

Fillers as Functional Categories: Evidence from German-English Bilingual Acquisition

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1. Introduction

During the acquisition period, some children go through a stage in which they produce monosyllabic segments that cannot be associated with any existing words. Phonetically, these so-called filler syllables [FILL] typically consist of vocalic segments, mainly [ə,e,a]: “rather than being associated with a specific phonetic feature, [they] are realized within a phonetic space, the low-central area” (Bottari, Cipriani & Chilosi 1993/94: 331). Fillers normally emerge during the child’s transition from the one- to the two-word stage, appearing before lexical elements of various types (see (1)), and tend to disappear with the emergence of free functional morphemes (see Peters (2001) for an overview).

- (1) a. Ge. [FILL] diese [FILL] Ente (‘FILL this FILL duck’) (Dora 2;7)
b. En. no [FILL] swim [FILL] water (Dora 2;8)

Across languages, there is variation in the occurrence of fillers. While fillers have been observed frequently in the speech of monolingual Romance-learning children (e.g. Bottari et al. 1993/94; Lleó 1997; Veneziano & Sinclair 2000), they seem to be less frequent in the speech of Germanic-learning children (Lleó 1997, 2001; Lleó & Demuth 1999; Pepinsky, Demuth & Roark 2001); the exact reasons for such variation are currently discussed (but see footnote 11).

A major debate in the study of fillers involves whether their motivation is primarily prosodic or primarily morpho-syntactic. Thus, some authors have argued that the earliest fillers that children produce are grammatically/semantically empty *placeholders* inserted for purely (phono)prosodic reasons (e.g. Dressler & Karpf 1995; Peters & Menn 1993; Veneziano & Sinclair 2000); in other words, under this view, fillers are motivated by rhythmic patterns in the input, which children are sensitive to. On the other hand, certain authors claim that all children’s fillers (including the earliest ones) have a grammatical function (e.g. Bottari et al. 1993/94; Connelly 1984; Demuth 1998; Lleó 1997, 2001; Pepinsky et al. 2001; Tremblay 2005), even though certain prosodic factors might be relevant for explaining their exact distribution (e.g. Demuth & McCullough, to appear; see also footnote 2). More specifically, although fillers are used to realize an underlying syntactic position, they are more likely to appear if their production results in either an unmarked prosodic structure or one that is frequent in the target language (similar to the production of functional categories more generally).

The present paper addresses the debate on the status of fillers by examining previously unanalyzed data from a bilingual child, Dora. Fillers have never been forefront in research on bilingual (L1) language acquisition, although, as we discuss here such investigation is in fact of particular interest.¹

* This project was supported by the Language Research Centre, University of Calgary, through a post-doc fellowship given to Tanja Kupisch, as well as by the GALANA 3 organizing committee, through a student travel fellowship given to Alyona Belikova. We would like to thank Heather Goad and Katherine Demuth for comments on earlier versions of this paper. Special thanks to Jacqui Clydesdale, John Archibald and especially to Dora and her family for supporting the data collection and to Athanasios Tsiamas for starting the project with us.

¹ To our knowledge, few case studies of filler use are based on data from bilingual children. In Pepinsky et al. (2001) and Peters (1977) the presence of two languages was merely accidental and not the primary object of study. Lleó (2003) observed filler use when studying proto-articles in Spanish-German bilinguals.

The primary focus of bilingual research, beginning in the late 1970s, has been whether bilingual acquisition starts off with a fused language system or with two separate systems. Beginning with the seminal work of Genesee (1989) and Meisel (1986, 1989), the *separate system hypothesis* has been well-supported and is now the standard viewpoint (see e.g. the volumes edited by Meisel (1990 and 1994), as well as the overview by De Houwer (1995)). Current research is concerned with the question of whether bilingual children, despite having two separate mental representations for their languages, are in any way *quantitatively* different from monolinguals to the extent that exposure to one language accelerates or delays the acquisition of particular phenomena in the other language (see Meisel (2007) for an overview of the more recent debate). In the present study, we will discuss such a quantitative difference, but one that does not result from language influence.

In this paper, we will propose that fillers can be viewed as a strategy that children employ when acquisition of language-specific morphology is particularly challenging. As this is arguably the case in bilingual acquisition, extensive rather than occasional filler use might be expected in certain bilingual acquisition scenarios as compared to the monolingual acquisition of these same languages; that is, such scenarios could result in quantitative differences in filler use between monolingual and bilingual children. The paper thus takes a first step in establishing a foundation for the study of fillers in bilingual acquisition, and in particular in the acquisition of two Germanic languages, as we believe it is this specific acquisition scenario where the different views on the status of fillers (grammatical vs. *purely* prosodic) make different predictions.

First, it is known that children go through a transitional variational stage where morphological knowledge is instable (e.g. Brown (1973); see also Yang (2002) for a discussion of variation in child language); language acquirers have to scan the input for cues as to the exact language-specific feature composition and morphology associated with each functional category. It is clear that the task of bilingual children in this respect is even more challenging as they have to acquire morphological feature specifications for two languages. If it is correct to assume that, consequently, simultaneously bilingual children go through a somewhat extended transitional stage, the view that fillers have a grammatical function might imply that bilingual children will show higher and delayed rates of filler production (in cases where the morphology and exact feature composition associated with specific functional categories differ in the two languages) as compared to monolinguals. We would therefore expect that a bilingual German-English child might produce an increased amount of fillers, even though these are typically quite limited in the monolingual acquisition of both German and English.

On the other hand, the view that fillers are inserted for *purely* (phono)prosodic/rhythmic reasons together with the fact that fillers *mainly* occur in acquisition of Romance language suggests that we should not expect much higher rates of filler production in children acquiring two Germanic languages than in monolingual children acquiring a Germanic language.² Thus, there is no reason to expect a bilingual German-English child to produce any noticeable amount of fillers.

The current paper will present data from a bilingual German-English child, Dora, who does produce a large amount of fillers in both of her languages. Given the predictions just outlined, this already suggests a morpho-syntactic (and not *purely* phono-prosodic/rhythmic) motivation. We will provide a number of further arguments to support that these fillers stand for functional categories (FCs) rather than being grammatically empty prosodic placeholders. Though fillers can potentially stand for any FC, our analysis will focus on copula and subject contexts.

The paper is structured as follows. Section 2 presents our data and methods. Section 3 introduces the type of fillers found in the corpus, rules out their explanation in terms of the *purely* (phono)prosodic view and as hesitation markers, and provides first arguments for their analysis as FCs. The remainder of the paper provides further support for the FC status of Dora's fillers; in particular, Sections 4 and 5 examine the distribution of copulas and subject pronouns, relating them to the appearance of fillers. The paper concludes with a brief summary and discussion in Section 6.

² We emphasize that we do *not* intend to argue that the appearance of fillers is completely unrelated to prosody, as previous research shows that functional categories are likely to surface in footed contexts (Demuth & Collough, to appear; Gerken 1996). Rather, we argue against the view of fillers as grammatically empty prosodic placeholders where their primary (and indeed only) motivation is understood to be rhythmic patterns found in the input.

2. Data

Dora is the second child of a German/English (Canadian) marriage. Each parent uses his/her native language with Dora, while speaking English between them. Dora's father does not speak German. Her older brother is a fairly balanced bilingual and, during the investigation period, mostly used German with Dora. The family tries to support the non-community language by hiring a German *au pair* each year; Dora's German grandmother comes to visit about twice a year. Dora's linguistic development is quite evenly balanced between her two languages. Her MLU (mean length of utterance) development is parallel in both languages, as shown in Figure 1.³ She produces few mixed language utterances, and she is cautious to use her interlocutor's language, be it German or English.

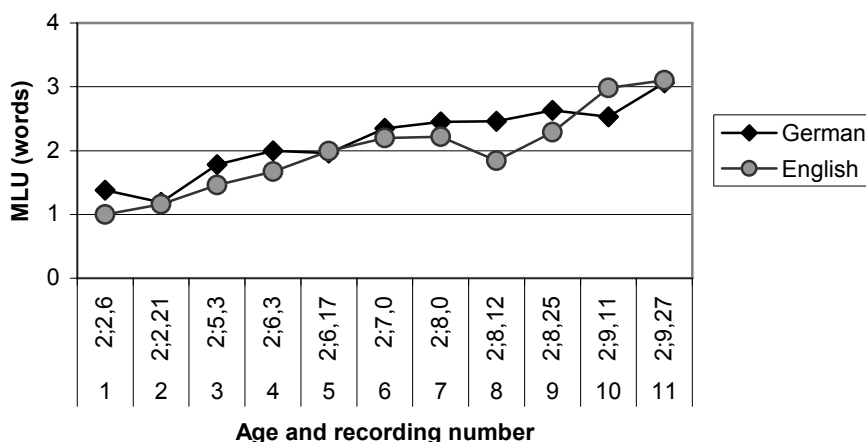


Figure 1: Dora's MLU and Age

The corpus includes 12 recordings in total, though the last recording took place one year after the preceding one (i.e. one year after Recording 11 (Fig. 1)). Recordings were made every two weeks on average and each recording session lasted one hour (30 minutes in each language). The recordings were conducted by native speakers at Dora's home in Calgary, Alberta, Canada.

3. Characteristics of filler syllables in the corpus

A preliminary phonetic analysis of some of Dora's fillers with Praat (Boersma & Weenink 2006) indicates that they represent a high or mid front vowel.⁴ In this respect they differ from previous descriptions which characterize fillers as generally low-central (Bottari et al. 1993/94).⁵

³ Dora's German and English MLU counts are based on monolingual (i.e. non-mixed) utterances in the German and English recording sessions, respectively. Counting MLU proved challenging for two reasons. First, as typically reported for children who use fillers (e.g. Peters 1977), Dora's pronunciation is rather unclear so that some utterances (or parts of them) had to be excluded. Second, German and English are closely related languages sharing many phonetically similar cognates (e.g. *bear/Bär*, *mouse/Maus*, *house/Haus*), which precluded their classification as German or English. Such words were defined as "neutral" and classified according to their language context: as English in otherwise English utterances, and as German in otherwise German ones. The language of utterances containing only language-neutral words was assumed to be that of the interlocutor.

⁴ Since the original goal of data collection was not filler-oriented, recording technique was not designed for detailed phonetic description; as a result, the exact phonetic properties of many individual fillers are, in fact, difficult to determine.

⁵ The unusually high/mid height of Dora's fillers could in principle be explained in terms of approximated articulation; note that we only looked at fillers that presumably stand for her copulas and subject pronouns, most of which contain high/mid vowels in the two languages of the child. Further research needs to undertake a more fine-grained phonetic analysis addressing the question of whether fillers in specific contexts can be viewed as approximations of the target morphemes (but see footnote 4). To pursue this question, two comparisons are planned for future research: (i) the phonetic properties of earlier vs. later fillers (recordings 5-6 vs. 10-11), and (ii)

Table 1 provides an overview of total filler use and total number of utterances in each recording. The table shows that fillers become frequent from the fifth recording (age 2;6), which is rather late (age-wise, if compared to the study by Bottari et al. (1993/94)). (Figures 6 and 7 below provide this information in terms of percentages.)

Recording	age	German		English	
		UTT	FILL	UTT	FILL
1	2;2.6	71	3	17	0
2	2;2.21	118	1	19	0
3	2;5.3	90	0	43	0
4	2;6.3	112	2	93	0
5	2;6.17	134	20	132	12
6	2;7.0	172	68	119	41
7	2;8.0	204	107	153	71
8	2;8.12	232	120	166	51
9	2;8.25	167	82	162	60
10	2;9.11	30	8	166	88
11	2;9.27	185	61	219	111
15	3;11.5	248	0	166	0

Table 1: Fillers and total number of utterances

As outlined in Section 1, the presence of a large amount of fillers in a bilingual German-English child's production suggests a morpho-syntactic rather than purely phono-prosodic/rhythmic motivation. In addition, Dora's fillers emerge rather late, beginning at MLU 2, while fillers whose motivation is claimed to be *purely* prosodic are instead reported for the transition between the one-word and the two-word stage (e.g. Veneziano & Sinclair 2000). Furthermore, and more specifically, it is reasonable to assume that a phono-prosodic filler would manifest itself, at minimum, to produce the most typical foot structure in a target language or to manifest the universal bias/preference for trochaic feet (a SW metrical unit, i.e. a strong syllable followed by a weak syllable).⁶ It is therefore peculiar that Dora's fillers never append to monosyllabic nouns, such as *dog*, to make them result in prototypical bi-syllabic trochees; instances like *dog FILL* are never found in Dora's speech.⁷ Moreover, Dora's fillers also are observed to append to otherwise perfect trochees: e.g. *FILL pages* [W(SW)], *FILL stickers* [W(SW)], *FILL princess* [=princess] [W(SW)].

Finally, a strong indication that Dora's fillers cannot be explained in terms of prosody alone is that they rarely precede function words; only 6-7% of all Dora's fillers do so. A *purely* phono-prosodic account cannot explain such selectivity in distribution. However, if we assume that Dora's fillers stand for FCs, the observed selectivity is actually straightforward: fillers that stand for FCs are expected to be restricted to contexts where FCs are likely to occur, i.e. to appear in syntactically-constrained positions (for similar observations and argumentation see Bottari et al. (1993/94), Pepinsky et al. (2001), Tremblay (2005)). (The finding that 6-7% of Dora's fillers do precede function words is not surprising given that

the phonetic properties of fillers vs. the target morphemes they supposedly represent. Another relevant question is whether the fillers are phonetically identical in both languages (a preliminary analysis suggests that they are).

⁶ Both German and English are trochaic languages (e.g. Hayes (1995) and references therein). The universal bias/preference for the trochaic foot was proposed for phonological development by Allen & Hawkins (1978, 1980) and for language systems by Hayes (1995), among others.

⁷ Note that monosyllabic words are normally viewed as being vacuously trochaic in English. However, lacking a second syllable to form a binary unit, they are not ideal (but cf. the Moraic theory; e.g. Hayes 1989); thus, we might nevertheless expect a child like Dora to append a filler in these cases if the motivation of a filler were to produce ideal trochees.

FCs occasionally appear consecutively in the adult language.). Taken together, we believe that these considerations are strong enough to reject a *purely* phono-prosodic motivation for Dora’s filler use.

One common sense objection to any structure-licensed (either phono-prosodic or morpho-syntactic) analysis of fillers is that they could be viewed as mere hesitation markers. Several observations serve to exclude this interpretation of Dora’s fillers. First, unlike what is typical for natural hesitation markers, Dora does not slow down when producing a filler. Second, her filler production does not accompany puzzled looks or gestures implying uncertainty or difficulty in retrieving lexical information. Third, hesitation markers are often produced in a sequence, unlike Dora’s fillers. Only 1.5% (5/334) of her German fillers occur in a sequence and only 0.7% (2/304) of her English fillers do. Moreover, other speech markers which Dora produces can be unmistakably identified as hesitation markers (and these are clearly accompanied by slowing down and puzzled looks, and are at times produced in sequences); these hesitation markers have a characteristic pitch contour and are noticeably longer than her fillers, as illustrated by the difference between Figure 2 (filler syllable) and Figure 3 (hesitation marker). In short, we believe it is not reasonable to analyze Dora’s fillers as hesitation markers (see Pepinsky et al. (2001) for a similar point).

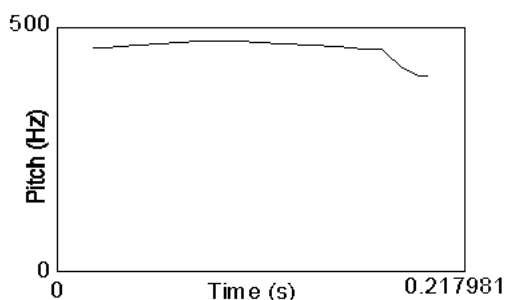


Figure 2: Filler syllable

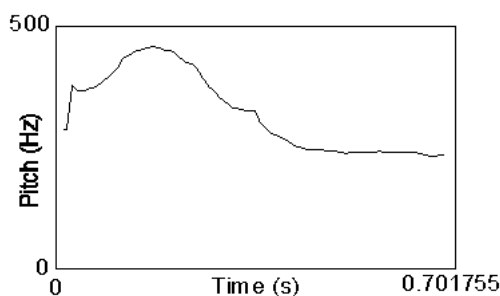


Figure 3: Hesitation marker

In the remainder of this paper we will continue to argue that Dora’s fillers stand for FCs. In particular, we will focus on instances of fillers that are found in obligatory copula and subject contexts, and we will provide arguments to support the analysis of such fillers as copulas and subject pronouns, respectively. For example, if fillers stand for FCs, we expect to find a relationship (more specifically, at least a rough negative correlation) between the rate of filler use and that of the FCs they presumably replace. We will show that this prediction is borne out for both copulas (Section 4) and subject pronouns (Section 5).

4. Fillers and copulas

In this section we will motivate the view that fillers can stand for copulas by looking at fillers and copulas in obligatory copula contexts.⁸ Only utterances with two arguments (Adv_ NP, NP_ NP, NP_ Adj, Dem_ NP, etc.) were considered to be obligatory copula contexts.⁹ In these contexts, copulas (2), fillers (3) and omissions (4) are found.

⁸ The 3rd person singular present tense copula *is/is(t)* represents the most frequently occurring copula form. We classified it as a “neutral word” (see footnote 3). It is largely homophonous in the two languages. Unlike German, English does not have word-final devoicing, but since phonetic and phonological development is still ongoing between age 2 and 3, it could not be used as a criterion for distinguishing between German and English copulas.

⁹ Dora’s copulas also occur in contexts with presentational utterances lacking the subject (i) (unreported previously, to our knowledge). We did not consider such copula contexts obligatory, which keeps our analysis as conservative as possible. If the copula is absent and/or the filler is present in such contexts, the utterance’s interpretation (as copula *omission* or as copula *realization*, respectively) cannot be conclusive. For example, *FILL happy* could be interpreted as a case of a filler standing for a subject pronoun along with copula omission, but also as a case of subject drop and a copula realized as a filler. Likewise, an utterance which contains just *happy* could be interpreted as copula omission (and a subject drop) or as an ellipsis licit even in adult speech.

- (2) a. Ge. rot is das ('red is that')
 b. En. it is funny. (Dora 2;8)
- (3) a. Ge. das [FILL] ostereier ('that FILL easter eggs')
 b. En. dat [=that] FILL funny. (Dora 2;8)
- (4) a. Ge. rot _ die ('red that')
 b. En. that too _ purple (Dora 2;8)

Figures 4 and 5 illustrate the rate of copula omission as a percentage of the total number of obligatory copula contexts. Each figure shows two different curves: one representing the omission rate with fillers in copula contexts *counted as copulas* (grey), and the other with fillers in copula contexts *counted as copula omissions* (black). Clearly, copula omissions decrease between recordings 2 and 4 in both languages. When fillers are not counted as copula realizations, the rate of copula omission stagnates after recording 4 and then shows an overall *increase* (61% to 66% in German and 18% to 48% in English) between Recordings 4 and 11, which results in an unusual acquisition curve. If, by contrast, fillers are viewed as copula realizations, the data yields a more natural curve, with rate of omission decreasing steadily over time.

It is important to highlight that in spite of the fact that Dora's language acquisition appears to be somewhat delayed between 2;2 and 2;10, we should nevertheless expect natural developmental curves; at 3;11, her age at the time of the 12th and final recording, her morphology and syntax have "caught up". In German (MLU 3.2), the copula is used in all of the 26 obligatory copula contexts. As for subject use – the phenomenon examined in the following section – there are 78 lexical verbs, of which 77 are accompanied by a subject. The only exception is a case of adult-like topic-drop. In English (MLU 3.1), forms of the copula *be* are realized in 20 out of 22 (91%) cases and all 71 contexts for obligatory subject use contain a subject. There are no fillers in either language. In other words, it is not plausible to conclude that Dora exhibited abnormal (SLI-like) developmental curves between 2;2 and 2;10.

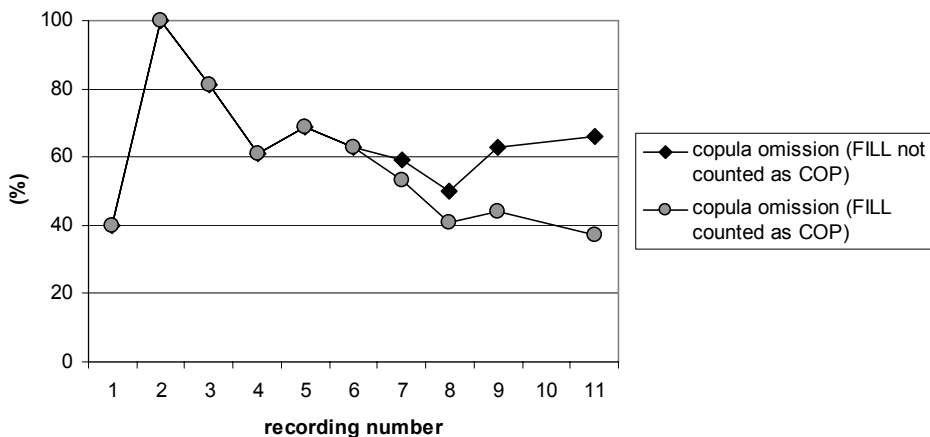


Figure 4: German, rate of copula omission in obligatory contexts

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- (i) Ge. is lila ('is purple') En. is happy
 is Raupe ('is caterpillar') is like this
 is Spinne ('is spider') is stuck (Dora 2;6/2;7)

Dora's copulas first appear at age 2;2, "normal" according to the findings of Brown (1973). However, Dora starts to speak late; at 2;2 she still mostly uses one-word utterances. Relative to the appearance of other grammatical morphemes (e.g. *-ing*, plural, past irregular, as listed in Brown (1973): 274), her copulas are acquired rather early. We suspect that this could be related to the aforementioned homophony of the copula *is/is(t)* in English and German. Presumably, this makes the copula easier to segment off and speeds up its acquisition (this idea receives support from the fact that Dora uses possessive *-s* rather early).

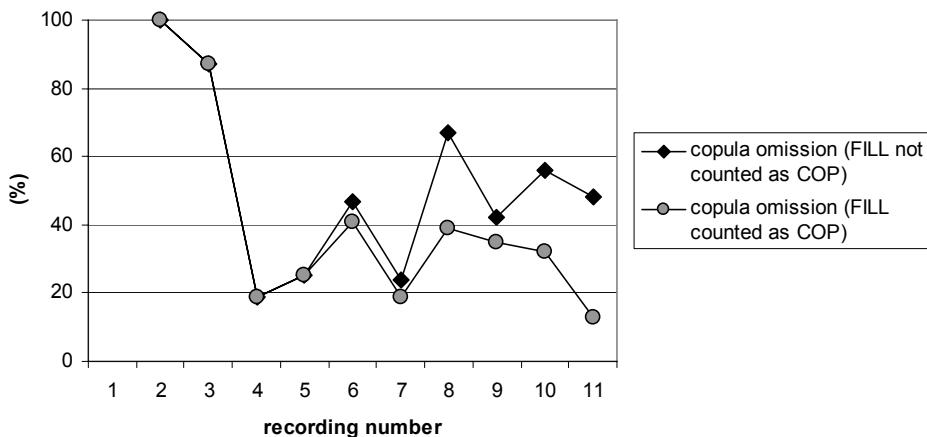


Figure 5: English, rate of copula omission in obligatory contexts

Figures 6 and 7 show the rate of fillers (black) and copulas (grey) relative to the total number of words. Once again, an unexpected decrease in copula use can be accounted for provided that some of the fillers stand for copulas. Even if not all fillers represent copulas, the increase in the rate of fillers, while the rate of copulas decreases, suggests that these two phenomena are related.

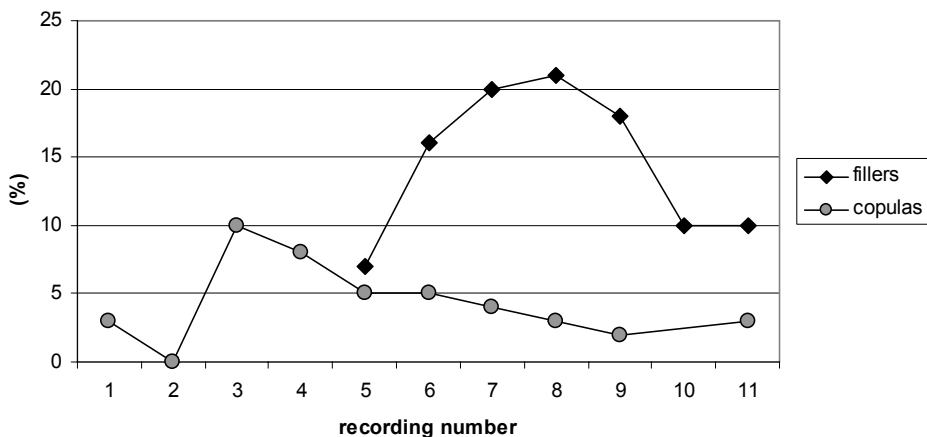


Figure 6: German, fillers and copulas as a percentage of total words used

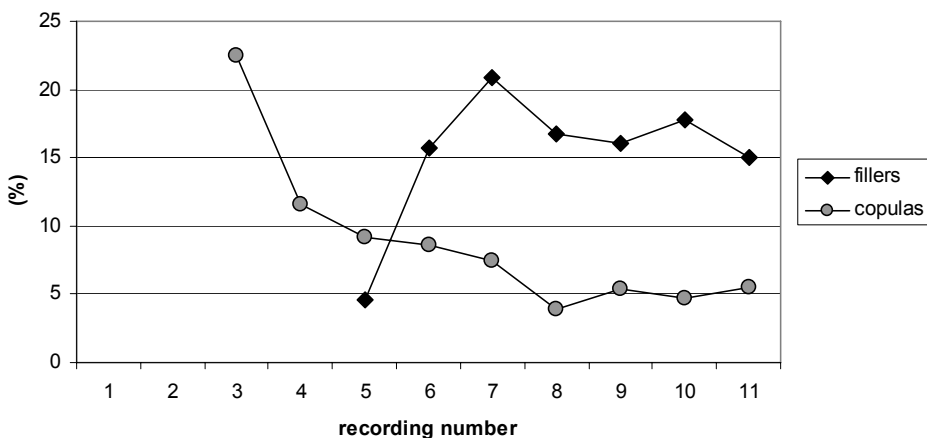


Figure 7: English, fillers and copulas as a percentage of total words used

5. Fillers and subject pronouns

In this section we will motivate the view that fillers can stand for subject pronouns by examining fillers and subject pronouns found in obligatory subject contexts. Although all utterances containing a verb could be considered obligatory contexts for subject use (see examples in (5)¹⁰), a closer look reveals that only Dora's lexical verbs are preceded by fillers and that copula contexts are consequently irrelevant here. Most copulas are not preceded by fillers but by lexical subjects and demonstratives (En. *that*, Ge. *das*); only 2 out of 117 German copulas (1.7%) and 2 out of 177 English copulas (1.1%) are preceded by fillers.

- (5) a. Ge. [FILL] s(ch)ä(f)t. ('FILL sleep')
 b. Ge. [FILL] weiss. ('FILL know')
 c. En. [FILL] scares me.
 d. En. [FILL] sleep here. (Dora 2;8)

Figures 8 and 9 show the rates of subject drop in obligatory contexts in German and English, respectively. Even more clearly than with copulas, Dora's subject use in obligatory contexts shows an unlikely decrease (i.e. an increase in subject drop) if fillers are counted as *dropped subjects* (black). Again, the developmental curve is rendered more natural when fillers in obligatory subject positions are counted as *subject realizations* (grey). The resulting curve shows a child who omits less subjects over time.

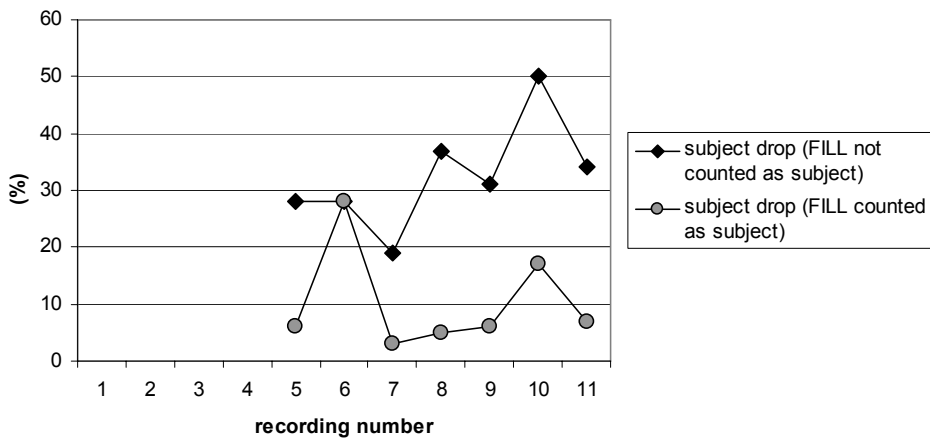


Figure 8: German, rate of subject drop in obligatory contexts

¹⁰ We have included root infinitive contexts, though we acknowledge that it is a matter of debate whether such non-target contexts should be considered “obligatory” for subject realization. For a summary, see Guasti (2002): Chapter 4.

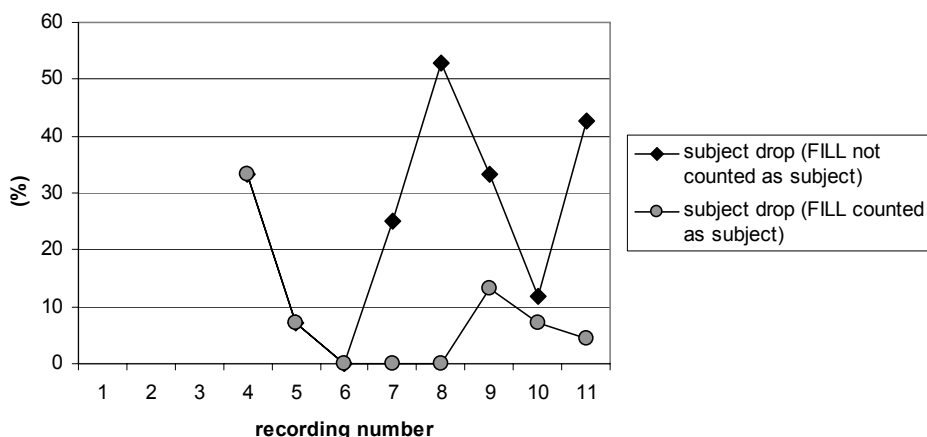


Figure 9: English, rate of subject drop in obligatory contexts

A comparison of subject types suggests that fillers in subject position replace subject pronouns rather than lexical subjects. Figure 10 shows that, in German, the proportion of fillers increases from 2;7 to 2;8 while the proportion of subject pronouns decreases by approximately the same amount. In contrast, the proportion of lexical subjects remains largely unaffected over this period, indicating that lexical subjects are probably not being replaced by fillers as Dora's grammar develops.

For English, Figure 11 shows that fillers start to emerge in subject positions at age 2;7. If fillers stand for lexical subjects, we should expect a *decrease* in the proportion of lexical subjects from 2;6 to 2;7; however, what we observe instead is a slight *increase* in the proportion of lexical subjects (and a slight *decrease* in the proportion of personal pronouns). Next, while the comparison of proportions in 2;7 vs. 2;8 is not uncontroversial (i.e. the increase in the proportion of fillers could be interpreted as corresponding to the decrease in the proportions of both lexical and pronominal subjects), the rates observed in 2;8 vs. 2;9 again support the idea that fillers stand for subject pronouns rather than for lexical subjects: the proportion of subject fillers decreases from 2;8 to 2;9, while the proportion of subject pronouns increases and the rate of lexical subjects remains fairly stable.

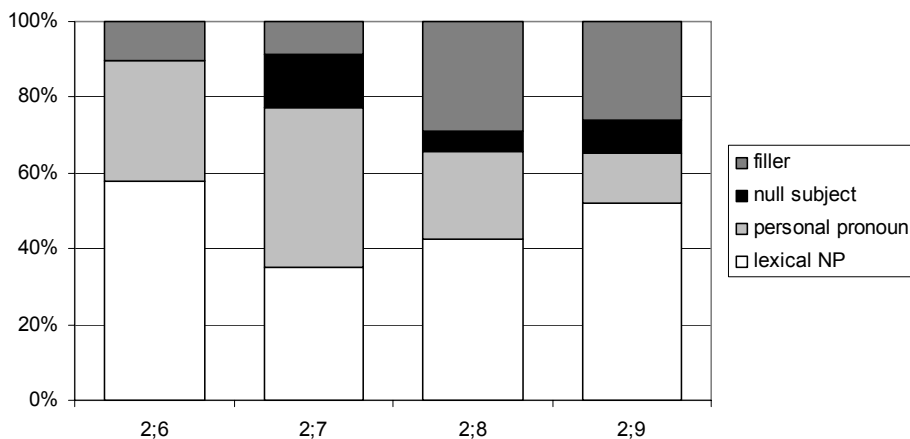


Figure 10: German, proportion of subject type

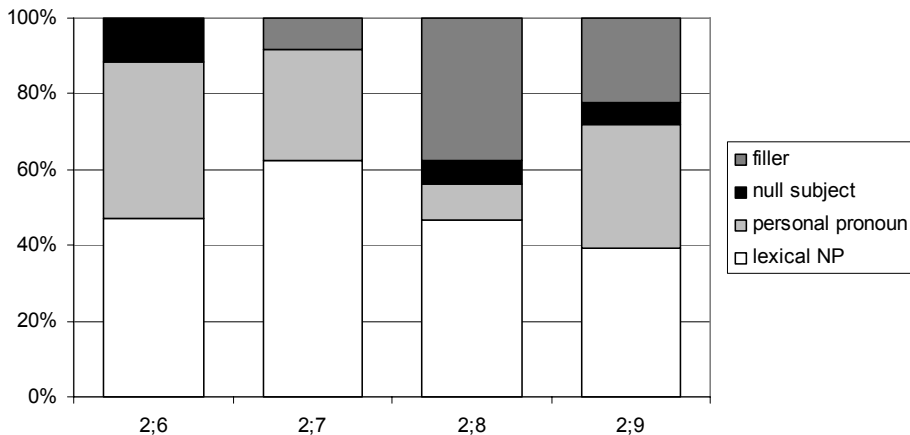


Figure 11: English, proportion of subject type

6. Conclusion and discussion

The hypothesis investigated here is that fillers are a resource that L1 acquirers can use as a substitute for FCs when the acquisition of language-specific functional material is particularly challenging for the child (as also argued by Bottari et al. (1993/94)). To examine this hypothesis further, it is necessary to seek evidence from acquisition scenarios which demand extra efforts. Dora's simultaneous acquisition of German and English is such a case. This is because the burden of morphological acquisition is considerably greater for bilinguals: the task is to acquire language-specific functional material as well as the language-specific feature composition associated with each FC, for two languages at a time. The proposal formulated above (i.e. that fillers represent a FC placeholder strategy to bridge temporary problems with morphology) predicts that, though monolingual acquirers of Germanic do not typically use fillers, *bilingual acquirers of Germanic may resort to such a strategy in light of their doubly-difficult task*.¹¹ Dora's corpus bears out this prediction, as we find extensive use of fillers in both of her languages in FC positions, in particular in place of copulas and subject pronouns. After a brief overview of the entire corpus in general (Section 2) and Dora's fillers in particular (Section 3), we first exclude alternative explanations of Dora's fillers: we show that they can be analyzed as neither grammatically empty prosodic placeholders nor in terms of mere hesitation markers (Section 3). We continue by specifically examining fillers in obligatory copula and subject (pronoun) positions (Sections 4 and 5,

¹¹ As is, our hypothesis implies that the L1 acquisition of morphology in Romance languages posits more of a challenge than Germanic languages (since monolingual Romance-learning children produce more fillers than monolingual Germanic-learning children). While this sounds like an unwelcome prediction, the following explanation helps to reconcile our proposal with cross-linguistic observations.

Most comprehensive accounts as to why fillers are found in the L1 acquisition of Romance languages have to do (sometimes implicitly) with the following assumption (we are drawing mainly on Lleó & Demuth (1999) and Pepinsky et al. (2001), and references therein, for the purpose of this footnote). Unfooted syllables are considerably more frequent in Romance languages than Germanic languages, which forces acquirers of Romance languages to become aware of higher-level prosodic structures (e.g. phonological words) earlier than acquirers of Germanic languages. Because the prosodic licensing of FCs often requires knowledge of higher-level prosodic structures, this early prosodic awareness enables acquirers of Romance languages to start producing FCs earlier, in the form of proto-morphemes (fillers). That is, awareness of prosody and, perhaps, abstract syntax may be preceding the acquisition of specific morphological knowledge in acquirers of languages rich in unfooted syllables. Similarly-aged acquirers of Germanic, which provides less evidence for higher-level prosodic structure, might instead omit FCs. With time, Germanic acquirers will amass the prosodic evidence they need to start incorporating FCs but would be less likely to require fillers since their morphological knowledge has had time to advance. That is, a view of fillers as place-holders to bridge temporary difficulties with morphology is consistent with observed cross-linguistic variation. It does not imply that morphology is acquired later in Romance. On the contrary, it implies that Romance-learning children try to deal with morphology at earlier ages because they are prosodically ready to do so.

respectively) for further confirmation of their status as FCs. Our analysis yields the following findings: (i) a rough negative correlation between the rates of fillers and the FCs they presumably replace; and (ii) more natural developmental curves if fillers in positions of missing FCs are viewed as FC realization rather than FC omission. In agreement with certain previous research (Lleó 2001, Pepinsky et al. 2001, Tremblay 2005, among others), we conclude that the fillers we observe in Dora's speech represent FCs, and not grammatically empty prosodic placeholders.

One immediate question for further research is what it actually means to “replace” or “stand for” FCs (Belikova & Kupisch 2008; Tremblay 2005). Although there may be different ways to answer this question, we believe that potential answers could fall into two categories (cf. Tremblay 2005). On the one hand, “fillers as FCs” might be taken to mean that the challenge L1 acquirers face is purely morphological and does not extend to any specific deficits in abstract syntax; in other words, fillers are default surface manifestations of FCs corresponding to the same underlying representations postulated for the target FCs they substitute for. On the other hand, “fillers as FCs” might be taken to mean that fillers also have representational implications, i.e. the functional projection dominating the filler is in some sense impoverished or *underspecified* (cf. Eisenbeiss 2000 who summarizes different views of underspecification in L1 acquisition research). Given these two major directions, an initial goal for further research is to determine the exact predictions of each account with respect to the present data.¹²

Finally, we return to a point from the Introduction, namely, that in spite of the general recognition that bilinguals have separate language systems for each of their languages and that development in each of the two languages is not fundamentally different in bilinguals and monolinguals, current research on bilingual (L1) language acquisition nevertheless remains concerned with *quantitative* differences in bilingual and monolingual acquisition. For example, it has been argued that bilingual children “pool [their] resources in a constructive way” (Gawlitzeck-Maiwaldt & Tracy 1996: 908) when challenged by specific acquisition tasks. More specifically, certain syntactic positions may be filled at an earlier age than what is normally observed in monolinguals because bilinguals may “borrow” lexical and functional material from their other language to bridge transitional gaps (Bernardini & Schlyter 2004; Gawlitzeck-Maiwaldt & Tracy 1996). Unlike borrowing, fillers do not involve transfer from one language to the other, but the phenomenon bears similarity to that of borrowing in that it helps bridging transitional phases in which language specific morphology material has not been fully acquired, thereby yielding quantitative differences between bilinguals and monolinguals.

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¹² For example, recall that we have argued that some of Dora's fillers stand for subject pronouns. If the substitution corresponds to representational deficit, such as absence of Case as a result of a deficit in the IP projection, one might expect to find filler subjects with root infinitives more often than with finite verbs.

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Proceedings of the 3rd Conference on Generative Approaches to Language Acquisition North America (GALANA 2008)

edited by Jean Crawford,
Koichi Otaki, and Masahiko Takahashi

Cascadilla Proceedings Project Somerville, MA 2009

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Proceedings of the 3rd Conference on Generative Approaches
to Language Acquisition North America (GALANA 2008)
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This paper can be cited as:

Belikova, Alyona, Tanja Kupisch, Öner Özçelik, and Emily Sadlier-Brown. 2009. Fillers as Functional Categories: Evidence from German-English Bilingual Acquisition. In *Proceedings of the 3rd Conference on Generative Approaches to Language Acquisition North America (GALANA 2008)*, ed. Jean Crawford, Koichi Otaki, and Masahiko Takahashi, 1-12. Somerville, MA: Cascadilla Proceedings Project. www.lingref.com, document #2301.