

## Re: Choice Question # 2

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- *From:* "Charlie-Boo" <[chvol@xxxxxxx](mailto:chvol@xxxxxxx)>
  - *Date:* 4 Feb 2006 10:02:21 -0800
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David C. Ullrich wrote & Charlie-Boo wrote:

Hint: In your first reply you said something about how proud I was of that presentation of AC in the language of ZF. I'd didn't say anything to that effect at all. Here you refer to someone declaring himself to be the champion of something, evidently meaning to say something about me. I didn't say I was the champion of anything.

Saying that something is "whoosh" (over ones head) indicates your belief that you have achieved some minimal degree of sophistication (greater than that of the reader.) But merely writing wffs and showing how substitution can make a wff more complex is hardly sophisticated or advanced.

Since the concepts (the definitions of the symbols and the process of substitution) are so elementary, I assumed you were referring to the length (complexity) of the expressions as your mark of sophistication. But this is merely repeating the mistake that Occam described so well so many years ago.

So it becomes a challenge (that is all too familiar.) You write a long (needlessly complex) expression and challenge someone to decipher it, claiming it is "over their head". But this is what programmers do (who also do not heed Occam's Razor.) To them, the challenge is to be able to figure out each other's code. But to the wise man, the challenge is to express the concepts in simpler terms. I agree with Occam.

You still haven't figured out what the "whoosh..." was.

Defining the meanings of various personal insults is no more productive than using them.

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Not that it's relevant, but:

If you believe complexity indicates insight, then you are right. But if you instead agree with Occam, then there is great relevance to methods for simplifying ones formalism.

And as we do with any such junior programmer, we start with the basics: How to use the language! We send him home with a few pointers:

1. Use of  $\Leftrightarrow$  instead of  $\Rightarrow$  would greatly simplify your definition of  $z=\{a,b\}$ . Note that if  $(i=a \text{ or } i=b) \Rightarrow i \in z$  then  $a \in z \ \& \ b \in z$ . We can replace:  $(a \in z \ \& \ b \in z \ \& \ (i)(i \in z \rightarrow i=a \text{ or } i=b))$  with:  $(i)(i \in z \Leftrightarrow i=a \text{ or } i=b)$

True.

2. Variable  $z$  is unnecessary. We can replace:

$Ez(z=(x,y) \ \& \ z \in f)$

with:

$(x,y) \in f$

Uh, no.

Why not? If you are going to write  $Ez(z=(x,y) \ \& \ z \in f)$  then you can certainly write  $(x,y) \in f$  instead, as it is equivalent and uses a subset of the symbols and semantics of the former.

(You are repeating your mistake of criticising something that is not qualitatively different from what you yourself use. Earlier you criticised an expression that merely used a different symbol for  $[\ ]$  in Modal Logic (because  $[\ ]$  has multiple meanings) and was likewise not qualitatively different from what you were using.)

I said I was going to give a wff \_in the language of ZF\_ that expressed AC. There is no notation for ordered pairs in that language.

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3. You make a point of specifying that only pairs can be elements of f. But all you really care about is that certain pairs are or are not elements. Whether triples are in there or not doesn't change this!

Huh? AC says that if S is a set of nonempty sets then there is a function f with domain S such that  $f(x) \in x$  for all x in S. A function is a set of ordered pairs satisfying certain conditions. If f contains a triple then it's not a function.

(It could be a function that admits a pair as input, actually.) It is unnecessary to painstakingly indicate that f contains only pairs. The references to the pairs that f contains or not suffice to express your intended semantics. You could even take that to the logical extreme and also indicate the nature of each component in each pair in f. But that doesn't change the meaning of your expression. It is redundant.

You can also leave out the requirement that S contains only nonempty sets, and specify that when an element of S is a nonempty set then the choice function works. You will find the results much simpler.

Simplification involves recognizing the essential properties that are needed to establish a result. You are being needlessly redundant.

Guffaw. Still totally missing the point. Maybe someone will explain to you what it means when someone refers to

$$(S)((x)(x \in S \rightarrow \exists y y \in x)$$

...

$$(i = x \text{ or } i = w)))) \& z \in f) \rightarrow w = y))))$$

as "simple".

Whatever you think it means (sarcasm, pride, whatever), it apparently lacks any mathematical content.

The C-B Pledge:

"A refusal to respond to a question about an earlier comment is to be taken as an admission that the previous comment was just

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stupid and I  
can't answer for fear of being exposed."

I certainly agree to it.

The statement that you say you agree to does imply  
that a lot of your comments are just stupid.

It is a commentary on human psychology and has no direct technical  
significance. But if you want to say that my belief, that discourse  
would be more productive if people would admit their mistakes (swallow  
their pride) rather than stonewalling, indicates that I'm not very  
good at Mathematics, then go ahead.

How much do you agree with Occam's Razor? I agree whole-heartedly,  
100%.

In any case, doesn't the above indicate that your comment that your  
exercise in writing expressions is "over my head" is not  
well-founded?

C-B

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David C. Ullrich