EXPLORING CANADA'S BILINGUAL LANDSCAPE[1]

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Internationally speaking, the mention of Canada often invokes associations with extreme weather and expansive landscapes. But Canada could equally be defined in terms of its languages. It is a country blessed with multiple languages… the languages of indigenous peoples, the languages of immigrants and refugees and, of course, the official languages… English and French. Along with its Policy on Multiculturalism, Canada's recognition of French and English as official languages created spaces where Canada's other languages and language groups can be appreciated and prosper. The prominence of language in the national landscape is further evident in the scientific community. Arguably, no other country in the world has shown such enthusiasm for research on language and, in particular, bilingualism. Early views in the last century in both the scientific and broader community often depicted individual and societal bilingualism as a liability – intellectually, socially, educationally, and personally. This view is no longer tenable due in large part to the work of Canadian researchers whose work during the previous 50 years has led to a more positive attitude toward bilingualism… an attitude that views bi- and multilingualism as normal, natural, and desirable and, like all human phenomena, complex and begging to be explored and understood. This paradigm shift has had ripple effects around the world. It is impossible in such a short essay to give credit to all Canadian researchers who have played a part in this shift, but here are some selected highlights.

The beginning of this shift can be linked to the research of graduate student Elizabeth Peal and her mentor Wallace Lambert of McGill University

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in 1962. Their study followed decades of research claiming that bilinguals did not measure up to their monolingual peers on tests of intelligence, academic ability, and cognitive flexibility.

The research of Peal and Lambert corrected flaws in the early research – bilingual participants in these studies were often from disadvantaged socio-economic backgrounds and were tested in their second language even though they had not fully mastered that language yet. Controlling for these weaknesses, Peal and Lambert showed that teenage French-English bilinguals from Montreal actually performed better than their monolingual peers on a variety of "verbal and non-verbal intelligence tests". Careful statistical analyses of the groups' results indicated that, compared to their monolingual peers, the bilinguals had a more diversified set of mental abilities and that they were able to deploy them in more flexible ways during problem solving. This study set new standards on how research on bilinguals was to be carried out, highlighting the importance of controlling for the myriad factors that differentiate bilinguals from one another and from monolinguals.

Building on this research, Jim Cummins (University of Toronto) and Ellen Bialystok (York University) explored the cognitive dimensions of bilingualism in new directions. Their research confirmed Peal and Lambert's positive outcomes and, at the same time, provided a more nuanced view of the consequences of bilingualism. Cummins' work was important because it highlighted that not all bilinguals are the same and that the cognitive consequences of being bilingual probably depend on one's level of proficiency in both languages. He argued, and subsequent research supports this, that to benefit from any cognitive advantages, bilinguals must be highly proficient… having just beginning proficiency in an additional language is probably not enough.

Bialystok's work extended our understanding of the neuro-cognitive mechanisms that explain "the bilingual advantage" reported by others. Bialystok argued that acquiring and using two languages requires extended use of the executive functions of the brain and this enhances the brain's cognitive resources. Executive functions are innate cognitive functions that are responsible for focusing, shifting and inhibiting attention during problem solving and other cognitive tasks. Extended use of these cognitive skills when learning or using two languages enhances executive functioning in general so that "the bilingual advantage" is evident when individuals are engaged in a variety of cognitive activities, not just language-related activities. There is even some evidence of a cognitive advantage in later life that buffers older bilinguals from the effects of cognitive decline that sets in as one ages.

Another notable early contribution to bilingualism research in Canada occurred in the field of education, once again led by Wallace Lambert along with his colleague Richard (Dick) Tucker (now at Carnegie Mellon University). In the mid-1960s, Canada was in the throes of debate about bilingualism and national unity. Closer to home, the community of St Lambert, outside Montreal, was exploring how best to educate anglophone children so they could integrate into French-speaking Quebec. In consultation with community members, Lambert along with colleague Wilder Penfield from McGill's Montreal Neurological Institute launched the St Lambert early total French Immersion Program. In

this revolutionary approach to promoting bilingualism in school, significant parts of the curriculum were taught exclusively in French to anglophone students.

This was followed by years of research by Lambert and Tucker to evaluate the effectiveness of this program. Research on immersion was continued by the author (Fred Genesee, McGill University) in Montreal as well as by researchers at the University of Toronto (Merrill Swain, Sharon Lipkin, Birgit Harley), Simon Fraser University in Vancouver (Stan Shapson, Elaine Day) and College St Jean in Edmonton (Steve Carey), and others. These researchers' evaluations indicated consistently that using a second language to teach the school curriculum to speakers of a majority language was not only as effective as regular monolingual education in promoting academic and first language development, but it yielded significantly superior second language skills. Publicization of these findings in the scientific and popular media led to a worldwide interest in the "Canadian model of bilingual education" that continues to this day.

Research on immersion and second language teaching and learning more broadly is ongoing. For example, the research of Roy Lyster and Susan Ballinger at McGill University in immersion classrooms along with the extensive research of colleagues Nina Spada (University of Toronto) and Patsy Lightbown (Concordia) in second language classrooms refined the way teachers design and implement instruction for young learners in immersion and traditional second language classrooms. This work has taken on international significance as parents, educators and policymakers around the world seek educational alternatives that will prepare students to live and work in an increasingly interconnected and globalized world where language and cultural diversity are the new norm.

Researchers have most recently shown interest in the youngest language learners – children from birth to 5 years of age. Once again, Canadian researchers have been on the forefront in understanding bilingual preschoolers. My own research at McGill University was among the first to explore in depth how children who grow up in families where they are exposed to two languages accomplish the challenging task of learning two languages at the same time. Surprisingly, although many children around the world grow up bi- or multilingually, these learners were largely overlooked by the research community until recently. Previously, it was widely feared that bilingual acquisition during the preschool years exceeds the normal neuro-cognitive capacities of the young developing child. Parents were discouraged from raising their children bilingually under the presumption that this would stunt their linguistic development, especially if they were speakers of a minority language.

However, findings from my own research along with that of my graduate students (Elena Nicoladis, now at University of Edmonton; Johanne Paradis, now at University of Edmonton; and Liane Comeau) and colleagues elsewhere in Canada (such as Janet Werker, University of British Columbia; Linda Polka and Elin Thordardottir, McGill University), and around the world, has shown that learning two languages from birth is as natural as learning one. Given adequate learning environments, simultaneous bilinguals can acquire proficiency in two languages equal to that of monolinguals. But, as was so aptly stated by François Grosjean, "Bilin-

guals are not two monolingual individuals in one." Researchers in Canada are discovering intriguing differences between bilingual and monolingual learners that reveal the remarkable neuro-cognitive flexibility that neonates and infants bring to learning two languages.

All of these findings, and more, are part of the shift to viewing bilingualism as normal and typical as monolingualism – each with its own characteristics, outcomes and challenges. So, the next time someone broaches the topic of the vast Canadian landscape, with its sweeping vistas and extreme weather patterns, you might want to include linguistic diversity in your discussion.