

Zero to Infinity & Back - Attributes and Properties of macro-infinity and micro-infinity (Nothing or Zero) by Our Pal Asija

PAPER (& Presentation) OUTLINE (& Notes):

- 0. The Opening Joke: An optimist jumps from a 100 story building. As he passes the 50th floor somebody asks, How is it going, George. The Optimist confidently replied, "So far so good" Because before he can hit the ground he much travel half of the remaining distance and in this infinite series, in theory he should never die. But here is the three prong fallacy.**
 - a) Resolution of the feet**
 - b) Finiteness**
 - c) No ability to zoom-in and zoom out to magnify the remaining distance and to shorten the self-size.**

- 1. Relative (Physical) and absolute (Virtual) numbers. Physical numbers are relative with respect to something else. Like one person v/s no person or like 6 billion people on earth but zero on moon or one computer v/s no computer or a few apples v/s none or zero. They are all finite. Examples of relative numbers are one and all finite numbers
Examples of absolute numbers are zero, 1 & infinity.**

- 2. Graphic Representation**
 - a) Greek Oroborus**
 - b) Single line with opposite arrows for representation of zero and infinity in relative physical numbers and double line one with increasing left to right and the other with increasing right to left, such that the sum or integration of the two leads to a single line with both types of arrows on each side as well as shrinking of the line into a single point, which represents both zero (micro-infinity) and infinity (macro-infinity) currently, In this representation neither end is reachable or even comprehensible.**

- 3. Micro-infinity and macro-infinity both have the same symmetrical attributes and properties. Zoom-in and zoom out has no limits such that it is easy to comprehend and navigate between micro-infinity and micro-infinity or between macro-universe and micro-subatomic world of in its own right.**
 - a) Any and every infinitesimal part of macro-infinity is macro-infinity in its own right even when nested ad infinitum. Likewise**
 - b) Likewise any and all integrations of infinitudes of micro-infinity is still micro-infinity in its own right even if nested or multiplied ad infinitum**

Note: Paraphrasing into simpler vernacular a) every infinitesimal part of infinity is infinity in its own right unless first partitioned off. Likewise b) Micro-infinity can be expanded, combined, integrated into infinitudes of other micro-infinities to remain a micro-infinity in its own right. This somewhat easier to visualize by unlimited zooming-in and zooming-out as the case may admit.

4. **On the other hand absolute numbers of the virtual universe there are no finite numbers. All numbers are infinite. In this respect there are only 3 number that we can recognize such as 0, 1 and infinity.**
5. **These 3 and only these three numbers equal their reciprocals and equal each other such that $0 = 1 = \text{Infinity} = 1/0 = 1/\text{Infinity}$ and $1/1$ (if one uses any other name or number as synonym of these three such as ALL, Everything or Universe (All that there is) then they and their reciprocal will also equal this set of 3 above.**
6. **In physical relative terms we tend to think of zero and infinity as opposite end of the spectrum. We also think of their reciprocals as tending to the opposite end of the spectrum such as $1/0$ tends to infinity and $1/\text{infinity}$ tend to zero.**
7. **In absolute & virtual terms zero and infinity are on the same end of the spectrum or if there is an opposite end it is a point such that 0 and infinity are one and the same thing and one & all and all finite numbers in between also fit or overlap at this point and there are no finite numbers in between as we see them in our line of rational and irrational numbers.**
8. **The attached graphic shows the difference between the finite number line between 0 and infinity according to man and single point 0 and infinity at the same end of the spectrum. The Greeks represented it as an Oroborus where the snake with tail as 0 is being swallowed by its mouth as infinity.**
9. **Another way to visualize this is that zero and infinity are both infinitely away from us as macro (Infinity) and micro infinity (Zero). No matter how big it is there is still infinite more. Likewise no matter how small it is, there is infinite number of divisions to zero. So the attributes and properties of both zero and infinity may be stated as:
 - a) Unreachable
 - b) Invisible
 - c) Indivisible
 - d) Incomprehensible.**
10. **Any part of infinity (or absolute Zero) is infinite in its own right unless some part is partitioned off, even if that partition is invisible and crossable by the other side to us but not from us to the other side.**
11. **The attached graphic in upper half shows the opposite end of spectrum with a single line, where zero is one end and the infinity on the other end. The lower half of the graphic shows two lines one spanning from 0 to infinity and the other spanning from infinity to zero in the opposite direction.**

Since 0 = infinity both end are equal and one and the same. Now if you can imagine the two lines merging by overlapping and then contracting to a point, it becomes somewhat easier to visualize how 0 and 1 may be the same end of spectrum for someone who does not have limitations of Man. Of course there is no magic about contracting to a point. You could also imagine this line to be expanding to infinity and you will be equally right assuming you do not get confused or worse yet find it absurd and incomprehensible and if you do, I won't hold that against you.

12. A mathematical proof of zero and infinity as a synonymic couplet comprising:

Eight equations (4 equations governed by 4 different general rules and the remaining 4 equations governed by a single conventional rule applied 4 times almost identically.

- 1) General Rule #1 – Any number raised to the power of zero as exponent is 1
- 2) General Rule #2 – 1 raised to any power (exponent) is 1
- 3) General Rule # 3 – Any number raised to the exponent (power) of 1 is the base itself
- 4) General Rule # 4 – Any number raised to the exponent infinity is infinity.
- 5) Conventional Rule (5-8) Base multiplied by itself exponent's number of times.

Accordingly 8 equations are:

General Rule 1-4

1) $0^0 = 1$	$1^0 = 1$	$\text{Infinity}^0 = 1$	(Same Base)
2) $1^0 = 1$	$1^1 = 1$	$1^{\text{infinity}} = 1$	(Same Base)
3) $0^1 = 0$	$1^1 = 1$	$\text{Infinity}^1 = \text{Infinity}$	(Same Base)
4) $0^{\text{infinity}} = \text{Infinity}$	$1^{\text{infinity}} = \text{Infinity}$	$\text{Infinity}^{\text{infinity}} = \text{Infinity}$	(Same Base)

Conventional Rule 5-8

5) $0^0 = 0$	$0^1 = 0$	$0^{\text{infinity}} = 0$	(Same Base)
6) $0^{\text{infinity}} = \text{Infinity}$	$1^{\text{infinity}} = \text{Infinity}$	$\text{Infinity}^{\text{infinity}} = \text{Infinity}$	(Same Base)
7) $\text{Infinity}^0 = \text{infinity}$	$\text{Infinity}^1 = \text{Infinity}$	$\text{Infinity}^{\text{infinity}} = \text{Infinity}$	(Same Base)
8) $1^0 = 1$	$1^1 = 1$	$1^{\text{infinity}} = 1$	(Same Base)

Other implied rules applied are:

- 1) If right hand sides of equations are equal then left hand sides also must equal and vice-a-versa
- 2) If the bases of the equations are same and the equations are equal then exponents must be equal.
- 3) If the exponents of the equations are same and the equations are equal then bases must be equal.

Those who accept the general rule (without exceptions that it also applies to zero and infinity) can rely on equations 1-4 for proof of equivalence of 0, 1 & Infinity and those who do recognize the exceptions and hence do not accept the general rule then they can rely on conventional rule 5 as applied to equations 5-8.

Q.E.D. (Quad Erat Demonstrandum)