

Re: _Verum Et Factum Convertuntur_ (or: Surprised By Syntax)

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- *From:* Colin Fine <news@xxxxxxxxxxx>
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Herman Rubin wrote:

In article <3gjd96Fck07bU1@xxxxxxxxxxxxxxxxxxxx>, Harlan Messinger <hmessinger.removethis@xxxxxxxxxxxxxxxx> wrote:

Greg wrote:

Des Small wrote:

It seems that langwidge, for Herman, properly aspires to the condition of mathematics.

There are many others who consider language to be largely grammar upon which a rather arbitrary vocabulary has be added. Even with this arbitrariness, learning the grammatical structure reduces the amount of vocabulary which has to be learned, and if some etymology is learned, this is reduced even more.

There may indeed be many such, but they do not have a very profound appreciation of how language works. This is like considering a body to be 'a skeleton on which a load of organs and flesh are disposed'. It's not a false description, but it throws away so much essential information that it's almost useless.

Grammar and vocabulary are essential and inextricable parts of a language (no, they are not logically inextricable - you can imagine taking a

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language and altering all the vocabulary while leaving the grammar unchanged - but in the real world they are inextricable). We had a long and fruitless argument recently about what it means to say elements of a language are arbitrary, but generally I would agree that most of the vocabulary of a language is in some sense arbitrary. As is much of the syntax, accidence, phonology, prosody, etc.

"Learning the grammatical structure reduces the amount of vocabulary which has to be learned" is almost uninterpretable, but I guess you must be thinking of inflecting languages, where it is not necessary to learn each form of each word separately. But this is a truism for such languages, and is false for predominantly isolating languages. The remark about etymology is also very dubious. You have only to consider the number of folk etymologies which are common to realise that without study, etymology can be a treacherous friend. Furthermore, language change ensures that etymology is not necessarily a good guide to meaning.

Despite the apparent variety of grammatical structures, the structure of language does not vary THAT much, which is why we can try to understand it.

I think I would agree with that statement, though I wonder if you do appreciate how much it does vary.

As I read postings in this thread, I keep trying to deduce what the posters think the difference is between natural language and mathematics.

Well, mathematics isn't language, so there's one substantial difference. Comparing natural language to mathematics is like comparing French to Poland.

Most of mathematics, in use, is language. I have frequently stated that I would like students to be able to formulate their problems, NOT to compute the answers. In the practical problems of today, such as medical treatment, the best-formulated problems are only going to be solved by computers.

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You seem to be contradicting your earlier claims. Look through any mathematical paper and you will find large sections which are not language but mathematical notation: I thought this was your argument.

And then there's Herman's lament that natural language isn't as precise as mathematics (by which, yes, I understand him to mean "mathematical representation"). Well, that *is* a *difference* between them, isn't it? Natural language relies on human psychology for interpretation. Mathematical representation doesn't.

It is unclear how much "human psychology" is needed for interpretation of mathematics. Mathematical concepts are not understood as collections of words, but as more than that. One problem is that some concepts seem to have more than one intensional attribute; for simple things like the non-negative integers, the two basic ones are quite distinct, and there are related versions of them. Students are taught HOW to add, but not what addition means, and what it means differs in the different intensional meanings.

But axiomatic formulations, proofs etc, do their best to escape from the realm of human psychology. You can argue about how far they succeed (and how far it is possible to succeed) but that is an important and fundamental difference between mathematics and language.

[In another mail:]

One of the major problems is that most people seem to think that mathematics consists of means of calculating answers, and that language consists of some mysterious means of putting sounds together in a "natural" manner. That most "advanced" languages are also written, and that this means of communication is widely used does not seem to some to be real language, only spoken.

I agree as to the common misapprehension about mathematics. As to language, I believe that people are saying to you "Spoken language is also language" and you are interpreting this as "Only spoken language is language".

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The major part of mathematics is communication, and also getting results of some kind from the communication. Would natural language have developed if the collections of sounds did not get other results? Even the minimal animal languages have those properties, and my cat communicates by sounds.

I would not agree that the major part of mathematics is communication, though it does depend on whether you regard 'mathematics' as primarily an abstract world to be discovered or as a social activity. Certainly language arose because it gave practical results. While that is certainly true of some of the areas which gave rise to mathematics, it is not obviously true of mathematics as it is pursued today.

[from yet another posting:]

Possibly in high school, the various students came from regions speaking essentially the same dialect, in which little, if anything, precise was discussed, other than possibly spelling of words, or the application of computational rules, without any understanding.

Here you go again with the patronising assumption that if they are not speaking a standard dialect then they are incapable of precision.

In college, this is not the case. Communication is needed, and precise communication. Also, even in high school or elementary school, few examinations are oral.

A possible reason Dean Fish had the success he had is that children pick up a good deal of grammar before they learn too much vocabulary, so they still retain some of the structure of their native language even after the schools had ignored it for all those years.

This is nonsense. Children learn vocabulary at a phenomenal rate, during the time they are learning grammar and for some time after. Most people throughout the world retain more or less all of the structure of their native language throughout their lives, unless they move away from other speakers of it. Many people throughout the world also learn a competent command of one or more standard languages, which may be very different in structure from their native speech (even when they are dialects of the same language). Unfortunately in Europe and Europeanised parts of the world the idea grew up in the last couple of centuries that non-standard dialects were inferior, so schools often did not so much ignore the structure of

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pupils' native language, but actively seek to eradicate it. (I'm not just talking about minority languages like Welsh, Breton and Catalan - I'm also talking about non-standard dialects of major languages).

Colin

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