

# Re: Am I a crank?

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- *From:* "MoeBlee" <[jazzmobe@xxxxxxxxxxx](mailto:jazzmobe@xxxxxxxxxxx)>
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Tony Orlow wrote:

```
x=0;
while(finite(x))
{ add_to_list(x);
  x++;
}
```

That's a loop generating the naturals.

If by 'loop' you mean 'eventually returning to the starting value', then NO Peano structure is a loop.

The existence of a natural implying the existence of a next natural is but an example of this kind of logical construction. Does that seem like a wrong perspective to you?

In what context? Generally, I don't see existence of naturals as arrived upon inductively. In first order PA, the natural numbers are not mentioned in the theory itself. The natural numbers and the system of them are a model of the theory, and each natural number is a member of the universe of that model, but it is not the theory itself that proves the existence of each natural number. Then, in set theory, any given natural number can be proven to exist without recourse to induction. We use induction to prove that certain PROPERTIES hold of every natural number, but I think looking at existence itself as proven that way is odd at best.

I don't see it as prof of existence as much as definition out of thin air, which is fine for number systems.

An existence statement is either a theorem of the theory or it is not a theorem of the theory. So when you say, "implying existence", we take

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that as meaning that there exists a proof of existence (i.e., a proof that there exists an object having the properties).

Secondly, I would like your opinion on inductive proof in the infinite case.

How many times have I already posted to you that there IS transfinite induction?

Many, but do you thin