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Papiamento/Dutch code-switching in bilingual parent–child reading

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ABSTRACT
Code-switching between Papiamento and Dutch was studied in bilingual parent–child reading sessions in Antillian migrant families (who were to some extent bilingual in Papiamento and Dutch) in the Netherlands. Mothers were asked to read three picture books to their child: one in Dutch, one in Papiamento, and one without text. The code-switching in the data is studied from three perspectives: its relation to bilingual competence, its structural properties, and the implications for language change through lexical borrowing. Our data confirmed the results of earlier studies, which found that intimate code-switching within the clause is characteristic of fluent bilinguals. In our study, this held in particular for knowledge of Papiamento. Structurally, the type of code-switching encountered was predominantly insertional (with Papiamento as the dominant language), thus conforming to the constraints proposed for this type of switching. The single Dutch words that were frequently inserted into Papiamento utterances by the mothers could easily be interpreted by the child as Papiamento and are likely to become borrowings in the next generation. We conclude with some remarks about the functions of code-switching in our data.

In an earlier study (Vedder, Kook, & Muysken, 1996) code choice and functional differentiation between Papiamento and Dutch were studied in bilingual parent–child reading sessions in Antillian migrant families (who were to some extent bilingual in Papiamento and Dutch) in the Netherlands. Mothers were asked to read three picture books to their child: one in Dutch, one in Papiamento, and one without text. We found that, overall, code choice of mothers and children in the reading sessions was predictable, based on general patterns of code choice in the mothers' and children's language contacts with a variety of people. Information about the mothers' and children's language contacts showed us a fragment of the ongoing process of intergenerational language shift in this group of first-generation Antillian migrants. Code choice in the book reading sessions was related to the text and contents of the book, as well as to restrictions imposed by the

bilingual competence of mothers and children. The use of Dutch in the sessions was related to the children's limited competence in Papiamento rather than to their fluency in Dutch. It was not the case that the school language, Dutch, was used more in lexical items associated with more demanding cognitive functions (e.g., reasoning, metalinguistic activity, counting), except if these items were consciously perceived as school-related by the parents. Dutch had been expected to be used with cognitively demanding functions if it did have this role in the bilingual community. Both the fact that a school-related task – reading a text – was carried out and the specific subject matter of the text played a significant role.

We believe that, with respect to the issues of code choice and functional differentiation, we now have a somewhat comprehensive picture of bilingual book reading by parents in this particular minority group. In this article, we explore this material through a detailed linguistic analysis of the use and mixing of Dutch and Papiamento in the reading sessions; we interpret our findings from the perspective of the central linguistic issues in the study of code-switching and language contact.

First, we briefly survey some of the relevant issues in the study of code-switching: the relation between code-switching and bilingual competence, the syntactic characteristics of code-switching, and the relation between code-switching and language change. Next, we summarize the study of which this article reports one part; we then present a few relevant typological features of Papiamento and Dutch. Our findings are discussed with respect to the issues raised earlier, and we conclude with a summary of our study.

ISSUES IN CODE-SWITCHING AND LANGUAGE CONTACT RESEARCH

Studies of patterns of code-switching and language mixing show that the recorded conversations among bilinguals often include both languages and thus are instances of code-switching. In the last 15 years, a large number of studies have appeared in which specific cases of intrasentential code-switching have been analyzed from a grammatical perspective, involving a variety of language pairs, social settings, and speaker types. Code-switching, a quite normal and widespread form of bilingual interaction, requires a high level of bilingual competence. In individual language pairs, intrasentential code-switching is not distributed randomly in the sentence, but rather occurs at specific points.

Much less agreement has been reached with respect to the general properties of the process. Various "constraints" and "models" regulating intrasentential code-switching have been proposed and tested, with the result that some cases appear to fall under one constraint and others under another. Of the constraints proposed, it seems that switching may only take place (a) if the linear order of the two languages corresponds (Poplack, 1980), (b) between words, but not inside of a word (Poplack, 1980), (c) with content words, but not with function words (Joshi, 1985), and (d) if there is no

particularly tight syntactic relationship between the elements involved (Di-Sciullo, et al., 1986). A recent model proposed by Myers-Scotton (1993b) incorporates these constraints into a single model, which will be discussed later.

Code-switching is far from static and uniform. Rather, it shows considerable variation due to the interaction between structural, psycholinguistic, and sociolinguistic factors. Some of the questions that emerge in discussions of code-switching as a dynamic phenomenon (Muysken, 1995; Myers-Scotton, 1993a; Poplack, 1980; Romaine, 1995) include:

1. What is the relation between code-switching and bilingual competence?
2. To what extent is code-switching seen as an alternation between two structures (hence, governed by well-formedness conditions involving properties of both languages involved); to what extent is it seen as an insertion into a structure (hence, primarily governed by features of one dominant language)? What are its structural properties?
3. What is the relation between code-switching and language change across generations of speakers through parent–child transmission?

Code-switching and bilingual competence

In some of the literature there is evidence for a relation between the degree of bilingual competence and the type of switching that occurs: the more balanced the competence, the greater the incidence of intrasentential switching, which nonetheless follows specific patterns (Nortier, 1990; Poplack, 1980). Poplack and Nortier argued for a strong relation between bilingual competence and the propensity toward intrasentential code-switching. Poplack found that Puerto Rican speakers with high levels of competence in both Spanish and English in New York City show both emblematic or tag switching and intrasentential mixing; speakers with limited competence in English only show emblematic switching.

In the latter case, a typical switch consists of an element like *okay?* added to a Spanish sentence. Nortier (1990) argued that, for the Moroccan Arabic/Dutch bilingual speakers in the Netherlands, "a high degree of bilingual proficiency is related to the use of relatively many intrasentential and single word switches" (p. 115). The reason, presumably, for this relation between bilingual proficiency and the intricate combinations of languages in bilingual speech is that a bilingual needs to know both languages well to combine them within the sentence in rapid speech production. Nonetheless, in other studies no such relation appeared (Berk-Seligson, 1986). Berk-Seligson (1986), who looked at Spanish–Hebrew bilinguals in Jerusalem, found no such relation may be of less consequence: the group of speakers involved in her research (originating both from the Levant and from Argentina) was rather diverse, and the sociohistorical relation between the two languages that she studied, quite complex. The issue of possible relations between syntactic switch patterns and bilingual competence remains an important issue.

Alternation and insertion

There are two dominant approaches to intrasentential code-switching: those in terms of the alternation of the languages involved in the switch (Poplack, 1980), and those in terms of a single-language matrix structure into which the insertion of a constituent from another language takes place (Myers-Scotton, 1993a).

Consider Poplack's (1993) definition of code-switching, which embodies the idea of alternation.

> Code-switching is the *juxtaposition* of sentences or sentence fragments, each of which is internally consistent with the morphological and syntactic (and optionally, phonological) rules of the language of its provenance. (p. 256)

In contrast, Myers-Scotton (1993a) defined code-switching as follows:

> Code-switching is the selection by bilinguals or multilinguals of forms from an *embedded* language (or languages) in utterances of a *matrix* language during the same conversation. (emphasis added; p. 4)

The process of alternation is particularly frequent in stable communities with a tradition of language separation, but it occurs as well in many other communities. It may be the most frequent and least structurally intrusive type of code-switching.

Insertion is frequent in neo- or excolonial settings and recent migrant communities, where there is a considerable asymmetry in the speakers' proficiency of both languages and possibly also in the status of the languages involved. A language dominance shift (e.g., between the first and third generations in an immigrant setting) may be reflected in a shift in the directionality of insertion: from insertion into the language of the country of origin to insertion into the language of the host country.

Under the perspective of insertion we can conceive of the process of code-switching as something akin to borrowing; it is the insertion of an alien lexical or phrasal category into a given structure. The difference between insertion code-switching and lexical borrowing depends on the size and type of element inserted (e.g., noun phrase vs. noun).

The question is whether we can objectively establish which process we are dealing with in specific cases. A global syntactic characterization of code-switching in the reading sessions in Papiamento and Dutch relies on the patterns of code choice: does Papiamento, Dutch, or both matrix languages determine the interaction? On the basis of the syntactic characterization of code-switching in the reading sessions, we attempt to identify the specific switching patterns in the reading sessions. We also try to provide explicit criteria for distinguishing alternation and insertion.

Code-switching and language change through borrowing

Intrasentential code-switching is the use of two languages in one clause or utterance. Code-switching is different from lexical borrowing, which involves the incorporation of lexical elements from one language into the

lexicon of another language. It is generally assumed, however, that lexical borrowing occurs through code-switching: gradually, new words are introduced into the lexicon of the receiving language through repeated use by more and more speakers and by morphosyntactic and phonological integration. The reading sessions may be regarded as evidence for a more drastic pattern of change: the mothers introduced new words into the conversations – words which may well become established loans for the next generation.

OVERVIEW OF THE PRESENT STUDY

We studied Antillian and Aruban (both henceforth referred to as Antillian) migrant families in the Netherlands. These families emigrated from Aruba (66,000 inhabitants) or from the Leeward Netherlands Antilles: Curaçao (150,000) and Bonaire (10,000).

The study was part of a research project on the literacy development of 71 Antillian children, aged 4 to 7 years, attending three primary schools in Hoogvliet, a town near Rotterdam in the Netherlands. More details are provided on this study in Vedder et al. (1996). In the present study, 25 primary caregiver–child dyads participated. (We refer to caregivers as "mothers," even though some of the caregivers were aunts or grandmothers.) While Papiamento was the first language of the mothers and many of the children, all participants in the study also knew Dutch. Through interviews we studied home language use and the mothers' attitudes towards Dutch and Papiamento. The children's language proficiency in Papiamento and Dutch was assessed with standardized vocabulary tests.

The database was collected in the spring of 1990 by one of the authors (H.K.), who is a native speaker of Papiamento. The Papiamento-speaking mothers were recorded reading children's books with their child. The variation both in the texts read and in the parent–child pairs recorded made it possible to raise a number of issues.

Subjects

The mothers were recorded reading four books with their child at school. The children (13 girls, 12 boys) were all in the two years of preschool (nursery school or kindergarten). The children's mean age was 5.3 (SD = 9 months), and the mothers were 33 years old (min., 24; max., 58) on the average. All mothers were born in the Netherlands Antilles, as were all but one of the fathers. Seven of the children were born in the Netherlands, and the others, in the Netherlands Antilles. Their average age of arrival was 2.6 years (min., 0; max., 6 years). The Antillian migrants studied constitute a fairly recent, low-status immigrant group. Both mothers and children were bilingual, but their competence in both languages varied considerably.

Texts

We analyzed reading and retelling sessions involving three books chosen by us: *Vijf neer* (no text); *Slaap lekker meneer beer* (Dutch text); *Klop, klop* (Papiamento text). All texts were evidently fun to read for the children and elicited much commentary from both the mothers and the children (for information about the stories, see Vedder et al., 1996).

Measures

Children's bilingual competence (i.e., their language proficiency in both languages) was measured using standardized passive and active vocabulary tests in Papiamento and Dutch (see Vedder et al., 1996). For a full description of the language tests and their psychometric features, we refer the reader to Kook (1994).

Procedure

In a quiet room at school, the children's language competence was individually tested in Papiamento and Dutch. The interview with the mother took place in her home. All interviews were carried out by one of the authors (H.K.). For the book reading sessions the mothers came to school during schooltime and read the books in a quiet room, sitting side-by-side with the child on a couch. After reading the child's own favorite book first, they then read the other books in the order of their choice. The mothers were addressed in Papiamento; with the children, the language of address varied according to the proficiency of the child. All reading sessions were audiotaped.

Coding and analysis

All audiotapes were transcribed, and transcriptions were checked for completeness and accuracy. (The analysis of the bilingual interactions in this article excludes the printed text read aloud itself.) We coded the words in the transcripts semiautomatically with a dual code, indicating both the language status of the item and the grammatical category membership. We distinguished six language categories: Dutch; Dutch loans with Papiamento morphology; unadapted but established Dutch loans; Papiamento words of Dutch origin; Papiamento; and unclassifiable (see Vedder et al., 1996, for details).

The grammatical analysis was complicated by the fact that many Papiamento function words are short and have various meanings and functions. Thus *ta* [+ be] can be a copula, a focus particle, and a present tense or progressive aspect marker. Similarly, *pa* [+ for] can be a preposition and a purposive conjunction, and *ku* can mean 'that', 'with', or 'and'. The grammatical categories analyzed were: prepositions; nouns, names; verbs; tense/mood/aspect particles, auxiliaries, copula; personal, possessive, demon-

strative, and reflexive pronouns, question words, determiners; exclamatives, interjections; negation, adverbs; coordinating and subordinating conjunctions; numerals, quantifiers; and adjectives.

It appeared difficult to code conjunctions and adjectives reliably. These are relatively infrequent grammatical categories. Other categories were easier and more reliable to code (for further details, see Vedder et al., 1996). A number of theoretical issues of classification were avoided: for example, we grouped the copula and the auxiliaries together in one category.

After the information about the quality of coding was deemed satisfactory, semiautomatic full coding proceeded. A number of errors in the transcript turned up and were corrected before a final check of both coding and transcription were made.

The following example gives an indication of the resulting codes (CuVr is the abbreviated name for one of the children studied; MoCuVr is his mother):

1. {CuVr} AhanQ5?
   {MoCuVr} KiP4 eP4 faltaP2? EP4 tinP3 suP4 korantZ1.
   KikoP4 eP4 faltaP2? SuP4 lievelingD1.
   {CuVr} SuP4 sigariaP1.
   Child: Ahem.
   Mother: What does he miss? He has his newspaper. What does he miss? His darling.
   Child: His cigar.

This method of coding made it possible to analyze code choice to a large extent by computer, using the text analysis and text retrieval program, TACT (Bradley, 1990). Thus, the sequence, SuP4 lievelingD1, is automatically identified as a code switch uttered by the mother of the type "Papiamento possessive pronoun/Dutch noun," while the overall interchange is characterized as almost exclusively Papiamento.

Our quantitative analysis of the code-switching data in this study is based on a Markovian chain analysis of all successive two-word pairs within a sentence. Thus, a four-word sentence contains three transitions and, hence, three potential switch sites. We focus primarily on transitions between Papiamento (P) and Dutch (D) elements, leaving aside loans and unclassifiable elements. In some analyses (see Tables 1 and 2) we look at overall patterns of switching, irrespective of grammatical category, and in others, we look at specific grammatical or lexical categories (see Tables 3 and 4). Finally, focusing on the type of interaction and the language used (e.g., the mother asking *kiko* "what" questions), we examine bilingual language use as it relates to the reading activity.

PAPIAMENTO AND DUTCH

About 85% of the population of the three Leeward Islands (Aruba, Bonaire, and Curaçao) speak a creole of a mixed Portuguese and Spanish origin called Papiamento. Papiamento is used in daily life by all social classes,

although Dutch is still the official language. For most Antillians, however, Dutch is a foreign language. Television programs on Aruba, Bonaire, and Curaçao are mostly in Papiamento, English, or Spanish. The most popular newspapers are in Papiamento, as are most radio stations' broadcasts. There are approximately 190,000 native speakers of Papiamento living either in the Caribbean or in the Netherlands. About 60% of the children spoke only Papiamento outside of school. In school, the language of instruction is Dutch. A more extensive description of the language situation on the Antilles can be found in Kook and Narain (1993).

The language situation for Antillians who emigrate to the Netherlands changes drastically. A rather rapid process of language shift is taking place. In the Antilles itself, Dutch is used little in daily life, whereas one cannot function without it in Dutch society. It is clear that, in the process of language shift in an immigrant community, different members of the community have different levels of proficiency in either of the languages involved. Many studies of bilingual immigrant communities have revealed a cross-generational shift in this respect: generation $n + 1$ uses the ethnic language less and the language of the wider community more than generation n (Appel & Muysken, 1987; Extra & Verhoeven, 1993; Fishman, 1964; Li Wei, 1994). Nonetheless, the Dutch spoken by the Antillians in our sample is not native-like in a number of respects. A clear example of this is adjective inflection. In native Dutch, a neuter gender noun with an indefinite article requires zero inflection rather than *-e* (*een goed artikel* 'a good article' vs. *een goede krant* 'good newspaper'). However, in the corpus, five out of eleven times, *-e* appears: for example, *een mooie verhaal* 'a beautiful tale' [corr., *mooi*], *een grote monster* 'a big monster' [corr. *groot*]. Because neuter gender nouns are a minority, the overall result can be described as overgeneralization.

Papiamento is a creole language with a predominantly Ibero-Romance (Spanish and Portuguese) vocabulary. It also has loans from English and particularly from Dutch. Papiamento and Dutch differ in many ways.

First, Papiamento has a fairly rigid SVO word order. Dutch has a set of fairly complex alternating word order patterns, including OV and XVSO, and inflected verbs and auxiliaries. In Papiamento, apart from a few exceptions, the subject always precedes the predicate, even in question sentences, whereas in Dutch, subject–predicate reversals are rather frequent (more frequent than in English). Dutch nonfinite verbs occur at the end of the clause, and in subordinate clauses, all verbs do.

(2) Bo ta *kere* [ku nan *lo bai bende* e sapatu aki ei?]
you PR believe that they FU go sell the shoes here there
'Do you believe that they will sell these shoes there?'

(3) *Denk* je [dat ze deze schoenen daar *gaan verkopen?*]
believe.2 you that they this.pl shoe-pl there go sell?

Second, Papiamento has little inflectional morphology. It also has no conjugated verbs; tenses are indicated by particles preceding the verb. Present, past, and future tenses are indicated, respectively, by *ta, tabata* or *a*, and *lo* preceding the verb. Dutch has limited verbal inflection for tense, person, and number. Its rules for conjugations and tenses are similar to those of English.

Third, demonstrative meanings in Papiamento are not marked by single words, as in Dutch *dat* 'that', but by two words enclosing a noun:

(4) *e* bala *aki*
'the ball here; this ball'

Finally, Papiamento compounds can be rather complex and tend to include a linking preposition.

(5)

English	car key
Dutch	*autosleutel*
Papiamento	*yabi di outo* [key of car].

For more extensive descriptions of the structure of Papiamento, we refer the reader to other studies (Dijkhoff, 1993; Kook, 1989; Kouwenberg & Murray, 1995).

Some of these characteristics of Papiamento (e.g., the use of *ta* to indicate present tense, the structure of demonstrative pronouns and compounds) require Papiamento speakers to use more separate word forms to convey a meaning, compared with Dutch speakers.

CODE-SWITCHING AND BILINGUAL COMPETENCE

Poplack (1980) and Nortier (1990) pointed out that there is a relation between the degree of bilingual competence and the type of switching that occurs: the higher the competence in both languages, the greater the incidence of intrasentential switching. Tables 1 and 2 summarize our findings on language proficiency and code-switching by the children.

When corrected for the number of words in both Papiamento and Dutch spoken by the child during the reading session, there was a reasonable correlation for all three code-switching measures with Papiamento active vocabulary. In addition, there was a correlation of the less usual type of switch (Papiamento after Dutch) with the Dutch active vocabulary and the measures for cognitive concepts in both Papiamento and Dutch in our research (see Vedder et al., 1996).

Consider now Table 2, which presents information about the correlation between sentence complexity and intrasentential code-switching. The results presented here confirm the idea that the overall complexity of the Papiamento used by the mothers and children correlated with switching in a rather systematic fashion (again for both mothers and children). The better the Papiamento, the more switching took place. No statistically significant

Table 1. *Statistically significant* ($p < .05$) *Pearson product-moment correlations between intrasentential code-switching measures (percentages) and children's language proficiency*

	Passive vocabulary child		Active vocabulary child	
	Dutch	Pap.	Dutch	Pap.
% Dutch–Pap. child	.46	.47	.38	.45
% Pap.–Dutch child	n.s.	n.s.	n.s.	.35
% Pap.–Dutch–Pap. child	n.s.	n.s.	n.s.	.37
M (items)	19.3	20.2	13.4	14.6
SD (items)	5.6	6.7	5.0	6.3

Note: The passive vocabulary test contained 34 items, and the active one, 30.

Table 2. *Statistically significant* ($p < .05$) *Pearson product-moment correlations between amount of intrasentential code-switching measures (absolute) and sentence complexity measures (conjunctions and adjectives in Papiamento)*

	Pap. conjunctions	Pap. adjectives
Dutch–Pap. mother	.48	.44
Pap.–Dutch mother	.68	.56
Pap.–Dutch–Pap. mother	.41	.39
Dutch–Pap. child	.37	.37
Pap.–Dutch child	.41	.35
Pap.–Dutch–Pap. child	n.s.	n.s.
M (in Papiamento)	19.6	3.7
SD (in Papiamento)	23.2	4.8

correlations were found with the sentence complexity measures for the Dutch portion of the discourses and switching.

Our results are partly in line with those of Poplack (1980), who used self-report measures, and Nortier (1990), who used a variety of measures, though not vocabulary tests. The results of our study confirm the relation between linguistic competence and code-switching, but this effect was much stronger for Papiamento than for Dutch competence. The Spanish–English data analyzed by Poplack (1990) and the Moroccan Arabic–Dutch data studied by Nortier (1990) showed evidence of symmetrical switching: both languages in a switching pair played a central role. In contrast, in the type of code-switching examined by us, one language, Papiamento, was dominant and functioned as the base, or matrix, language in the switched sentences.

ALTERNATION OR INSERTION

What types of code-switching strategies characterize bilingual reading sessions? What do these reveal about bilingual parent–child interaction and about the reading sessions as such? A global syntactic characterization of code-switching in the reading sessions is dependent on the patterns of code choice: is Papiamento, Dutch, or both the language of the interaction? To gain insight into the switching patterns, consider the following examples (Dutch in italics). A very frequent category concerns single Dutch nouns in Papiamento utterances, as seen in (6) and (7):

(6) Ki *cijfer* esei? [embedded noun switches]
'What number is this?'

(7) Hopi *leter* aden
'Many letters in it.'

There are not very many multiword switches in the corpus, as in (8):

(8) Ami a kome *hele tijd* sopi.
'I ate soup the whole time.'

Papiamento utterances that include several separate Dutch items are more frequent:

(9) Ata bo por konta di *één* te *tien*
'You see, you can count from one to ten.'

Example (9) illustrates a second, rather frequent Dutch category in our material – numerals.

Often Dutch elements occur clause finally, such as the noun *gemak* 'ease' in (10) and the adjective *samen* 'together' in (11):

(10) Bo ta sinta na bo *gemak?* [clause-final switches]
'Do you feel at ease?'

(11) Kuantu nan ta *samen?*
'How much are they together?'

(12) E *drie* a *kapot*.
'The three is broken.'

(13) E ta *bijna*.
'He is almost.'

The Dutch adjective *kapot* 'broken' is used as a resultative Papiamento verb in (12), and in (13), a Dutch adverb is used as a Papiamento adjective. These category shifts are indicative of the extent to which Dutch elements are made to fit into the Papiamento mode. The same is evident in (14), where a Dutch adjective undergoes a Papiamento fronting rule (*ta ijskoud e ta* 'be ice cold it be'):

(14) Nan a kere ta *ijskoud* e ta
'They think he is really ice cold.'

In addition to this highly frequent pattern of inserting mostly single nouns, numerals, and adjectives and adapting them to Papiamento grammar, there

is a pattern of simply adding a Dutch discourse marker or loose expression to an utterance:

(15) *Kijk*, laga mi konta [discourse marker switch]
'Look, let me count.'
(16) Kiko e kos aki ta *eigenlijk?*
'What is this really?'
(17) Si, *leuk*, *hè?*
'Yes, nice, isn't it?'

Both *eigenlijk* in (16) and *leuk* in (17) have become commonly accepted in Papiamento colloquial speech. In (17), the switch is between an interjection in Papiamento and a Dutch exclamative adjective, which is highly peripheral grammatically. Another example of *leuk* is (18). Notice, however, that even these frequent words do not conform to Papiamento pronunciation patterns. The rounded mid back vowel [ø] (written *eu*) is not native to Papiamento, but neither is it adapted phonologically.

(18) Bo ta haña nan *leuk?* [semi-integrated Dutch elements]
'Do you find them nice?'

The multiword Dutch sequence in (19) may be a fixed expression.

(19) E puntanan aki no tin *niks mee te maken.*
'The points here have *nothing to do with it.*'

The global picture is of Papiamento, interspersed with occasional Dutch items (mostly nouns and numerals). We corroborate this quantitatively by posing the following questions: (a) which categories are switched, (b) how frequently are they switched, and (c) how do switched category sequences compare with monolingual sequences? Comparing and contrasting switched sequences with monolingual ones helps to clarify the extent to which the switches are grammatically exceptional. Does a switch between a Papiamento determiner and a Dutch noun present a higher percentage of the switched sequences than a monolingual Papiamento determiner/Papiamento noun transition?

The following quantitative survey is based on analyses of all two-word sequences internal to clauses in the corpus. For the analysis of Papiamento/Dutch (henceforth P/D) and Dutch/Papiamento (D/P) sequences, all transcripts were used. For the analysis of the Dutch/Dutch (D/D) and Papiamento/Papiamento (P/P) sequences, we used the transcripts of all three reading sessions from six mother–child pairs. These pairs were chosen at random from the caregiver/child pairs; the conversations of these six pairs contained more than 200 word types. An analysis was carried out to determine the frequency of language-specific monolingual two-word sequences in Dutch and Papiamento, respectively (D/D for the Dutch sequences, and P/P for the Papiamento sequences); in PP sequences, we included words that were of Dutch-origin, but had been incorporated into the Papiamento lexicon. The results of the analysis of D/D and P/P sequences in the discourses of the six pairs were used to estimate the D/D and P/P sequences

for all the mother–child pairs. This was done by multiplying the outcomes for particular sequence types (D/D; P/P) with the quotient of the number of D/D sequences for the six pairs (855) and the number of P/P sequences for the six pairs (5,167), and then the number of D/D sequences for all 25 pairs (3,406) and the number of P/P sequences for all 25 pairs (10,557), irrespective of sequence type. The multiplication factor for the Dutch sequences was 3.98 and for the Papiamento sequences, 2.04. Using estimates for the 25 pairs rather than the data of the six pairs facilitated a comparison between monolingual and switched two-word sequences.

Consider Table 3. In the Dutch sequences (D/D; column I), two numerals in a row (Num/Num) are highly frequent, as are a pronoun or determiner followed by a noun (Pron/N) or an auxiliary (Pron/Aux). Highly frequent patterns in the Papiamento sequences (P/P; column II) are an auxiliary followed by a verb (Aux/V) and a pronoun followed by an auxiliary (Pron/Aux).

The majority of switches from Papiamento to Dutch (column III) involve nouns and numerals. Half of the switches to Dutch involve a Dutch noun (158 out of 316, the total of column A); and another third involve a Dutch numeral (115 out of 316). Similar results hold for the transitions from Dutch to Papiamento. A third (58 out of 180, the total of column IV) of the switches from Dutch to Papiamento involve a noun; 40% (73 out of 180) involve a numeral.

Neither the D/P switches nor the P/D switches reflect in any way the frequency of monolingual sequences in either language. This is reflected in the relatively low number of matches (column V), the correspondences between highly frequent patterns in the P/D and D/P columns, and the high frequency in the same sequence in either monolingual D or P. There are only two items that are highly frequent in three columns and four items that are both among the most frequent sequences in one of the switch columns and a frequent monolingual sequence. If the code-switched sequences were a regular subset of the monolingual ones, a much higher frequency of matching would be expected.

Thus, the grammatical type of intrasentential code switches in the reading sessions primarily involves inserted single nouns and numerals rather than a transition between, say, the grammar of Dutch and that of Papiamento; what we find instead are Dutch elements inserted into Papiamento frames.

At this point, several methodological remarks are in order. The reason for considering monolingual sequences and then switched ones is that we gain an impression of what the most ordinary monolingual sequences are. From a probabilistic perspective (i.e., how often did something actually occur that could have occurred), this is crucial. There are very few combinations that occur somewhat frequently both as switches and as monolingual sequences. This suggests that code-switching in parental, dialogic book reading is far from evenly distributed over the different syntactic structures: in fact, it is highly specific in nature.

Second, a drawback of sequence analyses, such as the one we did, is that it only reveals something about single-word switches: *wak* (P), *muis* (D)

Table 3. *The frequency of the 12 most frequent two-word sequences* (*) *of the type D/D, P/P, P/D, D/P*

	I D/D	II P/P	III P/D	IV D/P	V match
N/Prep	36	124	1	5	
V/Prep	44	298*	2	5*	2
Num/Prep	4	22*	—	12	
Prep/N	20	144	32*	—	
V/N	8	114	16*	—	
Aux/N	40	76	25*	—	
Pron/N	396*	736*	71*	2	3
Num/N	32	94	14*	3	
N/V	44	40	—	5*	
V/V	28	408*	10*	4	2
Aux/V	4	1398*	13*	—	2
Pron/V	212*	124	—	—	
Adv/V	148*	152	—	1	
Num/V	4	6	—	8*	
N/Aux	36	190	—	18*	
Pron/Aux	304*	1426*	—	2	
Num/Aux	—	60	-	33*	
Prep/Pron	132*	458*	—	—	
N/Pron	4	204	—	12*	
V/Pron	236*	688*	—	6*	3
Aux/Pron	228*	178	—	—	
Pron/Pron	44	512*	—	1	
Adv/Pron	76	256*	—	1	
Conj/Pron	124*	296*	—	2	
Num/Pron	—	16	1	7*	
N/Excl	4	34	—	5*	
N/Adv	16	100	—	9*	
V/Adv	100*	300*	5	2	
Pron/Adv	88*	276*	—	—	
Adv/Adv	84	66	—	2	
Num/Adv	20	8	—	10*	
P/Num	—	14	12*	—	
N/Num	140*	2	18*	4	2
Aux/Num	20	60	18*	—	
Pron/Num	12	58	66*	—	
Num/Num	424*	12	1	—	
Other	290 est.	1,615 est.	11	21	
TOTAL	3,406	10,557	316	180	

Note: Column V presents the number of matches of highly frequent sequences between the different columns. Only cases of switched sequences that match monolingual sequences are included. The figures in columns I and II are estimates on the basis of six long conversations. Recall that the abbreviated grammatical labels refer to a cluster of categories that we coded together.

'look, mice/mouse' is recognized as a Papiamento verb, Dutch noun switch, but *wak* (P), *een* (D) *muis* (D) 'look, a mouse' is only recognized as a Papiamento verb, Dutch determiner switch. The fact that this determiner *een* introduces a Dutch noun phrase is ignored. Notice, however, that the large majority of switches in the corpus were one-word switches. This is clear from a closer study of Table 3. There are many P/D switches with a numeral as a second member, and, likewise, many D/P switches with a numeral as a first member. This is easily explained by assuming that there are a great many Papiamento words/Dutch numeral/Papiamento word sequences. The same holds for nouns, but to a slightly lesser extent.

Third, an additional drawback of the sequence analysis is that all sequences have equal value, while in natural language, this is not the case. When we examine *I walked with my sister in the garden,* the relation between *my* and *sister* is quite different from that between *sister* and *in.* In our counting procedure, they have equal status. The only way to circumvent this is by focusing on the frequent patterns, in addition to a more detailed, nonautomated analysis of the difficult cases.

Perhaps it would be useful to consider what it would mean if the corpus had had an alternational rather than insertional character. Consider a characteristic Spanish–English example from Poplack (1980, p. 589):

(20) He was sitting down *en la cama, mirandonos peleando, y* really, I don't remember *si el nos separó* ['. . . on the bed, watching us fight, and . . . if he took us apart.']

Here, the switches occur around prepositions, adverbs, and conjunctions, which are the typical sites for alternational switches. Notice that these categories are quite infrequent among the switch sites in Table 3.

BORROWING AND MORPHOLOGICAL INTEGRATION

The issue here is the role of parent–child interactions in the incorporation of linguistic borrowings. To some extent, the highly innovative language use in the parent–child interactions potentially throws light on linguistic change in progress – in this case, the way Dutch linguistic elements are incorporated into Papiamento (Haugen, 1950; Poplack, Sankoff, & Miller, 1988). Drapeau (1994) analyzed caretaker speech in a small Montagnais-speaking community in Quebec. Montagnais, a member of the Algonquian language family, has been in contact with French for generations. Drapeau noted "a major decline in Montagnais lexical skills in the younger generation" (p. 1) due to intensive insertional code-switching by their caretakers: often, French noun phrases and prepositional phrases were inserted into Montagnais clause frames.

To illustrate a similar phenomenon in our data, let us consider animal names, another school related item. The words for animals are drawn from both the Dutch and the Papiamento lexicon. To appreciate the data in Table 4, consider the following paradigm for Papiamento and Dutch noun phrases:

Table 4. *Language choice for animal names, differentiated for grammatical context and morphological shape* (*single citations excluded here*)

	Muis	Vark	Poes	Koni	Marm	Beer	Total	Example
Ndut	7	3	11	3	18	4	46	muis
Npap	8	2	2	13	—	5	30	raton
DEdut–Ndut (sg)	1	1	—	3	3	4	12	de muis
DEpap–Ndut (sg)	2	—	1	—	8	12	21	e muis
DEdut–Npap (sg)	—	—	—	—	—	—	—	*de raton
DEpap–Npap (sg)	1	2	—	2	—	1	6	e raton
e Ndut–nan	4	—	2	—	17	—	23	e muis*nan*
e Npap–nan	2	3	6	19	—	4	32	e raton*nan*
Ndut–pl	5	4	6	—	1	—	16	muiz*en*
Ndut–pl–nan	1	—	—	—	—	—	1	muiz-*en*-*nan*
DEpap Npap–pl	—	—	—	—	—	—	—	*(e) raton-*en*
Qpap Ndut (pl)	3	2	—	—	—	—	5	tur muis
Qpap Npap (pl)	3	4	4	—	—	—	11	tur raton
Qdut Ndut–pl	3	1	—	—	—	—	4	alle muiz*en*
Qdut Npap	—	—	—	—	—	—	—	*alle raton
NUpap Ndut	—	—	4	—	4	2	10	sinku muis
NUdut Ndut	3	5	1	—	1	—	10	vijf muis
NUdut Ndut–pl	5	4	3	2	—	—	14	vijf muiz*en*
NUpap Npap	2	8	1	6	—	5	22	sinku raton
NUdut Npap	—	—	2	—	—	—	2	vijf raton
NUdut Npap–nan	—	—	—	—	—	—	—	*vijf raton*nan*
NUdut Npap–pl	—	—	—	—	—	—	—	*vijf ratio-*en*
Ndut–dim–pl	1	2	—	2	2	—	7	muis-*je*-*s*
e Ndut–dim–nan	—	1	—	—	—	—	1	e muis-*je*-*nan*
Ndut–dim–pl–nan	—	—	—	—	1	—	1	muis-*je*-*s*-*nan*
Npap–dim (–pl)	—	—	—	—	—	—	—	*raton-*tje* (-*s*)
Other	7	2	3	4	9	8	33	

Note:	Code	Dutch	Papiamento	Gloss
	muis	*muis*	*raton*	'mouse'
	vark	*varken*	*porko*	'pig'
	poes	*poes*	*pushi*	'cat'
	koni	*konijn*	*konenchi*	'rabbit'
	marm	*marmot*	—	'hamster'
	beer	*beer*	*ber*	'bear'

N = noun, D = determiner, d = Dutch, p = Papiamento, dm = diminutive, pl = plural, sg = singular, nan = Papiamento plural.

(21)	a.	*e mucha*	'the child'
	b.	*e mucha-nan*	'the children'
	c.	*dos/tur mucha* (**nan*)	'two/all children'
(22)	a.	*de muis*	'the mous'
	b.	*de muiz-en*	'the mice'
	c.	*twee/alle muiz-en*	'two/all mice'
	d.	*de muis-je-s*	'the little mice'

In both languages, the definite determiner (*e* in Papiamento, *de* in Dutch) precedes the noun, and the plural is marked with a suffix (*-nan* in Papiamento, *-en* or *-s* in Dutch). However, as (21c) and (22c) show, the plural is marked in Dutch but not in Papiamento, when there is a quantifier present. Finally, (22d) illustrates the use in Dutch of a diminutive suffix, *-je*.

Globally, many more Dutch animal names are used than Papiamento ones: 187 (3.37% of all Dutch words) versus 98 (.79% of all Papiamento words). There is little difference between the three settings. Dutch animal nouns are more frequent in bare form than Papiamento ones (108 vs. 83), but Papiamento nouns are more frequent with the plural marker *-nan* (35 vs. 28). This suggests that the Dutch items are still only partially integrated into the Papiamento lexicon.

With Papiamento quantifiers and numerals, we never find *-nan,* even with Dutch nouns, nor do we find Dutch plurals (*-en* or *-s*). The rule in Papiamento of blocking nominal plural after a numeral or a quantifier is followed here. This is evidence for our earlier claim that the basic structures are Papiamento. With Dutch quantifiers (*alle* 'all' in Table 4), we always find Dutch plurals, and with Dutch numerals, we find Dutch plurals on Dutch nouns more often than not (23 vs. 13 times). Dutch numerals sometimes occur with Papiamento nouns (indicating that they are quite integrated with Papiamento), but they never trigger either *-nan* or Dutch plural endings on Papiamento words, which would be the Dutch pattern.

Dutch determiners or demonstratives never occur with Papiamento nouns, although Papiamento determiners occur quite often with Dutch nouns. This suggests again a basic pattern in which Dutch nouns are inserted into Papiamento structures, but not the reverse. Dutch plurals are sometimes (three times) combined with *-nan*. Often, Dutch unmarked nouns are used with a plural meaning in generic contexts, which is the Papiamento pattern. There are a few odd cases where a Dutch plural is combined with a Papiamento plural (*muiz-en-nan*) or a Dutch diminutive + plural with *-nan,* as in *muis-je-s-nan*. These are exceptional, however.

These results strikingly confirm Myers-Scotton's (1993a) analysis of insertional code-switching (although she claims it holds for all code-switching), where it is assumed that function words and particles must be drawn from the matrix language (in this case, Papiamento). All possibilities (marked with an asterisk in Table 4) are prohibited in her model, and indeed they are not found in our data. One pattern is exceptional from the perspective of Myers-Scotton's model: there are 13 cases of the pattern *vijf muis* 'five mouse,' in which all elements are Dutch but there is no plural marker, as in Papiamento. The sequence *vijf muis* should be an embedded

Table 5. *Language choice for animal names, differentiated for use by mothers and children*

	Mothers		Children		
Muis	29	67%	24	86%	
Raton	14	33%	4	14%	'mouse'
Rat	1	14%	2	100%	
Ratu	6	86%	–		'rat'
varken	14	48%	11	73%	
porko	15	52%	4	27%	'pig'
poes	16	44%	22	65%	
pushi	20	56%	12	35%	'cat'
konijn	9	24%	7	32%	
konenchi	28	82%	15	68%	'rabbit'
D total	69	45%	66	65%	
P total	83	55%	35	35%	
D overall		25%		35%	
P overall		65%		55%	

Note: Italic forms are Papiamento. Percentages for D/P overall reflect the overall use of Papiamento and Dutch and are taken from Vedder et al. (1996).

language island, retaining the rules of Dutch rather than those of Papiamento in it.

This points to something we noted before with respect to *kapot* 'broken' and *bijna* 'almost' in (12) and (13): namely, Dutch items tend to become adapted to the grammar of Papiamento and thus, in fact, become borrowings. We cannot say that this has indeed become the case for all animal names, but simply point to the ease by which this could happen in the context considered here. It is hard to argue that borrowing did in fact occur: first of all, we did not carry out a longitudinal study; second, Papiamento has an extensive loan phonology. Many words that are used frequently do not conform to the core phonological system of the language, and hence it is hard to base arguments on the criterion of phonological adaptation, which is so useful in many other language contact situations.

We did study the language choice for animal names by mothers and children. The results are given in Table 5. We looked at those animal names which figured prominently in the stories read to the children and therefore occurred reasonably frequently in the transcripts. 'Bear' was excluded: there is only a spelling difference between the Dutch and Papiamento versions, and there were many forms of the type, *Meneer Beer* 'Mister Bear', etc. 'Marmot' was excluded from this table because its orthographic form is identical in both languages, and our database was not phonetically transcribed. 'Rat' was not included in Table 4 because of its infrequent occurrence. Single citations are included.

The data in Table 5 strongly suggest that there is an intergenerational shift in language choice for animal names. Table 5 shows that the mothers used proportionately more Papiamento variants of an animal name consistently than did the children, who opted for Dutch variants. This shift from Papiamento to Dutch is stronger for animal names (D/P total) than the overall shift pattern demonstrated by Vedder et al. (1996); see "D/P overall" for comparison.

FUNCTIONS OF CODE-SWITCHING

In Vedder et al. (1996), we extensively discussed the global functional differentiation between Papiamento and Dutch in the parent–child interactions. In the present article, we made a few preliminary comments concerning the functions of specific code switches. There is a long tradition of research focusing on the functions of code-switching in interaction (see, especially, Gumperz, 1982). For our purpose, the work on bilingual classroom interaction is of relevance; many of the functions of code-switching between the mothers and children in the reading sessions resembled those of code-switching in classrooms to some extent. This subfield is summarized in Martin-Jones (1995) and yields some of the categories used here. We did not expect code-switching during parental dialogic book reading to occur as a negotiation of interpersonal relationships, as Myers-Scotton (1993b) proposed. As we see it, the characteristic of dialogic book reading is that parents want to explain things to children. Because of this drive to explain things, we deduced that parents would have a double aim in their conversation with the child: first, they would want the child to learn the new concept introduced, and second, they would want the child to understand what they are talking about when they are explaining underlying suppositions in the story. Thus, with respect to functions of code-switching, our research is more closely linked to the work of Gardner-Chloros (1990). Like her, we supposed that parent–child code-switching would be used to ensure the effectiveness of the communicative process in terms of a bilingual negotiation of meaning. This could take various forms, depending on the bilingual competence of both parent and child. The parent might say something in both languages, with the hope that the child would respond to at least one of the utterances. Alternatively, the parent might suppose that the child would know the concept better in the language not used at that moment. Finally, the parent might consider it more convenient for the child to learn the concept in one of the languages (often the socially dominant one).

Often we found referential switching to animals outside the Papiamento domain, for which the language does not even have a word:

(23) ta un *marmot*
'it is a guinea pig'

Sometimes we found citational switches, as in (24):

(24) MoCuVr: ki *cijfer* esei? [what figure is this?]
CuVr: *vijf* [five]

Many times, Dutch was used in corrective utterances:

(25) Akinan ta e nomber di e hende ku a skribi e buki.
Jackson, doe niet zo vervelend.
'About here is the name of the people who wrote the book.
Jackson, don't be a nuisance.'

(26) *Niet in je broek doen.* Paso mi ta klap bo.
'Don't pee in your pants. Watch out, I'll hit you.'

SUMMARY

This article examined code-switching between Papiamento and Dutch in bilingual parent–child reading sessions in Antillian migrant families in the Netherlands. Mothers were asked to read three picture books to their child: one in Dutch, one in Papiamento, and one without text. The code-switching in the data was studied from three perspectives: its relation with bilingual competence, its structural properties, and the implications for language change through lexical borrowing. Our data confirmed the results of earlier studies, which claimed that intimate code-switching within the clause is characteristic of fluent bilinguals. Structurally, the type of code-switching encountered was predominantly insertional and conformed to the constraints proposed for this type of switching. Code-switching was frequent, but it generally involved the insertion of Dutch nouns and numerals into Papiamento text. Given the fact that we often found single Dutch words inserted into the Papiamento of the mothers, it is conceivable that these words would be interpreted by the child as Papiamento and could become borrowings in the next generation. We conclude with some remarks about the functions of code-switching in our data: these include reference to new concepts, citation of school language, and corrective statements.

Even though bilingual book reading in other bilingual communities may turn out to have different properties, for us, an important result was the ease with which it was possible to apply concepts and analytical techniques to it from the sociolinguistic study of code choice and code-switching. Coding the elements in the corpus both for language and for grammatical category allowed us to do a fine-grained analysis of potential and actual switching sites in code-switching and, hence, a probabilistic interpretation of the material. While code-switching and language shift have so far been studied mostly in informal conversations, the type of semistructured conversations in this study allowed for greater comparability between speaker pairs. This made it possible to conduct lexical content analysis, linking code-switching to the functional distribution of cognitive weight.

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