The Unfathomable Sea

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Abstract: Science in general and mysteries of the brain in particular have puzzled us for centuries. For most of us, it is like an unfathomable sea. In this short article, the challenges of understanding our world and ourselves are depicted. In addition, ideas such as enhancing interdisciplinary bonding between art and science are proposed. The author supposes that the suggested approach should be open to accepting contributions from various scientific disciplines, arts, cultures and social groups.

Keywords: science; brain; art; interdisciplinary; cultures, challenges

Unfathomable Sea! whose waves are years,
Ocean of Time, whose waters of deep woe
Are brackish with the salt of human tears!
Thou shoreless flood, which in thy ebb and flow
Claspest the limits of mortality!
And sick of prey, yet howling on for more,
Vomitest thy wrecks on its inhospitable shore;
Treacherous in calm, and terrible in storm,
Who shall put forth on thee,
Unfathomable Sea?

—Percy Bysshe Shelley (1792-1822)

A poem can paint a thousand pictures in our mind's eye. Shelley's poem – Time – (1821/1915) which cited here includes an almost cruel irony as it talks of the terrifying nature of the sea, and it would later occur Shelley himself loses his life whilst at sea. It is supposed that Shelley probably eulogizes his murderer (the sea) in this poem. What this poem manages to do is depicting the sea as an outstanding entity. Nevertheless, why does he mention the sea in this poetry? In fact, why wouldn't it be? It is an area that is still largely unexplored and contains numerous mysteries – scientists estimate that 95 percent of the oceans has remained unknown (National Oceanic and Atmospheric Administration, 2000). We as scientists who are involved with brain as an organ are also in the same situation. It seems that mysteries of the brain are so profound that have puzzled us for centuries – it is still unknown and enigmatic. It is like an unfathomable sea!

Here a question might arise: why should we perceive it so profound and unattainable? As a quick answer, it is presumed that the ultimate knowledge is unreachable. How far we go there is the unlimited, and if we admitted that we are limited, the puzzle would be solved. We must first acknowledge that our ability to answer questions concerning our existence is constrained by the nature of the inquiring organ. Although 120 billion brain cells within our skull make up the most complex system in the known universe (Herculano-Houzel 2009), we should be aware of the fact that it was not "devised" to understand the world any more than your computer was designed to write its own software. We should fully understand our architecture and limitations before adhering to a certain answer. Besides, it appears that no matter how you attempt to decode a phenomenon, somebody will come up with another topic which we have to address. Moreover, it appears that we do not comprehend how we could ever settle that.

Furthermore, life is a flux – it is a moving river. While the brain is a constantly active organ and building block of human existence, it is difficult to reach a consensus on the nature of it. In other words, since we seem to know far too little, we assume that the mentioned argument might be one of the reasons why we have the problem of replication in topic related to human psyche/mind/brain (Wiggins & Christopherson 2019; Callard 2022).

However, there is an explanation preventing one from falling into the pitfall of disappointment. To us, doing science should be like a piece of art. We should see our scientific efforts like painting on a canvas or composing a piece of music. We should merge science and art as it was before. In fact, this separation of art and science is rather a modern occurrence – it did not exist in the past, and there is no reason why it should subsist in the future. For instance, during 1508-1512, Michelangelo was hired to paint the Sistine Chapel Ceiling, a task he was not eager to complete (Wallace, 2013; Pál, 2022). He used figure on the ceiling as an anatomical study (Suk & Tamargo, 2010; de Campos et al., 2016). In another case, Caravaggio's Death of the Virgin (1606) was controversial because he researched what happened to people's physical bodies when they died and depicted the virgin as bloated and stiff with rigor mortis (Ch'ien 2022).

Just as art is not so much simply about works of art but rather of a viewpoint – the artistic spirit – so should be science. Besides, if we are not careful, however, the differences between disciplines may be exaggerated and their similarities ignored, with the result that young people are inadvertently misled. Appreciating the considerable similarities between art and science unlocks the potential for collaboration between both subjects and can enrich both realms. It should be mentioned that the advent of interdisciplinary enterprises in recent years in understanding brain

and art (e.g. Neuroaesthetics) is a good signal of a closer dialogue between science and art and seems promising.

In fact, despite the mentioned breakthrough, science and art should not consist only of the accumulation of information but rather in the formation of different modes of perception. As David Bohm claims (1985), "The ability to perceive or think differently is more important than the knowledge gained."

Having said that, the author presumes that we as scientists have diverged from our main aim as ambassadors of nature. We should eventually move beyond self-interest efforts, political parties, racial biases and nationalistic views (tribalism which has been so fashionable these days with the appealing label of patriotism). Besides, we should try to see the world as it is, not as what we desire to see, because when desire blooms, then corruption grows.

Likewise, we have crammed science full of non-ending philosophical discussions (none of them are looking for the truth) and restricted our horizons via mechanistic and even mathematical paradigms. Both of them are supposed to have founded in us a myopic understanding towards reality. For instance, these days, many of the brain scientists have come to assume that mathematical modelling of the brain is the only way to deal with the mysteries of this phenomenon (Lindsay 2021; Mardal et al. 2022). Their view has been founded on the fact that because it has worked in some disciplines so well for a while, they have presumed that it has to hold true for understanding the brain as well.

Taking a glance at our today's scientific epoch, at first sight, it seems difficult to break away from our myopic views or from what we call "scientific scotoma" – neglecting insights and sticking to less perceptive explanations. However, those barriers seem too cumbersome to overcome. In fact, what we need is

openness to new ideas, as well as the ability to dwindle our bias resistance. The history of science is full of stories about new ideas which were completely ignored. New ideas are extremely threatening to our scientific foundations, and henceforth are denied full access to the mind. To deal with that, we should create a mental space for new ideas, to bring them into a stable consciousness, to give them conceptual shape, stocking them in mind even if they contradict our existing ideas, classifications, or even theories.

As a closing remark, when mulling it over, one realizes how high we have built the walls separating ourselves, from those who share our views and interests. In other words, we struggle with invaders into our scientific territories. We often forget that those other scientific realms are also part of the heritage passed down by genuine pioneers of knowledge. A prodigious legacy can only be fully developed when these segments reunite to form knowledge without borders. Science is undoubtedly misunderstood today as a way to draw boundaries, a tool to display power, or a way to rank orders. This reconciliation can only be accomplished by scientists themselves, by artists, and by anyone who has the ability to share what they know. Such an all-embracing approach should be open to accepting contributions from various scientific disciplines, cultures, and social groups.

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