Mathematical Ontology: Classicality and Constructivism

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0.0 Introduction

(notes scribbled down …)

Writing conventions – so much of writing is a continuation of the activity – the collective web of meanings and concepts put forth previously – it is also conventions that are fixed though new ones may be added. This is just what a *natural* language is. Artificial language attempts to *represent* such things as we can express them in *natural language* alone to clarify something – so that we may then return (or modify) that concept to (or in) *natural language* in a more precise way at some future time.

Below, I will adopt some what I hope are useful conventions to help improve the *intelligibility* of this work. The *word* is an *ethical* act (and it is fun that I am writing this on a tool called Microsoft Word) that requires *maintenance* of the internal logic of all human systems will fail at least as handled by humans. *Language* is fundamentally an *ethical* act. When the use of a language falls apart by a person – when the *semantics*, the *syntax* and other norms are not *obeyed* you are not using that *language* but some *deviation* of it – but if the *internal logic* of the language is *self-organizing* then all such languages will come to be intelligible to each other.

Such language systems become increasingly more resilient over time. *Codified*, greater *specified*, *tautologies*, *algorithms*, even made *programmatic*. And I ask, is not everything linguistic (more on this later)? *Genes*, *nature*, *patterns*, etc.

As such I am driven to write using *clarificatory* conventions and to be clear and process in doing so.

I am deeply humbled to write this having read and forgotten much. In this way, and in some more literal (pun) way is your work too.

[0.0.1] Through *logos*, *logic*, which was defined as being *classical* (two-valued), and *argument* we achieved through time greater and greater clarity, knowledge, language. Logos, is perhaps the first self-organizing system symbolized in "E." (Out [from nothing] – *ex nihil nihil* – which can be regarded as **disgust** and **disdain** for what was once before and the process of building something where seemingly impossible – you were once bacteria and now you are human…).

The process and development of *logos* in its application in the world is powerful. Meaning more precisely that it and its use facilitates great change. Other systems may do this partly but even then, biologically, evolutionarily, one such *logic* and its application comes to *reign supreme* over all variations and deviations. Part of this is the conceptual web through which words are intelligible – i.e. one major part of *logos* – the other is the *logic* – and a third part is the *application* or use of it.

Sometimes other *logics* are used but *classical logic* in its *duality* between *falsehood* and *truth* through *negation* as expressed by the curved bent circles (*symmetry breaking*) and creates a primary, essential, what is the *ordering*

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[1] **Revision 0.0.4 – 8.3.0.18** - https://www.linkedin.com/in/adamintaegerard/

(verb-ish – strictly is the extension of *beings* through *becoming* inherent in *logos* and of which the expression of this is the task of *philosophy* – and all things about it) of the *ordering* (noun) and arrangement of things through time – which is what I think time is – the extension of previous orderings and arrangements – with the past embedded up until the extension.

[0.0.2] Mathematics is the use of *ontological* concepts with rigor and in accordance with *systems* where *negation* can be found. *Logos* is The Highest. But these *ontological concepts* must be constrained with a *system of rules* which *self-organize* and which intelligibly due to so under scrutiny since mathematics is both an activity and a portfolio of such systems for use as needed and where applicable.

Crux:

1. Mathematics is the study of *patterns* which are *described* by language-based systems with the following features:
    a. The language systems are fully rule-based.
    b. The language systems are fully and precisely defined.

    What can derived, talked about, or proven of a pattern by a language system is fully encompassed by 1.a. and 1.b.

2. The utility or practical value of a pattern and its attendant language systems largely depends on external factors. What we've seen though is that most esoteric patterns and their attendant language systems find some applicability in real-world engineering and scientific research.

    One criterion is the ability for a theory (e.g. a pattern, model, and language system) to be applicable to other known and well-substantiated mathematical theories.

3. The priority of mathematical systems depends on which is more fundamental. Set Theory is the framework within which all other mathematics in the 20th century has been conducted.

4. Category Theory is another.

5. Constructive mathematics is largely the privy of fundamental theories. It is not enough alone to construct a mathematical object (which, according to the terminology I've used above, is to specify in language a pattern and define that pattern in accordance with 1.a. 1.b.), the constructed theory must be applicable to other theories, useful, etc. This corresponds to what Landry and Brading call existence postulates or the historical evolution of sets (Cantor posited sets then it took five decades to define how they work using rules – e.g. the history of ZFC set theory).

6. There is an essential interplay here.