What is really wrong with Universal Grammar

(Commentary on Behme)

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Abstract: Ambridge, Pine, and Lieven (2014; AP&L) identify three problems with Universal Grammar (UG), namely: linking, data coverage and redundancy, and argue for an alternative approach to child language acquisition. Behme (2014) aims to make a stronger case against UG. She attempts to show, by combining AP&L's arguments with evidence from developmental psychology and formal linguistics, that UG should be rejected. In this commentary, I argue that Behme's paper is not strong enough to reject UG. Although Behme has pointed out some problems for UG theorists to consider, she fails to pinpoint where UG has really gone wrong. I then try to make clear what the fatal problem with UG is.

Keywords: universal grammar, Subjacency, research method, scientific theory, evidence

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1. INTRODUCTION. Ambridge, Pine, and Lieven (2014; AP&L) identify three problems with Universal Grammar (UG), namely: linking, data coverage and redundancy, and argue for an alternative approach to child language acquisition. Behme (2014) aims to make a stronger case against UG. She attempts to show, by combining AP&L's arguments with evidence from developmental psychology and formal linguistics, that UG should be rejected.

In this commentary, I will first discuss how effective the arguments offered by Behme are. I will argue that these arguments are far from sufficient to reject UG. I will then try to explicate what is really wrong with UG.[1]

2. THE EFFECTIVENESS OF BEHME'S ARGUMENTS. AP&L discuss five core cases: (i) syntactic categories, (ii) basic morphosyntax, (iii) structure dependence, (iv) subjacency, and (v) the binding principles. They argue that in each case UG suffers from one or more of the three problems: linking, data coverage and redundancy, with the last one being the most wide-spread problem. But their position on UG is quite mild, as they state that their own proposals "do not constitute rival explanations to those offered by UG accounts", and that the latter are in general "faithful redescriptions … occasionally they diverge and risk hindering the learning process" (AP&L 2014: 81).

Maybe AP&L have been too "conciliatory" to take "a firmer stand against UG proposals" (Behme 2014: 97). Even if they did conclude that UG should be rejected, it is doubtful that such conclusion could be accepted by UG theorists. There are at least two reasons for this. In the first place, UG theorists could counter-argue that AP&L's own proposals suffer from a host of problems,[2] and hence that they are not better, or at least not clearly better, than UG accounts. In the second place, even if AP&L could show conclusively that in the five cases UG is redundant, UG theorists could present other cases and argue that UG is needed there, a point well made by Behme (2014: 99).

Behme (2014) has a more ambitious aim, she tries to "provide suggestions that could put an end to a fruitless debate that has occupied language acquisition research far too long" (2014: 97). Her conclusion is that UG should be abandoned and other approaches to language acquisition should be taken: "the Chomskyan orthodoxy has outlived its usefulness and that a refocus of language acquisition research is long overdue" (2014: 104) She reaches this conclusion by combining AP&L's arguments with evidence from developmental psychology and formal linguistics. But her arguments are problematic. Behme says that results in developmental psychology "*strongly suggest* that children rely simultaneously on several general-purpose mechanisms when they learn language" (2014: 100, emphasis added). But this is far from sufficient to refute UG, in which "one genetically specified mechanism (or set of mechanisms) accounts for the acquisition of every possible human language" (2014: 99-100). On the other hand, some UG theorists might cite results in developmental

psychology to argue that they strongly suggest that UG exists.

Behme's appeal to formal linguistics is also problematic. She cites work by Katz and others and claims that UG is internally incoherent:

> If language is (i) a biological organ …, then it is finite. If language is (ii) a collection of potentially infinitely many sentences or expressions …, then finite human brains can at best instantiate a very small part of language. And if language is (iii) an abstract object …, then the nature of the relationship between language and brains needs to be explained. Any view claiming that language is (i), (ii), and (iii) is internally incoherent and should be rejected for this reason. (Behme 2014: 104)

But UG theorists can hardly admit that there is incoherence here. Chomsky distinguishes between E-language and I-language: the former refers to public language, which is a potentially infinite set of sentences, and the latter to internalized language, which is a finite representation capable of generating infinitely many sentences. There is no incoherence here, at least in the eye of UG theorists.

Behme also blames UG for lacking mathematical precision. But this cannot hurt UG very much. On the one hand, UG theorists might argue that UG is quite precise, e.g. the definition of Subjacency. On the other hand, even if UG is not precise enough, there is no reason why it cannot be made more precise. Lacking mathematical precision cannot be a reason for rejecting UG.

So, while Behme's paper points out many problems with UG, it is not strong enough to reject it. I think that Behme has not spotted what is really wrong with UG.[3] In the next section I will try to explicate the fatal problem with it.

3. WHAT IS REALLY WRONG WITH UG. I submit that the fatal problem with UG lies in the method of finding it. To illustrate this method, let us examine how Subjacency, a representative principle in UG, was formulated. In the 1960s and early 1970s, some linguists noticed that movement of words in sentences is constrained, and they formulated some such constraints. For example, the following sentences are ungrammatical:

(1) *John$_i$ appears [$_{CP}$ it is likely [$_{IP}$ t_i to win]]

(2) *Which way$_i$ do you wonder [$_{CP}$ why [$_{IP}$ John went t_i]]?

(3) *What$_i$ did John make [$_{NP}$ the claim [$_{CP}$ that Mary owns t_i]]?

and they were seen to involve movement violating the following constraints respectively: Specified Subject Condition, Wh-island Condition, and Complex NP Condition. Later on, these three constraints were generalized into Subjacency, which states that movement cannot across more than one bounding node, where bounding nodes are IP and NP. Of course, UG theorists do not say that this version of Subjacency is the final one, but they think that by considering more language data and by making relevant revisions the ultimate version will be obtained. So, we can summarize the method used by UG theorists as this:

> **UG theorists' Method:** Based on certain interesting grammatical data, find some general principles that explain them; revise the principles if necessary.

This research method looks innocuous, but it is in fact rather wrong. To see the

problem, let us examine two seemingly analogous cases of trying to discover the laws of certain phenomena.

First, consider the behavior of free-falling heavy bodies. After some observations, one can find that two heavy bodies releasing from the same height will take the same time to reach the ground and that the greater the heights, the greater the fall times. So, there is a definite relationship between the height and the fall time in a free fall. By observing a sufficient number of falls of such bodies and measuring the heights from which the bodies fall and the times taken for them to reach the ground, one can get a law governing such falls, which is $h=1/2gt^2$.

Now consider the behavior of falling live birds. Birds released from certain heights will reach the ground in certain times. Suppose that someone, call him "the naïve scientist", tries to study the fall of live birds, just based on observed heights and fall times. He has the corresponding data before him, and he conjures up an ingenious formula which can explain the data obtained so far. But is this the law of bird-fall? The answer is clear "No". This is because the fall time of a bird depends not only on the height from which it is released, but also on an indefinite number of other factors, such as whether the bird wants to fly, whether it is ill, whether it is hungry, whether it is injured, whether there is an eagle hovering in the sky, how much strength the bird can use to flap its wings, so on and so forth. So, it is impossible to work out the law of bird-fall *merely* by measuring the heights and the fall times; and it would be totally wrong to do this. A correct way of trying to find the law of bird-fall would be to consider the just mentioned factors and construct models containing these factors, making idealizations if necessary.

Now, the method used by UG theorists in obtaining Subjacency is the same as the one used by the naïve scientist in discovering the law of bird-fall. In the naïve scientist's case, no matter how many falls of birds he observes, the formula he obtains on that basis cannot be called the law of bird-fall. In the case of Subjacency, no matter how many sentences in how many languages UG theorists have examined, the version of Subjacency posited on the basis of those data cannot be regarded as the law governing movement of words in human sentences. It is impossible to find the ultimate version of Subjacency in this way. A correct way forward would be to consider relevant factors that determine Subjacency, which is supposed to be the innate constraint on movement of words in sentences. What the constraint on movement of words in sentences is depends ultimately on a person's brain structure. Factors which determine this constraint are likely to include: memory, attention, information retrieval speed, and information processing speed, etc. Exactly what the factors are is an empirical issue. But this would be a correct way of finding Subjacency. It is simply wrong to try to find it merely on the basis of some grammatical and ungrammatical sentences in some languages.

UG theorists hypothesize a variety of innate language universals, which include not only syntactic principles (including economy principles and principles of efficient computation posited in the minimalist program) but also lexical categories, functional categories, and parameters. These are obtained using the same method as that used in formulating Subjacency. No real innate language universals can be found using this

method. If there are any real innate language universals at all, they have to be discovered by taking other approaches, e.g. by constructing models containing relevant causal factors.

4. CONCLUSION. UG theorists employ a particular research method: they try to obtain innate language universals on the basis of some grammatical and ungrammatical sentences in one or more languages. This method is wrong, and it cannot lead to the discovery of any real innate language universal. A correct way forward would be to fix some relevant causal factors, construct corresponding models and carry out relevant research.

It is often argued that UG is just like standard scientific theories, all being limited by available evidence. But as the preceding text has made clear, not all theories limited by available evidence are scientific or correct/sensible (consider, for example the naïve theory of bird-fall discussed above). Arguments for UG have also been made which state that UG theorists do consider evidence from psychology and brain sciences, but those are only empty talk, for the formulation of UG principles and other putative universals is not *based* on such evidence. UG theorists have also tried to find support for UG by discussing optional/perfect design of language, the FLB/FLN distinction, three factors in language design, biolinguistics, the poverty of the stimulus, and so on. These discussions might, or do, make a lot of sense, but UG theorists' research method is wrong, it is impossible to find the real, innate, UG (if it exists) using this method.

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NOTES

[1] I adopt the definition of UG given by AP&L (2014: 54).

[2] In deed Pearl (2014: 109, 113) discusses many problems with AP&L's own proposals.

[3] This applies also to AP&L.