The Borrowing Patterns of Three Kaqchikel Maya Generations and Their Implications for the Teaching of Indigenous Languages

Ivonne Heinze Balcazar

Ivonne Heinze Balcazar is an associate professor and chair of the Department of Modern Languages at California State University Dominguez Hills. Her research interests can be defined broadly in two areas. The first area of research interest is that of language acquisition, language maintenance and language attitudes in the Kaqchikel Maya language of Guatemala. This includes indigenous bilingualism, particularly Mayan bilingualism in consecutive bilingual Kaqchikel children in Guatemala. The second area of research interest concerns the sociolinguistics of the Spanish language in the United States of America, which includes themes related to code-switching and identity in the Latina/o community and the commodification of the Spanish language. Heinze Balcazar received her B.A. and M.A. in Spanish linguistics from the University of California, Los Angeles, and her Ph.D. in linguistics from the University of Kansas. Her dissertation is entitled: Kaqchikel and Spanish Language Contact: The Case of Bilingual Mayan Children. Her dissertation examined the lexical and morphosyntactic knowledge of Kaqchikel Maya consecutive bilingual children in the Kaqchikel and Spanish languages.
Abstract
In this paper, I report on and analyze the borrowing patterns of Kaqchikel-Spanish bilingual children; and Kaqchikel monolingual adults and children. The major findings regarding Spanish borrowings is that the bilingual children borrowed more from Spanish not only from noncore lexical fields (e.g., food and artifacts), but also from the core ones (e.g., people’s names, body parts, nature, and clothing). In comparison, the monolingual children and adults borrowed fewer Spanish lexemes in these semantic fields.

The adults were the more conservative borrowers. Of the 100 lexical items tested, their Spanish borrowings averaged 18 percent, while the Spanish borrowings of the monolingual children averaged of 24 percent. In contrast, the bilingual children produced the most Spanish borrowings; they scored an average of 32 percent. Nevertheless, the adults and monolingual children produced borrowings in all semantic fields, except in the body parts semantic field, which is a core field. Thus, these results provide support and provide a synchronic extension to Brown’s (1999) findings of diachronic lexical acculturation in Native American languages. Moreover, an important finding of this study is that the patterns of borrowing for the three groups included the borrowing of Spanish equivalent lexemes that named native objects, and this pattern was stronger in the living things semantic field than in the food semantic field.

The bilingual children produced more borrowings than the other two groups in five of the seven semantic fields tested. The high degree of borrowing found in these children’s data was related to their bilingualism. The relation between bilingualism and borrowing appears to be a general pattern of communities that have permanent cultural and linguistic contact. Bright (1960:233) noted that the degree of grammatical diffusion and borrowing from languages like Spanish and English by California indigenous groups were related, among other factors, to the degree of bilingualism of these indigenous groups. Furthermore, Brown (1999:91) observed that bilingualism has had substantial influence on the degree to which “European loans are adopted by Amerindian languages”. Hence, borrowing patterns presented by the bilingual children were also related to their bilingualism. In the case of the adults and monolingual children, sociolinguistic factors such as communicative expressiveness and the subordinate status of the Kaqchikel language can explain these groups’ borrowing patterns. Finally, this paper also addresses the implications for the teaching of Mayan languages particularly.
Introduction

The Maya, Xinca and Garifuna languages and cultures have lived in conditions of permanent contact with the Spanish language in Guatemala. Appel and Muysken have described these contact conditions in a typology of bilingualism that consists of five dominant language contact situations. According to this typology, Guatemala’s current contact conditions are the result of colonialism, which has created societies in which the high-prestige European languages “coexist with the native languages of the conquered peoples” (1987:5). The long-term and permanent linguistic and cultural contact with Spanish undoubtedly has created communities with various levels of bilingualism; however, it has also caused language loss and language shift. Moreover, a salient aspect of this contact is the phenomenon known as lexical borrowing or loanwords.

Lexical borrowing is of great importance for communities with long and permanent linguistic contact because it is perceived as symptom of language shift and as such is generally rejected in the Mayan communities. Linguistic communities such as the Achi’ and Kaqchikel have created neologisms and published books on these to combat lexical borrowing of Spanish. These efforts have addressed the need for new lexical items; however, questions regarding who does lexical borrowing, what are the lexical items being borrowed and why are these lexical items being borrowed have not been addressed. This paper presents findings of research that was conducted to address these questions in the Kaqchikel Maya community of Tecpán, Guatemala.

This paper is organized as follows: 1) the sociolinguistic context of Kaqchikel in the Tecpán community; 2) methodology and the participants; 3) semantic domains, the core and noncore lexicon; 4) the data; 5) loanwords, speech borrowings and nonce borrowings; and 6) conclusion.

1. The Sociolinguistic Context of Kaqchikel\(^1\) and the Tecpán Community

Kaqchikel is a member of the K’ichee\(^2\) branch of the eastern division of the Mayan family\(^3\), and is spoken in the highlands of Guatemala. The Proyecto de Educación Maya Bilingüe Intercultural (PEMBI) has reported 1,032,128 Kaqchikel speakers; however, other estimates of

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\(^1\) The Academy of Mayan Languages of Guatemala (ALMG) has replaced the old written form Cakchikel for the new form Kaqchikel.

\(^2\) K’ichee’ was previously written as Quiche. The orthographic convention established by the Academy of Mayan Languages of Guatemala (ALMG) assigns the symbol [ ’ ] to indicate a glottal stop.

\(^3\) Speakers of the Mayan language family inhabit Belize, the Mexican states of Chiapas, Tabasco, the Yucatan Peninsula, and Guatemala.
Kaqchikel speakers in Guatemala are around 500,000. Most recently, the Guatemalan census of 2002 gives the figure of 444,954 speakers. Kaqchikel is spoken in Tecpán, which is located in the highlands of Guatemala, 88 kilometers from the capital, Guatemala City, to which the Pan American Highway connects it. Tecpán is part of the department of Chimaltenango, and is just four kilometers north of the pyramids of Iximché, which were founded in 1470 by the Kaqchikel Mayas, who used it as their ceremonial center until the arrival of the Spanish colonizers in 1524.

The proximity of Tecpán to Iximché and the Pan American Highway, along with the agricultural, manufacturing, and textile economies, have resulted in its greater integration into the national economy; for instance, besides the traditional corn crops, lettuce, cabbage, beets, and broccoli, as well as flowers are cultivated for export. Family shops that manufacture sweaters are rapidly multiplying, and these hire eight to ten employees each. This economic integration has had sociolinguistic consequences for the Kaqchikel community, such as language shift.

2. Methodology and the Participants

The principal method of this study was the picture naming method, which can be considered an instance of the elicited production method. According to Thornton (1996), the elicited production technique has two general advantages. First, it reveals the participant’s knowledge without the necessity to make “inferences from ‘yes’ and ‘no’ responses, as is necessary in a judgment task”. Second, the experimenter can control the meaning that is to be associated with the targeted utterance. Furthermore, Thornton (1996:78) pointed out that such resulting data reveals what participants “do say”, and if the correct controls are included along with this technique, “they also reveal what the participants cannot say”.

Picture naming is a decoding task that has been amply employed and researched (Snodgrass 1993). According to Hochberg and Brooks (1962) children as young as two can perform this task fairly reliably, even without access to pictorial representations. This decoding task requires that the participant make a visual recognition, and then access her or his lexical knowledge. This method was selected to elicit the participant’s knowledge of lexical items that refer to concrete objects particularly. A total of one hundred pictures and objects were used to test lexical knowledge, and these represent 7 semantic domains (Lehrer 1974). A Kaqchikel native speaker conducted the testing, as well as transcribed the recording. The following groups participated in this study:
a. Four female adults (mothers), three of them Kaqchikel monolinguals, and the oldest a Kaqchikel-Spanish bilingual (a grandmother).

b. Six Kaqchikel monolingual children, whose ages ranged from 3-7 years old and who had not yet gone to school.

c. Eight bilingual children, whose ages ranged from 8-11 years old, and who acquired Kaqchikel at home and Spanish at school.

### 3. Semantic Domains, the Core and Noncore Lexicon

The concept of semantic field or domain is drawn from Lehrer’s (1974) semantic theory that conceptualizes the lexicon as a system of interrelated networks, in which there is a meaning inclusion relation between the items in the field and the field category itself; classical examples of semantic fields are color, kinship, cooking and body-parts. Furthermore, it has been proposed that lexical items from some semantic domains are subject to lexical borrowing and interference, but that others, known as core vocabulary, are not. Romaine (1995) proposed that body parts, numbers, personal pronouns and conjunctions belong to the core vocabulary. Moreover, items basic to society, such as ‘fire’, ‘hands’, ‘two’ and ‘daughter’ are considered to be core vocabulary by Appel and Muysken (1987) who also propose that noncore items include the very specific material and non-material culture and organization of a specific group; e.g., ‘lawnmower’, ‘dictionary’ and ‘psychiatry’. Haugen (1969) pointed out that in more personal domains, such as religion, clothing and body parts, the immigrants of his study used fewer English than Norwegian words, whereas in the areas linked to American life they borrowed quite extensively from English.

For this study, the concepts of semantic fields, core and noncore lexicon are adopted. It is assumed also that the body parts, family names, nature and clothing semantic fields belong to the core lexicon and that the artifacts and food semantic fields belong to the noncore lexicon. Thus, the data are discussed in terms of the following seven semantic fields: artifacts, food, animals, nature, clothing, body parts and people’s names. Table 1 lists these semantic fields and their core status is indicated with the (+) sign. The numbers in parenthesis indicate the number of lexical items for each semantic.
Table 1. Seven semantic domains

<table>
<thead>
<tr>
<th>Semantic Domains</th>
<th>Core (+/-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Parts (12)</td>
<td>+</td>
</tr>
<tr>
<td>Clothing (10)</td>
<td>+</td>
</tr>
<tr>
<td>Nature (14)</td>
<td>+</td>
</tr>
<tr>
<td>People’s Terms (7)</td>
<td>+</td>
</tr>
<tr>
<td>Artifacts (20)</td>
<td>-</td>
</tr>
<tr>
<td>Food (20)</td>
<td>-</td>
</tr>
<tr>
<td>Living Things (20)</td>
<td>+/-</td>
</tr>
</tbody>
</table>

The semantic field of living things is classified as core and noncore since this domain includes domesticated animals that are not native to this continent or to the Guatemalan region. Cows, horses, and chickens are among these animals, which the Spanish colonizers brought. Moreover, the semantic fields and their lexical items were chosen with the understanding that the selection of core and noncore fields is important, as well as the selection of objects particular to the Kaqchikel Maya culture. Most of the objects and drawings presented to the children, except for tiger, sheep, deer, formed part of the cultural and natural environment of the participants. Some of the ideas and drawings about Kaqchikel Maya objects were borrowed from a 1994 textbook that the Mayan Language Academy of Guatemala published for the purpose of teaching reading and writing to Kaqchikel Mayas.

4. The Data

Borrowing to name acculturated items was expected, but not to name native items. Graph 1 lists the percentages for each of the three groups in each of the seven semantic fields. The seven semantic fields have been organized from core to noncore semantic fields. The borrowing averages were: for the adults 32 percent, for the bilinguals, 38 percent and for the monolinguals 37 percent. It is important to note that in the adult group, it is the mothers, but not the grandmother, who were the principal borrowers of Spanish lexemes. Younger adults seemed to
actively make lexical changes that the grandmother did not make. This indicated that there was an intra-generational lexical gap developing in the adult group. The fact that all groups have high borrowing percentages demonstrates that bilingualism is not the only factor that causes borrowings. The permanent linguistic pressure of Spanish and the lower status of Kaqchikel are also factors causing these intergenerational borrowing patterns.

The adults were the more conservative borrowers; they produced an average of 18 percent in Spanish lexemes, while the monolingual children produced a 24 percent average. In contrast to these two groups, the bilingual children borrowed the most Spanish lexical items since they scored an average of 32 percent. The adults and monolingual children were the two groups that did not borrow from the body parts semantic field, which is a core field. The bilinguals produced the most borrowings in most of the fields, excluding the clothing and people’s terms field. In comparison, the monolingual children produced more borrowings from the clothing and people’s terms field.

Graph 1. Percentages in seven semantic fields

The bilingual children produced more borrowings than the other two groups in five of the semantic fields. The people’s names and clothing semantic fields were the only ones in which
they did not borrow more than the other two groups. Interestingly, the monolingual children borrowed more Spanish lexemes than the bilinguals did in the people’s names (7%) and clothing (43%) core semantic fields. The high degree of borrowing found in the children’s data was related to their bilingualism. The relation between bilingualism and borrowing appears to be a general pattern of communities that have permanent cultural and linguistic contact. Bright (1960:233) noted that the degree of grammatical diffusion and borrowing from languages like Spanish and English by California indigenous groups were related, among other factors, to the degree of bilingualism of these indigenous groups. Furthermore, Brown (1999:91) observed that bilingualism has had substantial influence on the degree to which “European loans are adopted by Amerindian languages”. Hence, it is also assumed that borrowing patterns of the bilingual children were related to their bilingualism too. In the case of the adults and monolingual children, sociolinguistic factors such as communicative expressiveness and the subordinate status of the Kaqchikel language can explain their borrowing patterns.

Interestingly, Graph 1 shows that as a whole the three generations provided the most Spanish borrowings in the food semantic field and the clothing semantic field. The former field had an average of 41 percent and the latter had a 39 percent average. Interestingly the food semantic field is a noncore semantic field, but not the latter. The artifacts field was the third field in which the three groups also borrowed the most; they had a 36% average. Thus, these results provide support and provide a synchronic extension to Brown’s (1999) findings of diachronic lexical acculturation in Native American languages. In other words, Brown proposed that borrowings for acculturated ‘natural kinds’ tend more strongly to occur than with acculturated artifacts. Brown classified both the food and living things semantic fields in the ‘natural kind’ category. In fact, the three generations borrowed more from Spanish to name objects from the living things and food semantic fields than the artifacts semantic field. Interestingly, these borrowings also occurred when naming objects native to the Maya culture. Graph 1 indicates that the highest percentages of Spanish borrowings occurred within the living things, the food, and the artifacts semantic fields. Thus, generally the groups borrowed more from Spanish to name objects that belong to these three noncore fields.

An interesting situation is that of the clothing semantic field which is considered to belong to the core field. Nevertheless, borrowing was expected to occur since McKenna Brown 1998 has documented changes in the clothing practices of some of the Kaqchikel-Maya
communities. Changes have taken place in the clothing practices of men; however, women have been more resistant to change. They still use the traditional attire of a hand-woven top and a hand-loomed fabric wrapped as a skirt that is tied with a belt that is also hand-loomed.

This traditional female attire is changing in some Kaqchikel regions due to the high cost of materials and the time required to make the garments. Hand-woven tops have particularly become the target of Ladino influence; for instance, women in San Antonio Aguas Calientes earning wages were turning to inexpensive manufactured blouses (McKenna Brown 1998:110). Currently, sweaters and shoes are the nontraditional items that indigenous women and girls wear. Also, one can buy sweaters made in Korea or China at the market in Tecpán.

Men mostly wear western clothing, and the traditional Kaqchikel pants and shirt are worn at important events, such as weddings and other ceremonial occasions. It is common to see on the streets of Tecpán only a handful of older men in traditional attire; however, on open-market days, more men in traditional attire are seen. This is partly due to the fact that Mayas from other regions go to Tecpán to sell their produce. It is also common to see men wear traditional attire to special occasions such as weddings.

The monolingual group borrowed the most Spanish lexical items of all the groups and the adults borrowed more from Spanish in this semantic field than in previous ones. These results suggest that cultural contact is as important a factor as bilingualism in borrowing phenomena. Moreover, these results also demonstrate the changing clothing practices of the community. The monolinguals borrowed 43 percent, the bilinguals 41 percent and the adults 32 percent of the ten lexical items for this semantic field. All monolingual children borrowed an average of four Spanish lexemes. Three bilinguals borrowed the most Spanish equivalents, i.e., they borrowed an average of six Spanish equivalents. Seventy-five percent of the adults borrowed an average of four Spanish lexemes and the oldest adult borrowed only one Spanish lexeme.

Moreover, an important finding of this study is that the patterns of borrowing for the three groups included the borrowing of Spanish lexemes that named native objects, and this pattern was stronger in the living things semantic field than in the food semantic field.

Another sociolinguistic factor that relates to borrowing is frequency of exposure. Brown found that Native Americans tend to adopt those “European terms to which they have been most frequently exposed” (1999:58). A finding of this study is that the borrowing patterns of the three groups provide evidence in support of Brown’s finding. All three groups produced borrowings
in the artifacts semantic field, which is a semantic field of frequent exposure in Kaqchikel-Ladino contexts. The importance of this finding is that it is a synchronic finding, whereas Brown’s is diachronic. Furthermore, it does not only include acculturated artifacts, but native ones as well. The prolonged and permanent contact between the Kaqchikel and Spanish speaking communities increases the tendency of Kaqchikel speakers to adopt Spanish lexemes to name both acculturated and native artifacts. This occurs especially in Kaqchikel-Ladino contexts such as the market, grocery stores, and schools. Thus, regarding the bilingual children, the analysis of their results clearly demonstrate that factors such as bilingualism, and the sociolinguistic and socioeconomic context explain the children’s borrowing patterns.

5. Loanwords, Speech Borrowings and Nonce Borrowings

In what follows, each semantic field and the types of borrowings that the three generations produced is analyzed. Regarding the food semantic field, the results in the Kaqchikel task were significant in that the bilingual children borrowed Spanish lexemes to name referents of native and traditional foods; for instance, *corn kernels*, *corn on the cob*, *avocado*, *mushroom*, *potatoes* and *pineapple*. The adult group borrowed the fewest Spanish equivalents (29%). Two mothers borrowed the most of the group, naming 35 percent of the 17 items with Spanish borrowings. The grandmother borrowed as well, although she borrowed 12 percent, the smallest borrowing percentage of the group. The three of the bilinguals borrowed the most, named 71 percent of the foods with Spanish borrowings. The monolingual group had a borrowing average of 37 percent and one of its participants named 47 percent of the foods with Spanish borrowings.

The seven Spanish borrowings (47% of 17 lexemes) that the three groups had in common are listed on Table 2. Interestingly, two of these borrowings refer to this continent’s native foods: *potatoes* and *pineapple*. The first six Spanish borrowings clearly have the status of loanwords since 83 percent or more of the 18 participants borrowed them. In other words, these loanwords had been accepted by these three generations. The fact that all the participants of the three groups borrowed *naranja* and *sandía* indicates that their Kaqchikel equivalents are not being transmitted by the adults; thus, the bilingual and monolingual children are not acquiring the corresponding Kaqchikel lexemes. That is, these three generations have only Spanish equivalents, which are being shared across both languages.
Table 2. Spanish borrowings in the food field

<table>
<thead>
<tr>
<th>Kaqchikel</th>
<th>Spanish borrowings</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>xna'j ‘orange’</td>
<td>naranja</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>këq q'oq ‘watermelon’</td>
<td>sandía</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>xnakät ‘onions’</td>
<td>cebolla</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>nimamixk'ú ‘apples’</td>
<td>manzana</td>
<td>75%</td>
<td>87.50%</td>
<td>100%</td>
</tr>
<tr>
<td>ch’op ‘pineapples’</td>
<td>piña</td>
<td>75%</td>
<td>100%</td>
<td>83%</td>
</tr>
<tr>
<td>ìs ‘potatoes’</td>
<td>papas</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ixkoya’ ‘tomatoes’</td>
<td>tomate</td>
<td>0%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The first six Spanish borrowings clearly have the status of loanwords since 83 percent of 16 participants borrowed them. In other words, these loanwords had achieved a level of acceptance among these three generations. Although only the children borrowed the lexeme *tomate*, it is still considered a loanword based on sociolinguistic evidence. At the market where one has the opportunity to listen to Kaqchikel transactions regarding the tomato, one can commonly hear the merchants as well as the customers engage in transactions in which the tomato was called by its Spanish lexeme, *tomate*, rather than its Kaqchikel equivalent, i.e., *ixkoya’*. Examples of speech and nonce borrowings occurred in both children's groups. *Pan* ‘bread’, *elote* ‘corn on the cob’, *aguacate* ‘avocado’, *hongo* ‘mushroom’, *maíz* ‘corn kernels’ are examples of speech borrowings since only an average of two bilinguals provided them. Three bilinguals and one monolingual provided the lexeme *banano*. Examples of nonce borrowings were *tortillas* borrowed by one bilingual and a monolingual and *huevos* ‘eggs’ borrowed by one bilingual. Thus, except for *pan* ‘bread’, these borrowings were retrieved to name native foods that are culturally important. Moreover, the fact that the bilingual children mostly retrieved these speech and nonce borrowings suggests that their bilingualism played a significant role in these borrowing processes.

5.1 The Clothing Semantic Field

The monolingual group borrowed the most Spanish lexical equivalents of all the groups and the adults borrowed more Spanish equivalents in this semantic field than the food semantic field. These results suggest that cultural contact is as important a factor as bilingualism in lexical borrowing phenomena. Moreover, these results also demonstrate the changing clothing practices of the community. All monolingual children borrowed an average of four Spanish lexemes.
Three bilinguals borrowed the most Spanish equivalents, i.e., they borrowed an average of six Spanish equivalents. Seventy-five percent of the adults borrowed an average of four Spanish lexemes and the oldest adult borrowed only one Spanish lexeme.

Comparing the type and number of lexemes that were borrowed, it was found that participants in the groups had fewer borrowings in common in this semantic field than in the previous fields. Table 3 shows that changes were taken place in the groups’ lexicons. Ninety-four percent of the 18 participants retrieved either Spanish *camisa* ‘shirt’ or *playera* ‘tee shirt’ to name a Mayan shirt. The grandmother was the only participant who retrieved the assimilated loanword *kamixa’. Seventy-five percent of mothers retrieved Spanish *camisa* as well as half of the fourteen children. However, a generational change was taking place since 66 percent of the monolinguals and only 37 percent of the bilinguals retrieved Spanish *playera* ‘tee shirt’. Moreover, this was apparently a recent borrowing since it only surfaced in the younger generations.

*Gorro/gorra* ‘cap’ was borrowed by 89 percent of all the groups; note that all monolingual children and adults, including the grandmother, borrowed this Spanish equivalent. *Pantalón* and *suéter* were borrowed by sixty-seven percent of all the groups. *Camisa, gorro* and *suéter* clearly had the status of loanwords, shown most clearly by the fact that the majority of the adults borrowed them. Although only half of the adults borrowed Spanish *pantalón*, the monolingual children had clearly incorporated it in their lexicons, since all of them produced it. Thus, the data suggests that these four borrowings are considered loanwords in the community.

### Table 3. Spanish borrowings in the clothing field

<table>
<thead>
<tr>
<th>Kaqchikel</th>
<th>Spanish Borrowings</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>kamixa’ ‘shirt’</td>
<td>camisa playera</td>
<td>75%</td>
<td>62%</td>
<td>75%</td>
</tr>
<tr>
<td>tz’atz ‘cap’</td>
<td>gorro/gorra</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>wexaj ‘pants’</td>
<td>pantalón</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
</tr>
</tbody>
</table>

An interesting finding was that the bilingual girls reflected the clothing patterns of the community in their language choice. That is, they named the Mayan female garments with Kaqchikel equivalent lexemes. However, they retrieved Spanish equivalents rather than Kaqchikel ones when naming male garments; thirty-three percent named the garment *pants* with Spanish *pantalón* ‘pants’ and 100 percent named the garment *shirt* with Spanish *camisa* ‘shirt’ or
playera ‘tee-shirt’. By comparison, 40 percent of the boys named the female Mayan top po’t and belt ximb'äl with Spanish güipil and faja; and 20 percent also named the Mayan skirt uq with Spanish corte. The boys also borrowed from Spanish to name Mayan male garments; 60 percent borrowed Spanish pantalón ‘pants’ and 100 percent borrowed camisa ‘shirt’ or playera ‘tee-shirt’. Girls and boys borrowed Spanish equivalents to name male Mayan clothing; kamixa’ was completely replaced by both groups. By comparison, the monolingual children of both genders, as well as the adults paralleled the responses of the bilingual girls. Hence, these results indicate that the bilingual girls were maintaining Kaqchikel lexical items that pertain to female Mayan clothing, while the boys were making changes that did not correlate with the community's clothing practices.

5.2 The Artifacts Semantic Field
Borrowing of acculturated items was expected, but not borrowing of native items. It is important to note that in the adult group, it is the mothers, but not the grandmother, who were the principal borrowers of Spanish lexemes, which suggests that younger adults actively made lexical changes that the grandmother did not make. This indicated that there was an intragenerational lexical gap developing in the adult group. The fact that all groups have high borrowing percentages demonstrates that bilingualism is not the only factor that causes borrowings. The permanent linguistic pressure of Spanish and the lower status of Kaqchikel are also factors causing these intergenerational borrowing patterns.
Table 4. Spanish borrowings in the artifacts field

<table>
<thead>
<tr>
<th>Kaqchikel</th>
<th>Spanish Borrowings</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>parab'äl ‘umbrella’</td>
<td>paraguas</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>quipib'äl ‘knife’</td>
<td>cuchillo</td>
<td>75%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>leme't ‘bottle’</td>
<td>botella</td>
<td>75%</td>
<td>100%</td>
<td>83%</td>
</tr>
<tr>
<td>ruwäch jay ‘window’</td>
<td>ventana</td>
<td>75%</td>
<td>87%</td>
<td>50%</td>
</tr>
<tr>
<td>k'olaj ‘ball’</td>
<td>pelota</td>
<td>75%</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>tz'ib'ab'äl ‘pencil’</td>
<td>lápiz</td>
<td>75%</td>
<td>62%</td>
<td>100%</td>
</tr>
<tr>
<td>pak'a'ch ‘spoon’</td>
<td>cuchara</td>
<td>75%</td>
<td>62%</td>
<td>100%</td>
</tr>
<tr>
<td>wuj ‘book’</td>
<td>libro</td>
<td>75%</td>
<td>50%</td>
<td>33%</td>
</tr>
</tbody>
</table>

The eight Spanish borrowings that the three groups had in common are listed on table 4 and the groups’ columns are arranged from the oldest to the youngest generation. These eight Spanish borrowings had the status of loanwords in these groups’ lexicons because 75 percent of the adults borrowed them, i.e., these lexemes had achieved a certain level of recognition or acceptance among these three generations.

The Spanish equivalents that were borrowed by 100 percent of the bilingual children were paraguas, cuchillo and botella. Ventana ‘window’ was borrowed by 87 percent of the bilinguals; one of the children recognized it as part of a whole and labeled it jay ‘house’. According to Brown’s study (1999), ‘Old World’ items like ventana ‘window’ and botella ‘bottle’ were probably focus of Native-American and Euro-American interaction and in her study bottle had a borrowability index of 51 percent and window 27 percent. This high borrowability index continues to the present in Kaqchikel since 100 percent of the bilinguals, at least 83 percent of the monolinguals and 75 percent of the adults borrowed Spanish ventana and botella.

That the native items quipib'äl and tz'ib'ab'äl were named with Spanish equivalents was unexpected. Moreover, the Spanish canasta ‘basket’, cama ‘bed’ and olla ‘pot’ were considered speech borrowings because children mostly borrowed them. Loanwords and speech borrowings point out to linguistic changes that are in progress within the community and within the families.
that participated in this study. For instance, the Spanish equivalent cama was borrowed by more monolingual children (33 percent) than bilingual children (12.5 percent). Moreover, in two families the older children retrieved the Kaqchikel equivalent, while the younger retrieved the Spanish equivalent or the equivalent pair. Table 5 summarizes these intergenerational and intragenerational changes; the subscript numbers indicate the age of the adults and children, the underlined forms are the Spanish borrowings and the lexemes under these forms are the Kaqchikel equivalents. Josefa is the mother of both Mercedes, a Kaqchikel monolingual speaker and María Angélica, a Kaqchikel-Spanish bilingual speaker. Dolores is the mother of both monolingual Lorena and Marvin. Both monolingual mothers and Mercedes retrieved Spanish cama during the Kaqchikel task and immediately after accessed ch'at. Lorena only retrieved the Spanish equivalent cama. María Angélica and Marvin retrieved Kaqchikel ch'at.

Table 5. Lexical changes between generations

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Josefa24</th>
<th>Mercedes6</th>
<th>Angélica8</th>
</tr>
</thead>
<tbody>
<tr>
<td>ch'at ‘bed’</td>
<td>cama ch'at</td>
<td>cama ch'at</td>
<td>cama ch'at</td>
</tr>
<tr>
<td>ch'at ‘bed’</td>
<td>cama ch'at</td>
<td>cama ch'at</td>
<td>cama ch'at</td>
</tr>
</tbody>
</table>

The important finding is that the older children, María Angélica and Marvin, appropriately retrieved ch'at during the Kaqchikel task, but that the mothers and Mercedes retrieved the Spanish equivalent first. Moreover, monolingual Lorena, the youngest speaker, retrieved the lexeme cama, i.e., she had only learned the Spanish lexeme. This indicated that the changes in progress regarding the equivalent pair ch'at-cama are (1) that the Spanish lexeme is dominating over the Kaqchikel one in these mothers’ lexicons; and (2) that the youngest generation is not acquiring the Kaqchikel lexeme. These mothers have switched from using Kaqchikel lexemes with the older children to using Spanish lexemes with the younger ones due to the social pressure to speak Spanish. These responses also indicated that this borrowing pattern was tied not only to bilingualism, since bilingual María Angélica retrieved the appropriate Kaqchikel lexeme, but also tied to sociolinguistic issues concerning permanent language contact with an economically and politically dominant language. New and old items gain more value in the dominant language. Richards (1998:99) noted that the lexical borrowings in the Kaqchikel community of
San Marcos La Laguna mostly represent terms for new cultural concepts and items, but they also replace native terms that have lost their ‘communicative power’.

Lexical items also fall out of use due to socioeconomic reasons and the younger generations do not acquire them; for instance the ikäj ‘ax’ and the jos ‘sickle’ are falling out of use due to the changing economy of Tecpán; men are decreasingly working in agriculture and their children are not participating in it either. Monolingual and bilingual children produced examples of speech and nonce borrowings to name objects such as the ax, sickle, road, cup and house. Because direct experience with objects like the ax within the linguistic and cultural domain of Kaqchikel is being reduced, it is most likely that some children learned the labels for some objects in Spanish at school.

Brown (1999:160) concluded that diachronic data indicate that native terms for introduced entities in earlier time states of Indigenous languages have tended to be replaced by European loans in later time states. The data in this study support this conclusion, specifically regarding the cases of leme’t ‘bottle’ replaced by botella, ruwäc jay ‘window’ replaced by ventana. Moreover, this study also demonstrates that the lexical items that refer to native entities were also being replaced by specially the children and young adults with Spanish loans; for instance: cuchillo ‘knife’, olla ‘pot’, chakach ‘basket’ and ch'at ‘cama’. Tecpán’s sociolinguistic environment seems to pressure Kaqchikel Mayas to adopt Spanish lexemes that have more ‘communicative’ value in the dominant Ladino culture.

5.3 Living Things Semantic Field
The seven Spanish borrowings that the three groups had in common are listed on table 6, which shows that in this field the groups had fewer borrowings in common than in the artifacts and food semantic fields. Interestingly, 35 percent of the Spanish borrowings were retrieved to name non-acculturated living things, i.e., native animals. Half of the bilinguals borrowed over half of the 20 lexemes of this field. The monolingual group had a borrowing average of 25 percent and only one child named half of the 20 Kaqchikel lexemes with Spanish borrowings. The adult group borrowed the fewest Spanish equivalents (15%). Two mothers borrowed the most of the group, naming 20 percent of the 20 items with Spanish borrowings. The grandmother borrowed as well, although she borrowed 5 percent, the smallest borrowing percentage of the group.
Table 6. Spanish borrowings in the living things field

<table>
<thead>
<tr>
<th>Kaqchikel</th>
<th>Spanish Borrowings</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>xanän ‘mosquito’</td>
<td>sancudo</td>
<td>75%</td>
<td>100%</td>
<td>83%</td>
</tr>
<tr>
<td>maq’uq’ ‘quetzal’</td>
<td>quetzal</td>
<td>75%</td>
<td>87%</td>
<td>100%</td>
</tr>
<tr>
<td>b’alam ‘tiger’</td>
<td>tigre</td>
<td>75%</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>kär ‘fish’</td>
<td>pez/pescado</td>
<td>25%</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>äm ‘spider’</td>
<td>araña</td>
<td>0%</td>
<td>75</td>
<td>75%</td>
</tr>
<tr>
<td>masat ‘deer’</td>
<td>venado</td>
<td>50%</td>
<td>62%</td>
<td>16%</td>
</tr>
<tr>
<td>umül ‘rabbit’</td>
<td>conejo</td>
<td>25%</td>
<td>50%</td>
<td>75%</td>
</tr>
</tbody>
</table>

The first three examples had achieved a certain level of acceptance and clearly had the status of loanwords. Seventy-five percent of the adult group borrowed Spanish 'sancudo, quetzal and tigre. In other words, the younger adults and at least 83 percent of all the children borrowed these Spanish lexemes. However, it is not so clear that the last four Spanish lexemes have the status of loanwords since only 44 percent of the three groups borrowed them and most importantly the adults hardly borrowed them; for instance, pescado ‘fish’ was borrowed by one adult and araña ‘spider’ was borrowed by none.

Both children’s groups provided speech and nonce borrowings; however, the bilingual children borrowed more from Spanish than the monolingual children. Six speech borrowings were provided by an average of three children from both groups and these were: gusano ‘worm’, mosca ‘fly’, gallina ‘hen’, ratón ‘mouse’, cerdo/coche ‘pig’ and vaca ‘cow’. An average of three bilinguals provided five nonce borrowings these were: hormiga ‘ant’, pavo ‘turkey’, caballo ‘horse’, oveja ‘sheep’, gallo ‘rooster’ and finally gato ‘cat’ was provided by a monolingual child. The importance of these speech and nonce borrowings is that they demonstrate that bilinguals borrowed from Spanish more than the adults, showing that either they had replaced the equivalent Kaqchikel lexemes or had not acquired them. Interestingly, this latter scenario surfaced in the data of only one monolingual child.

The borrowings that occurred in this semantic field support Brown's conclusion that acculturated living things in general tend more powerfully than imported artifacts “to be labeled by European loans in Native American languages” (1999:160). The data exemplified replacement in progress since the Spanish lexemes for naming the pig, chicken, horse and rooster. These Spanish lexical items were borrowed by the children and not the adults. Moreover, the borrowings demonstrate that the bilingual children were also naming native living
things with Spanish lexemes most frequently, which indicates that bilingualism is an important factor in the analysis of borrowing patterns for the items included in this semantic field.

The participants presented significant lexical variation showing that lexical changes occur due to language contact and to internal changes in the language. The first lexical variation that surfaced from these data concerned two equivalent pairs: *kej-caballo* ‘horse’, of which *kej* represents a marking reversal; and *masat-venado* ‘deer’. Five of the eighteen participants (28%) retrieved *kej* to name the *deer*, instead of retrieving *masat*, which suggests that this marking reversal had not been completed in some Kaqchikel communities. These differences are summarized and organized from the oldest to the youngest group in table 7. The numbers in parentheses indicate the number of participants who borrowed that specific lexeme.

Interestingly, those participants who retrieved either *masat* or *kej* were related. Juana and two of her grandchildren retrieved *masat*, while the two mothers, Dolores and María Reymunda and their children retrieved *kej* instead of *masat*.

Table 7. Variations of the Kaqchikel lexeme *masat*

<table>
<thead>
<tr>
<th>Animal</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>masat 'deer'</td>
<td>masat (1)</td>
<td>masat (2)</td>
<td>-</td>
</tr>
<tr>
<td>kej (2)</td>
<td>kej (1)</td>
<td>-</td>
<td>kej (3)</td>
</tr>
<tr>
<td>venado (1)</td>
<td>venado (5)</td>
<td>venado (1)</td>
<td>venado (1)</td>
</tr>
</tbody>
</table>

The bilingual and adult groups demonstrated that *kej* and *masat* co-exist in the Kaqchikel language and that the marking reversal of *kej* had probably not been completed in some speech communities. Dolores and María Reymunda produced *kej* rather than *masat* because they had lived in a village with their families before living in Tecpán. That is, the marking reversal of *kej* had probably not been completed in their village. Perhaps, this marking reversal will not be completed, since borrowing of the Spanish equivalent *venado* is already occurring. This is demonstrated by the fact that 44 percent of the three groups borrowed Spanish *venado*. Also, of the three groups, the bilinguals borrowed it the most, i.e., 62 percent of this group borrowed it. Finally, another possibility suggested by the results listed on table 7 is that, perhaps, *masat* was being lost and *kej* was being recovered, as it was the original name for the *deer*.

Another equivalent pair that showed significant variation is *aq-coche/cerdo* 'pig' due to the already mentioned Spanish archaic form *coche*. During the Spanish task, half of the bilingual
children retrieved coche and the other half retrieved cerdo. Interestingly, the archaic and modern forms coexist in Tecpán and the bilingual children have acquired one or both forms. In other words, Spanish cerdo has replaced Kaqchikel aq, and cerdo and coche Spanish forms co-exist with each other. Cerdo was marked as a Kaqchikel lexeme and coche as a Spanish lexeme.

\[ \text{pig} \]

\[ \text{coche}_K \rightarrow \text{cerdo}_S \]

Figure 1. A Spanish lexeme assigned to L1 and L2

Monolingual children have also acquired coche and cerdo; however, they showed intragenerational differences. One monolingual retrieved both forms and the youngest monolingual (2;00) retrieved only the modern form cerdo. These intragenerational differences are summarized on table 8 and were best exemplified by bilingual María Angélica, and monolingual Mercedes and Ixyamanik.

Table 8. The acquisition of two Spanish forms for pig

<table>
<thead>
<tr>
<th></th>
<th>Spanish task</th>
<th>Kaqchikel task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ma. Angélica 8</td>
<td>coche</td>
<td>-</td>
</tr>
<tr>
<td>Mercedes 6</td>
<td>-</td>
<td>coche cerdo</td>
</tr>
<tr>
<td>Ixyamanik 2</td>
<td>-</td>
<td>cerdo</td>
</tr>
</tbody>
</table>

These children demonstrated a continuum in the changes of the Spanish lexical form that labels the object pig. Bilingual María Angélica produced the archaic form. Mercedes has acquired both forms and Ixyamanik, from the youngest generation, only acquired the modern form cerdo. These two monolinguals, in fact, replaced the Kaqchikel equivalent, Mercedes with two synonyms, coche and cerdo, and Ixyamanik with the modern form cerdo.

<table>
<thead>
<tr>
<th>Archaic form</th>
<th>both forms</th>
<th>Modern form</th>
</tr>
</thead>
<tbody>
<tr>
<td>coche</td>
<td>cerdo</td>
<td>cerdo</td>
</tr>
<tr>
<td>Angélica</td>
<td>Mercedes</td>
<td>Ixyamanik</td>
</tr>
</tbody>
</table>

Figure 2. Lexical changes for the lexeme coche
Thus, the oldest child, María Angélica, who acquired the archaic form, represents the beginning of the continuum and Ixyamanik, who acquired only the modern form, represents the end of the continuum. Mercedes represents the middle point of the continuum; she knew both forms. The process of lexical acquisition and change will probably continue in these children. It is most likely that María Angélica will acquire the modern form *cerdo*, but that Ixyamanik will not acquire the archaic form *coche*. Logically, after some time, the lexeme *coche* will fall out of use or will acquire a different conceptual structure, as it has in other Spanish dialects. Thus, the data point at the possibility that future bilinguals (Kaqchikel-Spanish) and monolinguals (Kaqchikel or Spanish) will eventually only acquire the modern lexeme *cerdo*.

5.4 The Nature Semantic Field

It was found that all participants had fewer borrowings in common than in the previous semantic fields. Table 9 lists the borrowings that the groups had in common. Only, Spanish *rayo* ‘lightning’ or its plural form *rayos* were retrieved by most of the participants. Eighty-seven percent of the bilingual children, 83 percent of the monolingual children and 75 percent of the adults borrowed this Spanish equivalent.

Table 9. Spanish borrowings in the nature semantic field

<table>
<thead>
<tr>
<th>Kaqchikel</th>
<th>Spanish borrowings</th>
<th>Adults</th>
<th>Bilinguals</th>
<th>Monolinguals</th>
</tr>
</thead>
<tbody>
<tr>
<td>koyopa’ ‘lightning’</td>
<td>rayo</td>
<td>75%</td>
<td>87%</td>
<td>83%</td>
</tr>
<tr>
<td>ruxaq che’ ‘tree leaf’</td>
<td>hoja</td>
<td>25%</td>
<td>50%</td>
<td>-</td>
</tr>
<tr>
<td>jop ‘rain’</td>
<td>lluvia</td>
<td>50%</td>
<td>25%</td>
<td>-</td>
</tr>
</tbody>
</table>

The first example clearly had the status of a loanword since 75 percent of all the participants borrowed it. The situation is not so clear with the lexemes *hoja* and *lluvia*, which were borrowed by less than half of all the participants. Thus, the lexemes *hoja* and *lluvia* were moving toward becoming loanwords for these three generations and, perhaps, for the entire community as well.

The monolingual and bilingual children provided other borrowings whose status is not clear but the borrowing percentages were significant, particularly for the bilingual group. For instance, Kaqchikel *juyu’* ‘mountain’ is currently a polysemous word since it originally meant
‘hill’ and now its meaning has been extended to name volcanoes as well. This means that juyu’ has three Spanish equivalents. Furthermore, by analogy, some bilinguals have extended semantically the meanings of the Spanish co-hyponyms monte ‘hill’ and volcán ‘volcano’ to refer to montaña ‘mountain’. During the Kaqchikel task, thirty-seven percent of the bilingual group borrowed Spanish montaña ‘mountain’, while monte and volcán were borrowed by 25 percent of the group. In other words, 87 percent of the group borrowed a Spanish equivalent of the Kaqchikel lexeme juyu’, which refers to mountain, hill and volcano. In addition, half of the monolingual children also borrowed one of the Spanish equivalents, i.e., montaña ‘mountain’, monte ‘hill’, or volcán ‘volcano’.

Other borrowings include the lexemes that refer to the cloud, wind, fire and sun. Seventy-five percent of the bilinguals and 16 percent of the monolinguals borrowed Spanish nube ‘cloud’ instead of producing the expected Kaqchikel equivalent lexeme suzt’. Also, rather than naming the wind with Kaqchikel kaq’iq’, the Spanish synonym aire ‘air’ was retrieved by 37 percent of the bilinguals and 16 percent of the monolinguals. Only 25 percent of the monolinguals retrieved the appropriate Spanish equivalent viento ‘wind’. Q’aq ‘fire’ and q’ij ‘sun’ were better known by the children and their Spanish equivalents fuego ‘fire’ and sol ‘sun’ were borrowed by 21 percent of both children’s groups.

Two nonce borrowings also occurred, Spanish árbol ‘tree’ and leña ‘firewood’. One member of each group, i.e., 16 percent of all 18 participants, provided árbol ‘tree’. Leña was provided by only one adult; however, this borrowing is significant, despite its status as a nonce borrowing because firewood is essential for the daily routine of Kaqchikel homes, e.g., meals are prepared with it, as well as Mayan baths.

5.5 The Body Parts and People’s Terms Semantic Fields
Although the data on these two semantic fields point out that the borrowings had the status of speech borrowings or nonce borrowings, the results are significant in that they point out to the possibility that these borrowings may become stable and be accepted in the larger community. The bilingual group named seven percent of the twelve items with Spanish lexemes during the Kaqchikel task. Sixty-two percent of the group borrowed at least one of the following Spanish equivalent lexemes: hombro ‘shoulder’, dientes ‘teeth’ and uñas ‘fingernails’. Spanish hombro ‘shoulder’ was borrowed by 50 percent, uñas was borrowed by 37 percent and diente was
borrowed by 12 percent of the children. The monolingual children did not borrow Spanish equivalent lexemes, nor did the adult group.

The results people’s terms semantic field were significant because the bilingual children borrowed the Spanish lexeme mamá ‘mom’ to name a core lexical item during the Kaqchikel task. Various participants in the monolingual children’s and adult’s groups also borrowed the same Spanish equivalent. More monolingual children borrowed Spanish mamá ‘mom’ than the other two groups. Fifty percent of the monolingual group, and twenty-five percent of the bilingual children and adults borrowed this Spanish equivalent lexeme. The results for the monolingual children and adults were unexpected, which indicate that the influence of the Spanish language in the family domain is indisputable. Clearly, the mothers were displacing the Kaqchikel equivalent, but this is not so clear with the monolingual children. Either these children were displacing the Kaqchikel equivalent or they had not yet acquired it.

6. Conclusion

The bilingual children produced more borrowings than the other two groups in five of the semantic fields, i.e., they borrowed from both core and noncore semantic domains. The high degree of borrowing found in these children’s data was related to their bilingualism. The relation between bilingualism and borrowing appears to be a general pattern of communities that have permanent cultural and linguistic contact (Bright 1960 and Brown 1999). In the case of the adults and monolingual children, sociolinguistic factors such as the need to have communicative expressiveness with the Ladino community and the subordinate status of the Kaqchikel language can explain these groups’ borrowing patterns. The fact that the three generations borrowed Spanish lexical items points out to linguistic changes that are in progress within the community and within the families that participated in this study. This was exemplified especially in the clothing semantic field, where the clothing practices of the Kaqchikel Maya community are slowly changing, particularly, those of men and working young women. For these groups, these changing clothing practices are mostly due to socioeconomic factors.

All three groups produced borrowings in the food, clothing, and artifacts fields, which are semantic domains of frequent exposure in Kaqchikel-Ladino contexts. The importance of this study’s finding is that it gives synchronic evidence to Brown's (1999) proposal that diachronic borrowings tend more strongly to occur with the acculturated food and living things than with
acculturated artifacts. Moreover, these data also support Brown's finding that Native Americans
tend to adopt loanwords for the items to which they are most frequently exposed (1998:58).
Another major finding was that these groups, especially the bilinguals, borrowed lexical items to
name objects of the Maya culture. Thus, the borrowing patterns of the three generations represent
a sociolinguistic pattern of discourse in the community, which adopts Spanish lexemes for new
cultural concepts and items, and replaces Kaqchikel lexemes that have lost their ‘communicative
power’ (Richards 1998:99).

The results on the nature semantic field were unexpected since this semantic field,
belongs to the core lexicon, and it names objects that are essential to peoples’ daily lives, e.g.,
water, sun, and rain. Moreover, the labels that name natural elements are also among the first
acquired by children; for instance, water is among the early words acquired by children (Owens
1996). Nevertheless, in this field, the three generations borrowed from Spanish. This is
unexpected result indicates that this semantic field is vulnerable to lexical influence from
Spanish. In contrast, the body parts and people’s names semantic fields, borrowing percentages
demonstrate that Kaqchikel is less likely to be influenced by Spanish in these most intimate and
personal semantic domains.

The data indicate that adult mothers are not necessarily transmitting specific Kaqchikel
lexical items. In fact, vocabulary loss or the lack of development of the Kaqchikel lexicon in
some of the children seemed to be assisted by the mothers; thus, the bilingual and monolingual
children are not acquiring the corresponding Kaqchikel lexemes. That is, the younger
generations have only Spanish equivalents, which are being shared across both languages.
Finally, the children's borrowings can be analyzed as representing two possible bilingual
acquisition patterns: (1) the children have acquired the Kaqchikel equivalents, but have replaced
them once L2 acquisition took place, or (2) the children have only acquired L2 lexical
equivalents, most likely at school, and have not yet acquired their L1 equivalents.

In regards to the implications for the teaching of indigenous languages, particularly
Mayan languages, it must be assumed that the permanent linguistic contact with Spanish
introduces constantly lexical elements to early and late monolingualism. In order to combat this
permanent linguistic effect, the production of educational materials needs to address particularly
lexical acquisition in core semantic domains. Furthermore, the planning of curricula needs to
target lexical acquisition in all domains, particularly core semantic domains. Special programs
need to be designed for bilinguals that address the necessity to complete lexical paradigms. Mothers and fathers need to be integrated in community cultural programs that address the need to maintain language and culture through the use of native vocabulary.
References


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