Thoughts without a Thinker

by

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Consciousness is something which characterises being sentient of three textures. i) Feelings (e.g. pain, pleasure, hunger, sexual desire, friendship, beauty, loyalty, etc.) which may or may not be accompanied by thoughts or acts. ii) Thoughts (e.g. dreams, ambitions, plans, fantasies, images, abstractions, etc.) which may or may not be related to feelings or acts. iii) Ourselves, as sentient beings.

The first two are not reserved to humans. When a dog wags its tail he is communicating a feeling resembling happiness. We cannot know if a dog has thoughts as distinct from feelings because he can't tell us, though he probably does. We know humans have thoughts because we have the evidence of our own thoughts which are independent of any accompanying act; and because other humans constantly communicate their thoughts to us outside of any accompanying act apart from the act of communication itself. Indeed the very fact of me writing this essay is an example of a thought (or thoughts) on my part and the only act associated with it is the one whereby I translate the thoughts into script; and if someone reads this, the reader will have evidence that the writer had recorded some thoughts (however imperfect).

Finally we know that humans are conscious of more than thoughts. Humans are conscious of themselves as thinking beings. I am conscious of myself as "me"; and others tell me that "I" am "you" for "them" and "they" are their own "me". Indeed if someone loses a sense of their own identity, or is incapable of recognising the identity of others, it is considered a sign of major mental illness. Self-consciousness is the moment when I see (and judge) myself; when I can think the thought and say the words "I" and "me". Consciousness, in its highest form, is synonymous with self-consciousness.

1) Thoughts

What are thoughts? In particular what are abstract thoughts, i.e. thoughts which are not necessarily associated with a feeling or an act? "Thinking" and "thought" are not synonymous. Though I (and Descartes!) know more or less what I mean when I say "I think", can my thoughts (i.e. the subjects/objects of my thinking) exist outside my brain and the brain of others? In other words can thoughts exist outside of someone/something thinking them? We seem to belittle thoughts which are programmed; i.e. when we can see how the thought arose. So when a computer informs us of something we didn't know, we don't say that the computer had a "thought" and we certainly don't say it had a conscious thought. But though I am conscious of my own thoughts and those of others, thoughts are not the same as my consciousness of them. It is possible to conceive of thoughts existing without anyone or anything being conscious of them, just as it is possible to conceive of trees and flowers continuing to exist in a universe without anyone ever seeing them. Let's take the example of this essay. I am thinking about this paragraph and my thoughts are being translated into words on my computer. But when I close my computer and cease to think these thoughts, do the thoughts cease to exist? Obviously they can be recalled when I reopen my computer, at which time I may (or may not) modify them. But if I cease to exist, if my thoughts cease to exist inside my brain, the thoughts expressed in this paragraph still survive so long as my computer survives and so long as this paragraph is able to be retrieved from my computer. And this must be true whether or not some thinker, other than me, opens my computer to read these thoughts. It must be true that these thoughts can survive without a thinker; otherwise these thoughts would cease to exist between the acts of someone thinking them. But just as we know the vanishing lady is a magic trick; we have to solve the puzzle of where thoughts hide when they are not being thought!

So back to the question: "what is abstract thought?" It clearly does not mean thoughts which cannot have a concrete reality. Abstract thought (as we shall discuss later) is at its best when embedded in real matter. No, the definition of abstract thought, at least as far as this essay is concerned, is any thought which can exist outside a consciousness of it. Let's take an example of its opposite, a non-abstract thought. If I am hungry and I plan to satisfy my hunger and this engenders all sorts of thoughts as to how I can satisfy my hunger, these are thoughts that cease to have relevance outside of my consciousness of them or others consciousness of me. In other words they are thoughts which cannot bear any meaning without, in some form or other, referring to the sentient being who thought them. By contrast, the radical definition of an abstract thought which I am proposing is a thought which can exist outside of any sentient being actually thinking it.

Now you may think I'm being perverse with this definition. I have been arguing that this essay is "abstract thought" and yet, clearly, these thoughts are my thoughts. So how can I claim that abstract thoughts can exist without someone thinking them? Or, better still, how can I demonstrate the reality of thoughts without a thinker?

2) Interlocking Themes

This is where we move to several interlocking themes.

2.1 Entropy

In Physics, the first law of thermodynamics states that matter cannot be created or destroyed, and the second law states that every physical reaction in the universe contributes to entropy. This second law basically states that the energy of the universe is always being lost, it can never be increased. Energy conservation is just a way of slowing the dissipation of energy, it can never reverse it. If we create wind farms to capture the energy of the wind as electricity, we are conserving some small part of the energy of the wind; but the rest, the wind energy we fail to capture, simply dissipates. And the electricity we create will eventually itself be dissipated. Energy is a gradient, the ordering of matter; entropy is the opposite, it is the absence of a gradient, a sort of equilibrium where matter is in such disorder that nothing can be done. The second law is the affirmation that disorder always increases, heat always flows from hot to cold, energy is always being dissipated so that eventually everything will equilibrate and there will be no energy difference between different states of matter; and the universe will have entered a state of entropic doom.

2.2 Communication Theory

It might be worthwhile to digress into a related domain, Communication Theory. Shannon and Weaver's seminal theory of communication states that the meaning of a message can never be improved and can only be degraded when it is passed from point A to point B. In other words the task of the communication engineer is to reduce as far as is possible the interference with the message. Interference with a message is "noise". It could just as well be called entropy because it is essentially the same concept as the second law; i.e. order tending to disorder (and never the reverse) is essentially the same as a message being degraded by noise (and never the reverse).

2.3 Life

"What is Life?" asked Schroedinger. The answer is as short as the question. Life is a break on entropy. Living organisms are defined as living because they organise matter around them; i.e. they slow the process of entropy. Of course there is still a contribution towards entropy but it is less than without life. For every living plant that captures the sun's rays to mobilise its energy as chlorophyll, the second law is still intact because there must always be a greater loss of energy from the sun than can be captured and conserved by all the plants in the solar system. In other words life is like a biological wind farm; it cannot reverse entropy, but it does slow it down.

2.4 Knowledge

Now we arrive at Knowledge. I have talked about the first and second laws of thermodynamics. I have talked about Communication Theory and the nature of Life as a break on entropy. All this is scientific Knowledge, which is another way of saying that all this is a form of thought. Of course we only have these thoughts when we are thinking them but they are a different sort of thought from us thinking about when we're hungry and how we plan to deal with our hunger. These are, in a sense, universal thoughts, i.e. we don't think of these thoughts as being dependent on any particular thinker, we think of them as being dependent on their truth/validity or not. Also, though they are universal, that does not mean they are thoughts which can be thought by everyone. On the contrary, some of these thoughts are difficult to comprehend, and thinkers have to be trained and educated before they are capable of thinking them. Nor are they thoughts which are true/valid forever; on the contrary, they are thoughts which develop and improve with time, which can be passed and refined from generation to generation, and which, to use an unfashionable word, progress.

The astonishing thing about these thoughts which constitute the body of Knowledge which is science is that the one thought which has always remained out of bounds for the scientist is scientific thought itself. And here is where we come to the nub of my argument. I would argue that it has to be a basic premise of science that our scientific understanding of the universe must have arisen from the universe it is studying! Our Knowledge of the universe teaches us that the universe is created from energy and matter. Therefore we should acknowledge that this Knowledge must arise from the object of its Knowledge; i.e. Knowledge itself must have come from the energy and matter it is studying. In other words the one remaining immense gap in our Knowledge of matter is how Knowledge can be created from matter. So, just as the highest form of consciousness is self-consciousness, the highest form of science is self-science; i.e. a science which knows and understands how it has come into being, a science which can explain itself, the Knowledge of Knowledge.

But what is this Knowledge of Knowledge? I can dimly perceive where the answer might reside. It surely has to be rooted in the laws of Physics, there has to be an "equation" which relates energy to Knowledge. To explain what I mean, let us start with a practical example which, for me at least, is easier to develop. Let us take the example of the explorers, the Magellans, Cooks etc., who discovered the geography of the world. The energy required to map the world by those early explorers was much greater than the energy required to visit it by those who followed. Why? Because the followers were not travelling into the unknown, the original explorers had created a body of Knowledge which could save those that followed an unnecessary expense of energy. In other words, if I were to sail to Australia, I would not be re-discovering Australia. Discovery is a once and for all event. Once Knowledge is obtained, we can learn from it but we do not re-discover it. In terms of energy, the more we know (or can learn) in advance, the less we have to expend in the energy of discovery. As far as I know there are no "equations" which express this conservation of energy by Knowledge. But the fact that such conservation exists must mean there is some such formula. And any such formula would contribute to what I mean by "self-science".

Of course the problem of a self-science is much more complex than mapping the world. The discovery of land mass is as nothing compared to the discovery of the laws of physics! Newton and Einstein did not discover continents, they discovered abstractions about matter: and, once discovered, they are there to be "learnt" not "re-discovered" by others. And, of course, these abstract thoughts about the nature of matter have indeed been learnt and are currently being used to change the world; to slow down entropy by the use of technology based on these laws, and/or to increase entropy by weapons of mass destruction created on the back of these laws.

2.5 Maxwell's Demon

I say there must be an "equation" which links energy to Knowledge in much the same way as energy is linked to light and mass. I am no physicist and therefore am incapable providing the "Knowledge" equivalent of $E=mc^2$. However I do not want to use this as a lame excuse for not taking the argument further forward. I am capable of discerning some of the features of this equation. The one that stands out is Maxwell's Demon. In the 19th century Maxwell suggested a "demon" which might reverse the second law of thermodynamics. He argued that if you had two chambers filled with gas in equilibrium with each other and a trap door between the two, you could imagine that a demon might observe the atoms of gas hitting the trap door and open the trap to let hot into one side cold in the other and thereby reverse the second law. There have been two major objections to the demon: i) it does not exist; and ii) even if it did, the energy that the demon would have to expend in observing the atoms would be greater than the energy being conserved in opening or closing the trap and therefore the second law would still be intact. Now I am suggesting both these objections are wrong. Firstly, the

demon does exist. The demon is scientific thought! Second, because the demon is science, the premise is incomplete. Though we can agree that there is more energy expended in an observation than can be gained from that observation, this is only true of the observation. It is not true of the Knowledge gained from the observation. In other words if the observation(s) gives rise to a set of rules, e.g. a law of physics, there is no need to repeat the observation(s). Knowledge replaces the need to repeat the observation(s). Once there is discovery, there is no need for re-discovery. And, just like with the explorers of old, the energy gained by the use of Knowledge can exceed the energy expended in obtaining that Knowledge. And, once we concede that Knowledge is a form of energy, the second law no longer holds true.

2.6 Mutation

You may think I am shirking the Big Question, the one which says if Knowledge comes from observation, how did matter/energy create the observer; i.e. the discoverers on the back of which Knowledge can accrete? The answer, of course, lies with the theory of evolution where unicellular primitive life has evolved into the human species capable of understanding the mechanisms of life. But the theory of evolution is itself a form of Maxwell's Demon. If we consider how life replicates itself, i.e. how it passes information from one generation to the next, it is via the genetic code. This is squarely in the realm of Communication Theory. The message (an intact genetic code) must be transmitted from organism to organism without interference from noise (disruption/destruction of the genetic code). For living organisms, the most dangerous form of noise is mutation where a piece of the genetic code is damaged or wrongly transcribed. If we apply Communication Theory to this transmission of information, Shannon and Weaver's law is valid because mutations are, in the vast majority of cases, harmful. They are indeed "noise" and can lead to the deterioration/death of the organism that receives the disrupted message. But (a big "but"!) some tiny number of mutations are not harmful. Indeed they are essential for a Darwinian evolution of the species to occur. Without mutation, i.e. without "noise", life could not have proceeded from the antediluvian unicellular organism to the human species.

Evolution depends on some tiny number of the random mutations produced by "noise" to be actually advantageous. From the millions of mutations, which occur over hundreds of millions of years and which create a disadvantage for the organisms which bear them, a tiny few result in an organism which is actually better equipped to cope with its environment than its parent or its peers. As a result this organism is preferentially selected and propagated. In other words, in a tiny number the disruption of the message by "noise" did not lead to a degradation of the message but to another message, a better message. We could argue that the totality of mutations which are harmful exceed those that are beneficial and therefore in the totality of the system noise/entropy gains. But this does not take into account the step change advantage that "noise" creates in leading us to the human species, the only

living form capable of converting observation into Knowledge. And, just like with Maxwell's Demon, the energy garnered by humans via the accumulation of Knowledge may exceed the energy required to create the human species. And, just like the second law, Shannon and Weaver's law ceases to be valid because evolution depends on the conversion of "noise" to meaning; i.e. entropy to energy.

3) In the end was the Word.

I am not exactly sure what I am trying to say in this essay; but I will try to make it clearer, if only to myself, by summarising as best I can. Religion aside, we can all agree that life arose from matter. In other words, at some propitious environmental moment on this planet (about 3 billion years ago), matter became life; i.e. matter organised itself into a unicellular organism (or some even more primitive life form) to place a break on entropy. Religion aside, we can all agree that once life was established it evolved over the next 2 billion years to produce the human species; i.e. at various points during this period, via the accident of propitious mutation where "noise" produced a "better" message, primitive life advanced step by step to produce homo sapiens. Religion aside, we can all agree that over the last 200,000 years the primitive caveman has evolved to become our modern day scientist and thinker. But what we cannot yet agree is how this last stage was achieved. We can acknowledge that the human species has been able to convert observation into Knowledge, not just Knowledge for itself like a Pavlov dog, but Knowledge for its species. What we do not understand is how this is possible. The great remaining mystery is: "What is Knowledge?"

I am arguing that Knowledge is not relative; i.e. not all forms of Knowledge are equal. A knowledge of the gods and their powers by the Oracle of the Ancient Greeks is not the same as Knowledge of the theory of relativity. The first is not dependent on truth/validity, the second is. The value of the first, in energy terms, is close to zero; whereas the value of the second is incalculable. The missing link lies somewhere in the science of Communication Theory. Communication Theory has developed to become Information Theory. However "information" is not defined by truth/validity; it is defined by probability. If you offer me a service and I respond with "Thank you" my response has a low information content because it is highly probable. If I respond with "спасибо" it has much higher information content because it is less probable (though the meaning is identical if I am Russian!). I am trying to argue that somehow or other Information Theory has to advance to become Knowledge Theory; and by "Knowledge" I mean a Theory which places a value on the meaning (rather than the probability) of the message; and by "value" I mean a term which can be expressed as energy.

You remember my question earlier on: "how can I demonstrate the reality of thoughts without a thinker"? It should now be clear that Knowledge is itself my proof of the reality of thoughts without a thinker. The laws of Physics are a description of how matter behaves. The laws reflect matter. The laws depend on matter. The laws do not depend on sentient beings for anything other than their discovery. Of course I am not arguing that scientific Knowledge exists before it is discovered in the way in which a continent exists before it is discovered. Knowledge about the laws of matter and energy have accreted from thousands of acts of discovery, bit by bit, over centuries. To date only humans have been capable of generating these discoveries. However, though the second law was discovered by humans, it does not depend upon humans for its validity. Knowledge (science) has quite other forms of validation (a digression for this essay). Though discovery is (has been) dependent on humans; once discovered Knowledge has an independent existence and validity which is not rooted in the thinker. Though the thinker gives rise to the thought, the thought can continue without the thinker. And, once Knowledge accretes, no single thinker is capable of knowing all there is to know. So back to my original question: "Where do thoughts hide when they are not being thought?" Answer: "In energy!"

In a curious way I have been suggesting the opposite of a biblical interpretation of the universe. Instead of a Supreme Being creating the heavens and the earth, Adam and Eve, good and evil, and Knowledge; I am arguing that in the beginning was matter and energy, and that matter and energy created life, life created humans, and humans created Knowledge. I am suggesting that Knowledge is the most powerful form of energy, and that it is capable of progression with or without further dependence on humans. Another way of expressing this is: God did not create the universe; the universe is struggling to become God.