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Superhumans: Superlanguage?

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The paper questions the problem of the eventual biological successor of mankind as scientific rather than ideological. Though there is not enough knowledge for one to be able to answer it, the contemporary cognition can ask it as a research hypothesis.

A necessary condition is the emancipation from the philosophical legacy of Nietzsche and Heidegger and especially from the horrible doctrine and practice of Nazism, from any relation to racism or eugenics.

Furthermore, the natural framework of that question is the study of the genesis of eventual super-humans' predecessors, i.e. the genesis of humans: the enumeration of those evolutionary innovations, which have allowed of our species to blossom, to the extrapolation to new advantages of that kind.

The contemporary humans can be featured by a few global systems: society, technics, mind, and language in which all innovations have resulted. While the first three have reached certain natural limits, language is that frontier, in which any successful future evolutionary innovations should project in order to specify "super-humans".

The investigation of the supposed "super-language of the super-humans" addresses infinity as beyond our finite language designating also only finite objects. Anyway its outlines are already hinted in contemporary knowledge: the concept of "phenomenon" in Husserl's phenomenology; the semantic and philosophical theory of symbol: from consciousness and language to reality; the concept of infinity in mathematics and its foundation; the coincidence of the quantum model and reality in quantum mechanics and information.

These questions are considered in the article in consecutive order:

1. The emancipation of the problem about the future super-humans from the legacy of Nietzsche and Heidegger

"Super-humans" is usually to be linked to Nietzsche or to Heidegger's criticism to Nietzsche, or even to the ideology of Nazism. However, they can be properly underlain by philosophical and scientific anthropology as that biological species, which will originate from humans eventually in the course of evolution.

The first uses of the term of "*Übermensh*" (overman or superhuman) can be found in Nietzsche in the fragment 4[75] from 1882 –1883 according to the site "Nietzsche source[1]". Already *Also sprach Zarathustra* (1883 –1891) introduced the term in a plurality of uses. One can find among them the conception about the human being as the link ("a rope over an abyss") between the animal and the superhuman[2] or as "the middle of the pathway" between them[3]. The human being is the "bridge" or what must overcome on the "road" to the superhuman[4]. The images of "God's death" and the "superhuman" were connected[5] and followed chronologically: The empty place of the "dead God" was occupied by the "superhuman". Nietzsche defined the "notion of 'superhuman'" as "highest reality", "infinitely far under" which the human beings and all for them are, in the autobiographical reflection *Esse homo*[6].

Heidegger titles the chapter devoted to the "*Übermensch*" in his monograph *Nietzsche* exactly so: "*Obermensch*"[7]. "*Über*" in the "*Übermensch*" contents Nietzsche's relation to mankind as a whole[8]. This relation is metaphysical and nihilistic[9]. "The absolute subjectivity of the will to power is the source of the essential necessity of the superhuman[10]. Thus Heidegger discussed that term in an abstract and philosophical way. Following him, the "over-man" should be interpreted perhaps as an "among-man" who "at last thinks" in a properly philosophical way while mankind "do not yet think" according to him[11].

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[1] http://www.nietzschesource.org accessed 20.02.2014

[2] Nietzsche, Friedrich. 1883. *Also sprach Zarathustra. Ein Buch für Alle und Keinen*. Bd. 1. Chemnitz: Schmeitzner, p. 12.

[3] Nietzsche 1883, 112

[4] Nietzsche, Friedrich. 1884. *Also sprach Zarathustra. Ein Buch für Alle und Keinen*. Bd. 3. Chemnitz: Schmeitzner, p. 67.

[5] Nietzsche, Friedrich. 1891. *Also sprach Zarathustra. Ein Buch für Alle und Keinen*. Bd. 4. Leipzig: Naumann, p. 77.

[6] Nietzsche, Friedrich. 1928. *Gesammelte Werke*. Bd. 21, 165-275 (*Esse homo*). München: Musarion, p. 256

[7] Heidegger, Martin. 1997. *Gesamtausgabe*: 6.2. *Nietzsche.* Frankfurt am Main: Vittorio Klostermann, pp. 291-314.

[8] Heidegger 1997, 292

[9] Heidegger 1997, 293

[10] Heidegger 1997, 302

[11]Heidegger, Martin. 2000. *Gesamtausgabe*: 7. *Vorträge and Aufsätze*. Frankfurt am Main: Vittorio Klostermann, p. 130.

There are also publications equating the Nazi doctrine about racial superiority and Nietzsche's concept about super-humans[12]:

> Nietzsche and Nazism had declared an all-out war against these avowed enemies of the superman whose rule would be a spiritual, radically aristocratic age aimed at producing a collective evaluation and self-overcoming humankind towards greatness and perfection on earth, towards the creation of God-Man[13].

Instead of all that, the problem about the biological specie, which might appear as the successor of the contemporary humans, should be questioned as scientific, but not as ideological, speculative, metaphysical and philosophical. It refers to some distant and undetermined future being hypothetical and prognostic. The outlines of any possible answer cannot be guessed, however, they might be specified on the base of the contemporary knowledge and tendencies of cognition:

2. The origin of the super-humans from the humans as a prognostic direction

Paleoanthropology develops[14]: new facts and interpretations appear. Nevertheless, there is a series of more or less well-established facts in anthropogenesis, which would be relevant to the philosophical question about the "super-humans": bipedalism[15], cooling by persistence[16], specific hair or its lack[17], omnivorous-ness[18], thumb opposition and apposition[19], vocal system of speech

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[12] E.g.: Taha, Abir. 2005. *Nietzsche, prophet of Nazism: the cult of the superman: unveiling the Nazi secret doctrine*. Bloomington, Ind.: AuthorHouse.

[13] Taha 2005, 73

[14] Tattersall, Yan. 2000: "Paleoanthropology: The last half-century," *Evolutionary Anthropology: Issues, News, and Reviews* 9(1): 2-16.

[15] McHenry, Henry M. 2009. "Human Evolution," In *Evolution: The First Four Billion Years*, edited by Michael Ruse and Joseph Travis, 256-280. Cambridge, Mass., London: Belknap Press of Harvard University Press, pp. 269-271. Also: Harcourt–Smith, William E. H. 2007. "The Origins of Bipedal Locomotion," in *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1483–1518. Berlin/ Heidelberg/ New York: Springer.

[16] Liebenberg, Louis. 2008: "The relevance of persistence hunting to human evolution." *Journal of Human Evolution* 55: 1156–59.

[17] Bergman, Jerry. 2004: "Why Mammal Body Hair Is an Evolutionary Enigma?" *Creation Research Society Quarterly Journal* 40(3): 240-243, pp. 242-243.

[18] McHenry 2009, 271-272

[19] Young, Richard W. 2003: "Evolution of the human hand: the role of throwing and clubbing." *J. Anat.* 202: 165–174, p. 168.

production[20,21], human brain[22], long childhood[23]; our species is evolutionary young (about 200 000 years old[24]), but it is the last survived descendant being genetically exceptionally homogenous[25] (< 0,1% genetic differences[26]) of the genus "homo"[27] (about 6 000 000 old[28]) originated from *Homonidae*[29] between about 20 000 000 and 6 000 000 years[30] . All this generates a few main features of our population: society, technics, language, and mind[31], which guarantee the contemporary absolute domination of mankind.

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[20] Fitch, W. Tecumseh: 2000. "The evolution of speech: a comparative review," *Trends in Cognitive Sciences* 4(7): 258-267.

[21] Hauser, Marc D, Chomsky, Noam, Fitch, W. Tecumseh. 2002: "The Language Faculty: What is it, who has it, and how did it evolve?" *Science* 298: 1569-1579.

[22] McHenry 2009, 268-269

[23] Bogin, Barry. 1997: "Evolutionary Hypotheses for Human Childhood," *Yearbook of Physical Anthropology* 40: 63–89.

[24] Bräuer, Günter. 2007. "Origin of Modern Humans," in *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1749-1780. Berlin/ Heidelberg/ New York: Springer, p. 1755.

[25] http://humanorigins.si.edu/evidence/genetics/skin-color/modern-human-diversity-genetics accessed 26.02.2014 (Smithsonian National museum of Natural History).

[26] Jorde, Lynn, B. and Wooding, Stephen P. 2004: "Genetic variation, classification and 'race'," *Nature Genetics* 36(11): S28–S33, p. S28.

[27] Collard, Mark and Wood, Bernard: 2007. "Defining the Genus Homo" in: *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1575–1610. Berlin/ Heidelberg/ New York: Springer.

[28] Strait, David, Grine, Frederick E., and Fleagle, John G: 2007. "Analyzing Hominid Phylogeny" In: *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1781–1806. Berlin/ Heidelberg/ New York: Springer, p. 1801 (Fig. 15.8). However the common progenitor of the apes and homos lived about 12 000 000 years: Senut, Brigitte. 2007. "The Earliest Putative Hominids," in *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1519-1538. Berlin/ Heidelberg/ New York: Springer, p. 1534.

[29] Schwartz, Jeffrey H. 2007. "Defining Hominidae" In: *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1379–1408. Berlin/ Heidelberg/ New York: Springer.

[30] Koufos, George D. 2007. "Potential Hominoid Ancestors for Hominidae," in *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1347–1378. Berlin/ Heidelberg/ New York: Springer, p. 1354.

[31] Mithen, Steven. 2007. "The Network of Brain, Body, Language, and Culture," in *Handbook of Paleoanthropology*, edited by Winfried Henke and Yan Tattersall, 1965–2000. Berlin/ Heidelberg/ New York: Springer.

Almost all of those evolutionary innovations featuring the contemporary humans can be substituted by corresponding technical devices. However, some of them, such as the brain and long childhood, are yet irreproducible by technics. Others refer to the species only as a whole but not as a collection of individuals.

Anyway they can offer some ground about the prognosis of those innovations, which could enisle super-humans:

An evolutionary innovation, which can be reproduced by human technics, does not make any sense and accordingly it cannot become established. Even more, genetic engineering is gradually entering the evolution and also the human one in particular. The development of technics is much, much faster than that of natural evolution of mankind. Thus human evolution can survive only out of any competition of technics. Those areas, in which the technics has not yet entered, are: human brain, long childhood, jump-like mutations, which would allow of inhabiting some radically new environment such as space, *et cetera*. However, none of them seems to be probable and even possible as that area, in which one can expect any breakthrough.

3. A prognosis for the frontier of the super-humans

Another approach is not less possible therefor: The main systems featuring mankind can be investigated in order to find out those apt to intensive development. Which of them are most relevant for that, might be the next frontier for superhuman evolution.

The society has reached a natural limitation of earth. The technics depends on how much energy is produced. The mind is restricted by its carrier, i.e. by the brain. Thus only the language seems to be the frontier of any future development inducing a much better use of the former three. The recent informational technologies suggest the same.

Language creates human mind: The "ability to perceive the minds of others" plays the crucial role: "the human mind itself, and not just its fruits or results, would have originated in the perception of the minds of others[32]".

Language is defined as symbolic image of the world doubling it by an ideal or virtual world, which is fruitful for creativity and for any modeling of the real world. Consequently, a gap between the material and the ideal world produces language. The language increases that gap in turn. Furthermore, the ideal world is secondary and derivative from the material world in

[32] Bejarano, Teresa. 2011. *Becoming Human: From pointing gestures to syntax*. Amsterdam/ Philadelphia: John Benjamins, p. 4.

origin and objectivity: Language serves for the world to be ordered. Thus language refers to the philosophical categories of 'being' and 'time'. Any "super-language" should transcend some of those definitive borders of language and be a generalization.

The involving of infinity can extend the language. Any human language is finite and addresses some finite reality. Thus, the gap between reality and any model in language can be seen as that between infinity and its limitation to any finite representation: Finite representations dominate over society, technics, and the mind use.

Even more, language seems to be only possible access to infinity at least as to mankind. Indeed language can be considered as that semiotic system designated to denote anything doubling it by its name, which is an image from the world into the language. That object become a word is much more easily to be manipulated mentally. However, one can suggest a special kind of objects such as infinity, which can be indicated or transformed only mentally: as to them, the three primary semiotic elements (sign, signified, signifier) should be reduced to two ones therefor excluding redundancy and conventionality of natural language.

For example, any infinite collection unlike any finite one cannot be enumerated by its members: It can be denoted only by its signifier and sign while the corresponding signified can be only mentally complemented in an unambiguous way. In a sense, one can state that infinite collections or the true infinity are accessible only by the mediation of language as a semiotic system.

Furthermore, if matter and energy as the physical fundament of the world can be considered as some finite measure or quantity of infinite information, that super-language is also definable as the generalization of language identifiable with reality and therefore supplying another access to it.

4. The language of infinity in the reference frame of contemporary cognition

A "super-language" as an "infinite language" can be approached in a few reference frames:

One of them is Husserl's motto "Back to the things themselves!" if the "phenomenon" in his philosophy can be thought as the 'word' of the language of consciousness. Husserl's famous words from "Logical investigations" are: "We want to return to the things themselves[33]". Its

[33] Husserl, Edmund. 1901. *Logische Untersuchungen*. Zweiter Theil: *Untersuchungen zur Phänomenologie and die Theorie der Erkenntnis*. Halle: Max Niemeyer, p. 7.

context elucidates that the logical abstraction should be within the "thing themself". One can say that the things themselves can be obtained by "eidetic reduction", using another Husserl's notion, varying its meaning in a free plurality of uses and restoring the obviousness of the contemplated thing in a logical way as itself and by itself. "The appeal to the things and facts themselves" should be the base of the "universal science of absolute foundation[34]" as what he considered that philosophy, which would be a "rigorous science[35]". Though the concept of 'phenomenon' in Husserl is implicitly rather explicitly expressed and correspondingly defined in final analysis[36], it can be thought as the unity of a concrete experience or insight of correlative extension ("*Noema*") and intension ("*Noesis*")[37].

The words of that "super-language" can be seen in the above terms of Husserl as the unity of abstraction and reality representing an exact choice among an infinite set of alternatives.

Cassirer's concept of symbol can serve as the link between Husserl's phenomenon and symbol as the latter occurs in human experience. The sense (or Hussel's "*noesis*") correlative to some objects originates from the human ability of symbolizing them: "Cassirer regards the ability to symbolize as the distinguishing feature of human thought and considers all [the] knowing as symbolic"[38]. Symbol is the only form of thought, in which it can occur. It is the essential link which manages to unify a plurality of fundamental physical oppositions.

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[34] Husserl, Edmund. 1973. *Husserliana*: 1. *Cartesianische Meditationen und Pariser Vorträge* (2. Auflage). Haag: Martinus Nijhoff, p. 188.

[35] Husserl, Edmund. 1911. Philosophie als strenge Wissenschaft. *Logos*, 1, 289-341, p. 291.

[36] "Husserl's later writings follow the lines laid down in his *Ideas.* He quite often uses the word "phenomenon," and he does this to indicate that he is talking about the reduction or epoche or that he is talking about "something." However, in Husserl's later transcendental Phenomenology, "phenomenon" is no longer an essential concept nor a problematic one; it is more or less just a *word* used at times" (Kienzler, Wolfgang.1991. What Is a Phenomenon? The Concept of Phenomenon in Husserl's Phenomenology. *Analecta Husserliana. The Yearbook of Phenomenological Research*. Vol. 34. *The Turning Points of the New Phenomenological Era: Husserl research, drawing upon the full extent of his development* (ed. Anna-Teresa Tymieniecka), pp. 517-528. Dordrecht; Boston: Kluwer Academic Publishers, p. 524).

[37] Husserl, Edmund. 1976. *Husseliana*: 3.1 *Ideen za einer reinen Phänomenologie und phänomenologiaschen Philososphie*. Haag: Martinus Nijhoff, p. 215.

[38] Verene, Donald. 1966. Cassirer's view of myth and symbol. *The Monist*, 50(4), 517-528, p. 524.

Indeed the extension is an "*incomplete symbol*": it can "gain its sense by the relation to an intension[39]". "A symbol denotes" "by virtue of these intellectual and symbolic underlying acts" "the previously far distant and seemingly disconnected as a whole[40]". This processes leads to infinitesimal analysis[41] studying infinity by scientific methods.

The "super-language" can be thought as that generalization of language, which develops a series of words for infinity to be denoted by a complete system of relevant symbols. The contemporary semantic and philosophical theory of symbol: from consciousness and language to reality, would be included in it as that part, which is devoted to finite symbols.

What both unifies and divides Husserl's "things themselves" and Cassirer's "symbols" is the choice of a link between some plurality of individuals and its finite designation correspondingly either necessary or conventional, but necessary as the form of thought. Leaping into the super-language supposedly indicating those infinite pluralities each of them separately, one can use only the choice, which cannot be yet conventional, and the name in order to denote one single infinite item separately. For example, what is "super-thought" can be the name being linked to some observed object in reality by the form of that "necessary choice" among the infinite number of items in reality: Just one seen thing starts as if lighting to indicate its only relevance to what the observer is thinking at this moment. Consequently, that "super-language" would seem poetic according to a human. One can find a hint to Heidegger's philosophical consideration of poetry and poetic thought in the context of his thesis that "we do not yet think[42]": "Hölderlin says therefore of poetic living not the same as our thinking[43]". "Writing poetry and thinking meet each other in one and the same only then and insofar they have decided to remain in the difference of their essence[44]".

The concept of infinity in mathematics supplies another reference frame for the human cognition of infinity. George Cantor was who created the foundation of set theory and introduced

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[39] Cassirer, Ernst. 1929. *Philosophie der symbolischen Formen*. T. 3. *Phänomenologie der Erkenntnis*. Berlin: B. Cassirer, p. 343.

[40] Cassirer 1929, 466

[41] Cassirer 1929, 466

[42] Heidegger 2000, 130

[43] Heidegger 2000, 196

[44] Heidegger 2000, 196

infinite sets as a basic subject[45] for it. He clearly understood actual infinity as the philosophical generalization of his work[46]. He generated an absolute new area of scientific investigation, that of transfinite numbers representing the infinite generalization of arithmetic[47], and managed to define cardinal and ordinal numbers as well as their calculus[48]. However the unlimited use of 'set' allowed a series of antinomies. Ernst Zermelo put the foundations of the contemporary axiomatic set theory[49] avoiding the known paradoxes. He introduced a version of the axiom of choice[50] to prove the well-ordering theorem[51]. By utilizing the axiom of choice, Thoralf Skolem managed to demonstrate the "relativity of the concept of 'set'"[52] and thus even the relativity of infinity at all: Any infinity can be enumerated by the positive integers[53] and even equated to any finite set[54].

Kurt Gödel published two fundamental papers concerning the cognition of infinity by mathematical means. Finiteness under the condition of his theorems does not generate any statements, which can be simultaneously true and false in a strict logical sense[55] while infinity can generate those statements[56]. Infinity unlike finiteness turns out to be "incomplete" under a

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[45] Cantor, Georg. 1874. "Ueber eine Eigenschaft des Inbegriffes aller reellen algebraischen Zahlen," *J. Reine Angew. Math*. 77: 258–262.

[46] Cantor, Georg. 1886. "Über die verschiedenen Standpunkte in bezug auf das actuelle Unendliche (Aus einem Schreiben des Verf. an Herrn G. Eneström in Stockholm vom 4. Nov. 1885)," *Ztschr. Philos. und philos. Kritik,* 88: 224—233.

[47] Cantor, Georg. 1895: "Beiträge zur Begründung der transfiniten Mengenlehre," *Math. Ann*. 46: 481–512.

[48] Cantor, Georg. 1895: "Beiträge zur Begründung der transfiniten Mengenlehre," *Math. Ann*. 49: 207–246.

[49] Zermelo, Ernst. 1908: "Untersuchungen über die Grundlagen der Mengenlehre I," *Mathematische Annalen 65(2): 261-281*.

[50] Zermelo, Ernst. 1904: "Beweis, dass jede Menge wohlgeordnet werden kann," *Mathematische Annalen* 59 (4): 514–516, p. 516.

[51] Zermelo 1904, 514-516

[52] Skolem, Thoralf. 1922. "Einige Bemerkungen zur axiomatischen Begründung der Mengenlehre," in *Selected works in logic of Thoralf Skolem,* edited by Jens Erik Fenstad, 137-152. Oslo: Univforlaget (1970), p. 144.

[53] Skolem 1922, 143

[54] Skolem 1922, 143-144

[55] Gödel, Kurt. 1930: "Die Vollständigkeit der Axiome des logischen Funktionenkalküls," *Monatshefte der Mathematik und Physik*. 37(1), 349-360.

[56] Gödel, Kurt. 1931: "Über formal unentscheidbare Sätze der *Principia mathematica* und verwandter Systeme I," *Monatshefte der Mathematik und Physik* 38(1): 173-198.

rigorous mathematical definition of the term "incompleteness" as to the axiomatic base of any theory.

Einstein, a close friend of Gödel as refuges in Princeton[57], reckoned quantum mechanics, another fundamental physical theory, to be "incomplete", too. In order to demonstrate that alleged incompleteness, entanglement was theoretically forecast by him, Boris Podolsky and Nathan Rosen[58] and independently by Ervin Schrödinger[59] in 1935. An experimentally verifiable criterion in order to distinguish classical from quantum correlation (entanglement) was deduced by John Bell in 1964[60]. The existence of quantum correlations exceeding the upper limit of the possible classical correlations was confirmed[61,62] experimentally. The theory of quantum information has thrived since the end of the last century in the areas of quantum computer, quantum communication, and quantum cryptography. The theorems about the absence of hidden variables in quantum mechanics[63,64] demonstrate that the mathematical formalism of quantum mechanics implies that no well-ordering of any coherent state might exist before measurement.

Information can be discussed as an order reached by a series of successive choices and the quantity of information is the minimal amount of elementary choices necessary for this order to be created. The unit of the quantity of information is that elementary choice defined as the choice between two alternatives with an equal probability: one bit of information.

However, that concept of information is not applicable to infinite series or sets, which are the interesting area in set theory. The notion of quantum information involved by quantum

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[57] Yourgrau, P. 2006. *A World without Time: The Forgotten Legacy of Gödel and Einstein*. New York: Perseus Books Group.

[58] Einstein, Albert, Podolsky, Boris, and Rosen, Nathan: 1935. "Can Quantum-Mechanical Description of Physical Reality Be Considered Complete?" *Physical Review* 47 (10): 777-780.

[59] Schrödinger, Ervin. 1935. "Die gegenwärtige situation in der Quantenmechanik," *Die Naturwissenschaften* 23(48), 807-812; 23(49), 823-828, 23(50), 844-849.

[60] Bell, John. 1964: "On the Einstein – Podolsky – Rosen paradox", *Physics* (New York), 1(3): 195-200.

[61] Aspect, Alain., Grangier, Philippe., Roger, Gérard. 1981: "Experimental Tests of Realistic Local Theories via Bell's Theorem," *Physical Review Letters*, 47(7): 460-463.

[62] Aspect, Alain, Grangier, Philippe, and Roger, Gérard: 1982: "Experimental Realization of Einstein-Podolsky-Rosen-Bohm Gedanken Experiment: A New Violation of Bell's Inequalities," *Physical Review Letters* 49(2): 91-94.

[63] Neumann, John von: 1932. *Mathematische Grundlagen der Quantenmechanik*, Berlin: Springer, pp. 157-163.

[64] Kochen, Simon and Specker, Ernst. 1968. "The problem of hidden variables in quantum mechanics," *Journal of Mathematics and Mechanics* 17 (1): 59-87.

mechanics can be considered as a relevant generalization as to infinity. The unit of quantum information, one quantum bit, is a generalization of bit as a choice among a continuum of alternatives. Furthermore Hilbert space, in which quantum information is definable, can be introduced as a generalization of the positive integers, after which any positive integer is replaced by a corresponding cell of a quantum bit. The quantity of quantum information is the ordinal corresponding to the infinity series. Both definitions of ordinal[65;66] are applicable as the ordinals are small. The ordinal defined in Cantor – Russell[67] generates a statistical ensemble while that in Neumann, a well-ordering. Both correspond one-to-one to a coherent state as the one and same quantity of quantum information containing in it.

"Hume's principle"[68] can be relevantly and rather heuristically generalized, too: In the quantum principle of Hume "Gs" should be interpreted as some "many" and "Fs" as some "much" of one and the same abstraction. Indeed abstraction and thus any sign can be interpreted as a set of tautologies, in which each name designates a set as a whole, i.e. as a "much", while the collection of elements designates as a "many" consisting of separated individuals. That quantum principle of Hume is quite meaningful and exceptionally well interpretable in terms of quantum mechanics and the theory of quantum information.

5. Conclusion

Mankind is approached the idea of infinite language as the language of nature. Whether that "super-language" will arise for the relevant innovations in the human culture or it would need some corresponding evolutionary perfection is a question, the answer of which is not forthcoming. However the problem can be put.

Furthermore, it can be even generalized in a few ways:

What is the correspondence between the fundamental innovations in human culture and the essential evolutionary perfections apt to generate a new species?

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[65] Cantor, Georg. 1897: "Beiträge zur Begründung der transfiniten Mengenlehre," *Math. Ann*. 49: 207–246.

[66] Neumann, J. von: 1923. "Zur Einführung der trasfiniten Zahlen," *Acta litterarum ac scientiarum Ragiae Universitatis Hungaricae Francisco-Josephinae, Sectio scientiarum mathematicarum,* 1(4): 199–208.

[67] Whitehead, Alfred North and Russell, Bertrand: 1912. *Principia Mathematica*, Volume II. Cambridge: University Press, 334-338; Whitehead, Alfred North and Russell, Bertrand: 1913. *Principia Mathematica*, Volume III. Cambridge: University Press, 18-26.

[68] Boolos, George. 1987. "The Consistency of Frege's Foundations of Arithmetic," in *On Beings and Sayings: Essays in Honor of Richard Cartwright,* edited by Judith Jarvis Thomson, 3-20. Cambridge, MA: MIT Press.

Are there those perfections, which cannot be reached for culture development?

Can human progress be discussed in terms of an eventual or virtual competition with a biological rival or a potential successor?

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Cantor, Georg. 1886: "Über die verschiedenen Standpunkte in bezug auf das actuelle Unendliche (Aus einem Schreiben des Verf. an Herrn G. Eneström in Stockholm vom 4. Nov. 1885)," *Ztschr. Philos. und philos. Kritik*, 88: 224—233.

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Cantor, Georg. 1897: "Beiträge zur Begründung der transfiniten Mengenlehre," *Math. Ann*. 49: 207–246.

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