The birth of a convention (scalarity and context)

A history lesson

In times of old, contexts were scalar, and so were calculandi. By way of example, take C as scalar context, and P as scalar calculandum.

The English phrases "P holds" or "we have P" were then, by convention, shorthand for:

(0) $\quad C \Rightarrow P \quad .$

And please note that:

"(0) makes sense as an English proposition"

$\equiv \quad \{ \quad \}$

"(0) is scalar"

$\equiv \quad \{ \quad \}$

"C is scalar" $\quad \wedge \quad$ "P is scalar" $\quad .$

So back in times of old, if you were to drop the condition of scalarity on either C or P , then a phrase like "P holds (in context C)" would be treated as uninterpretable.

Adapting to the times

What a nice history lesson. However, times are changing, and in particular, contexts and calculandi are structures as often as they are scalars. So towards that end, let's generalize convention (0) , where by "generalize" I mean that the generalized convention should work for structures, but should also reduce to the original convention when C and P are scalar.

We calculate:

$C \Rightarrow P$

$\equiv \quad \{ \; P \text{ is scalar } \}$

$C \Rightarrow [P]$

$\equiv \quad \{ \; C \text{ is scalar } \}$

$[C \Rightarrow P] \quad .$

And so we have derived:

(1) $[\,C \Rightarrow P\,]$

as an equivalent way of formulating (0) and "P holds (in context C)" , when C and P are scalar.

But please observe that formulation (1) is more general, because it makes sense as an English proposition even when C and P are structures.

Thus we find that "P holds (in context C)" ought to stand for (1) .

And there you have the birth of a convention.

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Jeremy Weissmann
11260 Overland Ave. #21A
Culver City, CA 90230
USA

jeremy@mathmeth.com