

**Note of clarification on the coding of light verbs  
in ‘Semantic generality, input frequency  
and the acquisition of syntax’ (*Journal of Child  
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ANNA L. THEAKSTON

*University of Manchester*

ELENA V. M. LIEVEN

*Max Planck Institute for Evolutionary Anthropology*

JULIAN. M. PINE AND CAROLINE F. ROWLAND

*University of Liverpool*

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INTRODUCTION

In our recent paper, ‘Semantic generality, input frequency and the acquisition of syntax’ (*Journal of Child Language* 31, 61–99), we presented data from two-year-old children to examine the question of whether the semantic generality of verbs contributed to their ease and stage of acquisition over and above the effects of their typically high frequency in the language to which children are exposed. We adopted two different categorization schemes to determine whether individual verbs should be considered to be semantically general, or ‘light’, or whether they encoded more specific semantics. These categorization schemes were based on previous work in the literature on the role of semantically general verbs in early verb acquisition, and were designed, in the first case, to be a conservative estimate of semantic generality, including only verbs designated as semantically general by a number of other researchers (e.g. Clark, 1978; Pinker, 1989; Goldberg, 1998), and, in the second case, to be a more inclusive estimate of semantic generality based on Ninio’s (1999*a, b*) suggestion that grammaticalizing verbs encode the semantics associated with semantically general verbs. Under this categorization scheme, a much larger number of verbs were included as semantically general verbs.

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[\*] Address for correspondence: Dr Anna Theakston, School of Psychological Sciences, University of Manchester, Oxford Rd., Manchester, M13 9PL, UK. tel: 00 44 161 275 2600; fax: 00 44 161 275 2588; e-mail: anna.theakston@manchester.ac.uk

We argued that the data provide no evidence that the semantic status of individual verbs plays any consistent role in their acquisition, over and above the effects of the frequency of the verbs in the input. This was found to be the case for both a more inclusive, and a more conservative estimate of semantic generality. Thus, semantic generality was not a consistent predictor of (1) the order of acquisition of verbs in the children's speech in the intransitive S-V, and transitive S-V-O and V-O constructions, (2) the syntactic diversity of use of individual verbs, (3) the relative proportional use of semantically general verbs as a function of total verb use, or (4) the accuracy with which children use individual verbs.

Since the publication of these data, Professor Ninio has contacted the Associate Editor who dealt with the article to raise some concerns over our interpretation of her categorization of verbs as semantically general or more specific, as she feels that the scheme adopted was not a fair reflection of her approach. More specifically, she suggests that a number of the verbs that we coded as semantically general are not listed as grammaticalizing verbs in her papers. As this was stated to be our criterion for inclusion of the verbs in our coding scheme, she argues that these verbs should not have been included. She suggested that we should be invited to comment on our coding scheme, and the Associate Editor has therefore invited us to publish a brief note clarifying our coding scheme and addressing Professor Ninio's concerns. In this note, we acknowledge that the information contained in the original paper was not as clear as it might have been and may have led to some confusion over how verbs were categorized. We will therefore clarify how verbs were coded, and justify our coding decisions in the context of Ninio's overall position as presented in her 1999 papers on the role of 'pathbreaking' verbs in early grammatical development. We will argue that confusion over the categorization of verbs as semantically general or more specific originates from a tendency to focus more on the particular verbs that children produce early in development than on identifying the precise characteristics of these verbs (e.g. Clark, 1978; Goldberg, 1998; Ninio, 1999*a, b*). For example, it is possible to claim that *go* is a semantically general verb for a variety of reasons (it encodes semantics associated with movement in its broadest sense, is often grammaticalized, and is very frequent), but this does not provide a strict definition of the characteristics of semantically general verbs which would allow other verbs to be classified (thus, are all frequent verbs semantically general?; are all semantically general verbs grammaticalizing verbs?). However, without a detailed or fully specified coding scheme to determine which verbs are semantically general, the predictive power of theories advocating a privileged role for semantically general verbs in the acquisition process is weakened. A lack of clarity concerning the underlying characteristics of semantically general verbs will almost inevitably lead to disagreements on how these hypotheses

should be tested against empirical data. We will demonstrate that the categorization scheme adopted in our paper that was intended to represent Ninio's theoretical position was justified and, although open to interpretation, is very much in line with her arguments regarding the semantics associated with children's pathbreaking verbs.

#### METHOD: THE CODING SCHEME

In our second categorization scheme, 37 verbs in total were coded as light or part-light. This scheme was intended to represent Ninio's 'pathbreaking verbs' hypothesis regarding early verb acquisition. She argues that verbs which undergo grammaticalization cross-linguistically play a privileged role in the acquisition process. Our categorization scheme states that 'those verbs listed as the most common verbs to undergo grammaticalization cross-linguistically by Ninio (1999*a, b*) were coded as "light" ... (see also Foley & Olson, 1985; Bybee, Perkins & Pagliuca, 1994)' and 'Those verbs listed by Ninio as verbs that less frequently undergo grammaticalization were coded as "part-light"' (Theakston, Lieven, Pine & Rowland, 2004: 74). However, categorizing verbs according to these criteria in order to accurately represent Ninio's approach is not in fact so clear-cut or straightforward. In Ninio's 1999*a* paper, she argues that grammaticalizing verbs encode very general semantics, and therefore are likely to be acquired early by children. However, when she discusses grammaticalizing verbs, semantically general verbs, and the verbs children first use in verb-object combinations, there is an implication that these terms can largely be used interchangeably to refer to a single set of verbs, as she claims that these groups of verbs overlap to a large extent, and share common and general semantics. Ninio provides lists of verbs that children acquire early, and examples of grammaticalizing verbs found cross-linguistically that do not overlap completely. If we accept her claim that the different groups of verbs share very general meanings, there are some verbs that she appears to regard as semantically general that, nevertheless, do not appear in her lists of grammaticalizing verbs. It is therefore unclear exactly how semantic generality should be defined within her approach. We therefore applied a broad interpretation of 'grammaticalizing verbs' to arrive at a categorization scheme that we felt fairly represented the range of verbs that she considers to have very general semantics. We took five steps to arrive at our categorization scheme.

*Step 1.* 21 verbs are listed as undergoing grammaticalization in Ninio's papers, and were coded as light or part-light (1999*a*: 639, 1999*b*: 118) (*bring, come, do, drink, eat, fall, get, give, go, have, hold, lie, make, move, put, see, sit, sleep, stand, take, want*). At this stage of the coding, we made the assumption that the verbs *eat* and *drink* were acceptable representations of

the semantic notion *consume*. This leaves 16 verbs coded as semantically general in our paper that were not explicitly listed as verbs undergoing grammaticalization in Ninio's work.

*Step 2.* 18 verbs are listed as examples of verbs expressing verb-object relations crosslinguistically (1999a: 638–9), and thus conform to the criterion that they are grammaticalizing verbs. These verbs were coded as light or part-light. Of these 18 verbs, 12 are also listed in Step 1, thus six are additional verbs (*build, carry, hit, need, pay, throw*). This leaves 10 verbs that are coded as semantically general in our paper, but are not listed explicitly as verbs undergoing grammaticalization in Ninio's work.

*Step 3.* In her paper examining the verbs children use in their early transitive verb combinations, Ninio argues that:

'We saw that the set of transitive verbs most likely to be acquired early are all rather basic, frequent verbs; they also encode meanings which are pragmatically important for young children ... They certainly answer to the description of general purpose, or semantically light verbs ... Important as these features are, there is another, very striking characteristic shared by the first transitive verbs acquired by children. Crosslinguistic evidence suggests that these verbs may be no less than GENERIC transitive verbs. The coincidence is striking: children use as their pathbreaking verbs the very same verbs that we find utilized for the grammaticalization of the transitivity construct' (1999a: 637).

On the basis of this argument, we classified the verbs listed by Ninio as 'The starting verbs for VO and SVO' (1999a: 636) as semantically general verbs. This list includes 10 verbs, eight of which are also listed in Steps 1 and 2. This high level of overlap was taken as justification that the remaining two verbs should also be categorized as semantically general (*hear, find*). This leaves eight remaining verbs.

*Step 4.* In her paper examining the verbs first used to express transitive relations, Ninio states that:

'We have seen that children's earliest combining transitive verbs overlap to an amazing degree with the verb stems typically used as grammaticalized markers of transitivity in various languages of the world. This finding lends direct support to Slobin's (1985, 1997) claim that Basic Child Grammar is built on a stock of fundamental "grammaticalizable concepts". The question is, what does the relevant core concept of transitivity consist of?' (1999a: 640).

'An examination of the set of transitive verbs most likely to be acquired early, and the utterances they are used in with direct-object complements, immediately reveals that they do NOT have High Transitivity ... In general, the earliest combining transitive verbs do not have highly affected objects even when they depict completed actions and not requested ones ... What becomes intriguing now is that the same semantic profile is shared by the

set of verbs typically grammaticalized as transitivity-inducers' (1999a: 641-2).

Ninio argues that the verbs first used by children in combination with direct-objects map onto a notion of transitivity that is based on the unaffectedness of the objects concerned. This is also assumed to mirror the notion of transitivity that underlies grammaticalization. Here (1999a: 642), Ninio lists 13 verbs as examples of the verbs used in early combinations. Of these, eight are also found in Steps 1, 2 and 3; two are found in steps 1 and 2; and two are found in Step 3. In total, 12 of the 13 verbs are classified as semantically general by other criteria, thus it was decided to classify the final verb (*draw*) as semantically general due to the high degree of overlap between groups/lists of verbs, and the implication that these verbs underlie the core notion of transitivity that is also found in grammaticalizing verbs. This leaves seven remaining verbs that are not mentioned in Ninio's papers as grammaticalizing verbs, or as verbs that could be interpreted in this way.

*Step 5.* As Ninio argues strongly that grammaticalizing verbs are likely to be acquired early by children as a result of their very general semantics, we consulted an alternative source of information regarding the verbs that undergo grammaticalization crosslinguistically (Bybee *et al.*, 1994) in order to fairly represent her approach. Although we cite Bybee *et al.* (1994) in the original paper as an alternative source of information on grammaticalizing verbs, exactly which verbs were classified with reference to Bybee *et al.* was not made explicit. In the work of Bybee *et al.*, a total of 26 verbs were listed as verbs undergoing grammaticalization, and were also produced by the children and mothers in the current study. Of these, four were discounted because they seemed to convey a different sense to that used by the children, and they were also verbs that are rarely seen as grammatical markers (*catch, try to, used to, understand*).

Of the remaining 22 verbs, 15 are also listed by Ninio. This meant that we categorized seven additional verbs as semantically general because they are listed by Bybee *et al.* as grammaticalizing verbs, although they were not listed by Ninio (*finish, know, like, play, stop, wait, walk*). Given the emphasis on the semantics associated with grammaticalizing verbs, and their relevance in early verb acquisition in Ninio's work, we felt that this was a fair decision and did not misrepresent her theoretical position. In fact, we believed that taking a wider perspective on grammaticalization would provide a more reliable basis for verb categorization than relying on Ninio's work alone, as she provides examples of grammaticalizing verbs, rather than an exhaustive list. This means that of the 37 verbs coded as semantically general in our study, 34 are explicitly listed as grammaticalizing verbs in either the work of Ninio (1999a, b), Bybee *et al.* (1994), or by both, and the remaining three verbs appear to have very similar semantics to these verbs. It is important to note that if adding additional grammaticalizing verbs to

our categorization scheme renders it a misrepresentation of Ninio's position, then it is unclear what role grammaticalizing verbs play in allowing us to identify the verbs with transparent and general semantics that are proposed to underpin early verb acquisition.

#### DISCUSSION

Although the information included in our original paper could have been clearer regarding the categorization of verbs that was taken to reflect Ninio's theoretical position, we argue that the coding scheme we adopted is a fair representation of her position concerning the privileged role of semantically general verbs in the acquisition process, and that it allowed us to test the proposed role of semantic generality in the acquisition process against empirical data.

However, these problems of interpretation point to the need for researchers who advocate a privileged role for semantically general verbs in the acquisition of syntax to generate testable predictions concerning exactly which verbs are expected to drive the acquisition process. Without much tighter predictions, it is difficult to establish the particular emphasis that should be placed on the different factors that affect early verb acquisition within any given theoretical perspective.

In our paper examining the role of semantic generality, we argued that input frequencies are more important in determining children's early patterns of verb use than the specific semantics of the verbs involved. It is important to emphasize, however, that we are not claiming that input frequencies are the only factor to influence children's early language: this is clearly not the case, nor is the influence of input frequencies necessarily straightforward (see Rowland & Pine, 2000, 2003 on the complex role of input frequencies in the acquisition of *wh*-questions, and Theakston, Lieven, Pine & Rowland, 2005 on the role of both type and token frequencies in the acquisition of auxiliary syntax). Moreover, we are not claiming that the semantics of individual verbs do not contribute to their acquisition. For example, we have previously demonstrated that both the frequency of the syntactic construction in which a verb appears AND the frequency with which that verb is used to encode a particular meaning in that construction in the input influences the relative order of acquisition of the different forms of the verb *go* to encode specific meanings in particular constructions in children's speech (Theakston *et al.*, 2002). Our point is that the role of input frequency should be excluded before more complex explanations are put forward to explain patterns of language use observed in children's early speech. More importantly, when alternative explanations are proposed such as the role of semantic generality, very specific predictions are needed to allow researchers to test these theories against empirical data.

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