

## Artistic imagination needs more understanding than scientific imagination

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The article is non-expository in nature in which the proposed thesis is “Artistic imagination needs more understanding than scientific imagination.” which could also be reframed as ‘understanding needed for artistic imagination is more than understanding needed for scientific imagination’ and the claim to the proposition is to be supported by Neo-Kantian philosopher of science and advocate of symbolism Ernst Cassirer’s *An Essay on Man* with a special reference to Art (IX) and Science (XI) in the book and other arguments with examples. The premise of the debate requires the definition or meaning of imagination or what does imagination refer to if it could have a point of reference but in a passage of searching its definition, a historical problem is encountered as the word ‘*imagination*’ etymologically derived from Latin word *imaginatio* is used by Aristotle as *phantasia* in Greek forming fantasy, but an usual exchange between imagination and fancy has been re-thought and later, it is considered that imagination is not imaging in terms of mental pictures totally and not also merely fantasizing per se but rather could be creating, imagining neither in a logical rational nor irrational way but ‘a’ rational manner which is where it is difficult to demarcate the boundary of definition for imagination and the definition has been made more complex in modern days in philosophy of mind and neurological sciences due to the notion of neurological dynamics of imagination also.

The debate is in no way trying to undermine a scientist’s imagination and elevate an artist’s imagination as the proposition does not say that artist’s imagination needs more understanding than scientist’s imagination because artist’s imagination is not necessarily and sufficiently artistic all the time or not artistic at some point of time too while scientist’s imagination may be more artistic at some point of time and not always necessarily and sufficiently be scientific all the time or may not be scientific at some point of time too, thus, a great scientist with an artistic imagination has more understanding than a renowned good artist with a scientific imagination or in another way, it could also reflect the notion that an artistic imagination needs more understanding than a scientific imagination, thus making an attempt to support the proposition. It is clear that scientist’s imagination does not mean scientific imagination and artist’s imagination does not mean artistic imagination.

Without going to the general definition or the most accepted definition of imagination, I create three probable premises whose objections are to be replied by Ernst Cassirer.

**The proposition of my thesis is :**

MT (Main Thesis) : “*Artistic imagination needs more understanding than scientific understanding.*”

or ,

RT (Reframed Thesis) : “*Understanding needed for artistic imagination is more than understanding needed for scientific imagination.*” - ( reframed proposition whose semantic remains the same with a new look )

ST (Symbolised Thesis) : “ $A > S$ ”,  
if ‘A’ represents ‘*understanding needed for artistic imagination*’,  
if ‘S’ represents ‘*understanding needed for scientific imagination*’ and  
if ‘>’ represents ‘*is more than*’.

The premises of the thesis are as follows :

P1 (Premise 1) : ‘*Understanding needed for artistic imagination is same as understanding needed for scientific imagination*’

or

SP1 (Symbolised Premise 1) : ‘ $A = S$ ’ , if ‘=’ represents ‘*is same as*’ and not in a mathematical sense of being ‘equal’ ,

P2 : ‘*Understanding needed for scientific understanding is more than understanding needed for artistic imagination*’

or

SP2 (Symbolised Premise 2) : ‘ $S > A$ ’ ,

and

P3 : ‘*Understanding needed for artistic imagination is not at all related to understanding needed for scientific imagination*’

or

SP3 (Symbolised Premise 3) : ‘ $A \neq S$ ’ , if ‘ $\neq$ ’ represents ‘*is not at all related to*’ and not in a mathematical sense of being ‘not equal’.

In order to propose the thesis  $A > S$  , the three possible premises should be false and the conclusion would be as follow,

**$A > S$  ,if all P1 , P2 and P3 are false together .**

**Objection 1 :** P1 is true i.e. ‘*Understanding needed for artistic imagination is same as understanding needed for scientific imagination*’ is true. Why should not there be a general understanding which does not get differentiated due to whether being in art or in science? Why can’t an inspiration of *Theory of Everything* which is an attempt made in physics be possible for Theory of understanding and the distinction between artistic imagination and scientific imagination perhaps may not be there but perhaps may be the different manifestations of the neuronal firings in brain or due to mirror neurons in neurological dynamics of imagination and since, due to a lack of neurological explanation behind unified imagination or unified understanding, there exists a difference but this difference could be due to lack of technology to assess the brain to the extent of knowing what is imagination and understanding to human mind, and thus, in future, P1 can be true and if so, then P1 is true if not today but tomorrow.

**Replies :** To club together the artistic imagination and the scientific imagination, there is an inherent problem to solve while trying to understand the two from the same window of understanding as the logic of artistic imagination is different from the logic of scientific imagination and the logic here means the logical rules which may or may not do with logic per se. Cassirer in *An Essay on Man in Art* , he writes

“*The logic of the imagination had to be distinguished from the logic of rational and scientific thought.*” (Ch.IX,1,p.137) which also stresses the need of a special kind of logic for imagination which is different from that of rational and scientific thought . To go beyond it, the discussion is meant to understand the nature of imagination which is there in science and that in art and to understand the two, there can not be the same method or approach meaning the same logic and thus, there can not be a possibility of having the same understanding to understand the two different imagination i.e. artistic and scientific and hence, understanding needed for artistic imagination can not be same as understanding needed for scientific imagination.

He also further writes “*We do not, however, discover nature through art in the same sense in which the scientist uses the term ‘nature’.*” (Ch.IX,1,p.143). The sense in which artist understands nature through artistic imagination is not same as that of a scientist understanding nature ,which clearly indicates that the premise 1 can not be true.

The claim for the premise to be true also brings the claim that art and science are so close that both could be understood in almost a similar way but it is difficult as the both are differently described though, both are needed in understanding beauty in terms of “a unity in the manifold” which is also stated by him as “*Language and science are abbreviations of reality ; art is an intensification of reality.*” (Ch.IX,1,p.143) The premise given is difficult to support for being true as he says clearly that science and art are not same as “*Science means abstraction, and abstraction is always an impoverishment of reality. .... Art has not only a different aim but a different object.*” (Ch.IX,1,p.144). Considering the replies to the objection, the objection 1 has failed which means that the premise 1 can not be true, hence it is false.

**Objection 2 :** P2 is true i.e. ‘*Understanding needed for scientific imagination is more than understanding needed for artistic imagination*’ is true. The argument could be the *General Theory of Relativity* of Einstein was known to a handful of people in the world by then when he was working which means ,to understand his theory, one’s scientific imagination needs to be heightened and thereby, his or her understanding would be more and this could hardly be achieved with a mere artistic imagination because the artistic imagination with the knowledge of his theory would not make sense. Quantum Mechanics or an empirical sciences would be better understood with both its scientific methods and imagination and hardly with artistic imagination.

**Replies :** Cassirer writes “*Science is the last step in man’s mental development and it may be regarded as the highest and most characteristic attainment of human culture.*” in his *An Essay on Man* (Science,Ch.XI,1,p.207) , though he praises science but he also discusses that science which concerns with static notion of constancy but to which, he discusses that science is not the only one to discuss but empiricist and rationalist schools are also concerned with constancy in human culture. To discuss about human culture and life forms, artistic imagination enjoys more understanding role than scientific imagination. Einstein while working on *General Theory of Relativity*, used Riemann’s Geometry which was made with mathematical symbolism (Science,Ch.XI,1,p.218) and that symbolism is only possible not with only scientific imagination but also creative artistic imagination as Riemann had to develop his own geometry, which also shakes the foundation of the premise .

In case of quantum mechanics, Heisenberg developed his own mathematical symbolism which did not follow ordinary rules of algebraic symbolism (Science,Ch.XI,1,p.218) and the possibility of his mathematical symbolism could not be possible without his own creation of artistic imagination to be used in mathematical symbolism construction, which also means that to have artistic imagination is more significant in his case in terms of understanding quantum mechanics is concerned compared to the significance of scientific imagination, thus the need for scientific imagination has taken a back seat while artistic imagination has taken the front one driving the understanding of quantum mechanics. If the premise is true, then it would surely be highly appreciative of AI (Artificial Intelligence) which was developed with scientific imagination to replace human mind but the AI revolution has proved to have failed in modern days .

The replies to the objection show that the premise taken is weak and can not be accepted to be true ,thus , it has to be false which means that understanding needed for scientific imagination is more than understanding needed for artistic imagination is not acceptable and hence, the premise is rejected or treated as false.

**Objection 3 :** P3 is true i.e. ‘*Understanding needed for artistic imagination is not at all related to understanding needed for scientific imagination*’ is true. Art and science are classically different and their difference has become more widened in today’s world of specialization in science and art. Cassirer himself has pointed out both art and science or artist and scientist are not that they are not different .

**Replies :** In a history of human evolution, humans have been distinct from other ancestral evolutionary relatives owing to the fact of the presence of imagination and hence, the discourse of imagination is very much as old as human existence but this very unique feature of being a human has created two major works of academe in the form of art and science for an intellectual voyage which has also not only made man to discover their similarities but also their differences, there by making the world of intellectuals more complex to converge at a point to understand each other of both the world of art and science. Though art and science are not exactly the same as both do not overlap on each other in terms of their domain and understanding are concerned but nevertheless, Cassirer has not ruled out the relationship between artistic imagination and scientific imagition at all and instead, he appreciates beauty and while understanding reality and human culture , he needs both art and science as both are not strongly antagonistic which is oftenly made to think of. Thus, there is some manner in which there is an understanding related to bind both artistic and scientific imagination which disfavours the premise. Human artistic imagination is such that cubism or cubic paintings have influenced Niels Bohr to find the structure of matter, Kekule to draw the structure of an organic compound Benzene ring, Archimedes to discover principle of finding real gold or not after his stepping inside his bathing tub, Einstein to understand the *General Theory of Relativity*, Richard Feynmann famous’ *There’s a plenty of room at the bottom* ,Stephen Hawking on his *Grand Design of Universe* and indeed string theorists trying to explain multiple parallel universes from coherent mathematical treatment motivated by human imagination.

Human Imagination is a bridge between an artist and a scientist or between a philosopher of aesthetics and a neuroscientist and because of this bridge of possible exchange of subtle human mind, a recent world's largest experiment - *Light Hadron Collider* experiment at CERN ,Geneva which is a place meant particularly for particle physicists both theoretical and experimentalist, has invited artists to join in the experiment to find out neutrino to understand the universe, thus, there is a genuine urge to ask why is there a need for bringing artists in the field of particle physicists to understand the ultimate building block of matter and our mysterious universe and the answer to the query would be the relation and inter-dependence of artistic imagination and scientific imagination in understanding universe.

The understanding of interfacing both art and science in the form of using artistic imagination and scientific imagination has been shown with a classic example of the relationship between the two world great minds of 20th century namely, physicist Albert Einstein and artist Pablo Picasso through their respective works of the former's *Special Theory of Relativity* (1905) and the latter's *Les Femmes d'Alger* (1907) and it has also been staged as a play – *Picasso at the Lapin Agile*. Both the works have used both artistic and scientific imagination in order to make their mind understand their work ,which thereby has accept the inter relation between artistic and scientific imagination in understanding great work of either art or science.

The replies argue that the acceptance of the said premise would lead to a weak premise, thus it stands rejected and thus, the premise is not true, hence it is false.

## **CONCLUSION :**

The replies to the three objections have argued that all the three premises are false and since, all the three premises are together false, hence, the conclusion is in the favour of the proposed thesis which is  $A > S$  i.e. “*Understanding needed for artistic imagination is more than understanding needed for scientific imagination.*” or stating in the original thesis which is “*Artistic imagination needs more understanding than scientific understanding.*”