To Reduce Nothingness into a Reference by Falsity

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Abstract Assuming the absolute nothingness as the most primitive idea that can be imagined; I present a simple way to refer to this absolute, by reducing it onto some primitive object. In order to do this more precisely, I have reintroduced the required terminology and structures[1]. The primitive that is presented, can be regarded as a minimal formal system that can generate some infinite variety of symbols; expressed in terms of the elements and operations of the primitive. Provided that some proper modification is applied to this system, I suggest a possible application could be, to use it as a pedagogical instrument to visualize the idea of integer primality and their representations in terms of the primes.

1. MOTIVATION

The idea of irreducibility or primitive notion in mathematics brings the possibility of producing varieties that can be expressed by the original prime elements together with some proper operators between the primes. In addition and for other contexts, it is plausible to think of the same idea, by which we can generate the multiplicity of the context; having a variety of distinct expressions of the primitive notion, in which the expressions inherit some sameness and some difference. Moreover, any meaning that is implied by these expressions is characterized by the primitive, and not only we can generate a multiplicity of varieties containing distinct expressions or symbols; facing the possibilities that the primitive provides but also, going in the other direction; we can try to trace the symbols back to the primitive. For example, think about prime integers and addition; axioms of mathematical logic; the atoms of the chemical elements and their chemistry; syllables and syntax of a natural language, and the simple vibrations and their frequency which generates an infinity of distinct musical notes. These ideas together with the possibilities, sublimely put forward by Kantian philosophy of, a priori and intuition; the ground provided by Frege's principle of compositionality, the illustrations of Peano arithmetic, and the landscapes explored by

[1] I have abducted this from mathematics; which was then redefined to fit the purpose; most of which is found in the appendix and the exceptions are defined in the body of the text. I know very well that many mathematicians consider such usages of their discourse a mutiny; but my abduction is restricted to my specific purpose, thus angry mathematicians can rest assured; I am not molesting their commandments.

Kripke's reference theory, lead me to investigate the possibility of yet another example of a primitive notion, that makes a systemic, differentiation and repetition possible.

2. THE INFINITE JEST *

2.1. A Leap from Sense into Nonsense

The study of the *absolute nothingness*[3] is well beyond our scope; we just want it as a reference point and the idea is to find a way to refer to it by any means possible. Nonetheless, by the definition[4], this should be impossible if we are to completely preserve the absolute nothingness; thus we should preserve parts and dismiss the rest. In this case, the variation or the object generated by the reference should have a nonzero *divergence* relative to the absolute nothingness. Said differently, any reference to this absolute nothingness will inevitably mutilate it. Now, as we deviate from the absolute into the reduced *primitive object*; we want every possible variety of this primitive object to be generated by expressions in terms of the constituent parts of the primitive; which the rules for any such expression, is initially implied by the primitive; further, we want the possibility of generating some *infinite variety* from this primitive object, think about it as partially preserving the infinity[5] of the absolute. Now we shall construct this primitive object; that is, in a nutshell; a projection of the nothingness, externalized and reduced into a bundle[6].

2.1.1. Sense

In set theory, something close to this absolute nothingness, or more precisely to the primitive object we want to construct, is the idea of the empty set; a set of no elements. Not surprisingly, the empty set is a set and the easiest way to think about a set, is to regard it as a notion, which implies the idea of containing some proper elements or nothing at all. Now in the empty set, we restrict ourselves to the bare and hollow idea with no elements; i.e., a set that is just a set; which every other set is this bared idea that is further specified by some elements that fill the emptiness within.

* Snatched from the title of a 1996 novel by David Foster Wallace.

[3] Further description of the *italicized* terms is found in the appendix; or in the **boldfaced** terms, shortly following the italicized ones.

[4] See the appendix.

[5] Or in a sense, the invariance.

[6] In (Hegel, 1977, p. 578) we have "Spirit at first has the consciousness of itself as being all truth and all reality in the form of a mere concept, a dark night of essence opposed to its daylight forms, a creative secret of birth. This secret must be externalized, seen in and through all daylight forms". Further notice the Lacanian concept of **point de capiton** which is the locus where "the signifier stops the otherwise endless movement of the signification … and produces the necessary illusion of a fixed meaning" (Evans, 1996, p. 151).

Now for $\boldsymbol{S} = \{\}$ we can think about it as $\boldsymbol{S} = \boldsymbol{S}$, because $\{\}$ is the bared concept of a set and $\boldsymbol{S}$ says, I am another way to state this fact[7]. Here, the equation implies absolute sameness; and representing the empty set $\{\}$, also by $\boldsymbol{S}$ is only for notational purposes and has no significant of its own; shortly we shall present another way, which further distinguishes between this two; and somehow removes the equality sign[8]. By an abuse of notation[9], the idea is to extend and distinguish the notion of a set into further constituents; that is a *name*, which implies a *label* that bundles a *notion* into a *labeling* for that notion, i.e., the labeling is a characterization of the notion "by externalizing it via the label". Let us forget this gibberish for just a moment; say a labeling is the idea of an imagined container or a label that contains the notion (or a thing), and the notion somehow prevents this imaginary container from degenerating out of existence. Looking at the empty set, such a notion is not explicitly addressable, i.e., the label only refers; it proposes a container, yet the thing in reference and the contained is missing or hidden in a sense.

Now if I say the thing I am trying to label, is also the thing being externalized and equal to the name of the envisioned labeling; then this **pathological** labeling is also the characterization of itself; i.e., of the labeling, see

$$\boldsymbol{\mathcal{P}} = \{\boldsymbol{\mathcal{P}}\}$$

here we have imagined a label, denoted by the empty set $\{\}$, which bundles up $\boldsymbol{\mathcal{P}}$ as $\{\boldsymbol{\mathcal{P}}\}$; the notion that specifies the label into a labeling is $\boldsymbol{\mathcal{P}}$; which is also its given name, i.e., $\boldsymbol{\mathcal{P}}$ is itself and a reference to itself; on the other hand, $\boldsymbol{\mathcal{P}}$ is all the same if it is considered without a reference to itself. Said in the other direction; the externalization the name implies is that, it contain its own externalization; i.e., there is nothing beyond $\boldsymbol{\mathcal{P}}$ and thus there is no externalization; this name describes itself, in the terms of itself. Instead of killing this idea by saying, it is contradictory, or even paradoxical, let us imagine for a moment that this pathological and illusive name implies some oscillation between expressions; of being itself, being the reference to itself, and being its own signification. Clearly this is far from something[10] like $\boldsymbol{S} = \boldsymbol{S}$ because $\boldsymbol{S}$ is just $\boldsymbol{S}$; nothing more nothing less; yet $\boldsymbol{\mathcal{P}}$ is also a description of itself; it distinguishes itself; but here, what it distinguishes is not only itself, but itself also, infinitely contains itself and refers to itself with no termination[11].

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[7] For further insights, see (Kripke, 1980, pp. 25, 55, 57, 64-65, 71).

[8] See **the weak and the strong notions of truth** in (Gupta & Belnap, 1993, p. 22).

[9] My idea will be very similar, almost identical to that of (Frege, 1948); but because of the differences, I should start all over and change the terminology to avoid confusion.

[10] See (Žižek, 2012, p. 167).

[11] For more on the well-known paradoxes implied by this idea, see, (Halbach, 2014, p. 25). Further, regarding **self-referential sentences** see (Gupta & Belnap, 1993, p. 96).

2.1.2. Leap

Finally, introducing our own notation we say a **name** denoted by $\boldsymbol{\Lambda}$ implies a tuple as follows $\boldsymbol{\Lambda} \Rightarrow (\mu, \chi, \chi(\mu))$ where μ is the **notion** or the defining properties, χ is the mean to reference or the **label operator** which taking on μ, it outputs the **labeling**, $\chi(\mu)$. Further, whenever it is proper[12] we may write $\boldsymbol{\Lambda} = \chi(\mu)$.

Generally, χ should specify the rule, which makes this referring possible; e.g., in set theory, a set or the empty set, proposes the possibility of including proper elements inside; thus enclosing elements inside a set, is such a rule and it is clear that $\{x\} \neq x$. So think about it in this way; χ characterize (or express) μ by an arbitrary rule like {}; this is to say, the characterization, rather externalize the notion. Now, because χ propose a distinction, the requirements of such a distinction, dictates there should be something to be distinguished from; intuitively speaking; there should be something inside or outside the notion; not equal to it; in order to have a **proper characterization**. Now, for our $\boldsymbol{\mathcal{P}}$, the name implies "a notion $\boldsymbol{\mathcal{P}}$ that is characterized by containing itself"; if this is the case; then there is nothing beyond this notion; "nihil ulterius". Thus, distinction is only formally implied or imagined; and any proper distinction is impossible and pathological; because the notion is equal to its characterization.

Further, if we have only one object; then to properly characterize this object; the object itself should have different referable *atoms*; this is, if χ is **well-behaved** it should not redefine the object by the characterization. Considering some arbitrary object, if χ characterize the object by reducing it to some if its atoms, irreversibly; then it is not the original object that it is characterized, but some atoms; given by the irreversible annihilation of the other atoms; therefore in this case the labeling is pathologically defined and further it is false; because we said we are going to characterize a specific object, yet we mutilate it, and it became a new object; characterized, and distinguished from the original one.

To go back to the case of having only, and only one object in our universe; suppose this is some primitive object (it has only two atoms); we shall call this setting a **primordial universe**. Our orphan object has nothing outside, but two referable atoms inside; if without mutilating the object to any of its two atoms, we are able to characterize it; we shall call this characterization a **restriction**; this is, one of the atoms should characterize the other atom which is considered as the notion of the characterization; in this case, the externalization is provided by the integrity of the object being in its totality. Further, let $\rightarrow$ denotes such a restriction, and $\hookrightarrow$ the **release** from this restriction (or characterization) back to the original state.

For illustration, think about a primordial universe, of some special *light bulb*; which is an object that implies the possibility of "being-on"; now the light bulb itself, is being neither of the following states; "on", "off", "on and off", "on and not-off", or

[12] That is to say, when the notion is different from the labeling. Thus, in the example where $\boldsymbol{\mathcal{P}} = \{\boldsymbol{\mathcal{P}}\}$, we do not have this difference and we do not write $\boldsymbol{\mathcal{P}} = \chi(\boldsymbol{\mathcal{P}})$.

"not-on and off"; rather it is the object that provides the possibility of "being-on"; so in a sense it is being "not-on and not-off", and the release does not turn off the light; what it does is to imply an expression, which is "a becoming, of no longer being characterized by being-on"; this characterization implies or expresses the state of the primal possibility, of the implication, "to-become-on". Thus, the "on-state" is not equal to the object or the light bulb, neither it is equal to "being-on"; the "on-state" is the implication, "to-become characterized by the off-state".

Now let us denote the light bulb by $\boldsymbol{\mathcal{X}}$; which has an atom denoted by ν, and another atom, which is a label operator (i.e., it can characterize), denoted by χ. Let, $\boldsymbol{\mathcal{X}}$ imply $\chi(\nu)$, and $1 \coloneqq \chi(\nu)$, this means, by considering ν, we produced an expression denoted by 1, which is "being-on". Here we can write $\boldsymbol{\mathcal{X}} \to 1$ to denote the whole idea of restricting $\boldsymbol{\mathcal{X}}$ onto 1. Now let us say ν is defined if $\chi(\nu)$, thus ν should be considered a **falsity**, denoted by **F**; intuitively, because as we said ν is defined if $\chi(\nu)$, yet our object, $\boldsymbol{\mathcal{X}}$ in its initial setting is "the unfulfilled possibility of $\chi(\nu)$", thus initially there is no such expression $\chi(\nu)$. Now, assuming we have 1, we consider 1 as a **truth**, denoted by **T**. At this stage, we can release our restriction, let $1 \hookrightarrow \boldsymbol{\mathcal{X}}$ denote this idea; now we can write 1 only if $\boldsymbol{\mathcal{X}}$; assuming to have $\chi(\nu)$ meant in any case, that $\boldsymbol{\mathcal{X}}$ was the case. Now denote the whole expression $\chi(\nu) \hookrightarrow \boldsymbol{\mathcal{X}}$ by 0, this is to write[13], $0 \coloneqq (1 \hookrightarrow \boldsymbol{\mathcal{X}})$ which expresses "being-off"; to sum-up, let us write

- $\boldsymbol{\mathcal{X}} = \{\nu, \chi : \boldsymbol{\mathcal{X}} \Rightarrow \chi(\nu)\}$,
- $1 \coloneqq \chi(\nu)$ is the expression generated by considering $\boldsymbol{\mathcal{X}} \to 1$, in which 1 is a "being",
- $0 \coloneqq 1 \hookrightarrow \boldsymbol{\mathcal{X}}$ is the expression which is equal to the release of 1 back to $\boldsymbol{\mathcal{X}}$; thus 0 is a "being" that is defined by a "becoming" for consistency we additionally, denote this characterization writing $0 \coloneqq \chi^{-}(1)$.

Now we define further expressions[14] and denote them by binary numbers

$$
\begin{array}{lll}
0 & \coloneqq \chi^{-}(1) & \Rightarrow \mathbf{F} \\
1 & \coloneqq \chi(\nu) & \Rightarrow \mathbf{T} \\
10 & \coloneqq \chi(1) & \Rightarrow \mathbf{F} \\
11 & \coloneqq \chi(10) & \Rightarrow \mathbf{T} \\
100 & \coloneqq \chi(11) & \Rightarrow \mathbf{F} \\
\ldots & &
\end{array}
$$

[13] The parentheses are only to emphasis that 0 is the whole expression, and we shall not use parentheses for this purpose, anymore.

[14] Here, one can think about the characterizations (and consequently the implications) as being the negation of the argument; thus the consequent implication is true, if and only if, the "ones place" is the digit 1. One may also define, for the variety generated as such, a binary operation (e.g., XOR-ing) for every symbol of the variety, or even define some bitwise operations; the details should be obvious. Finally, it is also plausible to compare this to von Neumann ordinals (for now, $\mapsto$ denotes the next symbol), consider

$$\{\} \mapsto \{\{\}\} \mapsto \{\{\},\{\{\}\}\} \mapsto \{\{\},\{\{\}\},\{\{\},\{\{\}\}\}\} \mapsto \cdots.$$

Using the above construction, now I shall present a model for the desired primitive object—which I have further described in the remaining sections—for now, suppose, we have a primordial universe of $\boldsymbol{\mathcal{X}}$ (similar to the case described above); let x and $y = \boldsymbol{\mathcal{X}} \otimes x$, be the two constituents atoms. Here, y is the restriction—by the **quotient**-like operator, $- \otimes -$, that is the possibility that is put forward by $\boldsymbol{\mathcal{X}}$; the quotient can be used to *fractionalize* every possible **numerator** (left), in terms of its **denominator** (right); also preserving the numerator by the proper release from the restriction, denoted by $- \triangle -$; a **product**-like operation that glues back the fractions produced—to the original numerator—that is, to multiply the whole fraction by the denominator, now let

$$\begin{array}{lll} 1 & \coloneqq & \boldsymbol{\mathcal{X}} \otimes x \rightarrow y \\ 0 & \coloneqq & y \triangle x \hookrightarrow \boldsymbol{\mathcal{X}} \end{array}$$

and, $- \curvearrowright -$ (and $- \circlearrowleft -$) denotes the **fractionalization** (and **defractionalization**)—from left to right—by the means of the quotient (and the product), finally, we write

$$\boldsymbol{\mathcal{X}} = \{x, y : \boldsymbol{\mathcal{X}} \Rightarrow \otimes\}$$

denoting the outcome of the iterations via binary numbers, we generate the following sequence of outcomes

$$\boldsymbol{\mathcal{X}} \curvearrowright 1 \circlearrowleft 0 \curvearrowright 1 \curvearrowright 10 \curvearrowright 11 \curvearrowright 100 \curvearrowright \cdots$$

with their *decomposition*[15] as

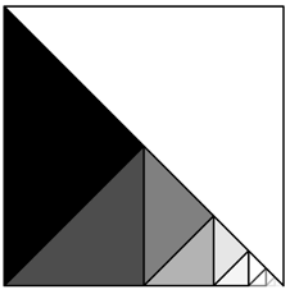
$$\begin{array}{lll} \boldsymbol{\mathcal{X}} & \curvearrowright \boldsymbol{\mathcal{X}} \otimes x \rightarrow y & \coloneqq 1 \\ & \circlearrowleft y \triangle x \hookrightarrow \boldsymbol{\mathcal{X}} & \coloneqq 0 \\ & \curvearrowright \boldsymbol{\mathcal{X}} \otimes x \rightarrow y & \coloneqq 1 \\ & \curvearrowright \boldsymbol{\mathcal{X}} \otimes x \rightarrow yy \triangle x \hookrightarrow \boldsymbol{\mathcal{X}} & \coloneqq 10 \\ & \curvearrowright \boldsymbol{\mathcal{X}} \otimes x \rightarrow y\boldsymbol{\mathcal{X}} \otimes x \rightarrow y & \coloneqq 11 \\ & \curvearrowright \boldsymbol{\mathcal{X}} \otimes x \rightarrow yy \triangle x \hookrightarrow \boldsymbol{\mathcal{X}}y \triangle x \hookrightarrow \boldsymbol{\mathcal{X}} & \coloneqq 100 \curvearrowright \cdots \end{array}$$

bearing the same truth values as that of the light bulb described earlier. Note that, for example in the decompositions of 10 and 100, the *isolated* y, is nowhere to be found and it is *mutated* into yy. By this construction, we showed a possibility of generating infinite varieties, if we are not to terminate the iteration of the further implied characterizations, each of which is considered a symbol of the specific variety generated. Before presenting a visual for this idea, it is most convenient, to quote from Tractatus Logico-Philosophicus

[15] In (Wittgenstein, 2001, p. 80) we have "The method by which mathematics arrives at its equations is the method of substitution . . . equations express the substitutability of two expressions and, starting from a number of equations, we advance to new equations by substituting different expressions in accordance with the equations".

> . . . A picture can depict any reality whose form it has. A spatial picture can depict anything spatial, a coloured one anything coloured, etc. . . . A picture cannot, however, depict its pictorial form: it displays it. . . . A picture represents its subject from a position outside it. (Its standpoint is its representational form.) That is why a picture represents its subject correctly or incorrectly. . . . A picture cannot, however, place itself outside its representational form. (Wittgenstein, 2001, p. 11).

In the following figure[16], one can see a visualization for the formal decomposition described for our primitive object: starting from the square a decomposition could be "the big white triangle" attached to the part that implies "the decomposition into smaller triangles", next, "the big white triangle together with the black one" attached to the part that implies "the decomposition into smaller triangles", etc., our *inlotus* is



decomposition of $\boldsymbol{\mathcal{X}}$

2.1.3. Nonsense

Once again, consider the original mathematical notation $\boldsymbol{\mathcal{E}} = \{\}$. In mathematics, this is just a definition; a set with no elements, and questions about its nature, is and for good reasons, considered nonsense, trivial, and ultimately stupid; the definition is very well-behaved and useful; a bless in its own right. Nonetheless, I shall ask some of this stupid questions once more; for example, "what is contained inside the labeling?"; this what; this thing; this contained notion; maybe is sort of like the following expression; sometimes abused to describe the integer zero; that is "the placeholder, for when we want to say, we have nothing"; so, for $\boldsymbol{\mathcal{E}} = \chi(\mu)$, our notion should be something like μ is "not being a thing"; some description for "nothing"; continuing in this line of thought, we are just going to circulate some tautological iterations, without mutilating this iterations into a signification. Insisting on this point, one last time; let us utter that $\boldsymbol{\mathcal{E}}$ is "a labeling for something that does not accept any definition"; or rather, "the emptiness of some false statement"; for example, "the set of all x such that $x \neq x$".

[16] Which I call an **inlotus**; because instead of unfurling outwards, it furls inward into itself.

2.2. And from Nonsense into Sense

To review, we said a *name* is a complex that enables us to *label* a *notion* to have a *labeling* that distinguishes the notion. So in the case of the empty set, at least a characterization is possible, such as—repeating the example—"$x \neq x$". So far, regarding the names for the pathological set and the empty one, we can write

$$\boldsymbol{\mathcal{P}} \Rightarrow (\boldsymbol{\mathcal{P}}, \boldsymbol{\mathcal{P}}, \boldsymbol{\mathcal{P}})$$
$$\boldsymbol{\mathcal{E}} \Rightarrow (\chi(\boldsymbol{\mathcal{P}}), \mathbf{F}, \boldsymbol{\mathcal{X}})$$

where **F** denotes falsity, and $\boldsymbol{\mathcal{X}}$ our primitive object.

Any characterization, or an ability to refer, bounds the notion it refers to, by the labeling it draws upon it; therefore, it makes some distinction possible; the labeling forgets every other property (if there is any) of the notion momentarily, or annihilates them permanently. The absolute nothingness is exactly the reference point of this labeling; it is where any sort of distinction is impossible; so there is no possible duality, and this to say, falsity and truth are not the case. This nothingness does not even have a proper name [17] and therefore nothing can break the absolute infinity of its indescribable essence. Now that we cannot characterize this notion in a proper way; let us take the absolute nothingness and try to pathologically characterize it by a mutilation; the label operator being this mutilation, the absolute nothingness can be referred to; yet as the absolute nothingness defies being in reference, the outcome of this mutilation, the labeling is a falsity; a fundamental flaw; we said something that Aristotle said it is, false, namely; we said of, "what it is that it is not"[18].

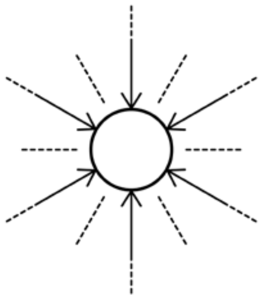
The falsity [19] become the possibility for our atom, to be the notion of a characterization; the falsity is exactly the thing that prevents this container from degenerating out of existence; the definition holds by the means of the falsity, and it characterizes a primitive object that can imply a duality; this is to say, a truth can be generated, and for such a truth and by the means of the release operator, a falsity can be expressed. Fetishistically iterating, reifying, and preserving the singularity of this object, decompositions can produce new symbols, and symbols can multiply, and varieties can come into being as the singularity oscillates the truth of the primitive

[17] The Ancient Greek had an interesting notion for nothing (or **meden**) which is "something that in principle cannot be" (Žižek, 2012, p. 59), Žižek also describes **othing** as "not nothing without 'no,' not a thing", he further describes how Democritus narrate the transition of this notion into something positive, as atoms in the empty space.

[18] See, (Davidson, 1996, p. 265).

[19] In a sense, similar to the idea of a **gap**, in (Shaw, 2014, p. 511) we have "gaps are by stipulation truth-values that block inferences like falsehood while having more infectious projection behavior". Further, in (Halmos, 1998, p. 7) Halmos illustrates the Russell paradox most amusingly in a sense that is relative to this falsity, saying, "it is impossible, especially in mathematics, to get something for nothing. To specify a set, it is not enough to pronounce some magic words . . . it is necessary also to have at hand a set to whose elements the magic words apply".

object; by this equipment; the ability to reference, it is now possible to generate infinite varieties, arbitrary objects and an orgiastic universe of all this; revolving around the infinite gravity of this singularity; a reference to the unreferable as a locus; the projection of the absolute nothingness into a primordial universe, by falsity.



projection of the absolute

3. CONCLUSION

We have provided a way to generate an infinite variety, using a primitive object. This may be useful as a simple pedagogical instrument to describe primality and integer representation of primes, in elementary schools; using amusing visualizations. Moreover, I suggest that this idea may be used to generate pseudorandom sequences; for example for possible applications in shift registers or similar systems. Further, the idea of a variety described in the appendix, may be a suitable subject for further investigations. However, what amuses me is the possibility of defining new formal systems based on the primitive object described here. As an outrages example, consider a formal system that enables us to undertake a uniform logical analysis of different categories of human knowledge, such as aesthetics or ethics in one comprehensive system.

APPENDIX

Nothingness

Trying to imagine something that is not definable, we say the **absolute nothingness** is such, that nothing can break its state; the invariant of all possible; an absolute infinity that can always be the case[20], and it cannot even be reduced to the property of being referred to[21]—in a proper way.

[20] Maybe, not far from how Cantor thought about the **absolute infinity**, "It was Cantor . . . who saw that there exists an Absolute Infinity that lies beyond the mathematical transfinites" (Rucker, 2011, pp. 9-13).
[21] In the proper case, if something can refer to this absolute, then there should be something other than the absolute, and thus there is something that can break its "always being the case", as the absolute should

Singularities

To describe our minimal formal system, we need to specify the means, which enables this description. As an example, let $\mathbb{C}$ be the field of the complex numbers in which the following function $f(x) = 1/x$ is defined for every element other than 0. Now, the point $f(0)$ is a division by zero, which is not defined in $\mathbb{C}$; the undefined point, can be thought of as something that characterizes the rules of division, which our function adopt to generate a certain variety of points. Thus regarding the division, the number 0 is distinguished from every other number of the field, by the properties dictated by the quotient.

Now for our purposes, we say a **singularity** is a point within any system which removing or identifying it with any other point of the system will result in the total collapse, or at least a reduction or a mutilation of the system; as if this was a point, that made the characterization of the system in question possible; knot of some sort, that unknotting it, gives back a plain meaningless string. For our cause, a singularity, implies an important and unique difference of some **singular point**[22], regarding its specific system and by means of the implications given by the system. Although, the term "singularity" is used in mathematical analysis[23] or in modern physics[24], and many other possible places, now that we mentioned them, we shall safely waive away from them. To sum-up—when it is proper—we can think of singularity as the unique characterization of a singular point, for which we cannot identify it with any other element, further removing the singular point, inevitably redefines the whole system.

For intuition, let us briefly investigate a singularity of a literary work. Considering one specific work, I suggest, we can look for a singularity, in the loci where the integrity of the work oscillates, but it does not fall apart; regarding a theme like love, death,

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be externalized by or from the something, therefore the absolute is not the case in regard to this something; thus there exist this thing, which breaks the case of the absolute. For example, in some theological context (like Judaism), we have **the ineffable name**, see (Heschel, 1955, p. 64), or in (Diwane Shams, #1759) we can find a seeming conversation of Jalaladdin Balkhi with Spirit; freely translating the ode into English we have "you are what I signify; there is no signification in the absolute of my absolute; then you are the…; bother not, it is not in language, the, for which I stand". Finally, in (Wittgenstein, 2001, p. 89) we have "There are, indeed, things that cannot be put into words. They *make themselves manifest*. They are what is mystical".

[22] In (Deleuze, 2001, pp. xii, 10, 47-52), **point remarquable** are points that "distinguish one idea, problem or multiplicity from another . . . introduced alongside the mathematical concept of 'singular point', which is employed to designate those points which characterize or define a given function".

[23] For example, consider the following, "there may be certain points on the real axis at which the integral . . . fails to exist" even though the functions are "integrable on $(-\infty, +\infty)$"; the author then refers to such points as **singularities of the integral** and states that these singularities cannot occur unless the functions have infinite discontinuities. For details, see (Apostol, 1974, pp. 327-328).

[24] Consider, **gravitational singularity**, in (Hawking & Penrose, 1970, p. 531) we have, "The gravitational constant could, in principle, change sign . . . via a region at which it becomes infinite. Such a region could reasonably be called a 'singularity' in any case".

morality, happiness, or whatsoever. We can say the whole structure of the work, is built around this loci, and every other element is in an ever-changing state of infinite mutations. These loci, these seemingly unresolvable points, somehow force the whole story to revolve around their nullity; these omitted points, generate all the meaning and characterize the possibilities of the whole work; a singularity, implies a characterization by means of an alien-somethings from a transcendental world, that itself is omitted in our world.

Varieties

In order to understand singularity, we should understand the variety that the singular point characterizes. Further, we need to define the idea of an *infinite variety*. To satisfy this two requirements, we need to define further terms; moreover, the resulting construction is only intended to satisfy our two requirements, and finally, the construction is already cumbersome, thus I shall omit unnecessary details.

Whenever we think of a multitude of things, we have already defined a property to distinguish these things from each other. This is done by considering a subset of every property that can be induced upon these things. One way to do this is to fix some property and then refer to some other property; by means of *decomposing* it into distinct referable parts, in a sense, these decomposed parts are attached to the previously fixed properties. Alternatively, we can define a symbol from some comprehensive set of distinct properties, by referring to one or some of them.

We shall call a generator that produces a set (or a *variety*) of distinct *symbols* a **variety generator**, denoted by π. Here, as π operates over its argument, which is essentially a set of properties; it can omit some of the properties, while preserving some other ones; now, from the set of preserved properties, the variety generator decomposes some property into further parts using an idea like quotient, and it finds a way to refer to each distinct parts of this decomposition. Generally, the variety generator regarding some fixed argument, properly, does one or a combination of the following operations on the elements of its argument in order to generate a distinct symbol

- omits some of the properties,
- carries exact copies of some of them,
- decomposes one, or some of them into parts.

Regarding some variety generator, we shall call the rule that generates the distinct symbols of the envisioned variety the **quantification rule** denoted by ψ[25], and the argument of the variety generator the **typeset**, denoted by $\boldsymbol{\mathcal{T}}$. A typeset, is the set of every possible properties that the thing in question can have; or in the other direction, the typeset can induce upon the symbols produced by the variety generator. A typeset is further equipped with some operation that distinguishes between all of its properties, i.e., the typeset implies some expression of its properties. Thus, every property or **tip**

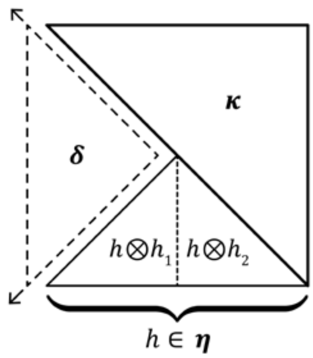
[25] We distinguish between the *variety generator* and the *quantification rule*, to imply an emphasis.

$t \in \mathcal{T}$ that defines the typeset should itself be distinct and referable; this is to ensure that we can validate the accordance of a typeset to the symbols under consideration. Now using what we just said and in order to denote the typeset in terms of its tips, we can write $\mathcal{T} \Rightarrow \triangle\, t$ where $\triangle$, is a **procedure** on the tips $t \in \mathcal{T}$; in simplest case, the procedure can be a concatenation of every tip in the typeset.

Further, for a typeset $\mathcal{T}$ we can have **subtypes**, $\mathcal{U} \subseteq \mathcal{T}$ which is itself a typeset, such that, $\mathcal{U} = \{t_i\}$ where i is an element of some proper index set $\boldsymbol{I}$. Now as hinted earlier, a **variety** or $\boldsymbol{\mathcal{V}}$ is the set of distinct items, such that all of these items are uniquely distinguished; each such item is called a **symbol**. Naturally, we can index these symbols by some proper index set, like natural numbers; then we should have a unique **index** for every unique symbol. So far, we said the generator taking on a typeset; produces a variety of distinct symbols that represent some possibility induced by the typeset. We shall express the whole idea by writing $\pi(\mathcal{T}) = \boldsymbol{\mathcal{V}}$. For convince, if we want to refer to the rule which produces some specific symbol x, we may write $\psi_i(\pi) = x$, where x is the i^{th} indexed symbol, and the rule which generates x is in the following form; $\psi_i(\pi) = \triangle\, t = x$ where $\triangle$ is a procedure on the tips $t \in \mathcal{T}$.

Finally, consider $\pi(\mathcal{T}) = \boldsymbol{\mathcal{V}}$; for the specific variety $\boldsymbol{\mathcal{V}}$ the relation of the typeset to the symbols in the variety; is characterized, most importantly using the following special subtypes of the typeset

- **kernel**, denoted by **ker** π or $\boldsymbol{\kappa}$, for which every symbol expresses every tip $k \in \boldsymbol{\kappa}$; and these tips are **isolated** only by an operator, or between operators, e.g., $k \triangle k'$ or $\triangle\, k \,\triangle$.
- **hub**, denoted by **hub** π or $\boldsymbol{\eta}$, for which at least one symbol expresses some parts from a proper **decomposition** of some tip $h \in \boldsymbol{\eta}$ or a **mutation** of a tip; which is a tip that the means that differentiates it from other tips or non-operator elements, is missing, e.g., consider hh or $h\mathcal{T}$.
- **divergence**, denoted by **div** π or $\boldsymbol{\delta} = \{t : t \in \mathcal{T} \text{ and } t \notin \boldsymbol{\kappa} \cup \boldsymbol{\eta}\}$, i.e., $\boldsymbol{\delta}$ represents the set of tips which are completely omitted from every symbol. If $\boldsymbol{\delta} = \{\}$, then we say we have **zero divergence**.



composition of a symbol

For example, suppose by integers, we mean the semigroup of positive integers. We can simply specify a variety by writing $\pi(\boldsymbol{\mathcal{T}}) = \boldsymbol{N}$ or to specify some rule such as $\psi_1 = 1$ and $\psi_{i>1} = \psi_{i-1} + 1$. This generator somehow represents the totality of the semigroup. For using the "integer 1" together with "addition", and the "ability to refer" to a proper previous instance, we can generate the whole variety that is $\boldsymbol{N}$.

Now consider another generator $\pi(\boldsymbol{\mathcal{T}}) = \{x_1, x_2\}$, where $x_1 = 3 + 7, x_2 = 5 + 5$. Here, the quantification "add" some "primes" together to represent the two symbols implied by the typeset and generated by π; yet using different generators further varieties with more symbols can be generated.

Objects

Very similar to the idea of typeset, we have the notion of an **object**; which is a system of at least two distinct components called **atoms**, together with some operations, which can generate varieties similar to that of the variety generator of a typeset. Moreover, a **primitive object** is an object, consisting of only two atoms.

At last, acknowledging the different ways to construct *infinite varieties*; simply, one of them suffices our purpose. Suppose $\boldsymbol{\mathcal{X}}$ is a primitive object, regarded as a typeset with its tips, being its two distinct atoms; denoted by x and y, and a relation[26] between the atoms that is implied by $\boldsymbol{\mathcal{X}}$; that is to say, the primitive object, has the potentiality of producing some specific variety $\boldsymbol{\mathcal{V}}$. I propose, $\boldsymbol{\mathcal{X}}$ can generate an **infinite variety**, if $\boldsymbol{\kappa} = \{x\}$, $\boldsymbol{\eta} = \{y\}$, and the relation is iterated without termination.

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[26] In a sense a characterization of some sort.

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