial and commercial activity can more easily establish the use of their own language in the work setting, in financial communications, and in advertising, including private and commercial signs. Finally, cultural capital can be assessed by monitoring the extent to which the group controls its own linguistic, educational, and cultural institutions and the degree to which the media reflect and portray the language and culture of the group.

As shown in Figure 1, life experiences that involve linguistic contacts with the L1 and L2 communities are grouped under the rubric INLC. These contacts constitute the sociopsychological level that becomes the link between the sociostructural factors of vitality (EV) and the variables at the psychological level: language competence, vitality

beliefs, and ethnolinguistic identity (see also Hamers, 1987, 1991). The INLC becomes the experiential basis for the socialization process needed to foster language development in L1 and L2 and may occur in a wide variety of forms and contexts. Our research with high school students has focused mainly on interpersonal contacts, contacts through schooling, contacts through the media, and, in the present study, contact with the linguistic landscape. Interpersonal contacts with L1 and L2 members are verbal, informal, and highly interactive. Contacts with the media and schooling can be both verbal and written, quite interactive, and also possibly quite cognitively demanding, especially in the school context. In contrast, private and government signs can be characterized as written, formal, context embedded, low in cognitive demand, and noninteractive.

At the psychological level of the model, variables are grouped under the aptitude/competence factor and the cognitive-affective disposition of the individual (see Figure 1). Aptitude is the ability to learn languages, specifically L1 and L2 in this case (Carroll, 1973; Gardner, 1985; Gardner & Clément, 1990). Competence refers to the ability to use a language and is hypothesized to be strongly related to the frequency and quality of linguistic contacts within the INLC. It is hypothesized that linguistic contacts through schooling should favor all aspects of language competence but be especially important in fostering cognitive-academic linguistic proficiency. Interpersonal contacts, however, should favor more strongly the communicative than the cognitive-academic aspects of linguistic proficiency. In contrast, contact with the linguistic landscape should not be strongly related to language competence because of the noninteractive nature of public signs.

Vitality beliefs and ethnolinguistic identity constitute the cognitive-affective disposition, which is related to one's willingness to learn and use L1 and L2. Allard and Landry (1986, 1992, 1994) proposed that cognitive representations in general and subjective EV in particular may be analyzed in terms of exo-centric and ego-centric beliefs as defined by cognitive orientation theory (Kreitler & Kreitler, 1972, 1976, 1982). Exo-centric beliefs are mainly cognitive in nature and reflect the perceptions by group members of the factual and normative positions of in-group and out-group languages in terms of EV. These beliefs are about things, events, and processes that occur "outside" the individual, hence the term "exo- centric." When the recurrent conditions that foster these beliefs become stable and when they become perceived as legitimate (see Giles et al., 1977), it can be hypothesized that beliefs become more strongly associated with feelings, more deeply internalized, and more strongly related to one's own predispositions and aspirations. It is at this point that beliefs can be said to become "ego-centric" (Allard & Landry, 1994). They refer to personal attributes and dispositions of the individual. Because these beliefs express attitudes and feelings as well

as perceptions concerning one's personal attributes relative to language, they can be said to be both affective and cognitive in nature.

Finally, ethnolinguistic identity is viewed as the most deep-rooted aspect of what has been labeled a cognitive-affective continuum (Landry & Allard, 1991b). Social identity is an internal representation of oneself as a group member that involves both cognitive and affective dimensions (Sachdev & Bourhis, 1990). Through social comparisons with out-groups on valued dimensions of comparison, group members construct a social identity that may range evaluatively from very positive to very negative. It is in this regard that social identity may be seen as still more affectively loaded than ego-centric beliefs (Tajfel & Turner, 1986).

From the proposed theoretical model, it may be hypothesized that one's experience with the linguistic landscape would have its strongest effect on exo-centric vitality beliefs. The linguistic landscape may be the most visible marker of the linguistic vitality of the various ethnolinguistic groups living within a particular administrative or territorial enclave (Bourhis, 1992). In their informational function, public signs directly reflect the economic, political, and cultural capital of the language group. These highly visible markers of vitality therefore may be highly influential in shaping the cognitive representations of in-group versus out-group vitality (Sachdev & Bourhis, 1993). Based on the notion of a cognitive-affective continuum (Landry & Allard, 1991b), we propose that the linguistic landscape will have a stronger and more direct effect on exo-centric beliefs and a lesser and more indirect effect on ego-centric beliefs and ethnolinguistic identity. Given their informational function as the most salient and visible markers of in-group versus out-group vitality, public signs may have a direct impact on exo-centric beliefs. The impact of public signs on ego-centric beliefs and social identity is hypothesized to be less direct and weaker because the latter constructs are construed as dependent on the prior formation of exo-centric beliefs and more interactive types of linguistic contacts. It is reasonable, however, to assume that it is the symbolic function of public signs that may be associated most closely with ego-centric components of vitality beliefs.

Within the model, language behavior refers to the general use of L1 and L2 in various linguistic contact situations. Language behavior includes verbal communications between in-group and out-group individuals and with public and private institutions, language choice strategies for oral and written communication, and the production and consumption of written and audio communication in L1 and L2 (Giles & Coupland, 1991). Language behavior can also include the decisions by individuals and institutions to post unilingual or bilingual signs within the linguistic landscape. As seen in Figure 1, the most proximal mediators of language behavior, including the posting of public signs, are the vitality beliefs and linguistic competencies accumulated via

ethnolinguistic contacts experienced by speakers of contrasting language groups. The present and past language behavior of individuals within the social network also contributes to the INLC. In turn, past and present experiences in the INLC contribute to the formation of language beliefs and competencies at the psychological level of the model. The above interactions contribute to a dynamic process of bilingual development that influences the degree and type of bilingualism experienced by members of the linguistic communities in contact.

Given the above considerations, we can propose that the more the in-group language is used on government and private signs, the more individuals will perceive the in-group to have high EV. Likewise, the more the in-group language is seen to be present in the linguistic landscape, the more in-group members should tend to use their own language in a broader range of sociolinguistic situations. This carryover effect is likely to have a stronger influence on the language behavior of low- and medium-vitality groups than on the behavior of high-vitality language groups. Given their already weak position on the demographic and institutional support front, low-vitality groups may be more dependent on the linguistic landscape to foster favorable perceptions of in-group vitality, which in turn may stimulate greater use of the in-group language. Conversely, absence of the in-group language on government and private signs can symbolize the lack of recognition of the in-group language, thus lowering subjective vitality perceptions and degree of in-group language use. In contrast, high-vitality groups are usually well endowed on the demographic and institutional support front relative to out-group minorities and as such may be less dependent on the systematic use of their own-group language on public signs as a way of asserting their own-group vitality and maintaining sustained use of their in-group language across all domains of language use.

THE EMPIRICAL STUDY

Given our discussion concerning the importance of the linguistic landscape for maintaining the vitality of language groups and given the assumption that the linguistic landscape may constitute an important dimension of the INLC, a first question for this study is whether this construct emerges as a single factor, independent of the other variables constituting the INLC. Such a finding would provide at least indirect evidence that ethnolinguistic group members experience the linguistic landscape as a distinct contribution to their vitality independently of other factors such as language contacts with the media, in schooling, and in the social network. Thus the first hypothesis of our study is that *the linguistic landscape will emerge as a separate and independent factor relative to the other factors constituting the INLC.*

The second goal of this study is to assess the independent and relative relationship of the linguistic landscape to vitality beliefs, ethnolinguistic identity, and language behavior. Our second hypothesis is that *the linguistic landscape will be more strongly related to both exo-centric vitality beliefs and language behavior than to ego-centric beliefs and ethnic identity*. Public signs are markers of EV and, as such, are likely to influence the formation of exo-centric beliefs concerning the vitality of a linguistic community.

Through the carryover effect proposed earlier, we also expect, in the third hypothesis, that *the more present a language is on public signs, the more likely that this language will be used in certain domains, especially within commercial and public institutions*. Finding a relationship between the experienced linguistic landscape and degree of use of the in-group language would reinforce the pertinence of language laws regulating the linguistic landscape (Bourhis & Lepicq, 1993; Leclerc, 1989). So far, language planners and sociolinguists have relied on little empirical evidence to justify their assertions and interventions on issues related to the linguistic landscape (Bourhis, 1992; CLF, 1993; Québec, 1996). This study is a first attempt to verify empirically the relationship between linguistic landscape and specific aspects of vitality beliefs, ethnolinguistic identity, and language behaviour in multilingual settings.

METHOD

Population

The above hypotheses were tested by amalgamating data from several studies that have used the same tests and questionnaires. Participants in all studies were Grade 11 and Grade 12 students from the province of Québec and the Maritime provinces of New Brunswick, Nova Scotia, and Prince Edward Island (Landry & Allard, 1990), the Prairie provinces of Manitoba, Saskatchewan, and Alberta (Landry, Allard, & Théberge, 1991), the province of Newfoundland and Labrador (Landry & Magord, 1992), the province of Ontario (Landry, Allard, & Haché, 1995), and the province of British Columbia (Landry, 1995). Although some studies also tested anglophone students (Landry & Allard, 1992b, 1993), only the francophone students were kept for the present analyses. The advantage of amalgamating the participants from these studies is that together they constitute samples from more than 50 schools on a rich continuum of EV, ranging from regions where francophones constitute approximately 99% of the total population (Québec sample) to regions where they constitute 1% to 2% of the population (e.g., the Newfoundland sample). The total number of francophone students in the present analyses is 2,010. The

actual number varies in different statistical analyses because of missing data.

Instruments

Questionnaires and tests used in the present study have been described elsewhere (e.g., Landry & Allard, 1990, 1991a, 1992a, 1993). Below, we describe in two sections the methods and instruments related to the variables analyzed in the present study. The first section describes INLC variables that are considered as independent variables in relation to the psychological language variables. The instruments used to collect data on the latter variables are described in the second section.

INLC Variables

The INLC consists of three types of contact. Interpersonal contacts were measured by a questionnaire that analyzed different structural dimensions of interpersonal contacts with francophones and anglophones. For the present analyses, the following scales were used: the proportion of contacts with francophones in the interpersonal network (responses were given on a 9-point scale: 1 = *none were francophones*, 5 = *half were francophones*, and 9 = *all were francophones*) and the frequency of contacts with francophones (1 = *rarely*, or less than once a week, 5 = *four to five times a week*, and 9 = *very frequently*, or several times a day). Contacts with the French media were measured by a separate questionnaire in which participants rated their overall access to 12 different media sources since early childhood, including television, radio, movies, music, newspapers, magazines, books at home, plays and concerts, road signs, outside commercial signs, inside commercial signs, advertising, and unsolicited publicity messages received by mail. Responses were given on a 9-point scale (1 = *no contacts in French*, 5 = *contacts in French from time to time*, and 9 = *contacts were always in French*). Educational support was measured by seven questions, each one being answered for each school year from kindergarten to Grade 12. Participants responded to a first question on a 1 to 7 scale that concerned the degree of instruction in French and English. The other six questions, answered on a 5-point scale, referred to dimensions of the linguistic ambiance of the school, including language spoken by teachers when addressing students outside of class, language spoken by students among themselves outside of class, language of school materials, language of sport and cultural activities, language on posters and messages, and the proportion of anglophone and francophone students in the school. On the degree of instruction scale, a score of 1 indicates that instruction was given totally in English and a score of 7

that it was given totally in French. On the degree of French ambiance scale, a score of 1 indicates a totally English ambiance and a score of 5 a totally French ambiance.

Psychological Variables

Beliefs in ethnolinguistic vitality. In the present study, scores on two marker variables are reported: present French vitality (α = .90), which is seen as representative of exo-centric beliefs, and personal goals (α = .95), which best represents ego-centric beliefs. Scores are reported on a 9-point scale where 1 refers to very low-vitality beliefs and 9 to very high-vitality beliefs. These two scales measure, respectively, subjective EV and the desire to belong to the francophone community. Prior analyses have shown that exo-centric belief scales and ego-centric belief scales load on separate factors (Allard & Landry, 1994).

Ethnolinguistic identity. Students were asked to rate their francophone identity on a 9-point semantic differential scale from seven different perspectives: culture, language, ancestors, the future, education received, ethnicity, and territory. The mean score on these seven dimensions can range from 1 to 9, 1 referring to a nonfrancophone identity and 9 to a completely francophone identity. The Cronbach alpha for this scale is .95.

Language behavior in French. Students rated the frequency of use of French (1 = *never*, 9 = *always*) in 15 different contact situations: father, mother, brother(s) and sister(s), relatives, other students at school, friends (outside of school), neighbors, salespersons in stores, community services, social gatherings, social and cultural activities, shows, television, radio, and readings outside of school. These 15 contact situations have been grouped into six social domains: family, friends, social contacts, other students at school, social institutions, and media. Alpha coefficients for these scales range from .86 to .94.

PROCEDURE

Testing was done in classroom settings and for most students during a period of two days; it required a total of three 50-minute class periods: two periods on Day 1 and one period on Day 2 or vice versa. Tests and questionnaires were administered on dates ranging from October 1985 to December 1994. Except for the French and English cloze tests (20 minutes each) and a nonverbal aptitude test (25 minutes) for which there was a time limit, students responded to the questionnaires at their own pace.

DATA ANALYSES

The statistical procedures used to test the research hypotheses are factor analysis (first hypothesis) and regression analysis (second and third hypotheses). It should be noted that regression analyses were done with the INLC factor scores as the independent or predictor variables. Because all factor scores are orthogonal to each other, the variance explained by any of the factor scores is independent of the variance explained by the other factor scores (Tabachnick & Fidell, 1989). All analyses were done using the SPSS statistical package.

RESULTS

The results are presented in two sections. The first section reports the results of a component analysis done on the INLC variables that verify the independent status of the Linguistic Landscape factor (Hypothesis 1). The second section reports the results of the regression analyses showing the strength of the relationship between various INLC measures, including linguistic landscape and the dependent psychological variables such as vitality beliefs and language behaviors (Hypotheses 2 and 3).

The Linguistic Landscape as an Independent Factor

A principal components analysis using the varimax procedure was conducted on 31 INLC items. As described above, these dealt with interpersonal contacts with francophones, contacts with a variety of French media, and linguistic contacts with French through schooling. After eight iterations, five factors having an eigenvalue greater than 1.00 were extracted. The factor solution accounted for 74.7% of the total variance. The rotated factor matrix and the factor loadings of each variable are presented in Table 1.

The first factor received primary loadings (.53 to .90) from the seven questions dealing with degree of French schooling and the French ambiance of the school and from the question on interpersonal contacts that deals with the proportion of francophone students at school. It explains 43.6% of the total variance. This factor is called French Schooling, although it did receive secondary loadings (.32 to .45) from other items dealing with either literacy activities (books at home, plays and concerts) and other social contacts that seem to be sharing variance with items pertaining to the sociolinguistic ambiance of the school. These include frequency of contacts with francophone friends, frequency of contacts with francophone students, proportion of francophone friends, proportion of francophone cousins, and proportion of francophones in immediate family.

Table 1
Component Analysis of INLC Variables: Rotated Factor Matrix (factor loading of .3 or greater)

INLC Variables (contacts with French or francophones)	Factors 1	2	3	4	5
Teaching	.90				
School materials	.89				
Cultural and sport activities at school	.88				
Posters and messages at school	.88				
Teachers outside of class	.86				
Francophones and anglophones at school	.76		.38		
Students outside of class	.62		.43		
Francophone students at school (proportion)	.53		.46		.30
Music		.78			
Television programs		.74		.37	
Magazines or journals		.73		.38	
Movies		.72		.41	
Radio programs		.67		.48	
Books at home	.40	.64			
Newspapers		.59		.50	
Plays and concerts	.45	.56			
Francophones in social and cultural activities (frequency)			.77		
Francophone neighbours (frequency)			.73		
Francophone friends (frequency)	.41		.68		
Francophone neighbours (proportion)			.66		.31
Francophone students (frequency)	.41		.65		
Francophones in social and cultural activities (proportion)			.64		.33
Francophone friends (proportion)	.39		.53		.43
Signs outside stores and businesses				.89	
Signs inside stores and businesses				.89	
Advertising by mail				.85	
Road signs and street names				.83	
Francophone aunts and uncles (proportion)					.85
Francophone cousins (proportion)	.32				.82
Francophones in immediate family (proportion)	.38		.31		.76
Francophone family and relatives (frequency)			.38		.55

Note. Factors: 1 = French Schooling, 2 = French Media, 3 = Social Network, 4 = Linguistic Landscape, 5 = Family Network.

The second factor grouped eight items that measured contacts with French-language cultural media over the years, including television, radio, movies, music, newspapers, magazines, books, and theater. The loadings ranged from .56 to .78. This factor was named French Media. It is related to 16.3% of the total variance.

The third factor was named Social Network. It explains 6.6% of the total variance. Loadings (ranging from .53 to .77) come from seven items dealing with the proportion of francophones in the students' interpersonal network (friends, neighbors, persons known in social and cultural activities) and frequency of contacts with francophones in the social network. Three other items including proportion of francophones

and anglophones in the school, language spoken by students outside of class, and proportion of francophone students at school also loaded with this factor (.38 to .46). Finally, the items francophones in immediate family and frequency of contacts with francophone family and relatives also shared variance with the Social Network factor items.

The fourth factor grouped items that correspond very closely to the notion of linguistic landscape as developed in the introduction of this article and is named Linguistic Landscape. Highest loadings (.83 to .89) come from the following four items: government signs, road signs, place names, and street names; private signs including commercial signs on store fronts; publicity signs inside stores; and advertising sent by mail such as publicity flyers and government information and notifications. Although advertising by mail is not as clearly related to the Linguistic Landscape as the first three items, its loading on this factor makes sense because its advertising and informational purposes are related to the same social dynamics as the other types of public posting, especially commercial signs. The following five other items also had secondary loadings (.37 to .50) on this factor: contacts with television programs, magazines or journals, movies, radio programs, and newspapers. All these items have in common a grounding in the information or advertising functions of society, but highest loadings on the factor came from items more directly related to public and commercial signs. The landscape factor explains 4.6% of the total variance.

The fifth factor (3.5% of total variance) was named Family Network because primary loadings (ranging from .55 to .85) came from three items dealing with the proportion of francophones among family members and relatives: immediate family (parents, brother(s), sister(s), grandparents), cousins, aunts and uncles, and a fourth item pertaining to the frequency of contacts with francophone family and relatives. Secondary loadings (.30 to .43) came from four items dealing with other intimate social contacts: proportion of francophone friends, of francophones in social and cultural activities, of francophone neighbors and of francophone students at school.

As proposed in Hypothesis 1, Linguistic Landscape does emerge as an independent factor distinct from the other factors that constitute the INLC in the present study. According to Tabachnick and Fidell (1989), one test of the stability of a factor solution is that it appears regardless of which extraction technique is employed. We therefore replicated the analysis using a principal factor solution and varimax rotation and also using an oblique rotation. These two analyses also identified the linguistic landscape as a distinct factor, and overall, the factor solutions were very similar across all three analyses. As suggested by Tabachnick and Fidell (1989), however, it is better to use the principal component analysis technique when orthogonal factor scores are needed as predictor variables in subsequent regression analyses (see following).

It is possible that the Linguistic Landscape factor would not be found in sociolinguistic settings that are linguistically homogenous. The present results, however, show that Linguistic Landscape emerges as a distinct factor in bilingual settings such as those that exist in different provinces across Canada (de Vries, 1994). This finding does provide ground for further investigation on the issue. In the next section, we analyze the relationships among the INLC factor scores and different psychological variables.

Regression Analyses Using INLC Factor Scores

In this section, we present the results of regression analyses using the orthogonal INLC factor scores identified by the component analysis reported above as predictor variables. The dependent variables are exo-centric and ego-centric beliefs scores (i.e., perceived French vitality and personal goals reflecting the desire to belong to the Francophone community), group identity scores, and language behavior scores. Because the predictor variables are orthogonal, the percentage of variance explained by each predictor variable is independent of the variance explained by other factor scores. Orthogonality was verified by looking at the intercorrelations between the INLC factor scores for each of the nine regression analyses reported. The actual correlations between factor scores ranged from −.008 to +.010. These small variations from zero are the result of variations in sample size resulting from missing data on certain dependent variables. This procedure allows an estimate of the relative contribution of each INLC factor score to the total variance explained. The latter is the sum of the percentages of variance explained by the individual INLC factor scores.

Because of the large number of variables, the results of the regression analyses are presented in summary format in Table 2. This table shows the total variance explained by the INLC factor scores for each dependent variable. As can be seen in Table 2, the total variance explained by the INLC factors ranges from a low of 38.1% (perceived vitality of francophone community) to a high of 68.3% (use of French in social contacts). On average, the INLC factor scores account for 60% of the variance of the dependent variables.

In Table 2, when the contribution of the different INLC factors is considered, it can be observed that the Linguistic Landscape factor is the factor most strongly related to the subjective vitality scores. As predicted, perceptions of vitality are strongly related to the French linguistic landscape experienced by respondents from various francophone communities across Canada. The Linguistic Landscape factor accounts for 28.9% of the variance in perceived French vitality scores or a proportion of .76 of the total explained variance. As expected, the French Linguistic Landscape factor is only weakly related to the more affectively loaded components of the cognitive-affective disposition,

Table 2
Regression Analyses of the Relationship Between INLC Factor Scores and Scores on Psychological Variables (in percentages)

Psychological Dependent Variables	INLC Independent Variables (orthogonal factors)					
	French Schooling	French Media	Social Network	Linguistic Landscape	Family Network	Total Variance
A. Vitality beliefs and group identity						
1. Perceived vitality of francophone community (exo-centric)	1.2	2.4	5.3	28.9	0.2	38.1
2. Personal goals to belong to the francophone community (ego-centric)	17.8	17.2	11.4	1.4	9.7	57.4
3. Francophone identity	20.8	7.6	11.1	—	23.4	62.9
B. French language behavior						
1. With family members	17.1	8.3	15.3	3.1	23.7	67.5
2. Among friends	9.6	8.5	22.5	15.3	6.8	62.7
3. During social contacts	10.0	8.1	23.8	12.8	13.7	68.3
4. With students at school	22.2	7.2	22.0	6.0	5.5	62.7
5. Within social institutions	1.6	5.6	14.5	27.4	2.4	51.5
6. In media usage	7.0	27.5	9.4	18.6	4.0	66.4

Note. All relationships shown in this table are statistically significant ($p < .001$).

accounting for only 1.4% of the total variance in scores measuring the desire to belong to the francophone community and none of the variance in francophone identity scores.

The relationship between the Linguistic Landscape factor and language behavior scores is moderate, ranging from a low of 3.1% explained variance in use of French with family members to a high of 27.4% in use of French in social institutions. These preliminary results support the carryover effect on language behavior theorized by Bourhis (1992). The higher proportion of the explained variance in institutional contexts (.53) than in other social domains also supports the hypothesis; however, it will be necessary to undertake more studies to verify the reliability of these findings.

The degree of French Schooling factor accounts for a moderate portion of the variance in francophone identity, personal goals to belong to the francophone community, the use of French with family members, and the use of French with students at school. This factor is also related to approximately 10% of the variance in use of French among friends and during social contacts.

Contacts with the French language through the media, as should be expected, is strongly related to the use of French culture media. These contacts are also moderately related to the desire to belong to the francophone community, suggesting an important role of the social models that are routinely presented to today's youth by the media. The low relationship between the French Media factor and the perceived vitality of the francophone community may be explained by a certain degree of overlap between items loading on the media factor and items loading on the Linguistic Landscape factor (see Table 1). Certain media such as television, magazines, movies, radio, and newspapers loaded moderately on the Linguistic Landscape factor. This shared variance between linguistic landscape variables such as public and commercial signs and these media may help explain the nature of the relationship between the Linguistic Landscape factor and the perceived vitality of the francophone community. All items that loaded on the Linguistic Landscape factor share a common focus on advertising and publicity. They also share some aspects of the informational and symbolic functions of the linguistic landscape discussed in the first part of this article.

Finally, interpersonal contacts (social network and family network) account for a relatively large portion of the total explained variance in use of oral French in several social domains, in francophone identity, and in desire to belong to the francophone community. The francophone Social Network factor is more strongly related to the use of French in various social contexts, whereas the Family Network factor is more strongly related to the use of French with family members. As should be expected, the Family Network factor is related to the strength of the francophone identity of the students.

DISCUSSION AND CONCLUSION

Results obtained in this study provide support for the three hypotheses proposed in the research, although other studies are certainly needed in other contexts and from other perspectives. The linguistic landscape construct emerged as an independent factor among the five factors that accounted for the full range of INLC items tested in the study. The four items that constitute the Linguistic Landscape factor seem to have been perceived as distinct from the other eight items dealing with the diversity of media contacts within the INLC. As mentioned above, however, the Linguistic Landscape factor does seem to share variance with media that have an advertising or publicity function. Contacts with the linguistic landscape were also distinguished from other aspects of the INLC such as contacts through schooling and interpersonal contacts. A recent study on a random sample of 1,000 adult francophones in New Brunswick and using a

different questionnaire also showed the linguistic landscape to be a distinct factor among a variety of INLC variables (Landry & Allard, 1994). Both studies support the hypothesis that the linguistic landscape is a sociolinguistic factor distinct from other types of language contacts in multilingual settings (Bourhis, 1992). These results provide preliminary empirical evidence to justify the analysis and treatment of the linguistic landscape as a distinct variable contributing to the sociolinguistic character of ethnolinguistic groups.

As suggested by our second hypothesis, the French linguistic landscape experienced by the respondents was a significant correlate of subjective francophone vitality. This factor alone accounted for an important proportion (.76) of the total explained variance in perceptions of vitality of the French language in the students' local communities. Relative to the other INLC factors, the linguistic landscape seems to be a major, if not the most important, contributor to exo-centric beliefs concerning the vitality of the francophone communities sampled in our study. The linguistic landscape, at least in the Canadian context, may indeed constitute the most visible and most salient marker of perceived in-group versus out-group ethnolinguistic vitality.

As hypothesized, results showed that linguistic landscape was far less related to francophone respondents' ego-centric beliefs (i.e., personal goals to belong to the francophone community) and ethnolinguistic identity. It is not known to what extent exo-centric beliefs may serve as a building block to more affectively loaded and deep-rooted personal goals and identity feelings related to ego-centric beliefs (Allard & Landry, 1994; Landry & Allard, 1991b). The recent divisive debate in Québec on the issue of unilingual versus bilingual commercial signs has shown that the linguistic landscape can be invested with a strong symbolic function that strikes at the core of the respective social identities of rival language groups (Bourhis, 1994; Bourhis & Lepicq, 1993; Québec, 1996). Ongoing research is specifically designed to explore the symbolic functions of the linguistic landscape as it relates to the ethnolinguistic identity of competing language groups (Bourhis, 1992; Bourhis & Landry, n.d.).

The results of this study also support the hypothesis of a carryover effect of the linguistic landscape on language behavior (Bourhis, 1992). The presence or absence of the in-group language in the linguistic landscape is related to how much speakers use their in-group language with family members, friends, neighbors, and store clerks; in social gatherings; in cultural activities; and as consumers of in-group language television, radio, and print media. Results of this study suggest that the presence of private and government signs written in the in-group language may act as a stimulus for promoting the use of one's own language in a broad range of language use domains.

Ethnolinguistic groups have a vested interest in promoting the use of their own-group language within the linguistic landscape. Low- and

medium-vitality groups need to ensure the visibility of their own-group language on public signs to help maintain or restore the use of their own-group language in key domains of language use. Strategically, weak- and moderate-vitality groups would be more likely to succeed in maintaining their own-group language on private and commercial signs than on signs controlled by the government representing the interests of the dominant high-vitality majority. Weak-vitality groups deprived of visible signs of their own-group language in the linguistic landscape may lose the will to use their own language in pertinent language domains and thus further erode their own-group INLC and group vitality. High-vitality dominant groups also have a vested interest in maintaining their own-group language on public signs, especially in ethnolinguistically heterogeneous sectors of their national or regional territory. Given their strong vitality on the demographic and institutional fronts, however, secure dominant majorities can probably afford to share their linguistic landscape with weaker language groups, especially if the dominant language remains predominant on government and private signs. It remains that under some circumstances, high-, medium-, and low-vitality groups may have real reasons to compete against each other in their quest for establishing their respective language across every aspect of the linguistic landscape.

To conclude, it seems clear that the informational and symbolic functions of the linguistic landscape may constitute an important factor in the processes of language maintenance and language shift for ethnolinguistic groups regardless of the strength of their vitality. Consequently, language planners as well as language activists can ill afford to ignore the issue of the linguistic landscape, not only as a tool to promote language maintenance or reverse language shift but also as another front on which to wage the struggle for consolidating the vitality of their own ethnolinguistic groups in multilingual settings.

REFERENCES

Allard, R., & Landry, R. (1986). Subjective ethnolinguistic vitality viewed as a belief system. *Journal of Multilingual and Multicultural Development, 7*, 1-12.

Allard, R., & Landry, R. (1992). Ethnolinguistic vitality beliefs and language maintenance and loss. In W. Fase, K. Jaespaert, & S. Kroon (Eds.), *Maintenance and loss of minority languages* (pp. 171-195). Amsterdam: Benjamins.

Allard, R., & Landry, R. (1994). Subjective ethnolinguistic vitality: A comparison of two measures. *International Journal of the Sociology of Language, 108*, 117-144.

Bourdieu, P. (1980). *La distinction*. Paris: Éditions de Minuit.

Bourhis, R. Y. (1979). Language and ethnic interaction: A social psychological approach. In H. Giles & B. Saint-Jacques (Eds.), *Language and ethnic relations* (pp. 117-141). Oxford, UK: Pergamon.

Bourhis, R. Y. (1984). Language policies in multilingual settings. In R. Y. Bourhis (Ed.), *Conflict and language planning in Québec* (pp. 1-28). Clevedon, England: Multilingual Matters.

Bourhis, R. Y. (1992). *La langue d'affichage publique et commerciale au Québec: Plan de recherche pour l'élaboration d'une loi linguistique*. Québec: Conseil de la langue française.

Bourhis, R. Y. (1994). Introduction and overview of language events in Canada. *International Journal of the Sociology of Language, 106*, 5-34.

Bourhis, R. Y., & Gagnon, A. (1994). Les préjugés, la discrimination et les relations intergroupes. In R. J. Vallerand (Ed.), *Les fondements de la psychologie sociale* (pp. 707-773). Boucherville, Québec: Gaetan Morin.

Bourhis, R. Y., Giles, H., Leyens, J. P., & Tajfel, H. (1979). Psycholinguistic distinctiveness: Language divergence in Belgium. In H. Giles & R. St-Clair (Eds.), *Language and social psychology* (pp. 158-185). Oxford, UK: Blackwell.

Bourhis, R. Y., Giles, H., & Rosenthal, D. (1981). Notes on the construction of a "Subjective vitality questionnaire" for ethnolinguistic groups. *Journal of Multilingual and Multicultural Development, 2*, 145-155.

Bourhis, R. Y., & Landry, R. (n.d.). *Linguistic landscape: Attitudes and vitality perceptions in Québec*. Unpublished manuscript.

Bourhis, R. Y., & Lepicq, D. (1993). Québécois French and language issues in Québec. In R. Posner & J. N. Green (Eds.), *Trends in romance linguistics and philology: Vol. 5. Bilingualism and linguistic conflict in romance* (pp. 343-381). Berlin: de Gruyter.

Carroll, J. B. (1973). Implications of aptitude test research and psycholinguistic theory for foreign language teaching. *International Journal of Psycholinguistics, 2*, 5-14.

CLF. (1993). *Avis sur d'éventuelles modifications à la Chartre de la langue française*. Québec: Conseil de la langue française.

Cobarrubias, J., & Fishman, J. (Eds.). (1983). *Progress in language planning: International perspectives*. Berlin: de Gruyter.

Cooper, R. (1989). *Language planning and social change*. Cambridge, UK: Cambridge University Press.

Corbeil, J. C. (1980). *L'Aménagement linguistique du Québec*. Montréal: Guérin.

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.

Eastman, C. M. (1983). *Language planning: An introduction*. San Francisco: Chandler & Sharp.

Fishman, J. (1991). *Reversing language shift*. Clevedon, England: Multilingual Matters.

Gardner, R. C. (1985). *Social psychology and second language learning: The role of attitudes and motivation*. Baltimore: Edward Arnold.

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

Giles, H., Bourhis, R. Y., & Taylor, D. (1977). Towards a theory of language in ethnic group relations. In H. Giles (Ed.), *Language, ethnicity and intergroup relations* (pp. 307-348). London: Academic Press.

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

Hamers, J. (1987). The relevance of social network analysis in the psycholinguistic investigation of multilingual behavior. In M. Blanc & J. Hamers (Eds.), *Problèmes théoriques et méthodologiques dans l'étude des langues/dialectes en contact aux niveaux macrologique et micrologique* (pp. 64-71). Québec: Centre international de recherches sur le bilinguisme.

Hamers, J. (1991). L'ontogénèse de la bilingualité: Dimensions sociales et trans-culturelles. In A. G. Reynolds (Ed.), *Bilingualism, multiculturalism and second language learning: The McGill conference in honour of Wallace E. Lambert* (pp. 127-144). Hillsdale, NJ: Lawrence Erlbaum.

Harwood, J., Giles, H., & Bourhis, R. Y. (1994). The genesis of vitality theory: Historical patterns and discoursal dimensions. *International Journal of the Sociology of Language, 108*, 167-206.

Kreitler, H., & Kreitler, S. (1972). The model of cognitive orientation: Towards a theory of human behaviour. *British Journal of Psychology, 63*, 9-30.

Kreitler, H., & Kreitler, S. (1976). *Cognitive orientation and behavior*. New York: Springer.

Kreitler, H., & Kreitler, S. (1982). The theory of cognitive orientation: Widening the scope of behavior prediction. In B. Maher & W. Maher (Eds.), *Progress in experimental personality research* (Vol. 11, pp. 101-169). New York: Academic Press.

Lambert, W. E. (1975). Culture and language as factors in learning and education. In A. Wolfgang (Ed.), *Education of immigrant students* (pp. 55-83). Toronto: Ontario Institute for Studies in Education.

Landry, R. (1995). *Psycholinguistic development of Franco-Columbian high school students*. Moncton: Centre de recherche et de développement en éducation, Université de Moncton.

Landry, R., & Allard, R. (1984). Bilinguisme additif, bilinguisme soustractif et identitié ethnolinguistique. *Recherches Sociologiques, 15*(2-3), 337-358.

Landry, R., & Allard, R. (1990). Contact des langues et développement bilingue: Un modèle macroscopique. *Revue canadienne des langues vivantes/Canadian Modern Language Review, 46*, 527-553.

Landry, R., & Allard, R. (1991a). Can schools promote additive bilingualism in minority group children? In L. Malave & G. Duquette (Eds.), *Language, 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, England: Multilingual Matters.

Landry, R., & Allard, R. (1991b). *Ethnolinguistic vitality and subtractive identity*. Paper presented at the annual conference of the International Communication Association, Chicago.

Landry, R., & Allard, R. (1992a). Ethnolinguistic vitality and the bilingual development of minority and majority group students. In W. Fase, K. Jaespaert, & S. Kroon (Eds.), *Maintenance and loss of minority languages* (pp. 223-251). Amsterdam: Benjamins.

Landry, R., & Allard, R. (1992b). Subtractive bilingualism: The case of Franco-Americans in Maine's St. John Valley. *Journal of Multilingual and Multicultural Development, 13*, 515-544.

Landry, R., & Allard, R. (1993). Beyond socially naive bilingual education: The effects of schooling and ethnolinguistic vitality on additive and subtractive bilingualism. *National Association for Bilingual Education Annual Conference Journal*, 1-30.

Landry, R., & Allard, R. (1994). *A sociolinguistic profile of New Brunswick francophones*. Moncton: Centre de recherches et de développement en éducation, Université de Moncton.

Landry, R., Allard, R., & Haché, D. (1995). *Le développement psycholangagier d'élèves franco-ontariens à la fin du cycle secondaire*. Moncton/Sudbury: Centre de recherche et de développement en éducation/Centre de recherche en éducation du Nouvel-Ontario.

Landry, R., Allard, R., & Théberge, R. (1991). School and family French ambiance and the bilingual development of francophone Western Canadians. *Canadian Modern Language Review, 47*, 878-915.

Landry, R., & Magord, A. (1992). Vitalité de la langue française à Terre-Neuve et au Labrador: Les Rôles de la communauté et de l'école. *Éducation et Francophonie, 20*(2), 3-23.

Leclerc, J. (1989). *La guerre des langues dans l'affichage*. Montréal: VLB éditeur.

Leclerc, J. (1994). *Recueil des législations linguistique dans le monde* [Compendium of language laws in the world] (6 vols.). Québec: International Center for Research on Language Planning, Université Laval.

Maurais, J., & Monnier, D. (1996). *Le statut des langues dans l'affichage à Montréal en 1996*. Québec: Conseil de la langue française.

Maurais, J., & Plamondon, P. (1986). *Le visage français du Québec: Enquête sur l'affichage*. Québec: Conseil de la langue française.

McRae, K. D. (1982). *Conflict and compromise in multilingual societies: Vol. 2. Belgium.* Waterloo, Ontario: Wilfrid Laurier University Press.

Nelde, P., Labrie, N., & Williams, C. (1992). The principles of territoriality and personality in the solution of linguistic conflicts. *Journal of Multilingual and Multicultural Development, 13,* 387-406.

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: Centre international de recherches sur le bilinguisme.

Québec. (1996). *Le français langue commune: Enjeu de la société québécoise.* Québec: Ministère de la Culture et des Communications.

Sachdev, I., & Bourhis, R. Y. (1990). Language and social identification. In D. Abrams & M. Hogg (Eds.), *Social identity theory: Constructive and critical advances* (pp. 211-229). New York: Harvester-Wheatsheat.

Sachdev, I., & Bourhis, R. Y. (1991). Power and status differentials in minority and majority group relations. *European Journal of Social Psychology, 21,* 1-24.

Sachdev, I., & Bourhis, R. Y. (1993). Ethnolinguistic vitality: Some motivational and cognitive considerations. In M. Hogg & D. Abrams (Eds.), *Group motivation: Social psychological perspectives* (pp. 33-51). New York: Harvester-Wheatsheat.

Tabachnick, B., & Fidell, L. (1989). *Using multivariate statistics* (2nd ed.). New York: Harper and Row.

Tajfel, H., & Turner, J. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *The psychology of intergroup relations* (pp. 7-24). Chicago: Nelson Hall.

Tollefson, J. W. (1991). *Planning language, planning inequality: Language policy in the community.* London: Longman.

Verdoot, A. (1979). *La protection des droits de l'homme dans les états plurilingues.* Paris: Fernand Nattan.

Witte, E., & Beardsmore, H. B. (1986). *The interdisciplinary study of urban bilingualism in Brussels.* Clevedon, England: Multilingual Matters.

Woehrling, J. (1993). *La conformité de certaines modifications projetées au régime linguistique de l'affichage public et de la publicité commerciale découlant de la Chartre de la langue française avec les chartres des droits et libertés.* Québec: Conseil de la langue française.

Richard Y Bourhis, Ph.D., F.CPA
Professeur

Adresse postale:

Université du Québec à Montréal

Département de psychologie
Case postale 8888, succursale Centre-Ville
Montréal (Québec) Canada H3C 3P8