

<Copyedited Commentary: Christiansen & Chater for BBS 30(4), BBS>

<Running head: *Commentary*/Christiansen & Chater: Language as shaped by the brain>

<CT>**Universal Grammar? Or prerequisites for natural language?**

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<C-AB>**Abstract:** This paper aims to highlight what exactly is controversial about the traditional Universal Grammar (UG) hypothesis and what is not. There is widespread agreement that we are not born “blank slates,” that language universals exist, that grammar exists, and that adults have domain-specific representations of language. The point of contention is whether we should assume that there exist unlearned syntactic universals that are arbitrary and specific to Language.

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The notion of UG is generally understood to embody a particular hypothesis, namely, that some substantial portion of human language is based on universal domain-specific syntactic principles that are biologically determined (“innate” or unlearned). The UG Hypothesis thus involves four interrelated claims:

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1. Domain-specificity: Language acquisition is constrained by representations or

principles that are specific to language.

2. Universality: These representations or principles are universal.

3. Innateness: These representations or principles are not *learned*.

4. Autonomous syntax: These representations or principles require reference to syntax, not to possible functional correlates of syntax.

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Versions of each of these claims, taken independently, are not at all controversial. As Christiansen and Chater (C&C) make clear, no one believes that language arises from nothing. Our biological endowment is what separates us from the Amazon horned frog and is what ultimately ensures that humans have language while frogs do not. This is not the issue; the question is whether what separates us includes unlearned linguistic (i.e., *domain-specific*) representations concerning syntax. Generalizations about universals of human conceptual structure or about the human vocal tract do not provide evidence of Universal *Grammar* insofar as Universal Grammar is understood to be about grammar.

It is likewise clear that learning itself requires prior biases of one sort or another, since without any a priori similarity metrics or attentional biases, a system would not know on what basis to generalize; all input would be weighted equally or in some random fashion. But, again, this general fact in no way requires that the metrics or biases must be domain-specific. Clearly, too, everyone recognizes that there are some language universals; the question is whether the universals make reference to autonomous syntactic generalizations or whether instead they are explicable in terms of domain-general abilities and/or the semantics or pragmatics of the constructions involved (cf., Bates

1993; Goldberg 2006; Newmeyer 2005, for relevant discussion). In addition, we can all agree that adults have representations that are specific to language (for example, their representations of individual constructions); the question is whether these representations can be learned.

”Universal Grammar” has alternately been interpreted not as a hypothesis, but as a definitional label. It can be defined as the “initial state” of the child before exposure to language, or as the set of constraints that narrows the set of all logically possible languages to the set of all humanly possible languages. Neither of these interpretations of UG embodies a controversial claim. Surely (at least younger prenatal) infants can be said to be in *some* initial state before they are exposed to language. Certainly there are constraints on the range of possible human languages. On either of these interpretations, once again, UG may not be specifically about grammar at all. The initial state and the set of factors that constrain human language may be comprised entirely of domain-general abilities and mechanisms that conspire to give rise to the inclination and ability to create, learn, and use language.

Everyone also understands that language must be compatible with the human brain in that processing mechanisms and social forces are recognized to constrain language.¹ Chomsky himself has recently emphasized the role of domain-general processes. In fact, he has acknowledged that he remains unconvinced by any proposals for domain-specific innate syntactic representations or principles, with the (possible) exception of recursion, noting, “We hypothesize that FLN [the domain-specific Faculty

of Language] only includes recursion” (Hauser Chomsky and Fitch 2002, p. 1569).²

The target article by C&C highlights the challenges that defenders of the four interrelated claims (listed above) face in detailing how unlearned, communicatively arbitrary universals of grammar might have evolved (see also, Deacon 1997; Elman et al. 1996). Moreover, while it made sense for researchers to explore the UG Hypothesis at the time it was proposed (Chomsky 1965), we are now in a better position to appreciate the power of statistics, implicit memory, the nature of categorization, emergent behavior, and the impressively repetitive nature of certain aspects of the input.

In order to avoid prejudging whether any of the necessary abilities and constraints on language are domain-specific (specifically syntactic), a better term than Universal Grammar might be *Prerequisites for Natural Language*. As Liz Bates used to say, “It’s not a question of Nature vs. Nurture; the question is about the Nature of Nature.”

Of course, if universal syntactic representations have not evolved biologically, then various questions immediately come to the fore, many of which are briefly discussed by C&C. What domain-general processes account for each cross-linguistic regularity? Why are there impressive generalizations within any given language? What distinguishes us from other primates such that only we spontaneously create and learn language? How exactly is language learned and processed? More generally, what exactly are the Prerequisites for Natural Language and how do they interact to yield the constrained complexity that is language? These are exactly the questions that are currently the focus

of a tremendous amount of ongoing work (cf., references in C&C).

<C-Ack>**ACKNOWLEDGMENTS**

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<D>**NOTES**

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1. It is possible to agree with C&C’s and others’ arguments that our brains have not likely evolved to encode a complex system of arbitrary constraints on grammar, without embracing the notion that languages evolve to suit the human brain. Surely wars, assimilation, and dispersion, not processing difficulty, lead to language spread (or death, depending on which side of the spear a speaker is on). Also, Creole specialists may well balk at the idea that “language has adapted through gradual processes of cultural evolution [in order] to be easy to produce and understand.” This would seem to imply that newer languages might be less easy to learn or use than older, more highly “evolved” languages, but there is no evidence that this is the case. Each natural language must satisfy the simultaneous and potentially conflicting constraints of expressive power, learnability, and processing ease.

A more natural perspective that C&C adopt in other parts in their article is that combined pressures of learnability, processing ease, and expressive power operate at the level of individual constructions. Individual words and constructions do change (or “evolve”) to meet the changing demands of the overall system, as well as demands of external cultural forces. This insight harkens back to the structuralists and has recently received renewed attention (e.g., Ellis 2002; Enfield 2002; Saussure 1916).

2. See Pinker and Jackendoff (2005) for arguments against recursion being domain-specific and for other candidate domain-specific attributes. Their suggestions emphasize speech and semantics more than universal principles of syntax.

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<RFT>**References** [Adele E. Goldberg] [AEG]

<Refs>

Bates, E. (1993) *Modularity, domain specificity and the development of language*.

Technical Report 9305. Center for Research in Language, UCSD. [AEG]

Chomsky, N. (1965) *Aspects of the theory of syntax*. MIT Press. [AEG]

Deacon, T. W. (1997) *The symbolic species: The co-evolution of language and the brain*.

W. W. Norton. [AEG]

Ellis, N. C. (2002) Frequency effects in language processing: A review with implications for theories of implicit and explicit. *Studies in Second Language Acquisition*

24(2):143–88. [AEG]

Elman, J., Bates, E., Johnson, M., Karmiloff-Smith, A., Parisi, D. & Plunkett, K. (1996)

Rethinking innateness: A connectionist perspective on development. MIT Press.

[AEG]

Enfield, N. (2002) *Ethnosyntax.* Oxford University Press. [AEG]

Goldberg, A. E. (2006) *Constructions at work: The nature of generalization in language.*

Oxford University Press. [AEG]

Hauser, M. D., Chomsky, N. & Fitch, W. T. (2002) The faculty of language: What is it, who has it, and how did it evolve? *Science* 298(5598):1569–79. [AEG]

Newmeyer, F. (2005) *Possible and probable languages: A generative perspective on linguistic typology.* Oxford University Press. [AEG]

Pinker, S. & Jackendoff, R. (2005) The faculty of language: What's special about it?

Cognition 95(2):201–36. [AEG]

Saussure, F. d. (1916) *Course in general linguistics*, trans. W. Baskin, 1959 ed.

Philosophical Library. [AEG]

<Refs end>