Re: Kuratowski Ordered Pair

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- *From*: Hero <Hero.van.Jindelt@xxxxxx>
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Noel wrote:

> Hero wrote:
>
> Instead of asking directly what is meant by an ordered pair or n−tuple, I think it's interesting to ask instead what is involved in the so−called characteristic property. So we have some definition for an n−tuple, an ordered triple, say, (a, b, c), which gives us an expression using a, b, c, which we can write as E[a, b, c], such that:
>
> E[a, b, c] = E[u, v, w]
>
> iff
>
> a=u and b=v and c=w.
>
> What does this mean? Shocking as this may seem, I do not think it has anything necessarily to do with order. What it guarantees is that we have a kind of differentiated triple, in the sense that in (a, b, c), should it turn out that a=b, then there are still two instances of a (or b). A defintion satisfying the characteristic property has everything to do with ensuring that (a, b, c) cannot be equal to (a, b), for example, and nothing directly to do with order.
> When we write:
>
> (a, b, c) = (u, v, w)
>
> only if we already understand that a comes first, b second, c third (likewise for u, v, w) do we know what we are equating with what. The characteristic property is not enough, or rather it already presupposes the essential order.
> Get away from the use of consecutive letters.
>
> (x, c, p) = (d, r, t)
>
> If the characteristic property were enough, that x=d and c=r and p=t, how would we know not to write (x, c, p) as, say, (c, x, p), so that

(x., c, p) = (d, r, t) = (c, x, p) = (p, c, x) = (t, d, r) etc

and all the while we understand that x=d and c=r and p=t?

The characteristic property is not a defining characteristic of the (ordered) tuple, but a trivial and vacuous consequence employing the order.

Let's negate:
(a, b) = | = (p, q) <==? = => a =|= p OR b =|= q
a =|= p OR b =|= q ==> { a, b } =|= { p, q } but it does not follow that a is before b
....

There is possibly one other small consequence. The theory of sets might have difficulty in maintaining it has a foundation for arithmetic.

(a, a)=|= (a), but how can it be that a = a and that a is existing twofold?
Look at Aristotle for the most basic law of math.

And when (a, b) =|= (b, a) compare this to the invariant of time.

With friendly greetings
Hero
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