A study investigated the use of negative polarity items (NPIs) in child language, and in particular, how children acquire the restrictions on these items. Data are drawn from studies of NPIs in the spontaneous speech of Dutch- and English-speaking children. Results show the first NPIs to appear in Dutch and English are widely different expressions; one of the first used by Dutch children is a verb, "hoeven," while in English it is a quantifier, "any." However, there are remarkable similarities in the way in which these expressions appear in the children's speech, both correctly and incorrectly. It is argued that these cross-linguistic similarities in NPI use stem from the development of negation, which interrelates with the acquisition of NPIs. Contains 17 references. (Author/MSE)
Negative polarity items in Dutch and English: A lexical puzzle

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This paper deals with negative polarity items (NPIs) in child language; more in particular with the question of how children acquire the licensing restrictions on these expressions. Data will be presented from a spontaneous speech study of NPIs in Dutch and English child language. The first NPIs to appear in Dutch and English are widely different expressions: for instance, one of the first NPIs used by Dutch children is a verb, hoeven, whereas in English this is a quantifier, any. Yet, there are remarkable similarities in the way in which these expressions appear in the children’s speech, both correctly and incorrectly. It will be argued that these crosslinguistic similarities in early NPI use stem from the development of negation, which interrelates with the acquisition of NPIs.

1. The distribution of NPIs

NPIs are expressions with a restricted distribution; they can only appear correctly in specific licensing environments. This is illustrated in the following examples, with the NPIs any, either, and yet:

1. a. *Many people have any interest in this.
   b. Few people have any interest in this.

2. a. *I like it either.
   b. I don’t like it either.

3. a. *Everybody has arrived yet.
   b. Nobody has arrived yet.

The a-sentences are ungrammatical since they do not contain a proper licenser. In the b-sentences, the NPIs are correctly licensed, by few, not, and nobody, respectively.

The phenomenon of polarity sensitivity is not limited to English, but is found in many languages. See for instance the following examples with the Dutch NPIs hoeven (have to/need) and meer (anymore):

   Peter has always to do the dishes.
   b. Peter hoeft nooit af te wassen.
   Peter has never to do the dishes.

5. a. *We zien hem vaak meer.
   We see him often anymore.
   b. We zien hem zelden meer.
   We rarely see him anymore.

In the same way as any, either, and yet in English, these two Dutch expressions may not occur in unlicensed sentences, as is shown in the a-examples. Their distribution is limited to such licensing environments as nooit (never) or zelden (rarely), as in the b-examples.
Most probably, polarity sensitivity is a language universal phenomenon (Van der Wouden, 1994). At the same time, however, NPIs may come in different guises in particular languages. As was shown by the above examples from English and Dutch, languages may differ as to which expressions in their lexicon are NPIs. See also the following table:

<table>
<thead>
<tr>
<th>English</th>
<th>Dutch</th>
</tr>
</thead>
<tbody>
<tr>
<td>anymore (NPI)</td>
<td>meer (NPI)</td>
</tr>
<tr>
<td>have to/need (NPI)</td>
<td>hoeven (NPI)</td>
</tr>
<tr>
<td>any (NPI)</td>
<td>enige</td>
</tr>
<tr>
<td>either (NPI)</td>
<td>ook</td>
</tr>
<tr>
<td>yet (NPI)</td>
<td>nog</td>
</tr>
</tbody>
</table>

Table I. Crosslinguistic differences in polarity sensitivity.

The first line shows that there may be complete equivalence in polarity sensitivity, as with English *any more* and its Dutch equivalent *meer*. There may also be partial equivalence, as is shown on the second line, with English *need* and Dutch *hoeven*. While *hoeven* is strictly polarity sensitive, *need* is only an NPI as an auxiliary. Finally, expressions which are NPIs in one language may have non-polarity equivalents in another language. This is shown on the three lines at the bottom: *any*, *either*, and *yet* have no NPI counterparts in Dutch.

Despite such crosslinguistic differences, which are of a lexical nature, there is a universal pattern in the behavior of NPIs, regarding their sensitivity to particular licensing environments: NPIs in different languages draw on the same stock of licensors. The licensors include so-called *n*-words (e.g. *not*, *never*, *nobody*, *nowhere*), as well as certain adverbs (e.g. *hardly*, *seldom*, *rarely*), certain quantifying expressions (e.g. *little*, *few*, *only*), adversative predicates (e.g. *to be unable*, *to forget*, *to refuse*, *to doubt*), comparatives, relative clauses depending on a universal quantifier, and conditionals.

It is obvious that many of the licensing environments are negative, or at least have an inherent negative meaning. Other licensors at first sight have no link with negativity at all. Much of the literature on NPIs has focused on what the nature of the restrictions on NPIs is, and whether the licensing environments have certain characteristics in common. In formal semantic terms, the licensors indeed have a common denominator: they support the logical inference pattern of downward entailment, in which supersets may be substituted by subsets (Ladusaw, 1979; Zwarts, 1995; Van der Wouden, 1994).

This combination of differences and similarities across languages makes NPIs interesting for crosslinguistic acquisition studies. Although the expressions themselves may vary per language, children face the same task in acquiring the conditions for correct NPI use. For each expression which happens to be an NPI in their mother tongue, children have to discover that this expression is an exception to the rules which apply to members of a certain syntactic category. For instance, the Dutch NPI *hoeven*, a verb, differs from

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1 It should be pointed out that there still are problems with this theory. For one thing, not all possible NPI licensors are downward entailing. Secondly, not all NPIs can appear in all downward entailing environments. For a review, see Van der Wouden (1994).
other verbs in that additional restrictions apply to its distribution, besides the normal syntactic rules. The question is how children come to know that such restrictions apply, since they are not explicitly informed about where NPIs can *not* occur.

Also, children have to figure out what the exact licensors are for each NPI. In theory, there is uniformity in the licensing environments, since they share the property of being downward entailing, but it is not clear whether this common denominator plays any role in the practice of acquisition, and whether it is of any help for the child in discovering what counts as a correct NPI licenser.

2. The Dutch data

The spontaneous speech study of Dutch was carried out in a corpus consisting of transcripts of tape recordings and diary notes. The recorded data, some of which are available in CHILDES (MacWhinney and Snow, 1990), were compiled by G. Bol, L. Elbers, J. Frijn, E. Krikhaar, F. Kuiken, P. Rijkhoek, K. Stevens, J. van Kampen, and F. Wijnen. The diary notes are from J. Hoeksema, W. Kaper (1975; 1985), C. Koster, A.M. Schaerlaekens and S. Gillis (1987), J. van Ginneken (1922), and J. van Kampen.

In this corpus, two NPIs were found to occur rather frequently and early: the verb *hoeven* (*need* or *have to*) and the adverb *meer* (*anymore*). Both expressions first appear around the age of 1;09. An early example of each is given in 6 and 7:

6. *ik hoef niet.* (Chantal, 1;08)
   I need not.

7. *kan niet meer.* (Tobias, 1;10)
   can not anymore.

Although these utterances are very elementary, they conform to the requirement of a licenser, since they contain the negation *niet* (*not*). Early on, examples like these abound. Variation in licensing environments, which is normal in adult NPI use, is not found yet; *hoeven* and *meer* almost exclusively occur in combination with *niet* (*not*). It is only months later, from about the age of 2;06, that eventually some variation in licensors starts to occur. See for instance 8, with *niks* (*nothing*) as a licenser, and 9, with *geen* (the quantifier *no*):

8. *zie niks meer.* (Marlous, 2;06)
   see nothing anymore.

9. *meisje hoef geen slab om.* (Kim, 2;08)
   little-girl need no bib on.

Although the great majority of the children’s utterances with NPIs contains a proper licenser, there is also a relatively small number of incorrect utterances, in which apparently no licenser is present:

10. *doet het meer.* (Josse, 2;01)
    works it anymore.
11. ik hoef wijkoeck. (Matthijs, 2;04)
I need honey cake.

12. hoef papa fiets! (shaking head; Annette, 2;03)
need daddy bicycle!

13. ik hoef pit in, nee. (Matthijs, 2;09)
I need nut in, no.

14. ik heb nee stoel meer. (Annette, 3;01)
I have no (anaphoric) chair anymore.

Strictly speaking, these utterances are violations of the requirement of a licenser. At the same time, however, it must be seriously doubted that the occurrence of NPIs in non-licensing environments here results from plainly overgeneralized usage. The fact is that none of the above utterances is neutrally affirmative. They all have a negative meaning, although negation is not conveyed in a correct, adult-like manner. In 10 and 11, there is no negation present in the sentence, but it becomes clear from the context that these utterances have a negative meaning. The child in 10 means to say that some toy does not work anymore, and the child in 11 does not want honey cake. In 12, negation is expressed non-verbally, via an accompanying shake of the head. This child means to say that she does not want to sit on her dad’s bicycle. Also 13 and 14 convey a negative meaning, by means of nee (no). In adult grammar, nee (no) can only occur as an anaphoric negation, but in the children’s utterances it appears to be used as a sentence negation.

3. Reflections of negation development

These data, illustrated in examples 6 through 14, reveal a direct connection between early NPI use and the development of negation. It has been noted in studies on the acquisition of negation (Lord, 1974; Keller-Cohen and Gracey, 1979; Pea, 1980; Bloom, 1991) that headshaking, not, and anaphoric no are the earliest negation markers used by children, and that negation sometimes is deleted in utterances with a clear negative meaning. Remarkably, it is precisely in such negative environments that the first NPIs occur in early child language. This suggests that the phenomena shown in 6 through 14 are not strictly about NPI licensing, but rather are the reflections of negation development in NPI licensing. Deletion of negation, headshaking, and anaphoric no are not unique for utterances with NPIs, but are characteristic of children’s early negative sentences in general. This is illustrated in 15 through 17, where the same phenomena occur in utterances without NPIs:

15. child: hé, kan. (making puzzle; Michael, 1;10)
   hey, can. (meaning can’t)
adult:  kan je ’t niet?
        can you it not?
child:  kan. kan.
        can. can. (meaning can’t)
16. Thijs gaat-e bed nee! (Matthijs, 2;07)
    Thijs goes-e bed no!

17. de molen draait. (shaking head; Kaper (1975), 3;00)
    the mill turns.

Negation development can also account for the gradual increase in the variety of NPI licensers, beyond niet (not), which is so frequently used as a licenser in the beginning. An investigation of the use of various forms of negation in the Dutch spontaneous speech corpus (Van der Wal, to appear) showed that, from about the age of 2;06, the children's vocabulary of negation expands, and comes to include other negative markers than just niet (not), geen (no), and headshaking. At the same time, the variety of licensers in the children's utterances with NPIs increases.

The conclusion on the basis of the Dutch data, which showed both correct and incorrect use of NPIs, is that children in fact do very well, as far as licensing is concerned; they use NPIs in a restricted manner from the onset. The children's ungrammatical utterances, in which NPIs occur seemingly unlicensed, are not what they appear at first sight. The fact that these utterances at least have a flavor of licensing, in terms of a negative meaning, indicates an underlying attempt to adhere to the licensing conditions on NPIs. It thus seems appropriate not to regard these utterances as plain overgeneralization errors, but instead as examples of pseudo-licensing, representing a licensing system in development.

It is not clear yet how the early presence of restrictions on NPIs should be accounted for. An explanation in terms of conservative learning, in which children never go beyond what they hear in the input, will not do, since the distribution of NPIs in child language is clearly deviant from adult language. The occurrence of pseudo-licensers indicates that children use NPIs according to their own, intermediate system. The crucial factor in this system appears to be negation, or rather what counts as negation for young children. NPIs only occur in environments which are recognized by children of this age as being negative. This indicates that the acquisition of NPIs goes hand in hand with the development of negation.

4. The English data

Against the background of the finding from Dutch, that the acquisition of licensers for NPIs proceeds along the lines of negation development, a comparable investigation was carried out in English, to see whether the same developmental pattern is found here. A large corpus of English child speech was explored, consisting of the data compiled by Bloom, Brown, Clark, Kuczaj, MacWhinney, Sachs, Snow, and Suppes. All these corpora are available in CHILDES (MacWhinney and Snow, 1990).

In this corpus, it was found that the first NPIs to appear in English child language are any, either, and yet. The facts regarding the use of these expressions in the children's speech are rich and quite complex. In order to make the data better manageable, a distinction is therefore made between two categories of utterances, which are dubbed occurrences and non-occurrences. In the latter, NPIs are only indirectly involved. This category consists of utterances in which NPIs would have been expected to occur, but in which they are overruled by other expressions.
4.1 Occurrences

The utterances with *any*, *either*, and *yet* in the children's speech show clear parallels with the Dutch data, indicating that the acquisition of NPI licensing is indeed interrelated with negation development. For one thing, in English, as in Dutch, early utterances with NPIs are licensed almost exclusively by means of the negation *not*. Utterances like the following occur frequently in the corpora:

18. not any sheep. (Eve, 2;01)
19. it's not working yet. (Peter, 2;05)
20. I don’t know that song. either. (Nathaniel, 2;06)

As in Dutch, it takes some time before eventually more variation in licensing environments starts to occur. Some examples are given below, with *never*, *without*, and the quantifier *no*, respectively:

21. no, I never seed a alligator in a forest either. (Abe, 2;08)
22. you do that # without any cars ok. (Peter, 3;01)
23. no paper arrived yet. (Abe, 3;09)

Not only are there parallels with Dutch regarding correct use of NPIs, as was shown in the above examples, but also regarding incorrect utterances, in which no correct licenser is present. Just as in Dutch, there are utterances in the English data in which NPIs are pseudo-licensed by means of anaphoric *no*, as in the following examples:

24. oh, work no yet noisy, not. (context: the tape recorder is not making any noise; Shem, 2;04)
25. adult: nothing in there. we got them all out. child: yeah. no # any more in here. (Peter, 2;07)
26. Daddy, there's no any water in here. (Abe, 2;09)

Also, there are utterances with NPIs in which negation obviously is intended but not expressed, as if the negative meaning is so clear for the child that explicit negation marking becomes redundant:

27. I like that anymore. (...) I wanna different one. (Shem, 2;05)
28. he bite me yet. (Sarah, 2;08)
29. I play either, huh? (Sarah, 2;09)
To sum up, the utterances with NPIs in English child language reveal similar patterns of usage as those in Dutch, regarding both correct licensing and pseudo-licensing. These data support the earlier conclusion that the distribution of NPIs is restricted from the onset, and that this restricted distribution is anchored in the development of negation.

4.2 Non-occurrences

There are two different non-occurrence phenomena. The first one regards both *any* and *either*, or more exactly, their positive counterparts *some* and *too*. In adult grammar, the distribution of *some* and *too* is almost complementary to that of *any* and *either*: environments which function as licensers for *any* and *either* usually are anti-licensers for *some* and *too* (Van der Wouden, 1994). In general, *some* and *too* shun negative sentences. In child English, however, the opposite pattern is found. On the basis of the Brown corpus, Bellugi (1967) already reported that *some* in the children’s utterances often occurs in the scope of negation. The present study shows that this phenomenon is recurring in other corpora, and that *too* has the same pattern of usage. See the following examples:

30. can’t put some in. (Eve, 2;01)
31. I can’t pick up some mushroom. (Naomi, 2;04)
32. no, not this too. (Shem, 2;04)
33. I didn’t wipe them too. (Nina, 2;10)

Until the age of about three, *some* and *too* occur more frequently than their NPI counterparts *any* and *either* - even in negative sentences, in which the NPIs would be more felicitous. According to McNeill (1971), the dominant role of *some* is another illustration of the principle that unmarked forms (e.g. *some*) are simpler than marked forms (e.g. *any*), and therefore occur earlier in development. In addition, it might well be that the Principle of Contrast (Clark, 1993) is responsible for the lag between *some* and *too* on the one hand, and *any* and *either* on the other. According to this principle, children assume that any new word which is encountered must contrast in its meaning with other words which are already known. In the case of the pairs *some*/*any* and *too*/*either*, such a meaning contrast is hard to find; the meaning of *any*, respective *either*, per se does not differ from that of *some*, respective *too*. Although there certainly is a difference between the positive and negative part of these pairs, this regards their distributive properties, not their meaning. Once *some* and *too*, as unmarked forms, have appeared in the children’s speech, the absence of a clear meaning contrast with *any* and *either* may further delay the appearance of the latter.

After this interlude with *some* and *too*, another non-occurrence phenomenon shows up, which is related to *any* only: *any* is overruled by multiple negations. This phenomenon has also been reported on by Bellugi (1967), on the basis of the Brown corpus. Her examples include even a triple negation, Adam’s *I can't do nothing with no string*. Bellugi wrote: ‘I do not know how widespread this particular phenomenon is; we can only say that these are grammatical problems of the later period, and that they seem to take a long time to work out.’
The present study shows that such multiple negations indeed are a widespread phenomenon, since they are recurring in other English corpora as well. Some examples are given below:

34. he doesn’t like nothing to eat. (Nina, 2;10)
35. there isn’t no babies. (Shem, 3;00)
36. I didn’t do nothing. (Abe, 3;09)

According to McNeill (1971), these multiple negations develop naturally from the earlier stage, in which some was used in negative sentences. His argument runs as follows: ‘Such a pattern [i.e. some in the scope of negation] clearly indicates that the pronoun some is itself affirmative in Stage 3 [i.e. the stage in which some occurs in the scope of negation]. Children can therefore be led to the hypothesis that in English the sign of the pronoun matches the sign of the sentence. Such a hypothesis would make negation in Stage 3 (I don’t want some) unstable and lead naturally to the negatives of Stage 4 [i.e. the stage in which multiple negations occur]. In Stage 4 affirmative pronouns appear only in affirmative sentences (I want some) and negative pronouns in negative sentences (I don’t want none).’

This analysis may sound as a logical explanation for the sequence of patterns which occurs in the development of some and any. At the same time, however, this explanation has the drawback that it is specifically based on utterances in which the some/any alternation is relevant. The present corpus study shows that multiple negations in fact constitute a much more general phenomenon, which is not limited to utterances in which any would be in its place. As the following examples show, multiple negations occur in negative utterances in general:

37. no more presents he doesn’t give me. (Nina, 3;01)
38. I can’t count without nobody counting with me. (Ross, 3;11)
39. no one’s not going to do what I’m doing. (Adam, 4;06)
40. you can’t even let Jason play never. (Abe, 4;06)
41. nothing can’t reach it, see. (Sarah, 4;09)

The double negations overruling any thus appear to be part of a more widespread phenomenon. The use of multiple negations in child speech is even so broad as to extend the boundaries of one language: the corpus of Dutch child language also shows a variety of multiple negations, in the same age period. Some examples are given below:

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2 The children’s use of multiple negations cannot simply be attributed to the influence of dialects. As these examples show, multiple negations in the children’s speech may deviate from what is common use in English concord dialects.
An interesting side issue which now comes up is whether multiple negation might be a preferred option in child language. Both English and Dutch are non-concord languages, in which multiple negations are not grammatical. Yet, children invent such multiple negations during a certain period in acquisition. If, for some reason, multiple negations indeed are easier for children, then one would expect negative concord languages to be ideal languages to acquire. Indeed, a quick check in the CHILDES corpus of Afrikaans (compiled by J. Vorster) showed that the children never make errors with the double negations which are required in their mother tongue. All negative utterances in the children’s speech are correctly provided with a second negative element, nie (not). The following examples are all from the age period between 2;04 and 3;01:

47. ek kan nie die piesang eet nie.  
   I can not the banana eat not.

48. ons het niks ge-eet nie.     
   we have nothing eaten not.

49. hij wil nooit werk nie.      
   he wants never work not.

These data, however, are in contradiction with observations from Polish, which also is a negative concord language. According to Smoczyńska (1985), Polish children do make errors in negative utterances. She observed that use of a negative pronoun involves the deletion of the second negation nie, as in the following example:

50. nic powiem (correct would be: nic nie powiem)  
    nothing I-will-say

Multiple negations in child language still remain an intriguing puzzle, and as such are challenging for further research.

Now turning to the main topic of this paper again, the acquisition of NPIs, the question is whether the multiple negations overruling any have anything to do with the special character of any as an NPI. The extensive use of multiple negations, in negative utterances
in general, makes this highly unlikely. If multiple negations occur generally during a certain period in language acquisition, then the reason why *any* is overruled in this stage must be its special character as a quantifying expression, rather than its special character as an NPI.

5. To conclude

The data discussed in the previous section show that the crosslinguistic, lexical differences in polarity sensitivity may result in deviant patterns in the acquisition of NPIs in different languages. The special character of the lexical items which appear as early NPIs in English child speech leads to specific non-occurrence patterns, which are not found in Dutch. *Any* and *either* have positive counterparts - *some* and *too*, respectively - which the children prefer to use in their early speech. In addition, *any* is special because it is a quantifier, and as such it plays a prominent role in the stage of multiple negations.

The utterances in which *any*, *either*, and *yet* do appear, however, show clear parallels with the Dutch data on the early use of *hoeven* and *meer*. They are further support for the conclusion which was made halfway through this paper, that NPIs, as soon as they appear in child speech, have a restricted distribution, and are closely connected with the development of negation. When the first NPIs appear in child language, the children still have only a small vocabulary to express negative meaning. Yet, they use this whole vocabulary as licensors or pseudo-licensers for NPIs. This indicates that children use NPIs according to their own, intermediate system, which develops in tandem with negation.

6. References


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