

Re: The Difference between a Set and an Element

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- *From:* "Nam D. Nguyen" <namducnguyen@xxxxxxx>
 - *Date:* Fri, 12 Jan 2007 18:36:06 GMT
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Peter_Smith wrote:

Nam D. Nguyen wrote:

Chris Menzel wrote:

On Wed, 10 Jan 2007 18:01:50 GMT, Nam Nguyen
<namducnguyen@xxxxxxx> said:

Chris Menzel wrote:

On Wed, 10 Jan 2007
16:05:05 GMT, Nam
Nguyen
<namducnguyen@xxxxxxx>
said:

Frederick
Williams
wrote:

george
wrote:

JohnCreighton_@xxxxxxxxxxxx
wrote:

Frederick
Williams
wrote:

....
What
is
the
physical
difference
between
me

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and
a
set
containing
me?

The
difference
is
that
you
exist
and
the
set
containing
you
does
not.
This
allegation
that
sets
can
contain
concrete
objects
is
misleading.
Sets
are
abstract.

May
not
a
set
theory
with
urelemente
have
a
person
among
its
urelemente?

I think you
meant "...
an
abstraction

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of a person
among its
urelements?"
Mathematics
is abstract.
Period.

Well, granted, it makes life
much easier just to stipulate
that things
are thus and so, PERIOD,
because that's just what your
gut tells you,
but there is nothing
whatever about set theory or
mathematics generally
that would prevent honest to
God flesh and blood persons
from serving as
legitimate urelements.

You are right: I just forgot the basic math
that the natural numbers
are made of hydrogen atoms and this is why
they're so light that they
float around in the mind!

An excellent argument! Nearly as cogent as "<random
claim> PERIOD"! I
bow to you, sir; clearly, you have reduced my argument to
absurdity.

<quote>

Logic is the study of reasoning; and mathematical logic is the type of reasoning done by mathematicians. To discover the proper approach to mathematical logic, we must therefore *examine the methods of the mathematician*.

The conspicuous feature of mathematics, as opposed to other sciences [including say physics, chemistry, or biology, ...] is the use of proofs instead of [physical] observation. A physicist may prove physical laws from other physical laws; but he usually regards agreement with observation as the ultimate test of a physical law. A mathematician may, on occasions, use observation; for example, he may measure the angles of many triangles and conclude that the sum of the angles is always 180 degree. However, he will accept this as a law of mathematics only when it has been proved.

Nevertheless, it is clearly impossible to prove all mathematical laws. The first laws which one accepts cannot be proved, since there are no earlier laws from which they can be proved. Hence we have certain first laws,

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called `_axioms_`, which we accept without proof; the remaining laws, called `_theorems_`, are proved from the axioms.

For what reasons do we accept the axioms? We might try to `*use observation*` here; but this is not very practical and `*is hardly in the spirit of mathematics*`. We therefore attempt to select as axioms certain laws which we feel are evident from the nature of the `*concepts*` involved.

We thus have a reduction of large number of laws to a small number of axioms.

A rather similar reduction takes place with mathematical `*concepts*`. [...] We therefore have certain `*concepts*`, called `*basic concepts*`, which are left undefined; the remaining `*concepts*`, called `*derived concepts*`, are defined in term of these. [...] We have a criterion for basic `*concepts*` similar to that for axioms: they should be so simple and clear that we can understand them without a precise definition. [...]

Hence we may suppose that all the `*concepts*` which appear in the axioms are

basic `*concepts*`

[...]

</quote>

Shoenfield, Mathematical Logic, Chapter 1, "The Nature of Mathematical logic".

You wouldn't disagree with me that mathematical concepts are abstract, right?

My somewhat-naive-understanding-of-the-subject assertion that "Mathematics is abstract. Period." simply asserts what I believe as a fact of mathematical reasoning; and, from Shoenfield's passage above, it doesn't appear to be a "random" idea, as you seem to have alluded to. So, Dr., instead of making me feel humbled – being bowed to – perhaps you could explain why concepts which are `*abstract*` can be `*concrete physical entities*`, such as "flesh and blood persons". Or is that just a random and unprovoked reaction of yours?

There is nothing ins Shoenfield's remarks that rules out ZU.

Where id I even give a slightest hint that ZU, as a formal system, or any other formal axiomatization is ruled out, in Shoenfield's remarks or in any where else using FOL?

The concept of `*set*` can be as he says fundamental mathematical concepts should be: that doesn't stop the members of sets being as concrete as you like.

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It does stop "members of sets being as concrete" because concepts should be abstract. Period. (I hate to use that word "Period", but what choice do I have when incorrectness keeps persisted?). Remember the word "concept" should be used with "of": there is an indirectness–gap between a concrete object and the concept *of* it. (Sigh! Before one accuses somebody else as being foolish, as you've done so in the other post, why doesn't one *carefully* review what has been said, or review the natural–language (such as English) usage of the word in question?)