

# Gravity, thoughts and art

Mladen Bundalo, February 2017

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Understanding of the force of gravity has remained incomplete within scientific research, despite significant progress made in field of theoretical physics last decades, and the recent detection of gravitational waves. What we know and what has been studied the most, is based on the effects gravity has on the large-scale universe, including the space-time curvature introduced in Theory of General Relativity, the model that treats gravity not as a force, but as a consequence of warped space-time. The problem with this classical approach to the understanding of gravity, lies in the fact that it is not been integrated into principles of quantum mechanics, which cannot be ignored. Electromagnetism, strong and weak nuclear force, the other three fundamental interactions of nature, have already been described and observed within the framework of quantum mechanics, a radically different formalism, used for describing physical phenomena based on the wave-like nature of matter. [1] Quantum gravity is a field of physics that aims to describe gravitation on the atomic scale, the most popular approaches being *String Theory* and *Loop Quantum Gravity*. These narratives approach gravity as one of four fundamental interactions of nature.

On the other hand, the understanding of art has historically been approached in a similar manner as was the case with gravity in the classical model. Aesthetics has mostly treated art as a consequence of warping form, substance and meaning, but not as a force itself. What we will be looking at here, is an intuitive vision of art as a force, a "quantum art" fundamental to the understanding of humanity and its culture.

Speaking of quantum gravity, it is difficult for someone who is not already deep into the "matter" of theoretical physics, to understand the complex terminology and the implications it might have for our understanding of the natural world we are all part of. Nevertheless, the problem can be simplified using the concept of "messenger particles". For the three elementary forces excluding gravity, we have identified the particles responsible for transmitting them. For example, photons mediate electromagnetism, gluons mediate the strong nuclear interaction and  $W^+$ ,  $W^-$ , and  $Z$  bosons mediate the weak nuclear interaction. The problem is that this *Standard Model* does not include gravity, in other words - it does not explain what mediates gravity. String theory manages to theoretically predict the existence of such a particle, popularly called the *graviton*, and still remain mathematically consistent. There is only one small problem stopping further research - the particle's detection. Though not prohibited by any fundamental law, it

seems impossible to do using any physically reasonable detector. The reason is that gravity is an extremely weak force, compared to the other three. For example, a detector with the mass of Jupiter and 100% efficiency, placed in close orbit around a neutron star, would only be expected to observe one graviton every 10 years, even under the most favorable conditions. [2] In short words - it's all but impossible under the current paradigm.

Theoretical physics is nothing more but a fascinating field I'm trying to follow and it's far outside my competences. However, working as an artist and following theoretical physics, I started spotting some correlations of positions which art and gravity hold in their respective fields. In other words, if we think about the nature of human culture, then we must think about Art in a manner similar to Gravity within physics. We can see all around us the effects of art and the way it shapes individuals and cultures. We suspect it's one of the elementary interactions of culture, but unlike other cultural interactions (knowledge, beliefs, morals...) it is much harder to say what really mediates art. For example, we could say it is "an expressive object", but this is already a complex notion, since "art, in its form, unites the very same relation of doing and undergoing, outgoing and incoming energy" [3]. This would be a sort of introduction into perceiving art via its "quantum" properties, made by American philosopher John Dewey in *Art as Experience*, a writing dated 1934.

The scientific understanding of gravitation underwent a turbulent period during the 20th century - Einstein's work, Kaluza-Klein theory, String theories, M-theory. Speaking of art, something also radically changed with the work of Marcel Duchamp, who started discovering art outside of previously accepted artistic processes (ready-made), or somewhat later, John Cage's discovery of art in silence and outside of pre-composed music, as well as Kosuth and other conceptual artists exploring the nature of art through the prism of ideas, information and language. We start realizing that art is no longer exclusively associated with classical artistic techniques, nor is it necessarily mediated through image, sound, or movement. It can also be a sight, conversation, situation, event, relation, or even a calculation. It became more obvious that we might speak of a field, a trans-disciplinary, dialogical field. What we were used to doing was a sort of extracting/rendering of art experiences from that vast field using certain media and techniques. In that sense, what we call the history of art, suddenly becomes a history of the extraction of art. Joseph Beuys, being aware of this perspective, noted that every human being is an artist, and called for other sectors of human activity to join the power of art in order to transform society.

So, what would be that field or space from which humans are extracting and articulating all that art? As a conceptual artist, I have been working with thought-flow, memories, mental images and mindscapes in general. I started imagining that thoughts have their own kind of "gravity", gathering inner mental mass, growing and eventually colliding under their own weight. They are able to attract one another, creating more or less stable systems for a certain amount of time. Thoughts and memories have their density,

some being small but super dense, just like neutron stars, while other look more like intergalactic clouds of gas and dust. This brought me to intuitively think of the mindscape as an inner universe shaped by interactions which behave similarly to the fundamental forces of nature. More specifically, I started thinking about art experience as a sort of specific gravitational pull.

Looking at a common point for any work of art, regardless of its aesthetic format or strategy, it is exactly the ability to enter your mental space and put your thoughts in a certain movement, to rearrange and synchronize them in new systems, profoundly and in a long-lasting fashion. This is the point where we separate genuine art experience from “aesthetic entertainment”, which can be a seductive experience at the moment of consumption, but does not leave anything significant behind. This is the particular place within an art experience that fascinates me the most - its ability to sometimes produce almost no effect during the initial contact, but nevertheless to silently leave something behind, a certain “gravitational seed”, which grows with time, eventually gathering more and more mental mass and attention, ultimately turning into a powerful source of inner gravity. It is capable of creating a solar system out of a mental nebula of randomly diffused thoughts, and able to influence entire clusters of concepts, just like dark matter influences galaxies. To understand this property of art, we need to hypothesize a sort of trans-mental entanglement, a fractal correspondence, encoded and transmitted within an art experience. Once entered our mental space, it starts resonating, linking up various, unique positions within the mind, and raising awareness of a general fractal nature of inner and external systems. This works independently from the type of form or substance of the perceived expressive object, and it’s something that separates a political and scientific discourse from an artistic experience of politics and science, the disaster from an art experience of disaster, or the Fibonacci sequence from its artistic experience. We are talking about a mental event, necessary to comprehend the place of one specific experience within the general space of the nature of culture.

On the other hand, entertainment works by locking this possibility of deeper and more complete understanding of specific positions within the culture as whole, as has been brilliantly elaborated in *The Culture Industry: Enlightenment as Mass Deception* (1944) by Theodor Adorno and Max Horkheimer, or in *Society of Spectacle* (1967) by Guy Debord. Moreover, it is a moral duty of each cultural worker to deeply understand this differentiation between art and entertainment, since entertainment in its chronic phase is severely repressing to a human’s mental capacity to understand cultural processes. “Unlike authentic art it doesn’t challenge our conception of existing social norms and reality, but rather reinforces them. The viewer is presented with a smooth and comfortable spectacle that requires no deep concentration, and elicits no genuine attempt to criticise the art. Everything has been pre-classified by the production team and the audience has no choice but to become a passive unreceptive recipient of the art.” [4]

As a Bosnian citizen with a decent migratory experience, the idea of a passport has significant inner gravity to me. This “light” object has been transformed into a

super-strong mental gravitational source, gathering memories and situations in an abstract fractal correspondence with the culture as a whole, the density of which eventually overcame the very epistemology of the passport. It brought me into an experience of cultural understanding, an art experience. Each of us have our own mental objects or concepts with such super-strong gravitational pull - in other words, an intimate contact with a field of art. Something that brought us to the very experience of understanding. We are going to extract this inner art experience and share its gravitational pull in the relation between us as individuals. If successful, this energy will be felt by others as well, no matter how much formally-abstract, and initiate similar inner processes. It is a measure of our understanding of the very mediation of this inner pull. That's why the experience of art is universal, regardless of discipline or specific medium; it is about the same energy. In *Art as Experience*, John Dewey states that art is "only definable as organization of energies." The power of art to "move and stir, to calm and tranquilize" is intelligible only when "the fact of energy" is made central to the understanding of art. Dewey also indicated that this energy, characteristic of an art experience, is not only found within culturally accepted "art" forms, but is deeply interwoven into our everyday life experience: "So extensive and subtly pervasive are the ideas that set art on upon a remote pedestal, that many a person would be repelled rather than pleased if told that he enjoyed his casual recreations, at least in part, because of their esthetic quality. The arts which today have most vitality for the average person are the things he does not take to be arts ..." It's interesting that Dewey does not speak of the direction or possible origin of this energy, but rather treats it as a new concept that might turn the focus of aesthetics, the traditional study of the form of expressive objects. For Dewey, "a work of art happens when the structure of the object interacts with the energies of the subject's experience to generate a substance that develops cumulatively towards fulfillment of impulsions." [5] These mental impulsions may be an already experienced interaction of art.

Once we start thinking of art in this way, we can understand why some "artworks" are simply missing something, while others are virtually pulling us in. This may also be used to explain why some "non-art" pieces/events/situations/sights pull our thoughts like no art piece does, continuing to live inside our minds and even having an effect on art experienced previously. In this manner, we can speak about a masterpiece as a sort of gravitational anomaly, a black hole within the human thought-scape - a total fractal experience of nature, the human condition and culture. By contrast, "bad art" would be a purely aesthetic, and thus superficial attempt to imitate already mediated patterns of this inner gravitational pull, made by others, with no reference to the individual artist's mass of inner objects.

Within the M-theory, which describes ten spatial and one time dimension, we start suspecting that graviton might have the ability of flowing through the field of the Multiverse, like no other particle. Within this context, we could also say that the hypothetical "art particle" is crossing throughout different minds, connecting them. The idea of a human mind as a certain single universe is not new, and if we look at a

visualization of the evolution of the matter distribution in a cubic region of the Universe over two billion light-years [6], and compare it to the neural structure of the brain, the similarity is thought-provoking. We can be even more provocative and say that the space of mind hosts additional spatial dimensions, just as String theory speculates on the existence of an additional six dimensions which appear within hyperspace. The fact that we see only three dimensions of space can be explained by one of two mechanisms: *either the extra dimensions are compacted on a very small scale, or else our world may live on a 3-dimensional submanifold corresponding to a brane, onto which all known forces other than gravity would be restricted.* [7] When we think about the inner relations of memories, thoughts, feelings and experiences, one cannot resist to imagine a Calabi-Yau type manifold [8], with mental strings vibrating through all additional dimensions. The shape of the curled-up ones will affect their vibrations and thus the properties of thoughts and memories. We can imagine these mental strings as art particles of sorts - our unique-yet-universal field in complete fractal resonance.

It is also interesting to note that gravity is considered the weakest of all fundamental forces. However, it has even been hypothesized that this weakness of the gravity is illusory and stems the fact that we don't fully understand its function in nature. There is a significant number of people who consider that art plays a fundamental role in culture, but even in the best cases, we will spend 1-2% of GDP on culture in total [9], and what ends up being invested in serious art research is ridiculously small. Officially speaking, understanding art is considered to play a minor role within the needs of society. Politicians almost never think of art as a possible engine that can bring us social welfare and awareness, and this is most likely the result of our incomplete cultural understanding of the power of art. An exception being the fact that totalitarian regimes understand very well the impact of art experience on someone's mental landscape and its power to move and pull thoughts in new, unpredicted, formations - ones that can be dangerous to the status quo. In this context, a degree of art restriction in a society can be a unit used to measure its totalitarian totality.

In view of all this, we can be certain that a space in which the art particle may appear is a mental space. It has to somehow reach our brain in order to be detected and manifested. However, one problem with such a statement is that we have solved nothing. It might at least offer a challenging syntax for imagining complex mental, nonlinear relations in the multi-dimensional manner of art experience. Moreover, it might offer us a perspective on art, out of the necessity for choosing an aesthetic, formalist, historical or institutional prism, but without excluding any of them.

I imagine the works of Suprematism as a spiral galaxy, with Malevich's Black Square right at the center and all other shapes spreading around in arms of higher and lower density. To visit this galaxy is very similar to Malevich's interstellar experience of art - the artist's concept of an infinite universe.

*Scientific text editing by Dr. Ivan Hajnal ([www.yiwen.ba](http://www.yiwen.ba))*

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- [4] Klinger, Max . "A summary of Adorno and Horkheimer's quite interesting and staggeringly pretentious views on Art". See =  
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- [8] See: URL = <[https://en.wikipedia.org/wiki/Calabi%E2%80%93Yau\\_manifold](https://en.wikipedia.org/wiki/Calabi%E2%80%93Yau_manifold)>
- [9] The Budapest Observatory, see: URL =  
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