

## Re: Comparing languages

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*From:* LEE Sau Dan ([danlee\\_at\\_informatik.uni-freiburg.de](mailto:danlee_at_informatik.uni-freiburg.de))

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>>>> "Brian" == Brian M Scott <[b.scott@csuohio.edu](mailto:b.scott@csuohio.edu)> writes:

Brian> Here again you go too far. The claim is that associated  
Brian> with each language is a pair of numerical parameters. For  
Brian> each language it's a fixed pair. They are claimed to be  
Brian> constants in much the same sense that atomic weight is a  
Brian> constant: different isotopes have different atomic weights,  
Brian> but for each isotope the atomic weight is a constant.

So, given two atoms: Carbon-14 (atomic number: 6; mass number 14) and Nitrogen-13 (atomic number:7; mass number 13). (Let's assume such atoms exist.) Can you now tell me, using these pairs of number, which atom is "more beautiful"? How do you define the \*comparison relation\*? One person may consider the atomic number to be more important for "beauty", and hence say Nitrogen-13 to be more beautiful. Another person may consider the mass number to be more important and hence say Carbon-14 to be more beautiful. A third person is fond of diamond and hence would say Carbon-\* to be the most beautiful, irrespective of the atomic/mass numbers. A fourth person hates graphite because it's dirty, and hence would say Carbon-\* to be the most ugly atom. So, who's right?

Just having 2 numbers is not enough. For n-dimensional quantities (where  $n > 1$ ), there is no single canonical way of comparing them so that you get a totally ordered set. It is like asking which of the 2D vector (3,4) and (7,2) is "larger". Yes, you can use the magnitude, but that's not the only way to compare 2 complex number concerning the notion of "larger". In many situations, simply using the magnitude results in weird results. To get meaningful results, you'd need to perform a (not necessarily linear) coordinate transformation first. But why that particular transformation and not another? That's often a topic for debating.

Brian> Of course most of us recognize that there's a great deal  
Brian> more to learning a language than learning vocabulary, but  
Brian> he has in fact provided a numerical measure of one small  
Brian> part of the difficulty of learning a language.

sci.lang: Re: Comparing languages

That's what I'm talking about. You get one number based on the complexity of the vocabulary. You get another number based on the complexity of the grammatical rules. Language A gets (100, 86) and language B gets (73, 113). Now, tell me which is "easier to learn" or "simpler". What formula would you use to make the comparison, and more importantly, what WEIGHT would you use in combining each pair of values?

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Lee Sau Dan +Z05biGVm-  
E-mail: danlee@informatik.uni-freiburg.de  
Home page: <http://www.informatik.uni-freiburg.de/~danlee>

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