

**Babies, buzzsaws and blueprints: commentary on
review article by Sabbagh & Gelman***

LISE MENN

University of Colorado

The review article by S&G seems to me to take a very useful stance: basically friendly but gently quizzical. My linguistics doctoral seminar gave their review the same reception; we enjoyed many of the insights but thought that a few of the assumptions, mostly ones that are common in certain types of language acquisition studies, should be respectfully challenged.

The first of these is the familiar presupposition that children learn language ‘easily’. As compared to adults, they do, taking the measure as ultimate achievement (consider the work of Elissa Newport, Rachel Mayberry and colleagues, e.g. Johnson & Newport, 1989, Newport, 1990, Mayberry, 2000). But even on the view that most of grammar is learned in the first five years, young children spend more years at learning language than most people spend in college. When we examine the U-shaped curves, speech rate, hesitations, self-corrections, and failures to communicate (Elbers & Wijnen 1992, Peters & Menn 1993), one wonders what further evidence people need in order to be convinced that this is hard work. Perhaps, as my student Matthew Maraist points out, we take their errors so much for granted that we do not take them as indicators of trouble. Or perhaps this is projection by the adult: ‘Since I’m not working at teaching, the kid must not be working at learning’.

What harm does this notion of ‘ease’ do? I think one consequence is encouraging the development of streamlined developmental theories – those which, under the banner of ‘continuity’, expect child language to be described with devices that are already motivated by adult language phenomena. But in even the most deterministic parts of biological development, immature organisms contain organs and create structures not found in the adult: consider chrysalises and cocoons.

What William of Occam said was that entities shouldn’t be multiplied beyond necessity (*praeter necessitatem*). Developmentalists must, of course, account for the metamorphosis and disappearance of any child-specific apparatus that we posit. But the discontinuity argument should not keep us

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from being faithful to what we see in our data. In fact, once a construct has been invoked for child data, it may turn out to have a place in a complete theory of adult behaviour; after all, linguistics still does not have a theoretical apparatus to deal with the difference between active and passive vocabulary or partial knowledge of a syntactic form. In the research tradition of Charles Ferguson (Ferguson & Farwell 1975, p. 437), a better approach is to 'try to understand CHILDREN's development in itself in order to improve OUR theory, even if this requires new constructs for the latter.'

An equally important issue is S&G's apparent acceptance of the equation of 'innate constraints' with 'innate knowledge'. In fact, a major difference between emergentists and people who prefer to postulate a high degree of innate knowledge of language is that emergentists rely on innate processing mechanisms and their inferred computational biases as a primary source of constraints. Hearing, vision, memory, storage, retrieval, and other properties of the brain and body are the raw material of the mind; hearing and memory are already being structured by experience in late pregnancy, and this interaction continues after birth. 'Innate processing mechanisms' seems a redundant phrase, but it does have to be made explicit in order to be properly emphasized: the structure and initial operating mode of the body (including the brain, motor, and sensory organs) is something that is innate but is not knowledge.

The other source of constraints on language is language itself. What we are called upon to learn has been filtered through the minds and bodies of countless generations of learners. S&G ask: 'How did the input become so regular?' – i.e., as regular as it is. The answer is that it has been kept within learnable bounds by the limitations of human information retrieval, memory, perception, and learning – including second-language/second-dialect learning. (There's a speculation that languages rarely learned by outsiders – small isolated languages – tolerate more morphological irregularities than those which have a constant influx of late-acquirers. Consider Icelandic!)

Here's a small example to show that there are constant and countervailing pressures on language, arising from how people learn it. The Oxford English Dictionary shows that the meaning of the word *enormity* has slipped back and forth among 'irregularity', 'great size' and 'great evil', and that *enormous* has also had the adjectival forms of all three of these meanings over the last several hundred years. However, sometimes – as recently – *enormous* was dominated by one of these meanings, while *enormity* denoted a different one. It seems that the transparency of the *-ity* morphological structure pushes the two words towards semantic agreement, while different contexts of use pull learners to differentiate their meanings. The noun is currently moving back towards the adjective; the 1971 OED says that the use of *enormity* to mean 'great size' instead of 'great evil' is

regarded as incorrect, but now in 2000 the neutral meaning seems to have taken over again.

Finally, while I find much in the constructivist approach to be very useful, I think that the formulation by S&G of the input as ‘something that the child needs to interpret in conceptual terms’ is insufficient – although by no means irrelevant! – as an adequate characterization of the way the ambient language is taken in by the learner. Consider the poverty of even adults’ meta-representation of language, and how hard it is to access our tacit knowledge of language (or of any other skill). A large part of language knowledge, and presumably also of language learning, lies below the level of consciousness. A mechanistic approach to the unconscious part of the acquisition process seems to be necessary. Whether our current computational models can provide an adequate simulation of the mechanistic aspect of language learning remains to be seen.

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