A Few Thoughts on a Few Thoughts

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Purely logical

Abstract

A few thoughts on reading "A Few Thoughts", indicating how to use vicious infinite regression and higher order logic.

Introduction

In infinite regression, one supposes that a proposition depends on another proposition, which depends on another proposition, and so on, infinitely[1]. In this paper one aims to show how to use the logic of concepts infinitely, in order to establish infinity. One uses a new notation, based on some well-known results from number theory and algebra, named *semi-rings*.

One shows a way to use vicious regression (from higher order logic) in order to obtain regression in two directions, which removes the effect of vicious regression, and leaves one with a valid argument.

These results are then used in "A Few Thoughts on Creativity", "A Few Thoughts on Paradox Points", and in "A Few Thoughts on Being" in order to establish logic and language.

Nothing is defined partially, as well as Concept and Assumption. These are then collected together to deduce a few short results in natural numbers, to prove the point of The Logic below.

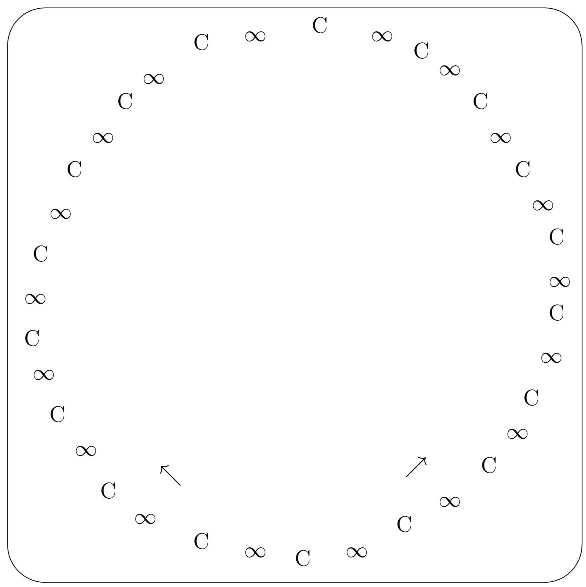

Figure 1: Conceptualize: Circles of semi-rings, which is a picture of infinity. The circle is a new notation that shows how to use higher order logic up to and including infinity. This infinitely high order logic is then called infinite regression, and this regression is vicious, but also depending on the first assumption. This assumption is called Concept. Note also that the infinity symbols indicate an infinite number of 'C's between every two 'C's, however, because a circle can be traversed infinitely, one can simply write a finite circle in order to generate Conceptualize.

1 The Logic

One has a Thought on a thought, and one calls this Concept. Then one can Concept (a) Concept[2]. This may be read from left to right, and from right to left. If we read from left to right, then one finds the urge to continue Concept-ing a Concept, and then to repeat Concept-ing another Concept, resulting in Concept Concept Concept. This can again be read from left to right and from right to left. Re-writing: (Concept Concept) Concept, and then Concept (Concept Concept)[3]. Repeating this process indefinitely yields an infinitely long list. Re-writing yet again, one can write this long list[4] as a circle[5] (See Figure 1).

Traversing the circle from left to right (starting at any point) as Concept Concept, yields an infinitely long list. The same is true if one traverses using Concept Concept Concept, since Concept has no memory of any of the traversed Concepts. There is therefore a mapping between a circle and an infinitely long list. Writing Concept Concept then forms both a finite semi-ring[6] (use for example the modulo operation, mod 2 for two Concepts, mod 3 for three Concepts, and so on), and an infinite semi-ring (such as in Algebra), if one counts the Concepts from 1, and onwards.

Re-reading the semi-ring in Figure 1, one can start to label the Concepts at any point in the semi-ring, and with the deduction of $\mathbb{Z}$ from "A Few Thoughts on Creativity", one finds all subsets of $\mathbb{N}$ (since one can start labeling at any point on the circle). This circle is then a picture of infinity. Every one of the circles one counts, is a subset of $\mathbb{N}$, and one can call the picture Conceptualize. Therefore, infinitely doing Concept result in Conceptualize.

The reason one uses semi-rings instead of rings, is that natural numbers form the basis of all number systems. A note on using natural numbers and infinity: all infinite numbers can not be written down, which means that a number that can be written down is finite, or can be *labeled*. Since one can form a semi-ring from $\mathbb{N}$, one finds that 0 is more than infinity, because 0 *can* be written down. The 0 then, is what makes a semi-ring, and this fact one can use to do infinitary logic in circles, without having to worry about getting lost in the $n+1$th proposition.

One notes also, that in-between any two Cs in Figure 1 there are an infinite number of Cs, as well as an infinite number of empty sets $\{\}$. This means one can at any point on the circle loop another circle, and one can, for example, label the new circle with $-\mathbb{N}$, in order to form a proper algebraic ring. This loop is based on finding the empty set $\{\}$, and then labeling the Concepts in the new circle $-1, -2, \cdots$. This is then a simple proof of $\mathbb{Z}$ using the new notation. Since this is simply a re-labeling of the Concepts, one then finds that the $\mathbb{Z}$ and $\mathbb{N}$ can be mapped on one another, in Figure 2. See also "A Few Thoughts on Creativity" for more on $\mathbb{N}$ and $\mathbb{Z}$.

Connecting two semi-rings can be done on either the empty set, or on infinity. Both are acceptable connection points.

Note that, since one writes an infinitely long list, one can then borrow from the infinitely long list to move from right to left, countering the concept of *vicious* regression. One therefore writes the infinitely long list, or circle, from left to right and from right to left, and the resulting logic is then regression.

Assumptions

Concept Concept results in Conceptualize. Concept repeated infinitely is then the basic assumption of Conceptualize. One can then replace Concept with any concept in the daily walk. Combining simple number theory with the new notation, yield useful results in logic. Suppose that 'C' is an existence. Then existence results in a greater existence (the circle, Conceptualize). The assumption is: the existence causes and results in existence (of Concept), which is also vicious regression.

Similarly to Concept, one can Assume Assume. Re-

[1] This is an intentionally infinite, indirect way of asking the why of existence.

[2] The 'a' is optional.

[3] The parentheses indicates associativity, which is not strictly necessary.

[4] See a googolplex and its inception.

[5] The exact shape is unimportant at this point; the main difference between using a circle and set notation, is that a circle is a container in two dimensions, and a set is a container in one dimension.

[6] A semi-ring is in the Author's opinion a misnomer - the algebraïsts should have called rings semi-rings, and semi-rings rings, since the element 0 forms an infinite semi-ring out of $\mathbb{N}$.

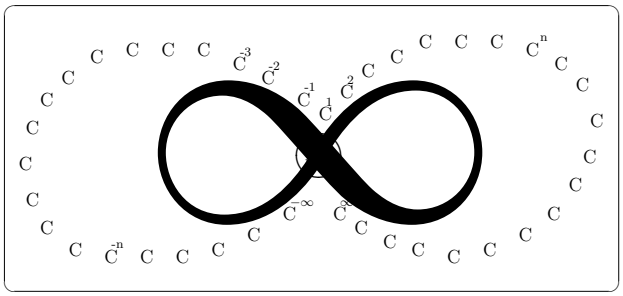

Figure 2: A re-labeling of the circle in Figure 1, resulting in a simple proof of $\mathbb{Z} \mapsto \mathbb{N}$ and $\mathbb{N} \mapsto \mathbb{Z}$, since there are two semi-rings that are exactly the same. The semi-rings differ only on labeling. The circle in the middle of the figure indicates the position of the empty set that one uses to 'connect' the two semi-rings.

peat infinitely and we reach Assumption. This again yields a useful existence. To Conceptualize Assumption, Concept needs to understand the whole Assumption. Map each Assume on (a) Concept, and then one Conceptualized Assumption. Therefore Assumption is a special case, and also an extension of Conceptualize.

An example of using the concepts in Figures 1 and 2: Assume natural numbers. Natural numbers (as a concept) assumes natural numbers. Form a ring from two semi-rings of $\mathbb{N}$. Repeat this step on a different natural number (say 1, and then 2 and so on). Since one can simply remove the Concept once, then connect on 0 (that is, the empty set), and put the Concept back in, one can connect all the possible semi-rings formed in this way in a chain. The chain itself forms a semi-ring (connect on 0). Therefore we Conceptualized all possible subsets of natural numbers[7].

Conceptualize Conceptualize, then Conceptualize is a chain built out of Concept, repeated. The assumption of Conceptualize is then Concept (repeated). From the example, natural numbers is the concept, and if one re-writes a semi-ring of natural numbers to include a full-stop at some point in a natural number, then one has deduced real numbers (just write a ring). Therefore, Assuming a Concept of natural numbers (in the new notation), yield mathematical truths.

The approach is then to find (by approaching Concepts) assumptions that yield new Concepts.

To use Assumptions, one finds the Assumption, and then one applies The Logic to the Assumption. If one uses disparate Assumptions (such as the Proof for Creativity in "A Few Thoughts on Creativity"), then using The Logic gets a little more complex. The idea is then to map from (for example) Concept, to a concentric ring, which maps to another concentric ring, and so on. This allows quite complex chains of proof, without having to work out the underlying logic every time. For example, in the Proof for Creativity mentioned, the "You Start" is repeated infinitely. This repetition yields an Idea, the Idea is repeated infinitely and "The Idea makes sense", and so on. To make sure that the whole proof is well-understood, one also thinks in-between the concentric circles. That is, one jumps from "You start", to "Adding initial idea into refined idea", *and through every step in-between* in order to prove the step. One of the big reasons that this proof is easy to see proven, is because the proof is a self-contained proof. Implementation implies every step traversed from the start up to and including implementation, shows that the proof is proved.

If one then follows the steps in the Proof for Creativity, and one ends with an Implementation, then one has proven that the underlying Concept is creative, as well as any proof that follows the same pattern.

Noting Nothing

In mathematics, one finds that 0 is used instead of the more general 'nothing'. The reason for this is that 0 and the empty set {} are very closely related - the one determines the other[8].

In logic, one frequently uses the concept of nothing, without really commenting on its use or noting where Nothing is used. Figure 2 uses the empty set to 'connect' two semi-rings of Concepts, but what is re-

[7] This also seems to be a fractal.

[8] Certain forms of algebra defines 0 in a different way.

ally used is the concept of Nothing[9], since a Concept is more general than what is used in mathematics. In general, one can use Nothing to connect any number of Concepts together, and in higher order logic, this connecting together would be called a 'sentence'.

Suppose one Conceptualizes Nothing. One still ends up with Nothing, even if written in a circle. Infinitely writing Nothing still yields Nothing, for it does not get written. Nothing, as a concept, does not work (in the same way as Concept) with infinite regression, because there is no proposition. There is then simply not any Concept present. The question is then what Nothing is, and from meta-physics one answers, that it does not exist. Nothing is then the most well-known unreachable concept – even more unreachable than infinity. One can therefore use an Approach towards Nothing to construct areas of logic and mathematics.

Suppose Approach approaches Nothing. If Approach reaches Nothing, then Approach *was* Nothing and nothing new is learned. Suppose Approach is natural numbers $\mathbb{N}$ - and natural numbers are more than Nothing. By removing numbers from natural numbers, Approach approaches 0. If Approach reaches 0, then we still have set notation left, which is more than Nothing. This means that as Approach reaches Nothing, we gain an understanding of deconstructing Approach. In terms of natural numbers: we learn to subtract.

Suppose Approach approaches Start. If Approach is Nothing, and Approach becomes Start, then Approach Started Start. If these steps are repeated infinitely, then we have defined Starting (map on Conceptualize's Concepts in a concentric circle). Moving from Nothing to Starting, and showing one does not only deconstruct, but can also construct using Approach. Then Starting is a continuous Start, that is, a circle of Starts. Re-written, as Nothing Approach Concept, repeated, yield natural numbers (as a labeling). That is, we learn to count.

Nothing is then a more abstract version of the empty set, since the empty set is based on containment. Infinite regression can be defined in terms of Concept, but not in terms of Nothing. One cannot only say that Nothing is not defined in terms of Something, but in itself (that is, the underlying reality), that it does not exist.

Conclusion

Vicious regression typically means that the argument cannot be proven, and yet, if a concept depends on itself, then vicious regression leads to a logically consistent position. One has shown that vicious regression has a valid form. This regression is then used to deduce valid mathematical and other truths. The basics for the deduction of the proof is found in the concept of *containment*. A set is a container. Conceptualize is a two-dimensional form of a container, which is an extension to the sets of Set Theory. One shows that Concept depends on Concept, and therefore that circular assumptions can yield a new construct in logic. These constructs are regularly used in natural language, but has not been formalized before. One notes Nothing[10] as a more general concept than the zero, 0, and that language can be used to deduce similar concepts to negative numbers in natural language.

One last note, one sees that Russell's Paradox[11] is an attempt to understand the infinite (write down an infinite set or number, and try to iteratively compare it with another set or number, and everything falls apart). This means that using the traditional finite symbology to represent Russell's Paradox is a mistake - and one will find an infinite number of different symbologies that can get rid of the contradiction.

Scratch Pad

[9]Nothing is less than *no thing*, for no thing may still leave, for example, intelligence, and Nothing is perhaps better written as DNE.

[10]Note that Nothing in this context does not mean *no thing*.

[11]Please note that a paradox is an *apparent* contradiction - see any dictionary.