

The role of illocutionary operators in the emerging grammars of bilingual children

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Abstract

In this paper, we bring together recent discussions about the role of function words in emerging monolingual grammars with the discussion about role of these words in mixed utterances in emerging bilingual grammars.

Recently several linguists have addressed the question of determining the organizing principles of early syntax in developing grammars of monolingual children. Van Kampen (this volume), Tracy (2002), among others, note that in early two-word utterances certain “function” words occur very frequently and play a special role: they appear as illocutionary operators and seem to have a bootstrapping function with respect to the development of syntactic structure. In this article, we consider spontaneous production data from three bilingual Dutch/French children and seek to answer the question whether the role of “function” words is the same in these bilingual developing grammars as in monolingual grammars. We show that this indeed appears to be the case. We then examine the claim by Deuchar and Quay (2000) that “function words” are mixed more readily than other words. We argue that our data do not present convincing arguments in favor of such a hypothesis.

Key words

bilingualism

cross-linguistic influence

emergent syntax

function words

illocutionary operators

1 Introduction

In the recent debate about cross-linguistic influence in the early language development of young bilingual children, several authors (Deuchar, 1999; Deuchar & Quay, 2000; Doepke, 2000) find a considerable amount of language mixing in the one-word as well as the two-word stage, as in (1) and (2).

- (1) *más paper* ('more paper')
- (2) *more pasa* ('more raisin')

These mixes are difficult to explain in terms of performance problems or lexical gaps. Meisel (1994), Deuchar (1999) and Deuchar and Quay (2000) suggest that cross-linguistically there is a group of words that plays a special role in these mixed utterances. They are often referred to as “function words” although this term is used in rather different ways by different authors. Meisel (1994, pp.427–428) suggests that these

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special words would be more loosely related to the language context than other words, because they:

express pragmatic functions, such as deictic reference, assertion and negation, completion of action and contradiction, which, for the child, are apparently not tied to the domain of one of the two languages [...].

These characteristics would make them easier to use in the non-matrix language, giving birth to mixed utterances such as (1) and (2). This kind of mixing disappears after roughly 2½–3 years of age.

In their discussion of this type of mixed utterances, Cantone and Mueller (this volume), argue that no differences between the syntactic organization of monolingual and mixed utterances are to be expected. In other words, the so-called “function words” should logically play the same role in monolingual and bilingual language acquisition. This implies that there is no a priori reason why function words would appear more often in mixed utterances than other words. At the same time, Cantone and Mueller argue that the whole array of formal features will not yet have emerged in child grammar and consequently this early grammar is less constrained, a fact which could be important in the explanation of mixed utterances.

In order to find out more about the question if and why the “special words expressing pragmatic functions,” as Meisel calls them, are mixed more easily than other words in the early stages of bilingual first language acquisition, we will first consider the role of such elements in the emerging grammars of monolingual children. We will then compare this role to the one they are claimed to play in bilingual acquisition and in mixing, as reported in the literature. Next, we will present early production data of three bilingual French-Dutch children and study the role of these special elements in our data. In doing so, we will try to answer two questions: (1) is the role of these elements in bilingual developing grammars the same as in monolingual acquisition, and (2) are these words mixed more readily than others, as claimed by Deuchar and Quay, among others, and if so, is this to be explained by their role in emerging grammars?

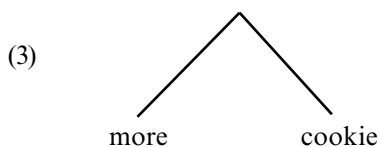
2 Emerging syntax in monolingual language acquisition

Recently, several linguists have addressed the question of determining the syntax of very early utterances in child language, taking up and elaborating some aspects of (older) ideas from Braine’s pivot-grammar (Braine, 1963) and Radford’s small clauses (Radford, 1990), see for example, Roeper (1996), Powers (2001), Dimroth, Gretsche, Jordans, Perdue, & Starren (2003), van Kampen (this volume). The question we are interested in here, is to find out what kinds of words are used in these very early stages of language acquisition, and equally what role these words play in the emerging syntax of the children’s grammars. Some authors (i.e., Tracy, 2002) have claimed that these words display “bootstrap” effects.

Following ideas from the Minimalist program, we assume that all lexical items are analyzed as collections of (formal) features in adult grammar. One of the tasks facing the child acquiring a language is to select from the universal set of features those

which occur in his/her particular language. It is plausible to assume that such feature acquisition takes place incrementally. Therefore, we expect a stage of development during which only some of the features have been acquired. Such a stage is sometimes referred to as one of “underspecification.” Powers (2001) claims that children in the one-word stage start off with lexical elements that do not yet have formal features. Similarly, Van Kampen (this volume) argues that early Dutch data show that content words start as category neutral signs X, which are used as a *name* or a *characterization*. Non-content words, on the other hand, often have the function of *illocutionary operators* (see below). Several other authors have argued that interpretable features, which require external checking at the interface, are acquired before uninterpretable features, which need checking in the computational component. It is assumed that the recognition and use of interpretable features such as “illocutionary force,” “modality,” “event,” and “reference” will eventually lead to the acquisition of functional categories, which have the corresponding un-interpretable features. Some authors also argue that the order in which interpretable features are acquired corresponds with general cognitive development. Say (2001), for example, states that “if at a certain stage of development the ‘system of thought’ of the child does not make a given distinction, then the language of the child should not include this feature.” Licerias et al. (this volume) discuss a possible role of uninterpretable features with respect to the direction of mixing in the utterances of bilingual children. We will not enter into this discussion in any detail.

Here, we will focus on the role of function and content words in the two-word stage, when we expect the first “syntactic” phenomena to appear. Roeper (1996) and Powers (2001), working in the framework of Chomsky’s Minimalist program, argue that the first two-word utterances are created by the operation *Merge*, which adjoins two lexical elements. The child’s initial tree is a singular binary branching structure consisting of what could be considered as a head + complement or a specifier + head, as in (3).



Tracy and Gawlitzek-Maiwald (this volume) also suggest that the child uses strictly binary templates in parsing his/her input, first identifying heads and then fixing their position. Before they do so, monolingual children may entertain for some time multiple, co-existing binary structures. According to these authors, the two elements forming the tree may look like adult words, but they are different because they lack formal features and do not yet have a categorical label. For this reason, children may make novel uses of adult lexical items: for example, elements like ‘more’ or ‘yes’ (which have been called “pseudo-functional”) appear to be used for their semantic or illocutionary import and are combined with all kinds of words¹. Here are some examples from early English child language:

¹ Powers (1998) suggests that in this stage child grammar—contrary to adult grammar—only has s-selection, specifying the semantic content of the complement and not c-selection which specifies the (syntactic) category of the complement.

- (4) *more cookie*
more high
more sing
no pocket
no sing
no dirty

According to Roeper and Powers, by merging two elements, the child creates a *Unique Maximal Projection* (UMP) which does not (yet) have an “adult-grammar-like” label.

Several other authors have equally stressed the role of “pseudo-functional” words, such as ‘more’ and ‘no’ in the development of early grammar in monolingual children: these are frequent elements which the children know well and which they equally use a lot in their one-word utterances. Van Kampen argues that in the early two-word utterances, these functional words first appear as illocution operators added to a content sign. The resulting word combinations are completely situation oriented. Only later these utterances are interpreted in a syntactic way. Thus, the Dutch child studied by van Kampen constructs utterances like

- (5) *dat X* (‘that X’)
hier X (‘here X’)
kan X (‘can X’)
ook X (‘also X’)

where X is a content word. The “function words” can have different illocutionary roles, like deictic (‘dat X’), modal (‘kan X’), or turn taking (‘ook X’). As van Kampen shows, these illocution operators each have a much higher frequency than any of the content labels found in the child’s utterances (except of course for some frequent proper names like the child’s own name and the words for mother and father). Van Kampen shows that there are mainly two types of word combinations in these early utterances. Apart from the frequent combinations of an illocutionary operator with an element X, Van Kampen finds the combination of a content word X with a characterizing word Y. In that case, X will generally be a noun-like word, while Y can correspond to different adult categories like another noun, an adjective, more rarely a verb-like element, as in:

- (6) *daddy bed*
milk hot
baby sleep

Van Kampen suggests that part of the acquisition pattern is item-based: children do not learn a syntactic category, they just learn one by one the elements that can be placed in a syntactic/pragmatic slot. Time adverbials like ‘nu/nou’ and ‘dan’ appear at first as markers of turn taking in the conversation and only later they are used for deictic/discourse marking. A comparable account is given by van Dimroth et al. (2003), who argue that the early two-word utterances they find in Dutch and German child language generally consist of a juxtaposition of a topic and a predicate. The first opera-

tors that appear are elements such as ‘nee’, ‘ja’, ‘magikke’ which have scope over the entire utterance and function as a kind of modal operator. According to these authors, in the next step of the language development, we find lexical elements from a closed-class that express positive or negative assertion and other illocutionary forces. In other child language studies, we find utterances with the same properties: Parisse and Lenormand (2000), who studied utterances of two-year-old French children in a distributionalist frame work, show that in comparison with adult utterances their children’s data contain an over-representation of place adverbials, nouns, the presentative ‘voilà’, and interjections. They give examples like:

- (7) *oh caché* (‘oh hidden’)
 joujou hein (‘toy, isn’t it’)
 poussette boum (‘buggy fall’)
 là bobo (‘there hurt’)

We may conclude that several authors present comparable characteristics for the first utterances in the two-word stage of monolingual children. On the one hand, we find utterances that can be described as a combination of an illocutionary operator with a content element, on the other hand, we find combinations of content elements with a characterizing word.

It is in the three- and more words-stage that we see the next crucial step in the emerging syntax of child language. Powers (op. cit.) argues that first, the child starts creating new structures by Merging not just single elements, but “syntactic objects” which have been created via Merge themselves. The next step would then consist of structure building by the operation Move and the introduction of functional projections. We may presume that the recognition and addition of *features* to the different elements probably plays an important role in triggering this next step. Van Kampen shows that, in the Dutch child she studied, the use of illocution operators for presentationals and wish/command precedes the emergence of the functional categories I and D, suggesting that the words used as illocutionary operators are precursors of those functional categories. Powers equally suggests that a plausible first hypothesis for the child would be that functional features map to the still a-categorial closed-class items which appear frequently in their two-word utterances and which have been claimed to play a “pioneering” role in the acquisition of functional categories. Similarly, van Dimroth et al. (op. cit.) argue that particles and modal phrases, when they first appear, are in complementary distribution with the upcoming finite/modal auxiliaries that appear in later stages. This suggests again that some of the elements that can enrich the function of finiteness in adult grammars turn out to be its precursors in earlier stages of acquisition.

One of the elements that, in the literature on the acquisition of German, has been claimed to have an important pioneering function for the building of syntactic structure is ‘auch’. Tracy (2002) assumes that initially ‘auch’ takes an entirely different position in child grammar than it does in adult grammar: ‘auch’ projects its own root and takes VP as its complement. They argue that particles such as ‘auch’ act like perfect bootstraps, helping the child to construct additional structural layers beyond VP. Eventually, Tracy argues, this competition between the finite verb and ‘auch’ triggers the next developmental step: yet another structural layer is created to which the verb can raise.

In sum, the general picture that emerges is that children start out with “illocutionary intentions,” which they express with specific lexical elements. These lexical elements often correspond to what in adult language would be called function words. Although it may also be the case that they look like adult content words, but in most cases the words are used in a non-adult way. These first elements are probably category neutral and do not yet have all their feature specifications. When children produce their first two-word utterances, they create them by adjoining two lexical elements in a strictly binary structure without assigning them category labels. These early word utterances are mainly of two types. On the one hand, there are combinations of a noun-like element with another element that is used for characterization; on the other hand, there are combinations of a frequent, closed class, functional item in the role of an illocutionary operator with some content element. These operators play a crucial, “bootstrapping” role in the building of syntactic structures and the acquisition of the (features of) functional categories in the subsequent stages of language development.

If monolingual acquisition does indeed go through a phase where so-called function words have a triggering role in the emergence of grammar, this leads to two questions for bilingual language acquisition. The first question is whether the respective roles of content words and function words are the same in bilingual acquisition as in monolingual acquisition, which logically should be the case. The second question concerns the role of function words in mixed utterances. As we saw, several authors have claimed that these words do play a special role in mixed utterances and that they would appear more easily in mixed utterances than content words. If function words play a special role in the emergence of grammar, the question is whether it is this role that makes them easier to be used in mixed utterances.

3 Early bilingual acquisition

3.1

The role of “function words” in bilingual acquisition

To our knowledge, all the work that has been done on the role of content words and function words in bilingual acquisition, is related to the question of language mixing by the children. There is no work that, similarly to work in monolingual development, independently addresses the role of these elements in the emergence of grammar. However, the question has indirectly been addressed in the bilingualism literature ever since the paper by Redlinger and Park (1980), who were the first to consider the role of “function words” in mixed utterances of little children. Since then, a series of authors (e.g., Deuchar, 1999; Köppe, to appear; Meisel, 1994; Vihman, 1985) have discussed this question and offered explanations for the appearance of function words in mixed utterances, thereby indirectly discussing their role in language acquisition.

The way in which function words are defined differs by author. Redlinger and Park (1980) for example include adverbs in their definition but not words like ‘yes’ and ‘no’; Vihman includes adverbs but not auxiliaries, articles and interjections. Deuchar (1999) includes the classical categories of function words but also “relational words” like ‘gone’, ‘off’, ‘more’. As for the role these words play in early bilingual utterances, most authors have not explicitly addressed this question. In our introduction, we cited Meisel’s remark

that there are some words, expressing “pragmatic functions, such as deictic reference, assertion and negation, completion of action and contradiction, which, for the child, are apparently not tied to the domain of one of the two languages [...]” and that these words are easier to be used in mixed utterances. However, Meisel does not elaborate on this. The terms he uses, of course, remind us of the analysis proposed by van Kampen and others for monolingual children. It is argued that these children use a series of words as illocutionary operators expressing notions like deixis, negation, modality. And precisely these words would help the children build the first stages of grammar. The only author who addressed the role of function words explicitly is Deuchar (Deuchar, 1999; Deuchar & Quay, 2000) In both publications, function words in utterances like

(8) *mas leche*

more milk

(9) *oh dear book*

are argued to function as acategorical predicates. In Deuchar and Quay, this is illustrated as follows:

function words “function as predicates in a predicate argument structure. So *more* seems to mean something like ‘I want’, *Oh-dear* indicates something having gone wrong, [...] *no* indicates not wanting something”

In other words, these elements are found in combination with a content word whose existence is approved or denied or characterized in some other way. Deuchar and Vihman (this volume) argue that the children in their research move from the use of these non-verbal predicates in the first stages towards a stage where verb predicates begin to be used in a more adult like way. Although this analysis is made in a different theoretical framework (Radical Construction Grammar) and although the analysis is not identical to that of van Kampen or Meisel, all these analyses go in the same direction: The way in which function words are defined differs from author to author, but the elements mentioned are similar to each other and also similar to the elements found in monolingual data and claimed to have an illocutionary role.

The analyses by Meisel and Deuchar and Quay suggests that indeed, for bilingual children too, these words can be analyzed as “illocutionary operators” and they appear to have an important function for syntactic structure building. As in the case of monolingual children, they function as a kind of cue to crack the code of their mother tongue(s). The elements do not pertain to one syntactic category in adult grammar, but they are semantically comparable by their capacity to express illocutionary intentions. Therefore, it is not surprising that the proposed functional elements differ from author to author and from language to language. ‘Nog’ / ‘noch’ / ‘encore’, are frequent in Dutch, German and French, like ‘ook’ / ‘auch’ / ‘aussi’, while in English the equivalents ‘still’ and ‘too’ are rare; instead, we find many occurrences of ‘more’. The words chosen may differ not only from language to language, but equally from child to child.

In sum, we would say that the literature on early bilingual more-word utterances does indeed suggest that bilingual children, like their monolingual peers, produce mainly two types of utterances: on the one hand noun + characterizer combinations, on the other utterances consisting of a (frequent, closed-class/functional) element with

a strong illocutionary force combined with another element to express a wish/command, assertion, negation, modal operation, turn taking, deictic operation, or place pointer. These functional elements express the “illocutionary” intentions of the child. Mixed utterances could be expected to appear here, since in this very early stage children are struggling with the emerging syntax of both languages. They want to express “illocutionary” intentions and as yet have little tools available to “translate” these intentions into proper syntax. They pool their resources and use whatever syntactic tools they have in either language. In the same way they use words from the “other” language in the case of lexical gaps, they may use illocutionary operators from one language in the other when there is a “construction gap.” This may lead to constructions such as *‘das X’*, illocutionary operators such as *‘more’* or structure building devices such as *‘auch’*. The data presented in the literature are scant for the moment, so further evidence is necessary. We will now turn to the question whether indeed function words / illocutionary operators play a special role in the mixed utterances of bilingual children.

3.2

Function words in mixed utterances

Redlinger and Park (1980), who were the first to consider the role of “function words” in mixed utterances of young children, claim to find a majority of mixed utterances involving function words, including adverbs (adverbs make up between 15 and 35% of utterances of the three children in their research). Vihman (1985) took up the same kind of work in studying the mixed utterances of her son. She concluded that, in Raivo’s mixed utterances in an Estonian context, English function words account for 62% (of types, 42% of tokens) of the mixing. So, in absolute figures, function words are more frequent in mixed utterances, although as types they are a minority. Vihman, like Redlinger and Park, included adverbs in her function words, but she did not include the categories of articles, interjections and auxiliaries. Meisel (1994, p.426), without using the term of function words, equally suggests that function-word-like elements occur especially often in mixed utterances. Examples are words like *‘da’*, *‘das’*, *‘ja/nein’*, *‘auch’*, *‘noch’*. In the French-Dutch bilingual child they studied, Hulk and van der Linden (1996) found a large amount of mixes of Dutch *‘ja’* instead of French *‘oui’*, but scarcely any other mixes. The status of words like *‘yes’* or *‘no’* certainly merits more investigation. Deuchar (1999) and Deuchar and Quay (2000) studies in detail the two-word utterances in the two language contexts (Spanish-English) of a bilingual child and found that in the mixed utterances which contained function words, 85% of the function words (tokens) did not match the language context. In particular, Spanish *‘más’* and *‘sí’* are often used in English, and English *‘more’*, *‘gone’* and *‘off’* in Spanish. In their definition, function words are similar to closed class words of the adult language, such as *articles, pronouns, prepositions, and conjunctions* but they also include “relational” words like *gone, more, oh-dear, más*. Their data show that these words occur very often in the child’s utterances. The observation that most of the mixes in the data of the Spanish-English bilingual child of their research involved a “function word” led Deuchar and Quay to postulate that content words match the context, while function words do not. They state that this holds especially for the very early stages of language acquisition, where the child uses her first two-word utterances. According to Deuchar and Quay, the function word in

these utterances has the status of a predicate while the content word has the status of an argument. This is illustrated by (10):

- (10) “*oh dear cookie*” (meaning: the cookie fell down)
 “*more juice*” (meaning: I want more juice)
 “*no spoon*” (meaning I don’t want a spoon in my egg)

Deuchar and Quay claim that the content word is the nucleus of the utterance, and that functional elements are less tightly tied to the specific language context and therefore more easily mixed. This argument is similar to that of Meisel, who proposed that these words “for the child, are apparently not tied to the domain of one of the two languages [...],” which makes them easier to be used in either language. Deuchar and Quay (2000) relate this analysis to the claim, that children’s (monolingual) language acquisition in the one-word stage is guided in the first place by “pragmatic” principles. These pragmatic principles would equally play an important role in the first two-word utterances. As pragmatic principles might be more language independent than the syntactic principles that are primordial in the later stages of acquisition, it would be easier for bilingual children to use function words from both languages within one sentence.

The picture emerging from the literature on bilingual acquisition is not unequivocal in this respect. In the first place, as is shown by Serratrice (this volume), mixing is not an unavoidable ingredient of bilingual acquisition. The Italian/English bilingual child Carlo of her research produced less than 1% of mixed utterances. Most of his mixes involve content words, not function words. Köppe (forthcoming), who studied the early two-word utterances of three German-French bilingual children (Ivar, Vainikka and Pascal) does not find support either for the hypothesis that “function words” are mixed more frequently than other elements. She does find utterances of the type “function word + content word,” such as (11) and (12).

- (11) *là grenouille* (‘there frog’) Pa 1;09,11
 (12) *das wasser* (‘that water’) A 1;10,18

She shows however that word combinations of this type occur in monolingual as well as in mixed utterances, even if they differ in frequency of use which appears to be language specific. Moreover, Ivar uses the combination “German deictic pronoun + French noun or adjective” with equal frequency in both linguistic contexts:

- (13) *das rouge* (‘that red’) Iv 2;00,22 French context
 (14) *das rouge* Iv 2;03,05 German context

This combination occurs with a different frequency in Ivar’s monolingual utterances, accounting only for 9% of all French multiword utterances, but for 28.8% of German multiword utterances. Köppe (forthcoming) argues that it thus appears plausible to assume that the use of this specific construction is transferred from German to French.

In sum, the evidence for the claim that function words appear more easily in mixed utterances than content words is contradictory for the moment. Other factors may play a role in language mixing besides the function-content distinction. Hulk & Mueller (2000), Mueller & Hulk (2001) discuss the possibility of predicting the occurrence of cross-linguistic syntactic influence in small bilingual children. They argue that bilingual

children show difficulties with the mapping of universal principles onto language specific rules. These difficulties may result in cross-linguistic influence whenever the interface between syntax and pragmatics is involved and there is some form of structural overlap, at least in the perception of the children. Of course, it can be argued that bilingual children are indeed struggling with an interface problem: illocutionary operators are typically at the interface between syntax and semantics/pragmatics. We also saw that the early two-word utterances in the languages under consideration here, often involve the same types of elements: an “illocutionary operator” + X or a “characterizer” + X. The elements of these “Unique Maximal Projections” do not yet have their adult features make-up; we are witnessing the onset of structure building. As soon as the elements involved start getting their (language specific) feature composition and early, abstract functional categories emerge, we expect mixing of the type considered here to disappear.

In the next section, we will present results from our study of three French-Dutch bilingual children in order to find a more precise answer to the questions discussed earlier, namely (1) whether the use of function words in utterances reflects the linguistic development suggested above for monolingual children and (2) whether function words play a special role in mixed utterances.

4 A case-study of three French-Dutch bilingual children

In the following paragraphs, we will first present information on the three bilingual children of our research and next we will analyze the data in the light of the earlier discussion.

4.1

The subjects

Our three subjects were all born in the Netherlands and grew up there. One of their parents is a native speaker of French, the other one of Dutch. They all adopted the one parent one language strategy, although Thomas’ parents were less strict in this respect than the others. All three went to Dutch day care centers for three of four days per week. Recordings were made approximately once a month (for Anouk every 3 weeks). Each recording was made by one of the parents who interacted spontaneously with the child in his/her native language.

Thomas was born in Utrecht and still lives there. Thomas’ mother is French but she knows Dutch very well although she did not speak it much to the child, at least in the audio-recordings, which were made approximately once a month (unfortunately, for technical reasons, some monthly recordings of Thomas went wrong, so there are some gaps in the longitudinal data). Thomas’s father is Dutch but he knows French very well even if he does not speak it much to the child. Both parents speak French to each other, which makes the home situation different from that of the other two children. When all three are together, the mother speaks French to the child, the father Dutch. Although this situation could suggest that Thomas gets more input in French than the other two children, the data show that his advances in Dutch are much faster than his advances in French. MLU values for the two languages (Table 1a) as well as the large number of mixes of Dutch words in the French files suggest that Dutch is Thomas’ dominant language.

Anouk was born in Amsterdam and is still living there. She has a Dutch father and a French mother. Anouk started talking rather late, as will become clear from her MLU data (Table 1b). Anouk's mother knew Dutch relatively well but did only rarely speak it to the child, her father knew very few French and did not speak it to the child. When all three are together, the mother speaks French to the child, the father Dutch, while the parents speak Dutch to each other.

Annick was born in Arnhem and still lives there. Annick's mother is Dutch but she knows French very well, having a university degree in French. She does however never speak French to the child. Annick's father is French. His Dutch is very good but he does not speak it to the child. When all three are together, the mother speaks Dutch to the child, the father French, while the parents speak mainly Dutch to each other. Annick's language development was faster than Anouk's, as is shown in her MLU-values in Table 1c. Audio recordings for French and Dutch were made approximately once a month. The first French recording shows an extremely high MLU of 2.75, falling back to around 2.0 in the next recordings. The very high MLU is probably due to the father's efforts to stimulate his child to produce rather complicated language in this first recording.

Table 1a
Age and MLU Thomas

<i>Age</i>	<i>French</i>	<i>Dutch</i>
1.07.06	1.01	1.15
1.08.07	1.14	1.21
1.10.07	1.38	-
1.11.25	1.32	1.22
2.00.28	1.56	1.52
2.03.14	1.78	1.90

Table 1b
Age and MLU Anouk

<i>Age</i>	<i>French</i>	<i>Dutch</i>
2.3.13	1.38	-
2.4.17	1.69	1.03
2.5.20	2.2	1.66
2.6.11	2.27	2.5
2.7.20	2.21	-

Table 1c
Age and MLU Annick

<i>Age</i>	<i>French</i>	<i>Dutch</i>
2.5	2.75	-
2.7	2.06	2.08
2.9	2.01	2.10

Note: The MLU is given in words, not in morphemes, as is usual in many studies on bilingualism.

Tables 1a, 1b and 1c show that Thomas is in the very first stages of language acquisition, with an MLU just above one; Anouk is a bit more advanced, while Annick is much more advanced at the moment of the first audio-recordings, almost too advanced for the objective of our study. However, we still find in her utterances traces of the first stages that interest us. That is why we included the first files of her data.

We also see that the MLU suggests a different pattern of dominance in the three children. In Anouk, MLU for the early stages is higher in French than in Dutch, which would normally be interpreted as dominance of the French language. For Annick, we see that the two languages are balanced. For Thomas, we see that in the first files, MLU for Dutch is somewhat higher than for French, but that in the later files, the MLU is comparable.

In this paper, we will mainly examine the French data, because the Dutch data hardly show any mixing. Only for Thomas, whose Dutch files contains some French words, we will examine the first Dutch files as well.

4.2

The role of function words

The three children in our study are in different stages of development, Thomas being the less advanced child, Annick the most advanced. This is reflected in their utterances. Following Van Kampen, we hypothesized that in bilingual as well as in monolingual children, the first two-word utterances would contain mainly two types of combinations:

- a combination of a content word (usually a noun) with a characterizing word
- a combination of a “function word” with a content word, in which the function word has the role of an illocutionary operator. “Function word” is not to be taken as the adult category of function word, it is rather the representative of a group of various words functioning as such in child language.

We expect to find most of these types of word combinations in Thomas’s data, and least in Annick’s.

4.2.1

Thomas

In the first file, Thomas is still largely in the one-word stage: out of 136 utterances, 124 contain one word (mostly proper names and ‘ja’ / ‘nee’). Only 12 consist of more than one word. The file shows that Thomas still has great problems communicating his messages. It seems as if he uses proper names (especially “papa”) and “yes” or “no” as placeholders for the messages he still cannot express, as in the following exchanges:

(15) MOT: *Qu’est-ce qu’il fait l’oiseau?*
 ‘What does it do, the bird?’

CHI: *ja*
 ‘yes’

(16) MOT: *Fais attention. Tu vas glisser. Tu vas te faire mal.*
 ‘Take care. You will glide. You will hurt your self’

- CHI: *papa*
 MOT: *Où est-ce que tu as mal?*
 ‘Where does it hurt?’
 CHI: *papa*

From the first file onwards he also produces more word utterances. Table 2 presents the different kinds of word combinations in Thomas’s utterances in French contexts:

Table 2

Thomas. Word combinations in French contexts

Age	<i>Ill.Op + X</i>	<i>Content word + characterizer</i>	<i>Other</i>
1.07.06	25%	25%	50%
1.08.07	33%	33%	33%
1.10.07	6%	45%	49%
1.11.25	55%	15%	30%
2.00.28	32%	20%	48%
2.03.14	8%	31%	61%

In the first French file (age 1.07.06), there are 12 more-word utterances. Of these, seven are entirely Dutch, one is mixed. The four French utterances (if we take the proper names as being French, as confirmed by their pronunciation) are:

- (17) *Papa et Bet*
 ‘Daddy and Bert’
Bet et Bet
 ‘Bert and Bert’
Prends pas
 ‘take not’
Papa caca
 ‘daddy pooh’

The last two correspond to the categories of word combinations that interest us (function word + content word; nouns + characterization²). The first two are juxtapositions of another kind.

The Dutch recording of the same day gives us the same picture: of the 20 more-word utterances, seven are a combination of ‘kijk’ with another word, mostly ‘eens’, once ‘auto’. Apart from the “kijk”-combinations, we find nine combinations of function words with content words. The function words are ‘hier’ (here), ‘nou’ (now), ‘ook’ (also), and the French ‘aute’ (other) as in:

² An utterance like “prends pas” should perhaps be excluded from this analysis since it is only later in Thomas’ files that we find other examples of inflected verb forms or of “pas” to express negation. Normally, we find “non” or “nee.” So it is not excluded that the child produces here an unanalyzed, chunk-like utterance. Nevertheless, it is not an imitation of an adult utterance, so we did count it.

- (18) *hier Pooh*
 ‘here Pooh’
deed-ie, nou?
 did he now?
 ‘what did he do?’
ook appel?
 ‘also apple?’
aute Pooh ook
 ‘other Pooh also’

In this first Dutch file, there are no utterances that can be considered a combination of a content word with a characterizing element. One month later, more or less the same pattern is found in the French and Dutch files. Here, in the French file, we find the function words ‘ook’ (also) and ‘aute’ (other)³:

- (19) *aute nounours*
 ‘another bear’
aute Pooh ook
 ‘other Pooh too’

Again, we find a rather large number of occurrences of ‘*kijk*’ in the French as well as in the Dutch files, as in: “*kijk nounours*.” A closer look at the role of *kijk* brings us to the suggestion that ‘*kijk*’ functions as a kind of illocutionary operator for Thomas. *Kijk* does not seem to have the same meaning as in adult language, it seems to play the role of the French presentational *voilà*, as it appears most often in contexts such as (20):

- (20) MOT: *il est où nounours?*
 ‘where is the bear?’
 CHI: *kijk nounours*
 look bear (meaning ‘here is the bear’)

So *kijk* seems to be more or less synonymous to *dat* or *hier* in the data described by van Kampen or as the presentational ‘*voilà*’ as used by monolingual French children. For Thomas, it is one of those words which are used because they are frequent and well known and thereby easy to combine with other words, despite the fact that normally, in adult language, we would categorize ‘*kijk*’ as a content word.

Although we find rather few combinations of function words with content words in the first French files, this combination is much more present in the first Dutch files: 63% of the utterances in the first two French and Dutch files taken together are of the “function word + X” - type. From the second file onward we also find the other expected combination of a noun-like element with a characterizer, as in:

- (21) *Papa caca?*
 ‘daddy pooh?’

³ We labeled ‘*autre*’ ((an)other) here as a “function word,” although its role is not completely clear.

dodo Pooh

'sleep Pooh'

The categorization of words as illocutionary operators is not always easy. When we find an utterance like: "N + N/A" like in "auto mooi" (car beautiful), we are tempted to say that this is a noun with a characterizer. When we find the utterance "deze mooi" (this one beautiful) we could say that this is a presentational word with an element X. But we could also classify 'deze' as a content word; its use could be caused by a lexical gap, which impedes the child from using the right noun in this utterance. The child utterances and their context do not always allow us to say unambiguously what is the case. The same holds for the French 'ça', as in "réparer ça" versus "réparer voiture" or "ça marche" versus "voiture marche." In most cases, the context made us decide to categorize 'deze'/'die' and 'ça' as a content word.

Table 2 shows that, taken together, these two types of utterances cover more than half of the word combinations in Thomas's early data. The remaining utterances form a very heterogeneous group. There are combinations of an interjection and a content word, like in "*hé papa*" (drawing his dad's attention), "*mauw hè?*" (kitten, isn't it?) or of "yes"/"no" with a content word, as in: "*ja, nounours.*" In some rare cases we see the combination of a preposition or a determiner with a noun, as in: "*à papa,*" "*la balle.*" From the file of age 1;11.26 (MLU 1.32) onwards, we see this pattern change. There are proportionally fewer combinations of function words with content words, while there is an increased number of combinations of noun-like words with characterizing words. Some examples of both types:

(22) *papa zitten*

'daddy sit'

boot epot

'boat broken'

kan niet

'can not'

papa ook

'daddy too'

cochon au chelle

'pig on the ladder'

In these files, the combination content words + characterizer accounts for 42% in the Dutch file, for 32% in the French file. The combination function word + content word accounts for 16% in the Dutch file, for 27.5% in the French file. In other words, the balance is changing, the combinations with function words become less important numerically and give way to more advanced constructions. This is a pattern we will also find in the other children: as language development advances, other types of utterances become more important. So for Thomas, it looks as if there could indeed be a group of words that helps him to start off making syntactic constructions. They comprise well known word like 'aussi'/'ook', 'hier', 'autre', but also less expected ones like 'kijk' (look). At the same time, we see that in most of Thomas's files, the two-word combinations types account for a bit more than half the utterances. So a large part of

utterances does not enter in these two categories. This makes it less evident that they are the best-and-only triggering conditions for the emergence of grammar. There are many other word combinations in the utterances of this child, which should be studied in more detail in future research.

4.2.2

Anouk

In Table 3, we present the percentages of the different kinds of word combinations in the utterances of Anouk in French contexts.

Table 3

Anouk: word combinations in French context

Age	<i>Illoc. Op.+ X</i>	<i>Content word + characterizer</i>	<i>Other</i>
2.3.13	62%	25%	13%
2.4.17	30%	43%	27%
2.5.20	40%	43%	17%
2.6.11	28%	37%	35%
2.7.5	25%	11%	54%

Anouk's development looks more in line with the hypothesis that the two-word combinations studied here play an important role in the first stages of language acquisition. There is a gradual decrease of function word + content word combinations as well as content word + content word combinations, while the number of other, more complex utterances gradually increases. The first two files of Anouk are comparable with the last files of Thomas as far as MLU is concerned. The data of these files present more or less the same image as Thomas's with regard to types of word combinations. Proportionally, the combinations of noun + characterizer are more frequent in Anouk's first files than the combination function word + content word. In the first two French files, we find combinations of a functional word with a content word, as in:

- (23) *lait nee*
 'milk no'
acore pain
 'more bread'
pomme aussi
 'apple too'

Frequently-used function words in this combination type are '*aussi*', '*encore*', '*un aut(r)e*', '*nee*'. This type of utterance forms 25% of the utterances. We also find utterances which combine a noun-like word with a characterizer, such as:

- (24) *maman chaud*
 'mummy hot'
malade Anouk
 'ill Anouk'

maman mange Anouk
‘mummy eats Anouk’

These comprise 42% of the utterances. The remaining utterances are diverse. We find combinations of two functional elements, like in: “*nee, acore*” (no, again), or combinations of determiners/adjectives with nouns, as in: “*des bateaux*” (det + boats), *ja (la) poupée* (det + puppet), “*petit poisson*” (small fish).

So in Anouk’s first files, we find the expected development. Combinations of function words with content words decrease in number, giving way to more complex constructions. Content words with characterizers increase in number, as does the diversity of utterances.

4.2.3 *Annick*

In Table 4, we present the percentages of the different kinds of word combinations in Annick’s utterances in French contexts.

Table 4

Annick: word combinations in French context

Age	<i>Ill.op + X</i>	<i>Content word + Characterizer</i>	<i>other</i>
2.5	25%	0%	75%
2.7	6%	6%	88%

When we examine the data of Annick, from the first file onwards, we find utterances which are much more complex than in the data from Anouk and Thomas. Determiners, for example, are provided already in about half of the obligatory contexts, and there are already a series of verbal inflected forms. Therefore, most elements in Annick’s utterances cannot be analyzed as a-categorial. Nevertheless, in these data we still find the two types of word combinations we found in the data from Thomas and Anouk. The combinations of noun-like element + characterizer are not very frequent, however. Instead, many utterances are subject-less and contain only a VP-like part, as in:

- (25) *dessine sur une feuille*
‘draw on a paper’
faire une ture
‘make a car’
eh main, la main Annick
‘eh hand, the hand of Annick’ (as object of a nonexpressed verb ‘to draw’)
avec une bouche
‘with a mouth’

The combinations of function words combined with a content word, are still represented, but to a lesser degree than in the other two children. We find combinations of a content word with words like ‘*naut*’ (another), ‘*aussi*’ (also), ‘*c’est*’ (that is), ‘*et puis*’ (and then), and the Dutch word ‘*zo*’ (that way). Together, the two types of utterances

account for less than 25% of all the utterances. This is less than in most files of the other two children. That could mean that indeed the two “early constructions” discussed above, especially the combination function word + content word, are to be considered as triggers for the first word combinations, that is, for the emerging syntax, making place for other constructions when syntactic structure is further established.

To conclude, we found some evidence for the language development sketched earlier for monolingual children, although the development of Thomas does perhaps not fit in very well. This is a drawback because Thomas should be expected to be most in line with the development as sketched by Van Kampen and others, since he is the youngest child and he is just producing his first two-word utterances.

In the next section we take a closer look at the children’s mixed utterances.

4.3

Mixed utterances

Our second question concerns the role of function words in mixed utterances.

The three children present a different picture for the quantity mixing and for the quantity of Dutch words used in French contexts. Let us first examine the latter.

Table 5 shows the number of Dutch words used by each of the three children in the French files.

Table 5

Percentage of Dutch words in the French files

THOMAS		ANNICK		ANOUK	
Age	Dutch words	Age	Dutch words	Age	Dutch words
1.7	30%	2.5	0.6%	2.3	30.0%
1.8	32%	2.7	11.0%	2.4	12.5%
1.10	22%	2.9	1.4%	2.7	4.3%
2.0	33%	3.2	1.5%	2.11	6.9%*
2.2	46%	3.4	0%	3.4	1.2%

* only Dutch “ja” en “nee”

We do not include a table of French words in the Dutch files because these are extremely rare:

- for Annick, we don’t find one single French word in her utterances in the Dutch recordings;
- for Thomas we find three French words in one Dutch file which was recorded in the presence of the French mother;
- for Anouk, we do find some French words in her Dutch utterances, but they are rare (the maximum score is 5 out of 134 words at age 2.5.20).

Table 5 shows that in the French files, lexical mixing occurs in the language of all three children. The table gives an overall image of the proportion of mixed words in the French files, independently of the number of words in the utterance or of the

kind of words used. We see that there is a substantial amount of Dutch words in the first two files of Anouk, the second file of Annick, and all the files of Thomas during the whole period of recording. The majority of the Dutch words used is represented by ‘ja’ (yes) and ‘nee’ (no) in one-word utterances. One may wonder if these have the same status as the other mixes. It seems that the children do know the correct equivalent but choose to use the Dutch word, presumably because it is more frequent in the input (especially in the kindergarten surroundings). This could hold for other Dutch words as well, of course.

It is not as much the number of words used in the wrong language that interests us for our discussion on emergent syntax, it is rather the role of function words and content words in the two-and more word mixed utterances.

Table 6

Percentage of mixed utterances in Thomas, Anouk, and Annick

THOMAS		ANOUK		ANNICK	
Age	mixed	Age	mixed	Age	Mixed
1.07.06	0%	2.3	50%	2.5	0%
1.08.07	50%	2.4	10%	2.7	2%
1.10.07	11%	2.5	7%		
1.11.26	37%	2.6	6%		
2.03.04	67%	2.7	5%		

4.3.1

Thomas

Thomas’s development seems to be inconsistent as to the use of mixed utterances; the number increases and decreases several times. In fact, the table does not give a very good image of his behavior because it does not capture the fact that Thomas produces lots of 100% Dutch utterances. In the first file, for example, there are 10 two-word utterances, of which four are entirely French and six are entirely Dutch, but no mixed utterances. As the number of more word utterances increases, the number of mixed utterances and the number of all-Dutch utterances increase. At age 1.10, for example, we have 45 more word utterances, of which 30 are all French, five are mixed and 10 are all Dutch. It is clear however that Thomas produces many more mixed utterances than the other two children, not only in the beginning stages but also when his more-word-utterances become more frequent and his syntax more complex.

There is indeed some evidence in Thomas’s data that function words are more easily mixed than content words. His French utterances contain more Dutch than French function words, but unexpectedly this happens mainly in the later files. At age 1.8, Thomas produces six two-word utterances: two French, two mixed, one Dutch and one unclear because it contains words belonging to either language. The two mixed utterances are

- (26) *Nounours peer*
 bear FR bear NL
 ‘the bear is a bear’

- (27) *Kijk nounours*
Look NL bear FR

The two French utterances in this file are:

- (28) *aute nounours*
'other bear'
(29) *la balle*
'the ball'

We could analyze (26) as N + characterizer, (27) as function-word + content-word, (28) as function word + content word, and (29) as "other" (det + N). This small number of utterances is of course not conclusive.

Later files give a slightly different image. In the French file at age 1.11.26 for example, most more word utterances consist of a Dutch or a French word, combined with the Dutch words 'ook' and 'kijk', such as (30).

- (30) *kijk nounours*
kijk cochon
nounours ook cheval

We noted earlier that Thomas uses "kijk" as a kind of illocutionary operator: it is used to draw the parent's attention or as a presentational word, rather than to really ask his father to look at something. The overall picture is that in the mixed utterances in the first files, Thomas uses slightly more function words in mixed utterances than in non-mixed utterances. Paradoxically, the percentage of function words in Thomas's data increases instead of decreases. The numbers and percentages are small in the beginning: at 1;10 we find two function words in mixed utterances and none in the non mixed ones; at 11.11.26 we find seven function words in mixed utterances and one in French; at 2.3 we find 15 Dutch function words in mixed files, and only two French function words in the French files. When looking at the utterances, we get the impression that at least partially, the function words are used because they serve a very general illocutionary function. At age 2.3, a new "function word" appears, namely 'ikke' ("me"+vowel) (cf. van Kampen). *Ikke* is used by Thomas in lots of mixed utterances, such as:

- (31) *ikke le maken jaune*
me NL it FR make NL yellow FR
'I make it yellow'

In French, Thomas does not yet produce 'moi'. There are only three function words in the mixed utterances for which Thomas surely possesses the translation equivalent: 'nog' ('acore'/'autre'), 'ook' ('aussi') and 'die' ('celle' in Thomas's French). They do not appear in mixed utterances before age 1.10. In that file, they appear in 5 out of 22 mixed utterances. At 1.11.26, the numbers are 5 out of 18, at 2.03 they are 6 out of 22. In all these files, in the French utterances, we hardly find any function words; these utterances are mainly of the type "N + characterizer." So Thomas does seem to choose for Dutch function words in his French files at an increasing rate. Thomas is atypical in this respect. We would expect that the use of function words would decrease with advancing language development. He is equally atypical in the sense that his overall

use of Dutch words in the French files does not decrease but it increases. It almost looks as if Dutch is so dominant in his development that it inhibits his French. Clearly more research is necessary here, more so since the other two children present a quite different picture.

4.3.2

Anouk

As is shown in Table 5, Anouk's data do not show a lot of mixing after the first two files. In the first file, where Anouk is still largely in the one-word stage, we find eight more-word utterances. Four of them are mixed. They all consist of a combination of 'nee' with a French word, as in:

(32) *lait nee*
'milk no'

(33) *Anouk chaud nee*
'Anouk warm no'

The other four are French only and are rather diverse. There are two combinations of a noun with a characterizer, like

(34) *maman chaud*
'mummy warm'

(35) *nage poisson*
'swims fish'

Furthermore, there is a combination of det + N:

(36) *des bateaux*
PART.ART. boats
'the boats'

All the mixed utterance are combinations of 'nee' plus a French word. The question is whether we may consider these as an argument that function words are more easily mixed than content words. We would like to suggest that this is not the case. In the first place, it is not certain whether 'nee' is really part of a two-word utterance. A better analysis could be that these are two one-word utterances. In the second place, we find only one function word, namely 'nee', and not an array of words. In the third place, Anouk does not use the French 'non' at all in this stage, so using 'nee' could also show a preference for the Dutch form above the French one. The same holds for later files. In these later files, the Dutch words in French multi-word utterances are almost exclusively occurrences of 'ja' en 'nee'. Only once or twice do we find an occurrence of 'ook' (also) in French. We conclude that there is no convincing evidence in Anouk's data that function words are more easily mixed than content words, but no convincing evidence of the contrary either, because Anouk does not produce many mixed utterances.

4.3.3

Annick

We find only some rare occasional mixed utterances in Annick's data. There are some word insertions of Dutch words in the French files, like '*paard*' (horse), '*rijde*' (ride) in the 2.7 file. We further find some examples of the Dutch word '*zo*' (that way), which is found mainly in one-word utterances but also in one more-word utterance; "*zo, du pain*" (there you are, bread). These few occurrences of mixes are extremely rare and do not give any indication that function words are more easily mixed than content words. This is not to be expected however, because Annick's utterances clearly show that her syntactic structures are further specified than those in the other two children.

We conclude that for Anouk and Annick, there is no convincing evidence that function words / illocutionary operators are more easily mixed than content words. However, perhaps because of their "acquisition strategy" (cf. Serratrice this volume), neither of the two girls produces a lot of mixed utterances, so it is difficult to draw conclusions on the basis of their data. The picture for Thomas is more complex: he mixes a lot and does use a number of Dutch function words in the French data. It is not entirely clear however why this is the case. More research is necessary.

5 Discussion and concluding remarks

In this paper, we wanted to answer two questions. In the first place we wanted to know whether function words play a specific, bootstrapping role in bilingual language acquisition, like they seem to do in monolingual acquisition. In the second place, we wanted to investigate the claim that function words are more easily used in mixed utterances of bilingual children than content words. For monolingual children, recent research has suggested that in early utterances there are two typical word combinations to be found. One is the combination of a content word with another content word that characterizes it. The other is the combination of a content word with what has been called an "illocutionary operator," that is, a word that expresses one of several possible specific functions in relation to the content word, for example a deictic, modal, turn taking. This latter type of combination would appear first, and would give way to the first type of combination and to more fully grammatical constructions in the course of language development.

We have shown in the data of our three French-Dutch bilingual children, that generally, in the very first two-word utterances, there is a large number of combinations involving a function word. In the case of both Anouk and Annick, this type of combination diminishes gradually to make place for other structures, showing that the children start building language specific grammars. In the case of Thomas, we do not find a decrease but an increase in the use of utterances containing function words. This could mean that Thomas, as the least advanced child, is still working hard to get syntax in place. We have investigated the claim, made for monolingual children by Powers, van Kampen and others (see above), that early two-word utterances arise through Merge of elements which do not (yet) have the same properties/features as in the adult grammar. When the first two-word utterances are constructed, functional words play a special role: they have a bootstrap function. These are frequently-used words, well known by

the child, and they help him/her to make the first word combinations express his/her intentions. In these combinations, these words seem indeed to function as illocutionary operators: they express intentions like deictic, modal, attracting attention, turn taking. In fact, these “function words” do not always correspond to the adult category of closed class word. The children may have their own preferred elements, like *kijk* (‘look’) in the utterances of Thomas and ‘zo’ in Annick’s utterances. The data of our bilingual children support such an analysis. This is best shown in the data of Thomas, where we witness the very first two-word utterances. There, a majority reflects the combination of function words with a content word. The first files of Anouk are recorded when she is at a slightly higher level of development, as measured in MLU. Her data are comparable to those of Thomas at the same MLU stage: The number of combinations of a noun plus a characterizer has become more frequent, while the number of combinations with a function word is decreasing. When we examine the data of Annick, we see that she has clearly reached the stage where elements do have (more) formal features, a stage which is characterized by Meisel as starting “as soon as language specific word order properties and inflectional morphology emerge in the children’s speech” (Meisel, 2002, p. 17). This suggests that for these children there is a relation with the development of functional categories, as has been claimed in the literature. In Annick’s data, we still find the two types of word combinations which prevail in the utterances of Thomas and Annick, but we equally find a large proportion of much more diverse and more complex combinations.

As for the claim made by Deuchar and Quay that function words are mixed more frequently than content words in early two-word utterances, we found that in the early utterances of our children, there is more mixing than in the latter, but there is no convincing evidence that function words are more easily mixed than content words. In the first place, we found virtually no mixes in the Dutch files of our bilingual children. If function words were more language independent and therefore easier to mix, we would expect this to go in both directions, French-Dutch as well as Dutch-French. In our data, however, the only mixes go from Dutch to French. Unidirectionality in mixing has been found for other bilingual children, such as in Lanza (1997): the girl Siri mixes Norwegian words in her English when speaking to her mother, but scarcely any English words in her Norwegian. Serratrice (this volume) reports only mixes of Italian words in English and not the other way around. Among the Dutch words in French utterances in the early stages, the number of function words is somewhat higher than that of content words in the data of Thomas, but not in the data of Anouk and Annick. Therefore our data do not give strong evidence for the claim by Deuchar (1999) that function words are more easily mixed. While the behavior of Thomas gives some support for this claim, the language development in Anouk and Annick is inconclusive in this respect, since they do hardly mix at all.

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