



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Response to Anderson

Citation for published version:

Pullum, GK 2009, 'Response to Anderson' *Language*, vol 85, no. 2, pp. 245-247.

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Preprint (usually an early version)

Published In:

Language

Publisher Rights Statement:

© Pullum, G. K. (2009). Response to Anderson. *Language*, 85(2), 245-247.

General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.





PROJECT MUSE®

Letters to Language

Geoffrey K. Pullum, Stephen R. Anderson

Language, Volume 85, Number 2, June 2009, pp. 245-247 (Article)

Published by Linguistic Society of America

DOI: [10.1353/lan.0.0125](https://doi.org/10.1353/lan.0.0125)



➔ For additional information about this article

<http://muse.jhu.edu/journals/lan/summary/v085/85.2.pullum.html>

LETTERS TO LANGUAGE

Language accepts letters from readers that briefly and succinctly respond to or comment upon either material published previously in the journal or issues deemed of importance to the field. The editor reserves the right to edit letters as needed. Brief replies from relevant parties are included as warranted.

Response to Anderson

February 16, 2009

To the Editor:

In the article derived from his 2008 Presidential address ('The logical structure of linguistic theory', *Language* 84.795–814, 2008), Stephen Anderson makes two misleading statements about how evidence might bear on language acquisition, one relating to corpus use and the other to typological generalizations. His errors have been made previously in the literature, and should not be repeated in *Language* without correction.

Anderson discusses a familiar claim of Noam Chomsky's: that children do not learn from experience that the formation principles for interrogatives in English are structure-sensitive rather than string-sensitive. Take the facts in 1.

- (1) a. Everything that wasn't eaten will be thrown away.
- b. Will everything that wasn't eaten be thrown away?
- c. *Wasn't everything that eaten will be thrown away?

Comparing 1b with its corresponding declarative in 1a reveals that the simple string-sensitive hypothesis in 2 is wrong.

- (2) The first auxiliary in the declarative must be positioned initially in the corresponding interrogative.

This hypothesis would predict 1c. I will call sentences like 1b telltale sentences, since their testimony brings out the difference between the first auxiliary in the string and the auxiliary that follows the subject of the clause. If language were learned from the evidence provided by experience, then encountering telltale sentences would help the learner by permitting 2 to be eliminated. But Chomsky claimed that 'A person might go through much or all of his life without ever having been exposed to relevant evidence' (*Language and learning: The debate between Jean Piaget and Noam Chomsky*, ed. by Massimo Piattelli-Palmarini, Harvard UP, 1980, pp. 40, also 114–15)—that

is, evidence that would confirm the correct hypothesis over the tempting but incorrect one in 2. In other words, he claimed that telltale sentences are so rare that you might well never encounter one in your whole life.

Pullum & Barbara C. Scholz 2002 ('Empirical assessment of stimulus poverty arguments', *The Linguistic Review* 19.9–50; and before that Pullum 1996, 'Learnability, hyperlearning, and the poverty of the stimulus', *Berkeley Linguistics Society* 22.498–513) probed that claim a little by looking in a readily available body of text, the *Wall Street Journal* corpus (*WSJ*). Telltale sentences showed up immediately. However, Anderson remarks: 'one might well question the extent to which the *Wall Street Journal* is representative of the input to the child' (804).

People have said such things before: Jerry Fodor ('Doing without what's within: Fiona Cowie's critique of nativism', *Mind* 110.99–148, 2001; relying on a discussion in Cowie's *What's within* (Oxford UP, 1999) of the preliminary report in Pullum 1996); Janet D. Fodor and Carrie Crowther Fodor ('Understanding stimulus poverty arguments', *The Linguistic Review* 19.105–45, 2002, pp. 108–14); and Cedric Boeckx and Norbert Hornstein ('Les différents objectifs de la linguistique théorique [The varying aims of linguistic theory]', *Cahier Chomsky*, ed. by Julie Franck and Jean Bricmont, 61–77, L'Herne, 2007). People offer their armchair opinion that *WSJ* could not be relevant, but no one goes back and checks *WSJ*. The first telltale sentence in *WSJ*'s forty-four million words is the sixteenth interrogative that occurs, and it is not an instance of financial journalistic prose or an editorial about capitalism. It is a nine-word sentence from spontaneous speech, the penultimate sentence of this passage:

Afterward, one of Mr. Tsongas's partners at the Boston law firm of Foley, Hoag & Eliot, told him: 'You've been invited to join your last corporate board.'

Mr. Tsongas says he is puzzled by such observations. 'Is what I'm doing in the shareholders' best interest? Then what's the problem?'

It is just wrong to assert that *WSJ* cannot provide any evidence that might bear on child language acquisition, because there is no reason to think sentences of the sort Mr. Tsongas uttered in the above passage will be absent from the speech that children hear.

Who knows how many times children hear *Will whoever is making that noise please stop?*, or *Could those who have to leave early sit over here?*. I don't (though I know I heard an ordinary person say *Is what you're doing enough?* when speaking spontaneously to a reporter on the BBC World Service). What *WSJ* shows us immediately is that whatever the frequency of telltale sentences in unscripted speech, it is certainly higher than Chomsky asserted.

WSJ does not have to be 'representative of the input to the child' to be relevant for the purpose Pullum and Scholz had in mind; it only needs to contain a sample of things real people actually say. (Essentially this point is made in Scholz & Pullum 2002:206–8, 'Searching for arguments to support linguistic nativism', which appeared in the same issue of *The Linguistic Review* (19.185–223) as the one Anderson cites, but he does not mention it.) In any case, telltale sentences turned out to be present in every corpus Pullum and Scholz looked at.

Anderson then gives a second argument for setting Pullum & Scholz 2002 aside. He says that Julie Legate and Charles Yang 'develop a precise account of the statistical prominence in the input data that seems to be necessary, and show that the level attained by [telltale sentences] is far below this threshold' ('Empirical re-assessment of stimulus poverty arguments', *The Linguistic Review* 19.151–62, 2002). But Legate and Yang do no such thing. They supply an estimated frequency of 1.2% for existential clauses in child-directed speech and an estimated frequency of 0.068% for telltale sentences, and note that the latter is 40 times smaller. That is backing up a hunch with a couple of ballpark guesses, not 'a precise account of statistical prominence in the input data'.

Nonetheless, Legate and Yang's argument, while not statistical in nature, is a complex and interesting one. It can be summarized roughly as follows.

- (i) Assume that languages fall into two types, optional-subject ('pro-drop') and obligatory-subject.
- (ii) Assume that noticing that existential clauses with *there*-type expletives, and nothing else, triggers learning that a language is of the obligatory-subject type.
- (iii) Assume that noticing telltale sentences, and nothing else, triggers learning that 2 is an incorrect generalization.
- (iv) If the trigger for learning about obligatory subjects is 40 times more frequent than the trigger for learning 2, then children should learn the former generalization long before the latter.

- (v) But this is not so: children seem to learn both at around the same time (by about a month or two after their third birthday).
- (vi) Therefore there are too few telltale clauses to trigger learning from experience.
- (vii) Yet children do learn that 2 is wrong.
- (viii) Therefore not all learning is from experience, so the thesis of linguistic nativism is true.

This argument certainly deserves attention. And it has received it, though Anderson does not note that. It is answered in detail in Scholz & Pullum 2002:217–21. The core problem is that Legate and Yang attribute the claim about the crucial status of clauses with *there*-type expletives to Nina Hyams (*Language acquisition and the theory of parameters*, D. Reidel, 1986). But Hyams made at least half a dozen clearly false or highly dubious assumptions, which Scholz and Pullum list (pp. 218–20).

Perhaps the most important point is that partitioning the languages of the world into two types, optional-subject and obligatory-subject, is a hopeless oversimplification. When considered in the context of the complex and subtle conditions governing subject omission in 'partial pro-drop languages' like colloquial Finnish or Estonian, it looks absurdly simplistic (see e.g. Outi Duvallon and Antoine Chalvin, 'La réalisation zéro du pronom sujet de première et de deuxième personne du singulier en finnois et en estonien parlés', *Linguistica Uralica* 4.270–86, 2004).

Perhaps in due course arguments like the one Legate and Yang attempt might enable us to find out whether or not young children hear enough telltale sentences in everyday speech to permit experience-based learning of the principles of interrogative formation. It is worth trying to find out. Scholz and Pullum (2002: 220–21) point out an interesting datum that might play a role in this enterprise (the frequency of *there*-type expletives in Danish is double the English frequency, which under a nonnativist view might suggest that Danish children should learn certain aspects of language at a faster rate). But essentially all of the work remains to be done.

It is not enough simply to wrinkle one's nose at the *Wall Street Journal*, wave an arm in the direction of the 'pro-drop parameter', and move on. The question of whether telltale sentences might be relevant to the learning of auxiliary placement remains open as far as I can see. Anderson is only the latest of quite a few

writers to treat the issue too lightly and dismiss nonnativist positions too swiftly. The important question of whether the typical child's linguistic experience is just too meager to support language learning deserves to be taken more seriously than that.

GEOFFREY K. PULLUM
[gpullum@ling.ed.ac.uk]

Anderson replies: Professor Pullum's response seems to me to fall rather wide of the mark as a criticism of my article. He accuses me of 'two misleading statements about how evidence might bear on language acquisition, one relating to corpus use and the other to typological generalizations'.

The first of these supposed errors lies in underestimating the representativeness of the *Wall Street Journal* corpus as evidence for the input to the child learner. This he rebuts by citing the sentence *Is what I'm doing in the shareholders' best interest?* from that corpus. While I did not assert that such sentences 'will be absent from the speech that children hear', I am not convinced by this example that the *WSJ* provides us with the data necessary to assess just what sentence types children base their grammars on.

In any event, I accepted Legate and Yang's (2002) observation that at least some such sentences are to be found in the somewhat more representative corpora in CHILDES, though quite infrequently; this was the basis of my reference to their paper. We know what children hear includes many actual utterances that are not in accord with the grammars they construct: corpora of natural speech include many false starts, mistaken continuations, and other literally ungrammatical sentences, but children are not misled by these. Legate and Yang's point was that a sentence type needs to attain a certain level of prominence in the child's input to constitute reliable evidence, and they suggested that a study of available corpora (including *WSJ* and CHILDES) shows that sentences of the type necessary to lead to a structure-sensitive account of auxiliary-inver-

sion constructions probably do not reach that threshold.

The second error of which I am accused seems to be that of treating this issue by 'wav[ing] an arm in the direction of the "pro-drop parameter"', and mov[ing] on', which I find quite incomprehensible, as I made no reference that I can detect to the pro-drop parameter or anything else that could motivate this criticism. Legate and Yang's discussion does touch on this, but their article focused on structure-sensitivity in auxiliary inversion, and that was the sense in which I cited it. They may well not have identified the exact level of significance necessary for relevant data to support grammar construction in the child learner, but surely some such factor must be a basic part of any inductive learner, and I do not think Pullum's caustic dismissal of their paper advances his argument very far.

In any event, in discussing the results from sophisticated inductive learning systems such as those developed by Joshua Tenenbaum and his colleagues, I explicitly admitted (at least for the sake of argument) that such a system might be able to arrive at structure-sensitivity as a property of grammars even with little or no evidence of the sort that has been the bone of contention in this dispute. The point of my discussion here, rather, was to question the plausibility of the claim that structure-sensitivity is a contingent property of grammars, arrived at by a rather elaborate induction. Given that all known grammars of all of the world's languages in fact display this property, it would seem that child learners never go astray in this regard. That suggests (though it does not conclusively demonstrate) that they do not spend time on this issue, never in fact entertaining alternative, non-structure-sensitive views of grammar. And that, in its turn, suggests that structure-sensitivity plausibly derives from the nature of the Language faculty. An argument from the poverty of the stimulus might suffice to establish that conclusion, but it is not, I think, strictly necessary.

STEPHEN R. ANDERSON
[sra@yale.edu]

EDITORIAL ANNOUNCEMENT

With the publication of this issue, Gregory T. Stump's term as Review Editor ends. We all owe Greg a great deal for his outstanding efforts in that capacity. The new Review Editor is Natsuko Tsujimura of Indiana University.