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Telepathic Communication: A Quantum-Based Account

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Abstract

In this multidisciplinary paper I will argue that speech module is but the tip of the ice berg of language whereas other language modules – such as thought – are still concealed in the dark recesses of the human brain. Considering several paths of possibilities that come to mind, I intend to address the question of whether language is really particles or waves. In essaying to answer such inextricably complex question, I will shun exegetical polemics and draw on an equally complex theory: the quantum theory as advanced by Niels Bohr (1913) whose views have recently been much absorbed by scientific opinion. My aim is to instantiate a posteriori that language is essentially a form of energy – electrically charged particles (which I will call *thotons*) generated when electrons leap downward from one fixed orbit to another within the nerve cell. Adopting a deductive comparative approach, I will argue that since electrons entangle each other even if they are in discrete locations, the thotons – here defined as the linguistic bits –are, by the same token, not tied down to any particular location; instead they could be anywhere and nowhere in the nerve cells of two or more minds even if they were on different sides of the globe.

Keywords: quantum, electron, thoton, entanglement, subatomic particle, wave, orbit, linguistic bit

1. Introduction

Quantum linguistics has its roots in quantum physics, a discipline prohibitively difficult to understand even by hard core physicists. In this paper, I will not venture into the intricate maze of the discipline, but will draw upon certain principles of quantum theory that may help explain one particular phenomenon in linguistics that until now has not received a fully satisfactory exegesis. Niels Bohr once said, "If you are not confused with quantum physics, then you haven't really understood it." Feynman also commented, "I think I can safely say that nobody understands quantum mechanics" (Griffiths, 2017). Although we are unaware of the strangeness of quantum linguistics in real life, it is always there if only we could look in the right place.

Obscure and highly abstruse, quantum linguistics is an attempt to take linguistic analysis a step further into the realm of the abstract. That is why we have to change our perspective and reach down to the smallest scales of the atom and subatomic particles at the level of the quantum where a completely different set of laws seem to operate – laws that apply to the atom but not to big objects in the world as we know it. Once we examine these laws, grappling with linguistics can never be the same again.

Furthermore, I will argue that language is in essence particles and as such, it can travel through space and time unimpeded; I will also demonstrate that linguistic particles can be simultaneously generated in two different locations over vast distances – an assumption that will allow us to draw the conclusion that quantum linguistics can account for the mind-bugling phenomenon – telepathy– the non-verbal exchange of ideas over tremendous distances.

2. Methodology

Throughout this paper, I will adopt the deductive comparative approach to argue that since electrons entangle each other even if they are in discrete locations, the thotons they emit are not tied down to any particular location; instead they could be anywhere and nowhere in the nerve cells of two or more minds even if they were on different sides of the globe.

My argument draws upon the quantum-based assumption that linguistic particles (thotons) can travel through space and entangle each other in two separate locations following the nebulous action-at-a-distance principle that Einstein turned down as "spooky" because it defies logic and challenges the Newtonian laws of physics and our everyday experiences. However, we need to bear in mind that quantum fields represent a crucible where information vis-à-vis time, matter, and light melts. Reality, in this sense, is a mesh of tiny events; the bond that

connects them is couched in the realm of probability; between one event and another, space, time, matter and energy melt in the mist of probability (Rovelli, 2017).

It is now common currency to say that, as a crucial form of human behavior, language has lent itself to modern scientific analysis involving its fundamental components: phonetics, syntax and semantics. Yet, as a multilayered structure, language has been found to be much deeper than was first believed. In this paper I will maintain that language, like everything else in the universe, consists of matter – atoms and subatomic particles –that, when heated, can induce the electron to make a downward leap and generate linguistic energy which I have termed (*thoton*) (Note 1). Though I am using the term with some trepidation here, I will define the thoton as the minimal, most abstract language-initiating particle representing a logic algorithm, a phoneme or a syntactic rule. In addition, I will maintain that the thoton, like the photon, is transmitted in two forms: a particle within the nerve cell, and a wave when transmitted through the synaptic cleft (a complex 20 nanometer gap or membrane junction between neurons). I will discuss this notion in more detail in due course.

Pushing the argument a step further, I will emphasize that linguistic bits are the output of a highly complex atomic process that takes place within and between neurons to generate and emit thotons – the energy released when the atom within the nerve cell is heated and therefore agitated (Note 2), but I will return to discuss the affordances of this claim later.

Following the deductive methodology leads us to realize that there are three stages for the thoton-releasing process: inside the neuron, across the synaptic clefts extant between neurons of the same cerebral cortex, and telepathic, i.e. between neurons of two distant and discrete cortexes. Energy emission is initiated by the quantum leap – the downward leap that the electron takes from one fixed orbit to another within the cell before it crosses the synaptic cleft at the extremity of the axon to an adjacent dendrite.

3. Results

Quantum leaps account for the interneuron linguistic bits initiated by electrons switching orbits and releasing electro-chemical energy in the form of thotons. In its most abstract form, the linguistic bit appears to be the consequence of the activity of subatomic particles in the atoms of the nerve cell. Neuroscience tells us that particles of sodium, potassium, chloride and calcium may be electrically charged within the cell to the point that it becomes ready to fire across the synaptic cleft of the agitated nerve cell (known as the threshold) to the dendrite of the adjacent cell. Each neuron exchanges electro-chemical bits (subatomic particles, e.g. electrons, protons, and neutrons) with at least 10,000 neurons through synaptic connections. It is established in physics that for subatomic particles to switch orbits (take quantum leaps) and subsequently emit energy, they must first be excited. It follows that multiple synaptic firing (5-50 times /second) form a network of linguistic bits that can be transmitted holistically in a chain-like process involving the cerebral cortex.

In their abstract forms, linguistic bits within the nerve cell are generated as a result of particle (not wave) activity, where energy is emitted by the movement of particles, namely electrons, leaping downward from one orbit to another and leading to voltage surge in the cell itself. Thoton-releasing electrons are minimal indivisible objects which form discrete quanta, i.e. specific minimum quantities, and this accounts for the discrete specific orbits that electrons can occupy. Unobserved, the electron, and for this matter the thoton, can be anywhere and simply nowhere – a claim that challenges both logic and the established laws of physics.

The fact that the electron's downward leap from one fixed orbit to another in the atom produces energy, i.e. photons, corroborates the allegation that linguistic bits (thotons) can be emitted by the same process. This quantum leap, known to generate the photon or the light particle, likewise produces a *thoton* which is the smallest, most abstract bit of language. Whether the resultant energy takes a photon or a thoton form is entirely contingent on the nature of the atom, but I will side step this issue here as it would take us straight to the realm of probabilities.

It is interesting to note that when the agitated electron leaps downward from one orbit to another, it does so *without* crossing the space between the higher and the lower orbits. The thoton emitted as a result of the electron leap therefore exists practically nowhere and everywhere at the same time – a bizarre behavior in quantum linguistics that is still incomprehensible to the traditional laws of physics.

By analogy, generating a linguistic bit (LB) follows the same process. Quantum-based linguistic theory means that linguistic bit production (LBP) does not, and cannot, happen in one location. The process has to be holistic involving the whole cerebral cortex – an assumption borne out by the fact that the electron is responsible for producing the thoton – the linguistic bit – in the atom and since the electron can be anywhere, so can the thoton.

In this connection, it is instructive to maintain that if the voltage changes considerably that it exceeds the threshold, the neuron fires a pulse across the synaptic gap and sends an electrochemical wave through the synaptic cleft (the

space between the end of the axon of one neuron and the dendrite of the adjacent one). However, to cross the synaptic gap, the linguistic bit or the thoton must renounce its particle state and convert into a wave state. I will elaborate on this pivotal point in the discussion below. Needless to say that without the electron leap no action potential (pulse) may be generated to cause a voltage surge in the cell and, consequently, no thoton-carrying wave is fired across the synaptic cleft to the adjacent neuron dendrite.

4. Discussion

As I have pointed out earlier, the electron can be nowhere and everywhere at the same time constantly switching orbits and producing energy. This observation remains valid as long as we maintain that language is the energy produced by electrochemical particles and as such it is subject to the laws of physics governing particle behavior. However, traditional physics tells us that linguistic signs are transmitted through the air as measurable sound waves, not as particles; accordingly, they must be subject to the laws governing wave behavior.

The electrochemical thoton (the linguistic bit) displays a very unorthodox dual behavior; it oscillates between two states: the particle state and the wave state. In its afferent (sensory) state, the thoton acts as a particle, and in its efferent (motor) state, it acts as a wave. However, the inextricable question of whether the photon is a particle or a wave that was raised in the 1927 during the Einstein-Bohr debate has since remained unanswered.

The statement just made brings us squarely up against a problem that is all the more important, namely telepathy. The Merriam Webster Dictionary defines telepathy as "*communication from one mind to another by extrasensory means*" which implies that minds can *talk* to each other nonverbally at vast distances. This raises the fundamental question that is still to be answered: how are linguistic bits transferred nonverbally from one mind to another? The problem is complicated further by *unison thinking* when the same linguistic bits simultaneously erupt in minds that are physically separated by vast distances. The Brisbane monoamniotic identical twins Paula and Brigitte Powers are a case in point (Note 3). In a televised interview, Paula and her twin sister Brigitte talked to their interviewer in complete unison without rehearsal. A possible and not all unreasonable explanation of telepathy and unison talk is furnished by quantum linguistics where subatomic particles not only appear in two largely separate locations but also entangle each other in the minds of the twin sisters. This is the property of the electron that I have mentioned earlier; the weird dual behavior of the electron which is still inexplicable; it is bizarre, defies logic and does not resonate with our knowledge of the macroscopic world.

Of course, no one in his right mind would accept that a subatomic particle such as the thoton can be both a wave and a particle at the same time and entangle another indefinitely far from it. Yet, compelling evidence corroborating this proposition is available from quantum physics; evidence that explains neatly weird linguistic phenomena such as telepathy. Like the electron in quantum physics, the thoton in quantum linguistics can be nowhere and everywhere at the same time. When in its sensory (particle) state, it has no specific location; it could be anywhere and anywhere includes nowhere. Only when it is observed in its motor (wave) state can the thoton be located. Here we are talking about probability, not certainty, which constitutes the bone of contention between quantum theory and relativity. "Quantum theory is a statistical theory and there seems to be no way to escape its probabilistic nature. The intrinsic randomness of quantum events is the seed of this uncertainty" (Radin, 2013).

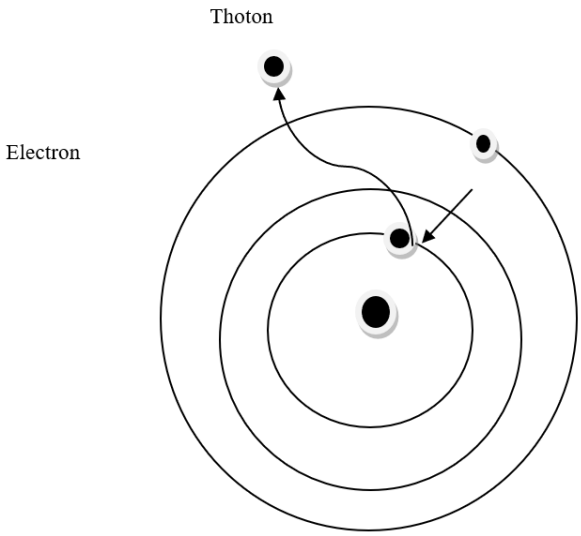

Figure 1. The thoton is emitted when the electron leaps from a higher to a lower orbit in the agitated atom

The question of probability versus certainty has been the subject of a long standing dispute between proponents of Einstein's relativity and Bohr's quantum theory. Einstein argued that science is all about certainty and rejected the concept of probability as unscientific. He even found the idea of action at a distance (entanglement) untenable and called it spooky (Roenblum and Kuttner, 2011).

In quantum linguistics distance does not seem to preclude the teleportation of thotons as they are perfectly capable of transforming their sensory and probabilistic afferent particle state into a motor and measurable efferent wave state.

5. Conclusion

In conclusion, absolute infinitesimal linguistic bits (which I termed thotons) are initiated in the nerve cells as electrochemical objects of energy emitted by agitated atoms. This happens when electrons move downward from a higher to a lower orbit but without crossing the space between the two orbits in the atom. Thus, quantum linguistics, by analogy, ascertains that the photon-like thoton which represents the smallest linguistic bit can be nowhere and everywhere at the same time.

Whether the thoton travels through time and space as a particle or a wave is not at all clear. However, the weird linguistic phenomenon known as telepathy can, *ceteris paribus*, be elegantly accounted for by adopting the action-at-a-distance principle though Einstein rejected it and called it spooky. It provides an elegant account for communication between minds over vast distances. The assumption that thotons simultaneously appear and entangle each other across arbitrary distances can solve inextricable problems in linguistics as it did in physics.

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Notes

Note 1. It is generally accepted now that light consists of photons released when electrons leap from one fixed orbit in the atom to another. Here the term thoton is used as the unit of language.

Note 2. Remember that the 100 billion neurons and neuroglia are all composed of matter, i.e. atoms and subatomic particles.

Note 3. Interview with Paula and Brigitte by Piers Morgan - Uploaded by Good Morning Britain on July 19th, 2016.

https://www.youtube.com/watch?v=kZXQSZ0nVZk

Bridgette and *Paula Powers* are identical twins from the Sunshine Coast in Queensland ... Didier Deschamps ...

Sep 25, 2018. https://www.mailonsunday.co.uk/.../Identical-twins-Bridgette-Paula-Powers-talk-unison