

Brain vs Mind

There are valid philosophical arguments for Mind being identical to Brain. ('Identity' viewpoint or the one-substance view sees mental processes identical with brain processes.)

There are also valid scientific, neurophysiological reasons why Mind and Brain are identical. Whether brain and mind are the same substance, or a duality was already discussed in 500BC.

The School of Elea taught duality. One substance was of mind, the other was sensory in perception and not truly existent. Anaxagoras thought the world was made of eternal atoms that were then organized by an eternal universal intellect. Heraclitus of Ephesus was a monist who believed everything was made of one type of stuff. The idea that mind and body are composed of differing substances has kept creeping into our ethos even recently. (i.e., variations of Cartesian Dualism). Nowadays Karl Popper's empiricism claims that all knowledge is derived from observation. Yet all observations are made within a milieu of assumptions and values, thus are tainted with metaphysics. Artists need not cling to any one philosophy but by simply evaluating differing viewpoints can come up with greater, more novel, shockingly creative ideas. Our boundaries of creation are enlarged by memory traces of more and more facts, theories, experiences, observations, metaphysics, and alternative value systems. No single man-made philosophy, scientific theory, or religion can ever claim to know the ultimate truths because the tiny human brain is theoretically incapable of knowing the vastness of Everything.

Edelman, (physicalist, monist?), explains how external stimuli can create a neuronal analog inside young brains such that it becomes a living 3D, colourful (but abbreviated), model of what we need to be aware of that is happening 'out there'. Thus, our awareness is not of 'reality', but only a few chunks of it that we need for survival. Assuming, neurons are made of matter same as all the other matter we can touch. The novelty in Edelman's explanation is the concept that any local transitory active brain structure (consciousness) is really a *comparison* between itself and the rest of the brain. This allows billions of different mental structures (ideas) without the need for an external controlling program. There is no need for a separate insider (overseer, program, or internal homunculus) to administer the brain. It is self-contained because each thought in the brain is referenced with respect to the rest of itself. Our brain doesn't require spirits or ghostly souls made of some non-tangible immaterial stuff to preside over it. Cartesian Dualism of mind-body is thus simply just an unnecessary complication.

The incoming sensory stimuli eventually build up an internal model, (by neural Darwinism), that is a modified structural analog of what we normally think represents some simplified aspects of our exterior reality, plus a few internal aspects of our body, we need to become an 'I' looking outward. What we think we see as the external reality, is really our awareness of our own internal model---a true virtual reality. The process we call 'seeing and learning' keeps our internal model up to date (every 1/50 sec.) with changes in our external environment. It is necessary however to have a basic pre-existing initial framework. (In order to become a human rather than a monkey!) We are conceived as a single egg and develop increasing

structures by 'remembering' (starting with) previous input from millions of years ago--- memory encoded in our DNA. The dominant ancient structure of our brain is now our Midbrain – a relic from our reptilian past. Without the recent addition of the Neo-cortex our mid-brain looks almost identical to that of a fish, or perhaps like that of Tyrannosaurus Rex! Simply put, our human nature born from basic brutish behaviours is now overseen and modified by a more rational neocortex. What we actually do is then the result of a perpetual battle between the beast within and the neo-cortex, which some call our conscience or at least an actor of sober second thought. The increase in our dispositions, other than simply fight or flee, allows for more complex societal structures and increases our odds of survival as a species. There is also a downside, we must painfully admit. The process is a back and forth, give or take, and the brutish cruelty of our reptilian midbrain can also be amplified by the neocortex and produce incredibly more destructive behaviour that Tyrannosaurus Rex could ever dream of.

Add to the above the mind-boggling idea that there is no such thing as 'time'. Instead, Everything is only some sort of structure or configuration of Nothing. Each universe of the Multiverse is a series of static 3D frames. 'Everything' that *is*, is Structure within a still frame. Our idea of 'information' appears to arise from the differences in structure between still frames. But if mind arises from structure, perhaps all structures represent some part of mind-matter. People who can accept that Mind arises from Matter appear to have difficulty accepting the corollary—chunks of Matter are chunks of Mind. The question then becomes what kind of MIND are we

talking about---certainly not a limited Human mind. Obviously, the nature of an 'awareness' arising from the total interconnected structure of our entire Universe (Quantum entanglement or spooky interconnectedness of all matter) is so vastly greater than our own very limited version of awareness, that its nature cannot ever be comprehended by our tiny brain. When we pick up a rock, we can simply dismiss it as just more 'inanimate matter', but could this perception simply indicate our abysmal ignorance of the nature of a Universal mind? Perhaps Anaxagoras with his often-ridiculed idea of a Universal intellect will have the last laugh after all.

Total structure = total mindfulness! Is it then possible that we are all part of a Universal mind! The ultimate Boltzman Brain? (Boltzman speculated that in an infinite stretch of space-time eventually a brain like entity could pop up out of empty space-time.) If this really bothers you, just remember that I am painting a picture. And if quantum theory has any validity there are many pictures, perhaps an infinite number. It is a question of values when you study a picture. Some may seem more valuable, perhaps closer to some unseen, underlying reality or perhaps just a more satisfactory, comforting, way of looking at things and life. One can easily picture a version of Boltzman's SuperMind that starts out as a single point of 'Something' (arising within a nonexistent absolute Nothingness) and then this 'existence' continues as a series of differentiating structures that are also intimately connected to each and every atom. (Just another example

of the popular 'Big Bang theory!) In comparison our brain with its finite number of neurons and dendrites is but a weak analog! No wonder that most human cultures arrive at strange and fanciful ideas of this Super Multiuniversal Mind (SuperMUM?). Each human culture has its own descriptions, or versions of a super being. Let me try and paint one example. First let us discard characteristics that IT probably does *not* have. IT may not have any emotions. Thus, IT may not have our values for 'good' or 'bad'. IT probably has no sexuality—why would it! Most likely IT would not appear as a bearded Father figure. IT would not look like a human, but since IT is Everything, IT would incorporate all humanity (and all other alien civilizations). IT may not have a purpose, but IT does appear to have some neediness or direction. (Second Law of thermodynamics?) There seems to be a necessity or probability to punctuate the perfect symmetry of nothingness. (Symmetry breaking). Possibly we will always know nothing about Nothing, except that it appears we belong to one such puncture ---our own Universe.

Many humans throughout the ages have believed that everything has a spiritual essence or is at least some part of a universal 'soul'. There are many forms of this 'animism' which philosophers have named 'panpsychism'. In our 'Western' religions (Christian, Muslim, Jewish) we are led to regard these beliefs as pagan 'Nativism' or things made up by ignorant, uneducated natives. This is a perjorative term promulgated by

various religious hierarchists who cannot tolerate the idea that God is everything, everywhere, and in everyone. They need the power that only through them and their church can their laws be dispensed with God's authority. The result has been thousands of years of crusades, pogroms, and killings in the name of God. Even today, there are fanatics who fly planes into skyscrapers to kill thousands, others who abduct and rape young girls, and others that slit throats, all in the name of God. Then there are clergy who bugger young native boys and rape Nuns, again all with God's permission. It seems when we got rid of the divine right of kings, we forgot about the clergy. It would be better to leave the teleological study of nature's purposes and ends to philosophers and artists and limit religious ministry to compliance with Earthly societal norms and man-made sectarian laws enacted right here on Earth.

The idea that there is an 'intelligent' being 'up there somewhere' has been accepted by practically all religious sects for thousands of years. It is not such a huge leap of imagination to realize that the 'up there somewhere' also includes the 'present down here and now'. Likewise, the concepts of 'mind' and 'matter' have also been discussed and argued about for thousands of years. The idea of Monism or the concept that mind and matter are really the same stuff can be looked at two ways. First, if there is matter, then mind is made out of this matter. (Many people feel this to be objectionable when they pick up a rock and need to think of it as part of a

cosmic mind). Secondly, if everything is 'mind-matter' then our 'minds' are just more mini-examples of this 'mind-matter'. (Some people may feel this to be objectionable if they were to dissect a brain and then need to ask whether a part or even a single neuron is part of 'mind'). So, from a monist perspective we can think of everything as composed of matter, and 'mind' is just another state of matter. Or we can assume everything, (that we can touch), is a gigantic awareness and our minds are just another abbreviated form of it.

Consider Edelman's explanation of how the brain thinks. First, we grow from a single cell to a brain which then integrates groups of neuronal activity but also differentiates such groups from each other. This allows specific areas of the brain to form thoughts with respect to the whole of the brain. In other words, it becomes a self-contained 'mind' that does not need some program or internal homunculus to control it. Our brain is conscious of its own model of reality within its own head at any given instant. Stream these instants into a movie and you get the 'reality' that you think you are seeing. The movie in the mind is familiar to everyone who has watched a movie projector project a series of still frames at 24 frames per second and flashes each frame twice to get a display rate of 48 flashes per second. (In Europe each PAL interlaced TV frame is presented at 50 flashes per second and NTSC in North America is at 60 flashes per second). In either case what we think we see is continuous motion, just like

our conscious perception of reality that only appears to us as an unbroken continuum in time.

Now consider what we know about our cosmic surround. First it began from a tiny spark that expanded and finally integrated into many galactic structures. The galaxies further differentiated into stars and planets. If we now look at a map of a field of neurons and a map of known cosmic structures (distribution of matter), they are startlingly similar. Of course, this does not imply that an interconnected cosmic 'mind', that is aware of everything, is identical to our sense of awareness which seeks to be aware of only very small, limited constructs. In fact, the simplified model of reality that we call consciousness is almost a total ignorance of everything around us except a few highlights important to our survival. For example, suppose you are looking at an apple tree. What you see is a bunch of green leaves and you focus on a red apple. You simply ignore the blue sky, the black dirt at your feet, the water being drawn up from the roots and evaporating out of the pores in the leaves, the action of photosynthesis in the leaves, the cellular divisions taking place to grow the apples, and all the countless subatomic things going on. With the tiny three bits of information processing ability of our brain, such vastly more accurate perceptual awareness would drive us crazy!

So as artists we must ignore all but the essences, the necessary, the existentially valuable. And we need to limit major items to less than 3 bits

(7 + or – 1). Of course, we don't have to always paint seven trees or use only seven colours or apply seven tints of one hue. In accord with what is known in our Quantum age, we should also consider numbers such as 'three', that have a magical appearance in the Standard Model. (3Quarks make a Proton etc.) (3bits info to encode the 8 colour charge characteristics of quarks). Also, the number 'two' has a powerful metaphysical presence in ideas such as symmetry. (Particle---Antiparticle). (Duality of wave type existence with its positive and negative swings). Since our world exhibits broken symmetry could that be why we instinctively avoid painting a perfectly symmetrical canvas? It takes an artistic perspective to appreciate the gorgeous beauty of our full colour, 3D, movie, internal brain model compared to the actual colourless, chaotic, ever churning details of physical reality 'out there'.

Be happy you have the need to be creative, the need to flaunt your impressions of the human experience. Keep painting or sculpting or potting or whatever but take it to your ultimate capability. Your creativity appears, even if in a small way, attuned to Cosmic reality. Creativity arises fundamentally from observation or awareness, and awareness is something we share with all life-forms. A Sunflower is aware of gravity and sunlight so it can position its roots and leaves. Its memory is genetic and epigenetic and it evolves slowly over many generations. Our memory is both genetic and neuronic and allows us to create more rapid responses to

our awareness. Our neuronic memory can also create widely different output responses such as painting a picture or designing genetically modified sunflowers, (or humans). Of course, our awareness is very limited since any landscape we try to paint is changing its atoms millions of times per second, and some of the stuff we think we see, such as colour, is only our internal brain code for colourless electromagnetic frequencies.

The Total Cosmic Awareness, or whatever you want to call It, is absolutely beyond our limited understanding, but we can appreciate some of the layers of complexity it creates. From Quantum fields to atoms, to stars, to billions of galaxies, to planets, to life-forms, to evolution, to life that creates even more types of life, etc. Even with limited awareness and creativity we can add to this magnificent cosmic complexity and as artists we can feel satisfaction in being attuned to the Cosmos.