

A tip-of-the-tongue experience at age two?*

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ABSTRACT

Some word-finding problems (recorded on tape) of a Dutch two-year-old are reported. The child's attempts at retrieving a certain target form show many characteristics which are typical for 'tip-of-the-tongue' experiences. During his lexical search the child produces malapropisms and a blend. The speech errors are analysed, and implications for the character of early lexical organization and the order of lexical form/meaning acquisition are discussed.

INTRODUCTION

When my son was about 2½ years old, I used to record our conversations regularly. During one of these conversations the child seemed to experience what is known as the 'tip-of-the-tongue' phenomenon (TOT). Since this supposed TOT experience was recorded on tape, it is possible to trace its origin in the conversation and to describe its course and resolution.

A speaker is said to be in a TOT state when she is searching her lexicon for a specific item, knows its meaning, knows also that she 'somewhere' has its form, but is (temporarily) unable to retrieve this form. While in a TOT state, the speaker may come up with target-related words and with generic information about the target, such as its first letter, its syllable structure, etc. (Bolinger 1961, Brown & McNeill 1966, Rubin 1975).

In the next section the relevant conversation segments are presented and interpreted. In the subsequent discussion a summary and evaluation is presented of the evidence for claiming that the child had a TOT experience, and some implications of the data are discussed for the interrelationships of form and meaning representation (and acquisition) within the developing lexicon.

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DATA AND INTERPRETATION

The material consists of three conversations, all taped on the same day, when the child's age was 2;9.26. In presenting the material I refer to myself as 'the mother' and to my son as 'the child'. Before presenting the relevant segments of the three conversations, two remarks about their context should be made:

(a) On the preceding day, mother and child had been visiting a marine show, where dolphins had been performing. This was the first time the child had ever seen a dolphin.

(b) At the time, much attention was paid at home to nursery songs. Records of nursery songs used to be played frequently. Mother and child often sang these songs together and the child also quite often sang them by himself. In one of these songs the word [solda:tjəs] (soldiers) occurred.¹ The child had never met soldiers, and soldiers also did not figure in his picture books. So, whereas he had a thorough knowledge of this word's form, he had, at the most, but a vague inkling as to its referential meaning.

The following six segments of the recorded conversations show how the child struggles to find the word *dolphins*, but mostly comes up with the word *soldiers*, and also, less persistently, with the word *orange*. I will analyse the segments successively. A phonetic transcription (word for word) of the Dutch utterances is presented, and English translational equivalents are added (with a few untranslatable parts presented between square brackets in IPA). For an adequate understanding of what is happening, it is sufficient to know that the Dutch form for *raisins* is [ro:zèintjəs], for *dolphins* it is [dolfeinən], for *orange* it is [o:rànjə] and for *soldiers* it is [solda:tjəs].

At the beginning of the first conversation, mother and child are talking about the marine show of the preceding day. During this conversation the mother introduces the word *dolphins* and produces it seven times in a sentence context. The child produces it twice. Then the child starts asking for a banana and the mother tries to talk him out of it. This goes on for some time. Then segment 1 begins:

[1] Transcription and translation of this song are:

het re:xənt, het re:xənt
it's raining, it's raining
 də panətjəs wordən nat
the tiles are growing wet
 da:r kwa:mən twe: solda:tjəs a:n
two soldiers came
 di vilən op hən xat
who fell on their behinds.

Segment 1 (from conversation 1)

Mother

we:t jə; ne:m ma:r livər
 you know what, take a
 ən do:sjə ro:zeintjəs
 small box of raisins

he? vɪl jə nit...ɪk zal
 what? don't you want...I'll
 jə ən do:sjə ro:zeintjəs xe:vən
 give you a small box of raisins

vat solda:tjəs?
 what soldiers?

vat is da:rme:?
 what's the matter with that?

ja:, ma:r vat kan ɪk vɛl?
 yes, but what can I do?

Child

- (1) max ɪk nox ən bana:n?
 can I have another banana?

- (2) [ətəva x ɪŋə]²
 (giggle) (2 ×)³
 (3) [ədəva nini no:moma:]

- (4) solda:tjəs a:n
 soldiers [a:n]
 (5) solda:tjəs
 soldiers

- (6) solda:tjəs a:n
 soldiers [a:n]
 (7) sol...da:tjəs
 sol...diers
 (8) solda:tjəs
 soldiers

- (9) ə, də...jei, jei, jei kan het vɛl
 eh, the...you, you, you can do
 it

- (10) vasein dɪt?
 what are this⁴

[2] Utterances (2) and (3) are 'articulated nonsense', i.e. the phonetic form of these utterances can be clearly identified, but the utterances have no meaning in Dutch.

[3] Whenever an utterance (or a non-speech act, such as in this case 'giggling') is repeated in full, the number of productions is presented between brackets.

[4] The child's Dutch utterance may either be interpreted as a *what*-question or as a *where*-question. The following utterance (12) makes clear that a *what*-question was intended, but the mother at first takes utterance (10) to be a *where*-question.

- (11) vʌsɛɪn də...vɪʃə?
what are the...fishes?

vʌ:r də vɪʃə nou zeɪn?
where the fishes are now?
 dɪ zeɪn ɪn het zʌɛmbat,
they are in the swimming pool,
 ɪn het xro:tə zʌɛmbat,
in the big swimming pool,
 dʌ:r zɪtə zə ʌlteɪt ɪn, he?
that's where they always are, hm?

- (12) vʌ...vʌt seɪn dʌt vɔ:r...
wha...what kind of
 vʌt seɪn dʌt vɔ:r vɪʃə?
what kind of fishes?

dɪ xro:tə vɪʃə?
those big fishes?

- (13) jʌ:
yes

dʌt vʌ:rən dɒlfɛɪnən
those were dolphins

- (14) dɒlfɛɪnən
dolphins

jʌ:
yes

- (15) ɪk vɪl he...ɪk vɪl...bʌnʌ:n
heba
I wanna ha...I wanna...have
banana

Segment (1) starts with the child asking once more for a banana (utterance (1)). The mother responds by offering him raisins ([ro:zɛɪntʃəs]). The child then produces some nonsense utterances (utterances (2) and (3)), and then, seemingly out of the blue,⁵ starts talking about soldiers ([soldʌ:tʃəs]) in utterances (4) to (8). The origin of this form in a nursery song can be clearly seen in utterances (4) and (6), in which the child also produces the word [a:n], which follows [soldʌ:tʃəs] in the song (see fn. 1). Since this topic is completely

[5] We might, however, speculate that *raisins* [ro:zɛɪntʃəs] by sound association reactivates (parts of) the representation of *dolphins* [dɒlfɛɪnən], which word was used in the previous conversation topic. The child tries to produce this form again, but is sidetracked by the form *soldiers* [soldʌ:tʃəs], which has elements in common with both [ro:zɛɪntʃəs] and [dɒlfɛɪnən]. This supposed sequence of sound associations would adequately fit into the interpretation developed here.

alien to the ongoing conversation, the mother asks for a clarification of its introduction. The reaction of the child consists of an attempt to make clear that he is looking for the form *dolphins* ([dolfeinən]). First, in utterance (9), he points out that mother can do something which he cannot.⁶ Utterances (10)–(14) indicate that this something refers to producing the form *dolphins*. Assuming that the child is adhering to the principle that conversations should be coherent, we may conjecture that utterances (4)–(8) and utterances (9)–(14) are related. The most plausible relationship would be that in utterances (4)–(8) the child is attempting to retrieve the same word form as in utterances (9)–(14), i.e. the form *dolphins*. As we will see, this assumption is supported by the later course of the conversation. As for the present, the implication is twofold: (a) for the child, the word forms [solda:tjəs] and [dolfeinən] are related (note that they have the same number of syllables, the same stress pattern, and, as far as the first syllable is concerned, the same rhyme) and (b) the child is aware of the fact that [solda:tjəs] is NOT the correct form, but feels himself incapable of finding the correct one. Thus, utterances (4)–(8) are reminiscent of that phase of an adult TOT experience during which the experiencer retrieves target-similar word forms, which, however, she knows to be incorrect.

In Segment (1) the child is satisfied when the mother finally produces [dolfeinən]. He once repeats the word (utterance (14)), but then immediately drops the subject and returns to his request for a banana (utterance (15)). In Segment (2) however, he spontaneously starts searching his lexicon again:

Segment 2 (from conversation 1)

Mother	Child
	(16) vasein di nou? what are those?
	(17) solda:tjəs fi (3 ×) soldiers [fi] (3 ×)
vi...vat is dat, solda:tjəs fi?	
who...what is that, soldiers [fi]?	
	(18) solda:tjəs zein vex (2 ×) soldiers are gone (2 ×)

After Segment (2) the child's attention is caught by noises in the street, and the subject of soldiers/dolphins is dropped. The mother, however, has now become alerted to what is going on, and later on the same day (conversation 2) it is she who starts probing the child's memory:

[6] The untranslatable Dutch form [vel] is used when the speaker wants to indicate a positive/negative opposition. For instance: an utterance like *the apples are* [vel] *red* would only be produced in a situation in which there are also apples which are not red.

Segment 3 (from conversation 2)

Mother

Child

hu he:tən di vɪsən? tɔ:mas?

what is the name of those fishes?

Thomas?

(19) o:ranjə

orange

hu he:tən di vɪsən?

what is the name of those fishes?

(20) o:ranjə

orange

ne: ... zə zeɪn nɪt o:ranje,

no ... they are not orange,

zə zeɪn xreɪs, en zə zwemən zo:

(gesture)

they are grey, and they swim like

that (gesture)

zə sprɪŋən ɔɪt het vɑ:tər

they jump out of the water

en dən sprɪŋən zə dɔ:r də hupəl

and then they jump through a big

ring

en dən, plɒns, vələn zə veɪr ɪn het

vɑ:tər

and then, splash, they fall into the

water again

en hu he:tən zə nou?

and now, what's their name?

(21) solda:tjəs

soldiers

ne: (laughing), zə he:tən nɪt

solda:tjəs

no (laughing), they're not called

soldiers

hu he:tən zə dən?

how are they called?

(22) solda:tjəs

soldiers

(23) ne: (laughing)

no (laughing)

(24) bæyt seɪn nox solda:tjə...s

outside are still soldier...s

zə he:tən nit solda:tjəs
they are not called soldiers
 ma:r hu he:tən zə vel?
but how are they called?

(25) o:ranjə
orange

he?
 hm?

(26) o:ranjə
orange

o:ranjə, kom nou!
orange, come on!

(27) xe:l?
yellow?

At first the child comes up with [o:rənjə] (orange) in utterances (19) and (20). This word (which in Dutch refers only to the colour, not the fruit) has the same number of syllables and the same stress pattern as the target word [dolfeinən]. Like *soldiers*, it still lacks a clear referential meaning for the child (at the time he was not yet able to reliably name colours).

After the first two instances of *orange*, the mother decides to present the child with a few semantic cues. She describes the way in which dolphins perform. As we would expect in a true TOT experience, this semantic cueing is of no avail. The child again comes up with *soldiers* (utterances (21) and (22)) and *orange* (utterances (25) and (26)). The production of *yellow* (utterance (27)) probably must be explained as a semantic association to *orange*.

After Segment (3) the conversation moves again to the marine show. Mother and child talk about seals and their performance. The word *dolphins* is not used. Then (Segment (4)) the mother tries the effect of presenting phonological cues:

Segment 4 (from conversation 2)

Mother
 en hu he:tən də vɪsən?
and what is the name of
the fishes?

Child

(28) solda:tjəs
soldiers

(29) ne: (laughing)
no (laughing)

ne:, zə he:tən...
no, their name is...

də...də...

də...də...

(30) də

də...

də...

(giggling)

do...do...

do...do...

(31) feina!

phins!

(32) dolfeina!

dolphins!

dolfeinan, ja:

dolphins, yes

(33) sein nit solda:tjəs

are not soldiers

ne:, nit solda:tj:s, ne:

no, not soldiers, no

(34) dolfeina

dolphins

Segment (4) shows that the mother first presents the initial consonant [d]. When this does not help, she presents the first vowel as well ([do]). The child is then able to retrieve the target word (utterances (31), (32), (34)). This however does not make its phonological representation strong enough to withstand further interference, as is evident from Segments (5) and (6), which were recorded still later on the same day (conversation 3).

Segment 5 (from conversation 3)

Mother

Child

en hu he:tən di vɪsən?

and what's the name of the fishes?

(35) solda:tjəs

soldiers

(36) ja:

yes

(37) ne: (laughing)

no (laughing)

ne: (laughing)

no (laughing)

hu he:tən zə dan?

what's their name?

(38) keikəs

look

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- (39) vo:r jou (offers M. a toy)
for you (offers M. a toy)
- (40) do...vən
do...vən
- (41) dol...doltəl...tətə

Segment (5) shows the child retrieving parts of the target word and engaging in sound play. He does not retrieve the complete form (utterances (40) and (41)). Then, in Segment (6), the mother tries phonological cueing again.

Segment 6 (from conversation 3)

Mother	Child
he:tən zə to:mas? are they called 'Thomas'?	
	(42) ne: no
he:tən zə solda:tjəs? are they called 'soldiers'?	
	(43) ne: no
hu he:tən zə dan? how are they called then?	
	(44) vɪsə! (2 ×) fishes (2 ×)
ma:r hu he:tən di vɪsən dan? but what name do the fishes have?	
	(45) solda:tjəs soldiers
zə he:tən...do... their name is...do...	
	(46) fei...nə phins
ja:, dol... yes, dol...	
	(47) feinənə phins
	(48) vəs...vasein vɪsə? whata...what are fishes?
nou, hu he:tən di vɪsən? well, what's the name of those fishes?	
	(49) ja:? yes?
	(50) soldeinə! (3 ×) soldins! (3 ×)

soldeinə?

soldins?

o:!

oh!

(51) soldeinə (3 ×)

soldins (3 ×)

(52) soldeinə

soldins

(53) solda: ... səla:tjəs ...

soldie ... səliers ...

sola:tjəs ... he?

soliers ... hm?

(54) [hu-ta:la:], etc. (sings)

[hu-ta:la:], etc. (sings)

Segment (6) shows the child finally producing a fully-fledged 'blend' of target and interfering word (utterances (50)–(52)). At first this blend is produced with great assurance. Then, when no confirming response from the mother comes forth, there is a gradual 'taking over' again by the interfering form (utterance (53)). After this the child switches to producing singsong nonsense (54).

DISCUSSION

TOT or not?

In the previous section we witnessed a series of difficulties, experienced by a child during repeated attempts at retrieving the same word form. The question now is whether these difficulties deserve the name of TOT or whether they do not. The answer of course depends in part upon what definition of TOT experience is preferred. Generally, the 'feeling-of-knowing the target form' seems to be considered as the most important defining characteristic of a TOT state. Yarmey (1973: 287) for instance states: 'Whenever S was unable to think of the target's name but felt sure that he knew it and that it was on the verge of coming back, he was considered to be in the TOT state'. Young children hardly ever venture such detailed introspective information, and our 2-year-old subject is no exception in this respect. So, by the introspective criterion, which tends to exclude children as potential TOT experiencers, we may not speak of TOT in the present case.

On the other hand, the child's lexical search processes do manifest many characteristics typical for TOT states. In summary, these are as follows:

(a) The child knows the intended referent and is ACTIVELY SEARCHING for its SPECIFIC NAME, and not for a conversationally adequate paraphrase. The active character of the search is indicated by utterances (9)–(12), (16) and (48),

in which the child directly and tenaciously asks for the specific target form. These utterances are not prompted by the mother's questions, nor do they constitute a request for completely new information (prior to Segment (1) the child had already spontaneously produced the target form).

(b) Though we cannot conclude with certainty that the child experienced a 'feeling-of-knowing the target form', we may at least infer from his utterance (9) that he experienced a 'feeling-of-knowing the target form's EXISTENCE'. In combination with the fact that he had already spontaneously produced the target form earlier in the conversation, this SUGGESTS he may very well have had a 'feeling-of-knowing the target form' as well.

(c) During a TOT state, an adult may retrieve forms that are similar to the target form, while knowing they are not correct. The child also retrieves a similar form (utterances (4)-(8), (17)-(18), (21)-(22), (28), (35), (45)), knowing it is incorrect (utterances (9), (23), (33), (37), (43)).

(d) In adults, lengthy semantic descriptions may intensify the TOT experience (Koriat & Lieblch 1977), whereas phonological cues may lead to retrieval of the target form. In our subject, semantic cues also did not trigger the target form (utterances (21) and (25)), but phonological cues did (utterances (31)-(32) and (46)-(47)).

(e) During a TOT state an adult may, if asked to do so, produce some generic information about the target form, such as its first letter, its number of syllables, etc. Our subject, when asked to produce the target form, also once came up with generic information (utterances (40)-(41)), without producing the complete target form.

Taken together, these five observations do not quite seem to fit an interpretation which sees the child as simply being somewhat confused about how to express himself. The child just seems to know too well what he is and what he is not looking for (see also the abrupt ending of the questioning sequence after utterance (14) and the almost metalinguistic observation made in utterance (33)). So I favour a TOT interpretation in the present case, though ultimately such an interpretation must remain a matter of definitional taste. For the present, a more interesting question is what the data suggest about early lexical representation and acquisition.

Form and meaning in early lexical representation and acquisition

In the adult lexicon, the form and meaning of a lexical item are represented somewhat independently. The same holds for the different aspects of the phonological representation itself, such as syllable structure, stress pattern and phonetic segments (Brown & McNeill 1966). The observations presented above suggest that this independent storage may already be effective before age three. However, they also confirm some recent theorizing about the difference between child and adult lexicon. In their study of 200 child malapropisms (up to age 12) Aitchison & Straf (1982) conclude that child and

adult lexicon differ in the relative weight assigned to the several phonological word features that make up a word's phonological representation. Adult malapropisms appear to be more strongly based on identity of initial consonant, whereas child malapropisms are more strongly based on identity of number of syllables and stress pattern (see also Vihman (1981)). The TOT experience reported above confirms this conclusion. We saw that during the search for the form [dolfɛinən] the child came up with two malapropisms ([soldà:tjəs] and [o:rànjə]) which both resemble the target form in number of syllables and stress pattern, but not in initial consonant. Also, presentation of the initial consonant by the mother had no effect (though presentation of the initial consonant/vowel combination had).

Another interesting aspect of the two malapropisms [soldà:tjəs] and [o:rànjə] is the fact that both words seemed, at the time, to be still incomplete as to the representation of their referential meaning. [soldà:tjəs] was a form encountered almost exclusively in a certain nursery song, and the specific reference of the colour word [o:rànjə] was not yet known to the child. This suggests that, during the search for a weakly represented word form, similar forms which are not yet tied to a 'strong' referential meaning are among the first to present themselves. The implication would be that during lexical search a kind of 'difference score' is computed between the target word and a candidate item. Should the candidate item have little specific meaning, the difference score will tend to be lower, and the item in question will have a greater chance of being retrieved.

Stated somewhat differently: it seems that a child's lexicon may contain 'forms searching for meaning' as well as 'meanings searching for form', and both kinds of item appear only too eager to meet each other. Another striking instance of such a 'meeting' is the following malapropism which occurred in the same month as the reported TOT experience. When we were visiting friends, the child noticed a microscope. This new object fascinated him and he was allowed to explore it for some time. During the following days he often referred to this experience, telling me that he wanted to play with the [vlɛ:sta:xutkò:p] again. At first I did not understand. Then it dawned on me that this 'word' came from [en het vlɛ:s vas da:r xutkò:p] (translation: 'and the meat was cheap there'), a phrase from, again, a nursery song. Apparently, the fact that [mikroskò:p] (microscope) and [vlɛ:sta:xutkò:p] share the same final (and stressed) syllable had been a sufficient reason for this meeting of an 'old', referentially empty, form and a 'new', phonologically untrained, meaning to result in lexical marriage.⁷

[7] Note that this malapropism is also a particularly clear example of a child's tendency to pay more attention to word endings than to word beginnings (Slobin 1973, Aitchison & Straf 1982).

Nursery songs of course are an excellent source for the acquisition of 'forms in search of a meaning'. But probably other sources exist as well. One might think of recurrent expressions in overheard adult conversations, or in stories which are repeatedly told. Until now, the literature has emphasized the fact that meaning acquisition may precede the acquisition of form. The observations presented above add to the growing body of research which indicates that the reverse order may also occur (Clark 1974, Leonard, Newhoff & Fey 1980, Vihman 1981, Peters 1983, Snow 1983).

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