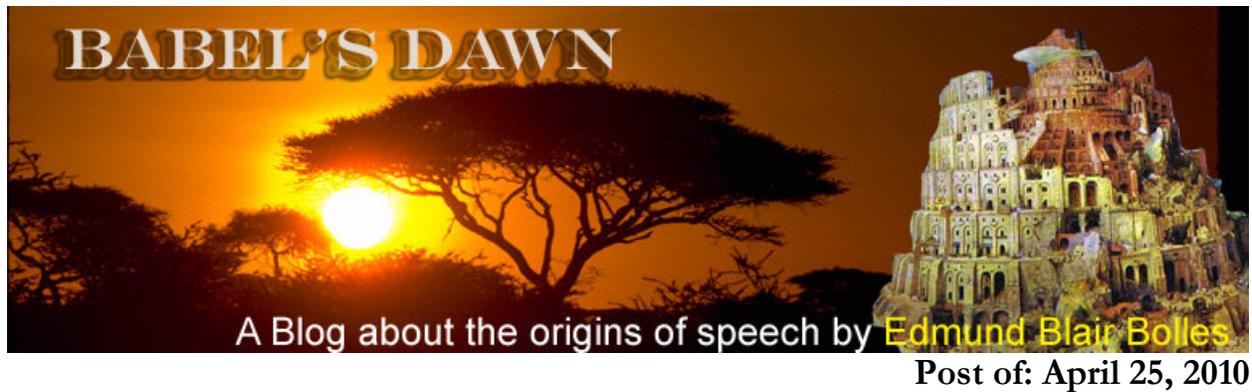


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The Utrecht Paradigm



A canal in Utrecht, home to the largest university in The Netherlands.

There is something wrong here. If you began stopping people on the street and asked them if they thought it likely that language depends on a mixture of biological adaptations and cultural innovations, wouldn't the first 999 out of 1000 answer *yes*? So what kind of knot can language scholars have tied themselves into for the news out of Utrecht to be that they too would answer *yes*? But that's the case, although it looks temporary and unsustainable.

The unsustainable part comes from the dualism in the answer. It's like the mind-body problem. How do the brain's adaptations and the culture's innovations merge to form a single thing: language? What is the connection linking the biological contribution with the cultural? Until we have an answer to that one there will be a strong tendency to say language is the product of just

one input, or at least mostly one while the other's role is trivial. If it is all cultural/learned, the biological side just has to be able to produce the output (e.g., vocalizations) and store associations between words and output. If it is all biological/inborn, the cultural side has only to reflect the innate rules of some universal system.

The trouble is that neither one of those choices is true. The unsatisfactory nature of each monism is what many speakers at Utrecht recognized. It is what makes the news of agreement interesting rather than absurd. The defenders of all culture/learning still have not found an answer to the objection that you cannot learn grammar by learning the visible patterns. At the same time, they have effectively challenged the proposition that you can learn a particular language by being born with a Universal Grammar hardwired into your brain.

Right now there is a stalemate between the biology and the culture teams. Each can prove the other wrong, but can't prove themselves right. The solution is obvious—combine the two contributors—but hard to implement.

The learning-only side was shown wrong decades ago, but the persistent failure of the inborn-only side to prove itself right has emboldened its opponents, and at Utrecht it seemed that their efforts have led to a spirit of compromise, however grudging.

Two papers were particularly important in laying the groundwork for this situation. Each was discussed on this blog during the two years between the previous Evolang conference in Barcelona and the one that has just ended in Utrecht.

Reducing the universals to abstractions: The original idea of a linguistic universal was that it should be as concrete as possible, but as Maggie Talerma, from the biology side, conceded at the Utrecht conference “it is a far from trivial matter to illustrate language universals at anything but a very abstract level.” She was speaking in response to a paper in late 2009 by [Nicholas Evans](#) and [Stephen Levinson](#) titled “The Myth of Language Universals” (abstract [here](#)) which argues that there are no concrete language universals. (See: [Is Anything Universal in Languages?](#))

Limiting the Baldwin Effect: One way to explain the ability to learn language rules easily is to suppose they were once hard to learn but became easier over time as we evolved an ability to learn them quickly. This kind of transfer of learned behavior to the genome is called the Baldwin Effect and became a way of explaining where elements of a Universal Grammar might have come from. But a 2009 paper by [Nick Chater](#), [Florescia Riali](#) and [Morten Christiansen](#) titled “Restrictions on Biological Adaptation in Language Evolution” (abstract [here](#)) It reported computer simulations that show the Baldwin Effect will not work with culturally learned behavior that changes faster than genes can be fixed. So the brain cannot evolve ways of helping the culture along. Culture changes too fast. (See: [Could Language Modules Have Evolved?](#))

So we have the classic argument of the lawyer in court. First, there are no concrete universals, and second, even if there are, there hasn't been time for them to be fixed in the genome.

The compromise that seems to be emerging from this quarrel is that languages around the world are too different to be defined by a specific universal grammar, but there are abstract universals

that cannot be the product of chance. In Utrecht, Maggie Tallerman agreed with Evans and Levinson that the brain mechanisms needed for language are exaptations of earlier cognitive adaptations, and that language exploits “pre-existing brain machinery.”

Deacon had something very similar in one of the slides he did not get to show at Utrecht, thanks to the volcano, “[language] recruits brain structures evolved for other functions, not those evolved for communication.”

And Christiansen concluded his talk by saying, “The fit between language and the brain arises because language has been shaped to fit pre-existing domain-general conditions.”

Each of these people has a different emphasis and would argue the case in their own way, but there appears to be a general agreement that biological adaptations provide the ground supporting the universals and culture provides the concrete details.

Isn't that what commonsense has been saying all along? Nonetheless the agreement marks progress.

First, we know why it can't be either biology or culture alone, and we know it to a level that gets beyond commonsense. The demonstration that language is not just structured as a string of words was a profound achievement of science and logic. A commenter pointed out that Sanskrit scholars made the same discovery millennia ago, which is true, but they were not using commonsense either. The discovery of how different languages can be is also the result of investigation and observation and goes far beyond anything anticipated by commonsense.

Even so, the situation seems unsustainable. Natural languages use pre-existing brain structures; okay, but how do they use them and how does that usage affect language? We want to avoid the trap [John Searle](#) has described with the mind-body problem. Every time one solution is tried it ultimately leads back to mind-body dualism. That fate looks certain unless the search moves out of the trap of trying to establish which part is dominant, and ultimately the solution.

A better hope comes from the example of nature-nurture itself. The relationship between gene and environment is getting worked out so that the two are as intertwined as space and time. We've got to understand how biology and cultures are two dimensions shaping every utterance.

Links:

Nicholas Evans: http://rspas.anu.edu.au/people/personal/evann_ling.php

Stephen Levinson: <http://www.mpi.nl/people/levinson-stephen>

Evans & Levinson abstract:

<http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=6427084>

Is Anything Universal in Languages?: http://www.babelsdawn.com/babels_dawn/2009/12/is-anything-universal-in-language.html

Nick Chater: http://www.psychol.ucl.ac.uk/people/profiles/chater_nick.htm

Florenca Reali: <http://cni.psych.cornell.edu/people/florenca.html>

Morten Christiansen: <http://www.psych.cornell.edu/people/Faculty/mhc27.html>

Chater/Reali/Christiansen abstract:

<http://www.pnas.org/content/106/4/1015.abstract?maxtoshow=&HITS=1&hits=1&RESULTFOR=MAT=&andorexacttitle=and&andorexacttitleabs=and&fulltext=%2522evolution+of+language%2522&andorexactfulltext=and&searchid=1&usestrictdates=yes&resourceype=HWCIT&ct>

Could Language Modules Have Evolved?:

http://www.babelsdawn.com/babels_dawn/2009/02/language-changes-too-rapidly-to-permit-the-biological-evolution-of-the-kind-of-language-module-in-the-brain-proposed-by-steph.html

John Searle: <http://socrates.berkeley.edu/~jsearle/>