

Response to comments¹

All the comments were thoughtful, interesting, supportive of further investigation into this small but complex arena of language acquisition, and suggested new ways to extend the enterprise. Not having space to discuss all the interesting issues to the length they deserve, I will synthesise the highlights of an overall picture of both agreement and questioning.

The commentators generally agree with the usefulness of a child-centred approach to understanding language acquisition, and with a constructivist view of what children do. Those who commented on the notion of a ‘holding tank’ seem to agree that a filler can serve as a locus for accumulation of information about the phonological, syntactic, semantic and/or pragmatic attributes of the adult target. In my view children do not *unlearn* amalgams, as Radford suggests; rather they analyze them and/or fill them in with information accumulated in the holding tank (Peters 1999, in press).

Most respondents, except for Dressler & Kilani-Schoch, support continuist views of language acquisition, with several also mentioning the need to integrate our view of traditional compartments of language. Lleó notes that fillers are at the interfaces of phonology, morphology and syntax, which thus cannot be rigidly compartmentalised. Menn & Feldman remark more than once on the importance of considering the influence of pragmatic and functional development. Demuth calls for the integration of phonoprosody into our understanding of morphosyntactic development, citing crosslinguistic evidence from Spanish and German for phonological influence on the appearance of articles.

Lleó, Menn & Feldman and López-Ornat remark that development is continuous, and question the line dividing the boxes in my table. I propose the following view: yes, the boxes in some sense represent continua. However, they have identifiable subsections with prototypical centres, which cry out for labels such as Pre-, or Proto-morphology, and the edges of the sections are both fuzzy and interesting. I believe this is true both of modules of language, and of development from pre- to proto- to full morphology (Menn 1999).

Dressler & Kilani-Schoch, however, do not seem to support developmental continuity when they say: ‘despite the early continuity between phonology and morphology, the phonological forms of fillers are not derivable (i.e. predictable) via phonological processes of child phonology from adult target inputs’. I disagree. The phonological forms of fillers are at the very least constrained by the phonological forms of the adult targets. We need a much

[1] I would particularly like to thank Katsura Aoyama for her insightful comments and her help in pointing out relevant examples from the Seth corpus.

more multi-dimensional model to make these predictions more precise. Also regarding continuity, in their first ‘problem’ Dressler & Kilani-Schoch suggest that fillers are always extragrammatical, even when increasingly grammaticised. By this I understand that fillers can never develop into truly grammatical items. So what happens to them? Do they get more and more grammaticised but then just disappear, either gradually or suddenly? Radford, on the other hand, asks ‘whether fillers... simply represent *reduced lexical items* (where the term *lexical item* subsumes items belonging to both substantive and functional categories).’ He predicts that a child might produce fillers both for target verbs (*n cookie* ‘want cookie’) and for (what I consider to be) target quasi-modals (*n go* ‘wanta go’). In my own data, by 2;0.14 Seth was using fillers for the second type but not the first, saying *n close it* (with a nasal filling in for the functor-like ‘wanna/want to’) but *want some cookie* (with no filler for the verb).²

All the more phonoprosodically oriented commentators (Demuth, Vihman & Velleman, Echols, excepting only Lleó) seem to accept a premorphological stage and provide supporting arguments and evidence. Demuth suggests that a rhythmic production account can provide a framework for understanding some crosslinguistic and within-language findings about early production, although she points out one problem: predictions about which syllables will be kept or omitted are not always borne out. She asks how we should interpret fillers within words (as do Echols and Leonard), wondering whether they might be influenced by some sort of early constraint to produce full metrical feet. She notes that crosslinguistic data suggest that such a constraint may be partly language-specific: Spanish prosody leads children to relax it early, allowing pre-lexical unfooted syllables, and thus production of early proto-determiners. Demuth emphasises the utility of making use of prosodic units such as the Syllable, the Phonological Word and the Phonological Utterance, tying these to early individual preferences for one size over the others. See Peters (1997) for a discussion of syllable-, foot-, and phrase-paths. Vihman & Velleman, while presenting crosslinguistic evidence of evolution from monosyllables in English and French, ask whether this shift is caused by or a result of growing awareness of morphological structure. In my view, phonology plays the primary role in providing a holding tank within which morphosyntactic information can be accumulated, although I also expect the core organisation of these loci to shift from phonological to morphological with the shift from pre- to proto-morphological fillers.

Lleó, however, does not acknowledge a premorphological stage, asserting that from the very beginning fillers are more than ‘phonological stuffing’. In

[2] In looking for such examples we need to distinguish *phonological* fillers from *proto-morphemic* ones. Katsura Aoyama notes that in Seth’s earlier productions, when *n* was more phonological we do find utterances such as *n cookie*. (personal communication, 7/00). However, at that point there was little indication that *n* could fill in for *wanna*.

her view, merely ‘reflecting target prosody’ is too vague. She asks: if Spanish children are producing protoarticles earlier than German children, must not some syntactic awareness be involved along with the phonology? I agree that some syntactic awareness is involved in the production of protoarticles. But I think that there are also genuine premorphological fillers, which are so unsystematic that we cannot identify them with any (proto)-functor class. These are the prosodically motivated fillers, which fill out minimal words or phrases. To justify her scepticism, Lleó cites one of her German-learning subjects who produced fillers variably so that they did not all occur with monosyllabic lexical targets. But it seems to me that Lleó is talking about a dynamic developmental situation in which, as the learner gains both phonoprosodic control and morphosyntactic knowledge, we should expect changes in the proportions of fillers with words which have different numbers of syllables. In Seth’s productions we find this sort of picture, based on counts from one hour of tape at the beginning of each month. Note the sudden increase at 1;8 in the proportion of fillers that precede two words, and the subsequent increase at 1;10 of fillers that are produced between two words or syllables.

TABLE 1. *Changing proportions of fillers with words with different syllable counts in Seth’s productions*

age	filler + syl. e.g. <i>n swing</i>	filler + syl. + syl. e.g. <i>m floppy</i>	syl. + fill. + syl. e.g. <i>cross\street</i>
1;4	0.86	0.14	0.00
1;5	0.97	0.03	0.00
1;6	0.88	0.10	0.02
1;7	0.88	0.12	0.00
1;8	0.47	0.51	0.02
1;9	0.66	0.33	0.01
1;10	0.43	0.22	0.35
1;11	0.22	0.66	0.13

Clarifications

Dressler & Kilani-Schoch raise a number of problems with my adaptation of their model. Some of these difficulties may have arisen from my not being sufficiently clear in my original exposition. To begin with, I completely agree that the three stages of acquisition laid out in my table are not, and should not be, defined according to a single phenomenon such as fillers. I do not in any way believe that fillers are at the heart of language acquisition, nor all there is to Dressler *et al.*’s model of morphological development. Rather I was borrowing their framework as a useful lens through which to view the (relatively small) phenomenon of the life span of fillers. Their summary fits my understanding.

Dressler & Kilani-Schoch's problems 2–4 seem to be in the vein of clarification – I agree with their points. Their problem 5 questions the relative timing of fillers as prosodic extenders vs. rhythmic placeholders. In clarification, I suggest that we need to distinguish between extenders of single words (e.g. η **go**), extenders of (partially analysed) phrases (e.g. **cross** ə **street**), and 'targetless' fillers in even more productive sentences, which may be motivated by trying to fill out metrical feet. For the latter, see the French example cited by Dressler & Kilani-Schoch, as well as examples from a number of languages presented in Peters (1997).

Radford asks whether the term 'filler' might lead to a serious underestimation of the level of syntactic knowledge a child has achieved, pointing out that in rapid colloquial adult English (the input) many functors can be reduced to schwa. I infer he means that in producing schwa a child may be reproducing an appropriate colloquial phonological form, all the while knowing the relevant syntax. How could we distinguish proto-syntactic from syntactic schwa? I suggest looking for what such schwas alternate with. Do they alternate with nothing? or with the full forms? López-Ornat finds both kinds of alternations at different stages of development, suggesting that the fillers change their syntactic status somewhere in the middle. Also we need to look for other corroborating evidence of knowledge of the target functional category, e.g. in related constructions.

Variability

One of the biggest puzzles about fillers is that not all children produce them, and of those that do, they do not produce them reliably. For this reason we do not yet know how to elicit fillers experimentally. Moreover it may be that some languages are more susceptible to fillerisation than others. While this variability makes fillers seem more anecdotal than scientific, they are proving to be remarkably robust, both within and across languages. It is therefore important to study fillers for the insights they provide toward a dynamic, constructivist understanding of language acquisition. As Veneziano points out, fillers 'may not be necessary, but they may still represent ONE OF THE MANY POSSIBLE ENTRIES into the complex and multifaceted properties of language systems'. We can only benefit from understanding the constellations of variables that seem to lead some children to group together a particular set of forms and reproduce them as a filler. For one thing these children seem to be providing us with concrete clues as to how they make the transition from single words to fuller structures. The whole acquisition enterprise seems to be turned on its head with López-Ornat's question: 'if abstraction into grammar does NOT progress through a transitional and inconsistent '+filler' representation, how do those NON-FILLER PRODUCERS 'jump' from primitive one-word blocks to full NPs?' (emphasis mine).

As Demuth points out, this variability occurs even within children, since we observe the production of particular proto-functors in some contexts but not others. Dabrowska shows us how Naomi's early production of recognizable functors is followed by a U-shaped dip into filler production. Were Naomi's earlier productions, while phonologically and positionally identifiable with specific adult targets, nevertheless not yet fully analysed along dimensions such as syntactic category, or socio-pragmatic value? Did the realisation of 'more to be learned' lead to their regression to the status of holding tanks for the accumulation of these new kinds of information? Dabrowska makes the telling observation that, 'if [Naomi's] use of fillers is indeed evidence of an emergent grammatical category, this category does not correspond to any category of adult grammar.'³

Clearer criteria

All this variability makes it unsurprising that several commentators requested clearer criteria for identifying fillers at different stages of evolution, including within-word fillers (Leonard's Italian examples), and a clearer definition of amalgams (Menn & Feldman). A larger problem is how to distinguish purely phonological from proto-morphological fillers (Veneziano, Leonard, Echols); another is how to identify fillers that reflect production which is unanalysed on the morphological dimension from that which is partially analysed (Echols). Criterial evidence will come from distribution, frequency, and potential semantic information, though there may be other clues as well. If a filler is premorphological (not protosyntactic), I expect it to make no identifiable contribution to the meaning of the utterance, to be distributed more or less randomly with respect to major lexical classes, to change in frequency over time, and perhaps to alternate with zero. If, on the other hand a filler is protosyntactic, I expect it to be distributed more or less predictably with respect to some major lexical class, to make at least a fuzzy contribution to the meaning of the utterance (e.g. protodeterminer, protomodals, protopronoun), and increasingly to alternate with full adult forms, López-Ornat's *¿Que?* method, whereby she asks for a repetition from a child who has just produced an NP, should be useful in helping us decide which of these stages a child is at.

Further research

In order to understand what children know about the meanings and functions of their fillers, our most urgent need is for more systematic perception data, which needs to be as longitudinal as possible. Radford's

[3] Seth produced an all-purpose question word *whatta* which may have served as a holding tank for collecting information, both about the forms of the question words themselves (**what**, **where**, etc) but also about auxiliaries they could occur with (**are**, **do**, **did**). (Wilson & Peters, 1988.)

important question regarding ‘whether the use of the term *fillers* runs the risk of underestimating the level of lexical knowledge which the child has achieved’ seems to cry out for longitudinal perceptual data. An illuminating example is to be seen in native vs. non-native perception of the distinction between **a** and **the** in English, a distinction which can be blurred in fast colloquial American speech. If, upon hearing such a blurry production, we ask *huh?* (as does López-Ornat) we know that a native speaker will be able to clarify with **a** or **the**, but that a non-native speaker is much less likely to be able to do so.⁴ I agree with Echols’s call for more research like that of Gerken, Landau & Remez (1990), and would add that Jusczyk’s work, much of which is summarised in Jusczyk (1997), provides a helpful picture of perceptual developments that may lead to the production of fillers.

Lleó notes that the large numbers of inflectional suffixes in German should predict a preponderance of postposed and over preposed fillers; but she finds very few of the former in her data. However Leonard provides examples of what look like word-final fillers in Swedish, as well as possible word-medial fillers in Italian; this suggests that fillers in these positions do exist, even though they may be less frequent than Lleó would *a priori* expect. In general we do seem to find more pre-lexical than post-lexical fillers. I have no immediate explanation for this puzzling result. In order to find one we need to bear in mind that a whole constellation of factors is likely to influence the appearance of fillers in any given position. German not only has a rich inflectional system, it also has a relatively heavy syllable structure ((CCC)VC(CC), as opposed to the (C)V(C) of Spanish), as well as articles which form feet with preceding rather than following words (Lleó, in press). When case marking emerges in German, are post-lexical markers produced later than pre-lexical ones? In English, as Gerken (1994, 1996) points out, post-lexical syllables are footed and therefore tend not to be omitted, and are probably less often fillerised for the same reason. I would guess that in general there will be an observable difference in children’s willingness to produce unfooted pre-lexical syllables and footed post-lexical syllables.

It is useful to think of ‘filler space’ as being defined by at least the following variables: the phonoprosodic nature of the language being learned (syllable structure, foot structure, preferred stress patterns), the morphological characteristics of the target language (isolating, inflecting/fusional, agglutinative), the functional utility of a specific bit of language interacting with socio-pragmatic pressures, and preferences of individual learners (including the preference not to produce fillers at all). However, the

[4] Elizabeth Barber (personal communication 7/2000) observes that when trying to converse in Russian she often resorts to a ‘filler inflection’ when the conversation does not allow sufficient time to compute the correct one. Her listeners either guess what she meant or ask for clarification, which gives her both more processing time and some potential models.

interaction of these variables is not fully deterministic; far from predicting the production of a specific filler in a specific utterance, the best we can do is describe the nature of the space delimited by these variables.

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