

## International research on bilingualism: Cross-language and cross-cultural perspectives

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### Abstract


Linguistics and the science of Anthropology have much in common. In fact, to a large extent the two fields overlap. Field workers utilize research models of the ethnographic type as well as approaches that are experimental, methods that are qualitative as well as quantitative, for example. The study of language contact and bilingualism, topic of this paper, presents a good opportunity for drawing on contributions from the two overlapping fields. The focus of the following review of current research will be mainly from the cognitive science point of view, divided into four areas of recent work: (1) bilingual development, first and second language learning and language loss, (2) creolization and convergence, (3) codeswitching and borrowing, and (4) problems related to the distinction between language and dialect. A guiding concept in better understanding the findings of research in these four areas is the special status of the mother-tongue (child first language). In bilingual communities, children often develop mother-tongue, or native-language level, competence in two languages – the acquisition of two first languages. How is second language learning different, and in what ways will research show that it is similar, or the same? Linguistics in East Asia and in other multilingual regions around the world present us with common research problems in the study of language contact and bilingualism because of notable historical parallels. Some of these parallels can be traced to the movement and settlement of founding populations. The more recent immigration and settlement of newer arriving populations is also comparable in some ways from the point of view of cross-language and cross-cultural interaction. In this regard an especially interesting parallel is that between Taiwan and North

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and South America. The four sub-topics to be briefly reviewed are closely related. The creation of new languages in creolization and convergence is basically about first and second language learning (#1 and #2 above). Related to the questions in this field, we study codeswitching and borrowing (#3) as an aspect of language contact on different levels: internally between the two mental grammars of the bilingual, and externally in communication with other bilingual individuals. How does this kind of linguistic interaction affect learning, language loss, and possible convergence involving two languages or two dialects? Then, what do we mean when we ask: how is variation from one language to another different from variation within a language? This question (#4) is actually difficult to answer. But it is related to processes of learning and communication between speakers of one language, or dialect, and another. Finally, the comparisons centered on East Asia allow us to study the design features of the most divergent writing systems in use in the world today and how these contrasts might be related to the cross-language interaction issues.

**Keywords:** language acquisition, bilingual development, first language attrition, literacy learning, cross-language interaction, cross-cultural interaction, migration



## **Introduction**

For historical reasons going back to the first waves of human settlement, important parallels can be drawn between East Asia and other multicultural and multilingual regions. The subsequent waves of colonization in each case that led to the establishment of national and official languages adds another important dimension of comparison. For additional reasons, the cultures of Taiwan, in particular, and the cultures of Latin America/North America mirror each other in a number of interesting ways. One way in which the reflections and comparisons are interesting is in the study of language variation. These two multilingual regions, one from Asia and the other from the Western Hemisphere, come forward for linguistic research because of highly favorable conditions of language contact from the point of view of fieldwork and analysis.

For ethnographers, and for anthropology in general, this multilingual interaction is an important aspect of multicultural interaction. Language contact finds a parallel in cultural contact. The following review of previous studies will center on bilingual processes as a way to suggest new approaches to research in ethnography, specifically as a proposal for how cultural anthropology and the linguistic branch of cognitive science can find greater opportunities for dialogue. From this dialogue greater sharing of relevant

research findings should follow. In fact, the study of bilingual interaction is the subfield of linguistics that offers an especially useful model for this dialogue because it takes as a starting point human diversity, in the domain of language. As Sperber and Hirschfeld (2004) pointed out, the challenge for fieldwork and theoretical discussion is to reconcile “the evident diversity of culture with our best hypotheses about cognitive development” (p. 40). How do the inherited biological endowments of the human mental faculties interact with the social and material environment? How are the former given expression by the latter to produce the wide variation in cultural knowledge and cultural practice? This paper presents a proposal for research that takes up an earlier summary and retrospective along the same lines in Francis (2013), which followed from a report on indigenous language bilingualism in Francis (2012).

One of the unifying concepts of the proposal was *modularity* as it has been refined by Jackendoff (2002) and Pinker and Jackendoff (2005). While the modular, or componential, approach to research on language comes from cognitive science, the overall concept of specialized and interacting modules (or components) lends itself ideally to a complementary relationship, where this is feasible, with work in the anthropological sciences. The reason for why findings from the two fields are more likely to complement each other, according this view, is because it is easier to see how apparently divergent results and interpretations are sometimes about separate cognitive domains. If the systems under scrutiny are largely independent of each other, or are subserved by different underlying knowledge networks, findings can be studied and compared more productively either as potentially compatible or at

least not necessarily in conflict. For example, one faculty, knowledge structure, or ability might depend more on domain-specific modules while another more on domain-general ability networks. In each case, different sets of research methods might be more informative.

Speakers of the Austronesian languages among the early settlers of Formosa participated in the dispersion of these languages across the Pacific region (Blundell 2011), standing today as a valuable resource for understanding language diversity and language contact. The first settlers of the Western Hemisphere, represented today by speakers of the American indigenous languages, present an analogous multilingual diversity. The interrelationships among the branches of the Chinese, or Sinitic, language family (the “Sino” trunk of the Sino-Tibetan phylum) in Taiwan (Hakka, Minnan and Mandarin), in turn, mirror the interrelationships in mainland East Asia, but under different circumstances, again favorable. Since democratization in Taiwan, researchers are able to conduct objective investigations on language development, bilingualism and learning without politically motivated restrictions on their work. Then, significant immigration from countries in South East Asia presents the new challenge of integration and second language learning similar to the North American scenario. Historical immigration from Europe to the North American border region with Latin America, dominated by speakers of English and Spanish, forged a similar multilingual panorama to the one that has emerged in Taiwan over the past 30 years. For example, what is the role of heritage language learning among young immigrants (regarding their successful integration)? See the recent study

by Yeh et al. (2015) of home-school language use and motivational factors that affect Vietnamese-speaking children's disposition toward their own bilingualism. Parallel to this line of research is work in the ethnography of communication that examines questions of intercultural understanding in language use, in both monolingual and bilingual contexts (Wang 2014).

### **The essentiality of first language**

In all the examples of language contact to be outlined in the following sections a hypothesis emerges regarding the relationship between natively acquired primary language (L1) and the different kinds of second language (L2) learning.<sup>1</sup> In previous discussions of this research problem, it was formulated as a proposal for “L1 essentiality” (or “L1 exceptionality”). Another way to present the same idea would be to ask how and in what way might L1 linguistic competence be different from L2 competence: the “how” could refer to processes of development and learning, the “what” to end-state ability that L1 and L2 speakers can demonstrate. In bilingualism, the concept of “primary language” would be equivalent to that of “dominant language.”

Perhaps the most visible and widely attested property of “primary language” is

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<sup>1</sup> For the purposes of this discussion, learning of a third language (L3) can be understood as a variant of second language learning (L2). For example, in case of L1 attrition, i.e. Replacing Language (RL) development, either the L2 or the L3 could develop to take on the role of RL and become the new primary language.

the completeness of ultimate attainment (i.e., no speaker of his or her primary language, whose L1 has not been replaced by a L2, reveals a profile of competence that is less “native” than any other speaker of the same speech community). Completeness understood in this way is uniform. In contrast, within the population of second language speakers who have received the equivalent experience in the target language (or even greater and richer experience), there typically exists a wide variation in ultimate attainment. In fact, markedly non-native proficiency in the L2 is a common outcome even after many years of study and rich immersion in the culture of the second language. This outcome, the variation, is never obtained in the L1 primary language except in rare cases of outright impairment (pathology). The development of second language competence also rests on the human language acquisition capacity; but unlike the kind of ultimate attainment in L1, L2 development can show systematic effects of transfer from the L1 that appear to often “inhibit” the development of full native speaker competence in the L2 (van de Craats 2003; White 2015). On this view, L1 competence may intervene as a kind of “filter” or as a kind of transfer effect.

This hypothesized L1—L2 distinction comes to be an interesting factor in descriptions of a broad range of language contact situations. One especially interesting bilingual phenomenon related to this distinction is that of language replacement, topic of the next section. If shown by future research to be an important factor, it might potentially help us better understand the nature of language knowledge in general. For the applied fields in linguistics, understanding

this distinction better should help us design more effective and efficient language learning programs. The complementary dimension of native and second culture (C1—C2) will interact with the linguistic dimension of L1—L2. In this aspect of the interaction between culture and language (C1/L1—C2/L2) ethnography contributes a more complete understanding of relevant contextual factors. An example of a relevant contextual factor would be the study of social disparities in how they affect language replacement. Then, interdisciplinary research can compare the parallel processes of language shift (at the language community level - cultural) and language attrition (at the psycholinguistic level - within the individual).

## **L1 and L2 in bilingual development and in language loss**

Early bilingual development often results in a stable native-like competence in two languages (2L1). Alternatively, one native-like and a second, non-dominant, language develop side by side, but under normal circumstances, never two non-native, L2-type, grammatical systems. In L1 attrition, better understood as Replacing Language (RL) development, the previous second language replaces the attriting L1 to become the new “native,” or dominant, language (in essence “L1” from the point of view of its mental representation). RL development is commonly referred to in the literature as “subtractive bilingualism,” 2L1 development, in



contrast, being a typical example of so-called “additive bilingualism.”<sup>2</sup> A consistent finding from studies of early bilingualism and child second language learning is that contrary to outcomes of significant linguistic confusion and cognitive conflict (as once suggested in early theories), bilingual and trilingual development results in no such competence deficit. In fact, studies point to information processing advantages in many cases, such as enhanced attentional and inhibitory control, as in a recent study of Hakka, Minnan and Mandarin trilinguals (Hsu 2014), broadly confirming international findings. Ethnographic research can examine, for instance, the reciprocal influences between these positive cognitive effects and social-communicative abilities related to degrees of bilingual proficiency. On this question of reciprocal influences, we have another example of an interdisciplinary complementary relationship, at least potentially. Aspects of cognitive effect and aspects of social-communicative ability belong to different (interacting) domains and can be studied separately. On the surface, findings in one domain may appear to contradict findings in the other, but because of the difference in domain the findings may in fact be compatible. At the same time, researchers understand that in actual language use, the underlying competencies of each domain interact (because of the “reciprocal influences”), another reason for

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<sup>2</sup> Logically and in actual practice, early or late second language learning, under favorable conditions, can also be “additive” even if the two language systems maintain a relationship of dominance/non-dominance one to the other. Here, grammatical competence is native, or “primary,” in one system, and competence is advanced, sometimes called “near-native,” in the second. This type of bilingual proficiency is characterized by fluent performance in the non-dominant, near-native, language. Near-native, and fluent, non-native ability is revealed in lacunae in the grammar (patterns in the morphosyntax that native speakers have full command of), and in errors that native speakers do not systematically commit.

collaborative exchange of results.

The concepts presented above will become relevant to the problems of language learning in school in addition to research on language shift (or preservation) in the section on “Language and dialect.” They will be relevant not only for learning and mastering languages but also for scenarios of language erosion and loss. The reason for this is that language loss, or attrition, only occurs in situations of language learning (of another language). An important research question here is whether observed changes in language use reflect actual RL development or simply a tendency of preference (e.g., more frequent use of the L2).

### **Creolization and convergence**

In this scenario, language contact is often studied at the societal level, in the creation of a new language (for brevity, in two variants):

- (1) In bilingual and multilingual communities, a pidgin might arise for communicative purposes. If it becomes the linguistic input for a new generation of child language acquirers a creole emerges. The celebrated and extensively studied case of Nicaraguan Sign Language is the most recent example (Sengas et al. 2005). By hypothesis, Haitian Creole is a historical example (Bickerton 2004).

- (2) Two fully formed languages in contact can give rise to a new “converged” language (different from the formation of approximative systems like pidgins) by means of a second language learning process. In contrast, pidgin to creole emergence (the first variant) is a kind of first language acquisition. The hypothetical cases of Bilingual Mixed Languages (BML), attested in South America – convergence of Spanish and an indigenous language – might fall into this category. For the debate on cases under discussion, see: Bakker (2003), Gómez Rendón (2012), Muntendam (2012) and Muysken (2013). Proposed by Muysken, *Media Lengua* (Ecuador) emerged from a far-reaching relexification, from Spanish, while retaining Quichua morphosyntax. Logically (almost “by definition”), the BML would not allow for mutual intelligibility with monolingual speakers of either of the two “source” languages.

From East Asia, the Wutun language, spoken in Qinghai Province, Peoples Republic of China, appears to represent a clear example of a Bilingual Mixed Language. With an autonomous cultural identity, it is still acquired as a L1 by children within the speech community. While classified as a distinct local form of Northwest Mandarin, it actually should be categorized not as a dialect of Mandarin but as an independent Sinitic language, being unintelligible to speakers of regional Mandarin dialects, proper, as well as monolingual speakers of Tibetan (Sandman 2016). Wutun has massively incorporated phonological and morphosyntactic features from Amdo Tibetan, the L2 of most speakers (e.g., losing tonal distinctions

and becoming agglutinative and extensively suffixing as a result of the contact with Tibetan, according to Sandman). More research might shed light on the evolution and current status of Daohua, a similarly mixed Chinese-Tibetan language (SOV, with the lexicon drawn from both source languages), spoken in Sichuan. Fieldwork in the vast multilingual region of China and Southeast Asia will probably lead to the discovery of similar cases of BML emergence.

### Codeswitching and borrowing

Unlike in the evolution of a BML, codeswitching and borrowing, by itself, does not result in convergence.<sup>3</sup> In fact, the typically systematic and rule-governed aspect of the different kinds of language alternation is taken as evidence for the separate mental representation of the two language systems that come to interact within the sentence and more broadly within the discourse. The analysis of Uyghur-Chinese (Mandarin) code switching by Cabras (2014) raised research problems similar to the ones that came up in our indigenous language bilingualism project in Latin America:

- (1) how bilingual speakers couple and combine the grammatical patterns of each

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<sup>3</sup> So-called relexification, widespread replacement of (content word) lexical items, while the host language preserves its grammatical structure, has been proposed as a mechanism of convergence. In this way, relexification is a kind of massive borrowing.

language as they produce well-formed mixed-language<sup>4</sup> sentences in which Uyghur is the Matrix Language, and

- (2) the question of whether insertion of Chinese words and phrases into Uyghur-language discourse can be taken as an index of its erosion in the face of expanding Mandarin Chinese in Xinjiang.

In regard to the second point, as was suggested in our Mexican project as well, insertion and borrowing would only present itself as an indicator of language loss in cases of significant sociolinguistic imbalance between a dominant and subordinate language; but the correlation is not strong all across the board. Exceptions are commonly observed in many bilingual contact situations: on the one hand, we see widespread borrowing and switching between two stable and ethnolinguistically vital languages, and on the other hand, there are cases of community language loss, from bilingual to monolingual, in which individual speakers tend to avoid mixing of any kind.

Returning to the distinction made at the beginning of this section between

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<sup>4</sup> The term “mixing” is used in this paper to refer simply to the broad category of bilingual speech (and writing), including codeswitching, borrowing and other types of language alternation at all levels. It doesn’t refer to the idea of unsystematic and random combination of two languages, sometimes used in the pejorative sense, or as a negative judgment or evaluation. In fact, the research on mixing, or “alternation,” seeks to understand how insertions and switches are constrained by the two linguistic systems that interact within and across sentences. A recent example is the application of the Matrix Frame Language model to child bilingual codeswitching by Meng and Nakamoto (2018). The idea is that mixed language sentences show the strong tendency, the constraint, to be grammatical.

convergence and codeswitching/borrowing, fieldwork in our Mexico bilingual project supports the evidence for the maintenance of autonomy between languages as a typical result of intense contact and mutual influence. Even in cases of extensive codeswitching and borrowing in the minority indigenous language, and even where, *in addition*, the weaker language begins to suffer displacement by the majority language, the stages of erosion are usually not marked by convergence (in the sense of creole emergence). The vulnerable and disfavored language can, and usually does, remain separate and independent; see studies of the influence of Spanish on Nahuatl, for example (Castillo 2012; Cerón 2013).

Lin's (2010) study of Mandarin-Minnan codeswitching (CS) begins with a summary of previous papers reporting on this language pair. In this corpus, consistent with the literature, Minnan constituents were insertions within the grammatical frame of Mandarin, the latter maintained throughout the conversational discourse (the type of data in this study). Additionally, the embeddings reflect the sharp sociolinguistic imbalance in force in most language use realms. Insertions or nonce-borrowed Minnan expressions, according to the author, are normally associated with vernacularity and slang, intimate personal interaction, relationships, affective states and specifically local cultural artifacts. An interesting comparative study of alternation would be to evaluate the converse: insertions of and switches to Mandarin within a predominantly Minnan discourse. In each case, what are the social and cultural expectations that affect the different patterns of bilingual speech?

Meng and Miyamoto (2012) studied mixing in early language acquisition by a Chinese-Japanese bilingual child in which they confirmed results from previous studies from other language pairs. Importantly, young bilinguals do not passively mimic the dual-language usage (or avoidance of it as was the case in this study) of their parents. Despite deliberate (monolingual speech) modeling and even implicit correction by the parents, the child (2;1—3;0) persisted in actively alternating between the grammars of the two languages intrasententially and across sentences, evidencing an early preference for the societal (non-familial) language, Japanese. Although the authors did not address the issue specifically, it appears that codeswitching and borrowing was implemented by the child in a systematic manner, indicating no confusion between Chinese and Japanese or fusing of the two grammars into a holistic and integrated “composite grammar.” Competence factors (i.e., which language is emerging as *cognitively* dominant) will tend to override parental input and even direct home instruction. This was the interpretation of the findings by the authors of the study; that the observed preference by the child reflected an incipient emergence of dominance of one language over the other. This emergence reflected, in turn, internal dynamics in bilingual development on the child’s part, independent to an important degree of parental input. Overall, findings of the study were compatible with research on bilingualism and mixing that strongly suggest that children attain an early differentiation between the language systems that they are still acquiring (de Houwer 2009; Genesee and Nicoladis 2007; Meisel 2011; Paradis 2004; Sebastián-Gallés and Bosch 2001).

On a related note, investigators will have at their disposal for analysis a unique corpus of bilingual narrative discourse in which Mandarin-Truku speakers from Hualien County (Tang 2011) showed wide variation from one mixed language sample to the other regarding the balance between the languages, apparently correlating with age. The Hualien study interviewed older bilingual subjects, presenting for the first time CS data from an indigenous language and Chinese. Also from adult subjects is the study of Wong (2014) that applied the Matrix Language Frame (MLF) model (Myers-Scotton 2006) to Mandarin-English CS. Of interest in this study is the analysis of creative forms that are difficult to account for, according to the author, within the MLF model, conceivably so within any other model as well.

In comparing codeswitching and borrowing cross-linguistically, one of the objectives of this line of research will be to identify common patterns and constraints. What underlying linguistic and cognitive processes might actually be cross-cultural and shared by (or accessible to) the language competence of all bilingual speakers? Then, which grammatical features of mixing (of all kinds) might correlate, and which not correlate, with which aspects of the social relationships of greater or lesser sociolinguistic imbalance that investigators have identified? For example, the case of greatest imbalance would be that of bilingualism under conditions of advanced language shift (replacement of a minority or subordinate language by a socially dominant majority language – the



loss of the former). The example of least imbalance would be one obtained between two speech communities (their languages) in contact where there is maximum equilibrium and stability.

In the study of codeswitching and borrowing, the observation has been made that cognitive approaches tend to focus on aspects of linguistic structure and ethnographic approaches tend to focus on aspects of semantics and intention. In the first case, how do patterns of phonology and morphosyntax form constituents that come to be integrated, grammatically, in bilingual sentences? In the second, what are the communicative effects or meaning-related changes that result from switches and insertions? More broadly, what may be the cultural influences and constraints on language choice within a bilingual sentence, and then within the unit of discourse as a whole? Here we have the clearest example so far of how the two approaches are entirely compatible.

## **Language and dialect**

A discussion from the field of sociolinguistics that the Americas and East Asia share is the question of how to differentiate between the categories of language and dialect, a question that is often overshadowed by political considerations. For example, during the long historical period when nation states in Latin America strove to establish a unifying national language, the strong tendency among

language policy makers and even scholars was to delimit the term “language” by excluding minority indigenous languages from this category. In particular, indigenous languages lacking a standardized writing system were considered apart, not as “languages” but as “dialects.” What would be an objective, linguistically-based, criterion for making this distinction?

As was suggested above, the language-dialect controversy is related to the intervening learning factor of literacy and schooling in asymmetrical bilingual contexts. The discussion still deserves research attention by linguists, with one instructive example that might arise in the near future. In Hong Kong, instruction in Cantonese is still a component of the school system’s trilingual policy. However, because bilingual or dual-language instruction does not normally apply to situations of dialectal variation, future educational policy might begin to phase out Cantonese as medium of instruction. In mainland China languages that belong to the same category as Cantonese are not accorded the same official recognition of “language” because they are not considered as separate languages. Thus, in a resulting future school language policy for the Special Administrative Region, provision of bilingual instruction (yes for “languages,” no for “dialects” of Chinese) might no longer apply to Cantonese. Bilingual education would not apply if it is considered simply as a dialectical variation of the national language. For background to the sociolinguistic and language learning issues in Hong Kong, see Lai (2011) and Snow (2010).

A separate, but related, case in China involves recognized minority languages, not “dialects.” (or “mere dialects” as Cantonese is characterized in some studies, Tse et al. 2007). The official recognition of an “independent language,” i.e., one branching off from the Chinese (Sinitic) languages, might legally qualify it for bilingual instruction, but actual implementation might fall far short of minimum language exposure (including literacy teaching) for any measurable effect. The dramatic turn of events for Tibetan language promoter, Tashi Wangchuk, highlights the importance of this factor (Buckley 2018). Educators point to the progressive reduction of the space for the L1 in official bilingual programs. Instruction in the modality of medium of instruction, in L1 Tibetan, according to reports, has come to be reduced to school subject. Consequently, the curriculum as it is now evolving implements the model of, more limited, foreign language type teaching. The result is the application of a kind of subtractive bilingual instruction favoring the active replacement of Tibetan by Putonghua (Zhu 2014). Roche (2017) is a recent sociolinguistic overview of language diversity in the region, more complex by far than what is presented in this section.

In other cases, literacy learning depends on the standardization of a writing system, or one that is autonomous and complete (in the sense that it represents the language completely). Instances that have attracted attention of researchers include, again, Cantonese (Cheung and Bauer 2002) and in a separate consideration, Minnan (Yeh et al. 2004). In the latter case, one discussion involves the viability of Romanized orthography (Chiang 2007) or parallel standardization of alphabetic

and Hanzi-based systems, yet to be proposed by the competent authorities. Specifically, the separate consideration consists in that only in Taiwan is autonomous language status and orthographic standardization a freely and openly discussed research question. To take one example, among linguists the criterion of mutual (un)intelligibility typically results in classifying Hakka, Minnan and Mandarin as three separate languages (Hsu 2014), a categorization, nevertheless, that is controversial in the PRC.

Terminological disagreement aside (whether a given *fangyan* should be categorized as a “language” or a “dialect”), failure to take full account of the significant or non-significant linguistic differences, as the case may be, within the Sinitic language family becomes an unnecessarily confounding issue in research on bilingual proficiency. The failure to take significant linguistic differences into account could confound the research in the case of language impairment of bilingual speakers (Han et al. 2016). For example, in the comparison (in assessment, for example) between two distantly related Chinese languages, if one insists on naming them as “dialects,” researchers and practitioners could at least recognize that they are “not mutually intelligible dialects,” if this indeed is the case. The Han et al. (2016) study also points to potential errors in L1—L2 transfer analysis if the specific grammatical differences between one Chinese language/dialect and another are not taken into account (if these differences exist and if they are important).

The programming of bilingual instruction that implies literacy in both

languages presents researchers with important theoretical challenges that have remained unresolved (Chireac et al. 2018; Walter 2007). This field of study includes the important work specifically on second language literacy learning, for example how L2 learners process texts written in their L2. In East Asia, as elsewhere, the language of literacy learning is often children's second language, not their primary L1. Needless to say, these problems of linguistic and learning theory have serious implications for educational language policy and language curriculum.

On this question of bilingual literacy, Wu and Ma (2017) summarize the extensive research literature that is approaching consensus on Chinese character recognition and text processing, as well as present their own study on the question comparing native speakers of Mandarin and Hakka-Mandarin bilinguals. This study, if I am not mistaken, is the first of its kind in comparing the responses of these two populations of literacy learners. The study asked:

- (1) whether phonological information is automatically activated in reading two-character compound words by both the monolinguals and the bilinguals, and
- (2) if the linguistic differences between Mandarin and Hakka affect word recognition.

Testing for the homophone effect (latency and accuracy), subjects were asked

to decide if two-character compounds were semantically related. Results showed first that, for both groups, a homophone effect was significant, supporting the hypothesis of phonological activation in reading Chinese. That is, evidence was found favoring the theory that the lexical entry is accessed through a phonological pathway, or at least that this pathway is not “by-passed” because of the exceptional design features of the Chinese writing system. Results from research, summarized in Lam et al. (2017), support the related hypothesis: that both phonological and morphological awareness are important components of literacy learning for children in China.<sup>5</sup> On the second research question, an effect of L1 Hakka was found. The bilinguals demonstrated a “near-homophone” effect while the native Mandarin speakers did not. The second finding was important because all of the Hakka-speaking bilinguals were proficient speakers of Mandarin (subjects were young adults). For obvious reasons, the results of this study, confirming a line of previous studies, has important implications for bilingual and second language literacy in general, not only for readers of orthographies that utilize the morphosyllabic character.

The above discussion of L1 and L2 literacy in language learning raises the problem of language development, preservation and erosion in multilingual contact situations. Even a locally majority language (e.g., Minnan in Taiwan and in regions of Fujian Province), in day to day contact with an expanding regional/national

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<sup>5</sup> Regarding the role of phonological awareness in reading, Lam et al. (2017) ask the question of how early instruction in the pinyin system (in the PRC) might be a factor in their results.

language, will come under the pressure of displacement. Recent studies by Ding (2016) and Liu et al. (2016) attest to this tendency even in communities and regions where Minnan can count on positive social valorization and strong ethnolinguistic loyalty. The most difficult question that linguists face in this realm is that of the imminently endangered languages, in rapid decline without native speakers in the younger generation. The experience of fieldworkers from Latin America is instructive regarding what the viable language preservation objectives are for the “post-vernacular” indigenous languages (Pivot 2013).

Returning to the concepts presented above in the section “L1 and L2 in bilingual development and in language loss,” it is important to put into proper perspective the findings of the Hsu (2014) study on processing advantages associated with bilingual development and second language acquisition. Recall that the study confirmed findings (today considered a consensus view) from a number of other language contact situations of no learning deficit for typical bilingual development (for example in the case of stable 2L1 development). Conversely, and importantly, there is no evidence of learning or cognitive deficit in the scenario of normal L2 learning that results in L1 attrition either, so-called “subtractive bilingualism,” or the related (but different) cases of L2 attrition. Informal and anecdotal accounts, early in the research on bilingualism, did suggest such a deficit, in part because this outcome appeared to be intuitively plausible (if “additive” development might be associated with “advantages,” then “subtractive” might be associated with linguistic and cognitive “disadvantages”). However, the latter,

intuitively plausible, theory has not been confirmed by evidence. That is, the resulting monolingual outcome, under normal conditions of L1 or L2 attrition, has not been linked causally to language and learning deficits. Logically and theoretically, there was never any compelling reason for why there would be a causal link.

## Conclusion

Looking back on the examples of research on language contact, we can appreciate how experimental and quantitative methods and the qualitative ethnographic approaches to studying culture can be complementary. The methods and approaches are tools from the same toolbox of science. At a more basic level, there is no competition or contradiction between the two paradigms. While cognitive and psycholinguistic factors play an essential role in constructing culture, it would be a mistake to think of cultural knowledge as simply “human psychology writ large” or to “seek a psychological reductionist explanation of culture” (Sperber and Hirschfeld 2004: 45).

In the background to the multilingual panorama described in the previous sections, in both East Asia and the Americas, is the growing presence of English as a cross-cultural academic L2. Of greater importance as regional and international lingua franca than ever before, with learning as foreign language beginning early in



primary school, how will it interface with the national languages on the one hand, and the minority languages on the other? Specifically, what we have in mind regarding this interface is how for young people will English learning come to be integrated into the larger language learning and language development program. The reason why this question is especially relevant to the theme of this paper is because for most learners mastery of the international language probably counts as the L3. That is, most learners of English as an additional language, today, may already be bilingual.

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