

An Evolutionary Perception to link Physical and Human Sciences

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Abstract: *Interlinking physical and human sciences in a seamless continuum is a task yet to be achieved. The difficulty however arises largely due to our inability to understand the mind-body connections. With two centuries of research to reduce individual sensations to neural mechanisms having remarkably failed, this article puts forward an alternative view. A plain acceptance of the creative ability of the universe to bring up fundamental sets of mutually relatable fields and features such as quarks and electrons and at a more evolved state visual and auditory sensations does in fact prepare us to see the whole of reality not merely as norms of Nature but as norms built on purposeful selection and fine-tuning. Under this singular axiom of inextricable interconnection between intelligence and matter, the rare occurrence of life in planet earth is no longer an anomaly but a renewed pattern of additional selection and lawful expansion. The complex societal structures that hinge on the choices, rules and regulations of individuals, now turn out to be a repeating natural development extremely similar to the complex biological functions built on the quantum fields. The total edifice of human and physical complexities easily reduce into a simple pattern of one plus one rising over yet another one plus one and the marvel of this pattern is bound to capture the attention of any intelligent being. One single overarching idea, indeed, subsumes every little turn of event that has ever occurred or will ever occur in this large universe.*

Index Terms: *Sensation, Mind-body relation, Neural Firing, Quantum fields, Physical and Human Sciences, Reductive Approach.*

I. INTRODUCTION

An apple tree might not be frightening to look at. But imagine a little babe that has just begun to explore its backyard. What comes across as an extremely simple, most familiar scenario for the grown-ups, can turn out to be a nightmare to the child. The concept of reality to its still evolving cognitive skills would be no more than a mix-up of confusing patches and pop-ups, with all sorts of colors, shapes and movements crisscrossing the field of sensation. The sound bytes of undifferentiated human talk, the occasional ring-tones, the clanging doors and whistles would confound the newly evolving conscious field even more.

To a child of this age, a compact red apple dangling in the midst of dark green bushes, mounted over a curvy, brown trunk wouldn't add up to anything that we call *an apple tree*. The block is just too big to make any definitive sense. Unsurprisingly, the attention of the babe would only turn to something much simpler and more captivating to its senses.

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In short, an abstract concept of tree is an impossibility for the cognition of the child. The analogy works out just the same, if the fast accelerating universe stands for the tree and the child is none other than we the adults. It's truly a nightmare to each of us, if ever we attempt to reduce the universe by assigning to its immensely diverse attributes a proper order of connections. To make sense of it all is a trauma that started off since the early days of humanity. The information tyranny of the 21st century has confounded the idea even more, rather than enabling us to bring all things in cohesion. More especially, the human reality of which we are an essential part staunchly refuses to be mainstreamed with the gigantic universe. The pretty long list of symmetry, formulae and interconnections that we have already discovered squarely fail to tick with yet another set of values, riches and beauty that are closely tied to our psyche. As a direct fall out, we are caught up in a mess of contradictions, constantly pulled in many different directions. Our own extinction after a brief stunt is indeed the height of such contradictions. The spontaneous ability to find meaning and import in everything connected to our immediate life turns into a ridicule when the whole drama crumbles at the face of death. Hence the oft-repeated question: Is life meaningful at all? It appears to be a near impossibility to integrate the overwhelming meaning of the immediate context in an endless sea of impersonal reality. And yet the extent of connections that we have already discovered clearly suggests there ought to be an underlying link to mind and matter at once. An utter simplicity of pattern could actually be the case and it's perhaps a bit too tricky for us, given the baggage of traditions and the current modules of science. Our persisting failures, in the meanwhile, have turned some of us into the proverbial fox that would rather consider the unreached fruit as sour and bitter. While the academic worldⁱ has either taken a wait-and-watch approach or a tone of agnosticism especially with respect to the body-mind issue, this article takes a contrary view and clearly asserts that we do have sufficient lead-way to start looking at the very same pattern of consciousness evolving over matter in such manner that all of natural and human sciences fall into a simple scheme of affairs. My argument, however, is rooted precisely on the current findings of physical, social and economic sciences. After tasting the impressive unity arising out of the standard modelⁱⁱ and a highly popular theory of Big Bang, it would indeed be strange if we continue to think that the evolving universe couldn't be reduced to one single pattern of beauty -- a conceptual simplicity analogically similar to the unity of a tree that we alluded to at the beginning.



Indeed, the major achievements and failures of physical and human sciences compel us to give a natural explanation to consciousness, precisely in line with the multiple tricks of innovation played by the universe right from the start. Once we figure out an overall pattern to cosmic evolution, the hard problem of consciousness [1] is likely to disappear as we would have already assigned its rightful place in the long sequence of a fundamentally creative scheme of affairs.

II. THE TASK ALREADY ACHIEVED

To return to our very first analogy, the 21st century adult can easily find a much deeper unity than the physical attachments of the tree. The red apple, the green leaves and the large trunk sticking together as one block would hardly compel any of us to come up with an external explanation such as a creation myth. We have tested and verified for ourselves that the unity of an apple tree arises not merely from the roots of the soil. Rather we have found it to be deeply rooted in the DNA of each of its cells. And we have also convinced ourselves that the common elements and activities extend far beyond the biological cell. What was once considered to be an impregnable wall between the organic and the inorganic, between the living and the dead, has been neatly pulled down. If a branch dries up and falls to the ground, it merely returns to its more fundamental elements. There's nothing hard and fast to demarcate physics from biology. The repeating cycle of seed to plant and plant to seed is now seen as one little sustainable link anchored on many other supportive cycles occurring till the ends of space-time. Even as Edwin Hubble, the American Cosmologist, started revolutionizing space research at the beginning of the 20th century, planet earth suddenly appeared to be a speck of no consequence; but this viewpoint has been thoroughly challenged in the most recent articles and publications [2], [3]. The hard evidence of billions of galaxies hasn't dealt a blow to human narcissism, as Freud [4] would have us believe. For we were quick to learn through subsequent space research that each and every element of our body, indeed every atom of planet earth, had been carefully cooked at the core of the mighty stars [5]ⁱⁱⁱ. Under this *anthropic perspective*^{iv}, the humans once again emerge as the end-points of a pretty long chain of cosmic and biological processes [3], [6]. A large number of balancing mechanisms sustain the accelerating ends of the universe while the *little pale blue planet*^v keeps witnessing an acceleration of creativity – the astonishing new developments propelled through its most evolved species. It's as if we are the 'focal point' of the gigantic universe all over again. The equilibrium of energy, electric charge or momentum profitably engages our theoretical physicists, while our social scientists continue to talk in terms of the equilibrium of market, power equations or the balance of relations badly required for the sustenance of each and every human institution. The conceptual similarity at work in nearly all disciplines is also suggestive of a common design that we are earnestly looking for. But we have failed to find it until now, for we are far too mesmerized by the geometrical symmetry, rhythmic wave and rigorous mathematics superficially found to be the case in natural sciences. We have always wanted to explain the later

developments such as the mind and its societal arrangements under the very same reductive methodology. The body blow of failures to this approach, be it in physical or human sciences, ought to have reminded us that creative selection paving way for a sustainable, lawful expansion until new sets of elements join the fray could possibly be the only explanation right from the start. But our default assumption of a reductive equation to explain everything from bottom-up seems to have misguided us. It is this juvenile expectation that is now increasingly under attack. The euphoria of inching closer to the last mile of connectivity under a rigorous mathematical equation appears to have receded within the scientific community itself [7], [8]. Our own remarkable discoveries of the past few decades have pulled the rug from under our feet. The Big Bang with its overwhelming evidence is also the point of collapse for every physical law known to us [3], [9]. The successful theory of quantum fields equally instruct us that there's no such thing as mathematical precision in any part of nature [10]. Even as we filled the chart of the standard model, after reluctantly preparing ourselves to accept the fuzzy reality of quantum fields, we also learnt to our dismay that we are talking of less than 5% of matter available in all of universe [9]. An overwhelming component called dark matter and dark energy haven't yet found a place in our most fundamental chart. The story is no different in Economics or Logical Positivism^{vi} that equally attempted to reduce everything to equations or a simple language function. Theory after theory^{vii} aiming at precision or absolute prediction has failed and we are compelled to take past records, statistical trends and probabilities as the only tools of science left with us. What's even more disturbing and mortifying is the simple fact we haven't yet explained how creativity, emotion, sensation and knowledge rest in line with all other cosmic trends, cycles and equilibriums. The continuity of neuron to perception is one arena where the challenge is ridiculously the highest. Nevertheless, the difficulty here, as we hope to show in the remaining part of the article, is one of our own making and not something imposed by Nature. After all, it's the most spontaneous flow of connection between neural function and consciousness that's instantly available to us and there's no reason why we can't bring the pattern of connection found here as the explanation of the entire universe. Indeed, this crucial link that has challenged every scientist and philosopher until now can turn out to be the point of inversion forcing a whole new insight on other issues of selection, imprecision, exception and fine-tuning one just can't avoid attributing to this universe -- a whole lot of difficulties we always wanted to brush aside as incidental ones, even though at the heart of heart, we murmured to ourselves there's something still lacking in our explanatory mechanism. The search for the master key was always directed outside and we failed to acknowledge that we the humans are the most irrefutable counter evidence to our academically induced desire of reducing everything to a fixed mathematical formula. The human experience of creative selection, intentional arrangement and strategic

planning is indeed the most emphatic statement of the inextricability of nature and its intelligence. Anything that exists is already in co-relation to something else and hence it's an expression of an idea. The convertibility of matter and energy or the coupling of one form of matter with another openly demonstrates an intelligence par excellence. It's this natural link between matter and idea discoverable in every aspect of the universe, our highly evolved neural system has gradually managed to observe, examine, verify and add to its own neural memory through successive generations.

The inextricable link of cosmic energy and cosmic idea is the longest ever causal chain supporting and sustaining the countless little equilibriums and evolutionary mechanisms, one comes across in the study of physics, biology, animal or human brain, followed by economics, politics or religion. An apple yields even more apples. The original root of creativity is set to bring out a lot more creativity right at the end of a long tunnel of evolution and this indeed is the topmost facility we, the humans, have come to possess. The powerful symbol of the Egyptian snake, coiling itself to bite its own tail tells it all in one shot. The cosmic agenda is heading towards a climax of its own [11].

III. THE CHALLENGE OF NEW PERCEPTION

Make no mistake, though. By no means do we suggest, we have already turned out to be the masters of creativity. There's still an equivalent new journey of progress ahead of us. Whatever has been discovered till date with the help of our sensing ability has largely to do with the physical world minus the nature of the ability itself. We are surprisingly blind to the uniqueness of our senses as opposed to the much more easily defined material functions. We are little informed of the manner in which our senses can go ahead to build all kinds of new combinations and permutations, ably supported by the activation of memory controlled through neural chemistry. All of this is attributable to our failed assumption that material laws have no connections with intelligence. Instead, if we openly accept that new arrangements to take things forward in a still more complex format could emerge from the fundamentally creative nature of the universe, the very first co-relation of physical fields and their fine-tuned features would instantly appear to us as the very first expression of an intelligence. We would easily understand that the way in which the self-intelligible nature of our senses allowed the formation of complex ideas and emotions [12], [13] is nothing but a repeating pattern of how the elementary fields went ahead to build galaxies, planets and biological organisms. It is the hidden connection between idea and matter running through all of evolution that finally played itself out in a most irrefutable manner through the human experience of choice and action. How liberating and soothing it would be to admit and explicate this one single stream of connections starting all the way from the Big Bang. The endless new forms of intuitions we come up with over and above the automatic push and pull of our neural memory is indeed too subtle and elusive to be studied under any single methodology of investigation. We need to effectively combine the findings of neuroscience and the insights gained through an introspection of our own conscious processes. Each of us is an ocean that on top of it

seems transparent enough but the fact remains it still contains vast depths of unexplored details and potentials.

Our conscious experience is a complexity of senses given by the electric firing of our neural networks. One could also study this newly evolved expansive realm in the same manner that we deconstructed the constituents of the larger universe. From a stupid idea of a flat earth fixed through some unseen foundations, we have developed the exciting concept of a fast accelerating universe and a similar kind of sea change is possible at the realm of mind as well.

A biological cell has no existence independent of the physical fields. In a much similar manner, every social institution relies on the uniqueness of people who either choose to respect its laws or to disregard them. The equilibrium of trend here might be more easily broken to make way for alternative arrangements, compared to the longer-lasting characteristics of physics and biology.

A grand design of increasing complexity has been put in order. Under this radical new perspective, everything indeed looks extremely simple. The one plus one system of physics and biology gets repeated all over again in a more complex layer of individual psyche and their social institutions. And yet the second generation complexities are totally beyond the reach of mathematical reduction, for the new basis itself begins with the exclusive characteristic of individual sensations. No mathematics would ever do the trick of capturing even a single sensation of the other. That's a new realm altogether, and its dependence on neural activity is never an intrinsic one; but a deliberately worked out set-up of Nature and it can be understood only against all such intentional set-ups starting all the way from Big Bang.

Physicists have wonderfully completed the task of deconstructing every form of physical structures, both simple and intricate, back to the quantum characteristics of fundamental fields. That includes the highly complex biological functions and their chemical structures as well. What we really need to do now is to realize how in a much similar manner, the sensual field of billions of individuals have given rise to classical mental powers as well as the bygone and the still persisting human institutions. The grand design of one plus one built over yet another one plus one is indeed an undeniable cosmic play to be admitted and admired by anyone who cares to study science without prejudice. We have indeed returned to a mathematical beauty that Einstein et al desired to find so earnestly; but this new beauty is so deceptively simple, we might choose to throw it away forgetting in the meanwhile that it alone can fully explain and restore dignity and respect wherever required to the surprisingly different kinds of riches and values, the evolutionary mechanism has brought forth.

IV. THE SOCIALLY-ENGINEERED SYMBOL OF CONNECTION

Language has the ability to bring all subjects under one platform, for it's the bridge of link we, the human beings, created between the physical and the mental. It's one of the top-most examples of a human set-up that can wonderfully support rule-based expansion and creative expansion at once.



The involuntary flow of words enabled through neural mechanisms and the voluntary attention capable of making new connections are fully taken care of in our practice of language. Once we understand how this extraordinary new tool was constructed taking simple sensation such as sound and geometrical image as its most fundamental elements, the basic idea of this article will instantly hit upon us. Language is also one of the very first social conventions we built utilizing what we have called the second generation fundamental fields, the individual sensations. All in all, an understanding of the emergence of language starting with basic sensations would nearly portray the entire picture of the one plus one system built over yet another one plus one.

Even as our physical surroundings produced an undeterred flow of scattered and hazy sensations processed through our biological make-ups, the self-intelligible nature of sensations not only ended up discovering the terms of relations in external events, they learnt the trick of representing the most significant events and objects with the exclusively set-apart sensations of sound, gestures and geometrical figures. Later, we called them the *alphabets, the syllables, the words and the sign language*. This simple, innovative arrangement soon turned out to be the most convenient mental tool with which we could explore every nook and corner of the universe. Long before neural chemistry was known, we learnt the art of registering the referral-sensations as additional memory in our brain. The system of referrals we thus created turned out to be the veritable platform for both habitual as well as newly occurring knowledge. What started off as a slow and stammering process at the early stages, quickly evolved into the most defining part of our conscious memory. If ever you find yourself reeling under endless thoughts as an evolved species today, just remember they are nothing other than the sensation of sound and pictorial images you picked up as a child or a social member of a community speaking the same language. Your attention at this grown-up stage might be entirely on the meaningfulness arising out of the connectivity of the referral system rather than the mellowed sound and their rhythm of syntax consciously registered earlier. But the larger point is this. The mighty universe could easily turn into contents of our little brains, only because everything was registered in our brain memory as specific forms of sensations -- an exclusively set-apart system of sound, gesture or image. Nothing other than sensations can ever find a place in the individual stream of consciousness. It's the self-intelligible nature of sensations that has automatically enabled us to focus on the interconnections of language representations. The meaning and significance of these connections are so vital to our survival and well-being, we have got into the habit of paying attention to the meaning of the language rather than the sensations on which they are constructed. Nevertheless, however complex our concepts or mental abilities might be, each of it can be deconstructed back to their basic sensations. Reasoning, judgment, free will, imagination of multiple possibilities are all built on the language symbols which are nothing other than sensations [12] (Mach, 1897). The complexity of emotions is reducible to the sensations of pain and pleasure coupling with the abstract concepts of our wants and desires [12]. Language comes in handy to express our emotions, desires, imagination and the future goals as well. Now if all of consciousness is reducible to basic sensations such as sound, image, color, pain and pleasure

which again are caused by physical waves, what difficulty is there to link everything of humanity back to the wonder of physical arrangements. It's only when you fight against quantum fuzziness or the secret of individual sensations, the very starting points of lawful expansion, you declare a war against the basic intelligence of the universe.

V. REVERSE MODULATION – CONSCIOUS ATTENTION

If the beauty of positive and negative charges, dominant and recessive characteristics wouldn't surprise us as anything abnormal, why should the neural firing yielding the taste of coffee and the soft-touch of a jasmine flower be any different? The all-accompanying creative source keeps building additional wonders and we mastered the very same tricks to push the frontier still further. The hectic scientific effort to explain physical continuity from neuron to perception has repeatedly failed. Hence the only logical alternative is to appreciate the continuity from the side of perception – a perception that can fully accommodate the neural perspective and yet readily takes into account what perception itself feels like. One can't question why a perfect match of coupling between particle and anti-particle, bosons and fermions, positive and negative charges is found to be the case. And we can't question how the unique combination of chemical compounds in just a tiny dot of the universe turned out to be an additional wonder of matching pairs engaged on an incessant process of reproduction. Similarly therefore it's insane to question how one and the same electric voltage running through different neural pathways ended up with a multiplicity of self-connecting sensations. The evolution of cosmos was set to bring out its hidden intelligence in a long enduring run and once the full weight of interconnections dawns upon the individuals, they would not only learn to be fully amicable with all aspects of their environment, they would also turn more and more of creative marvels themselves. The conceptual connectivity gradually worked out through language sensations is only externally dependent on the coupling laws of physics. It's not even a direct product of the combination of cellular activities. By their own uniqueness, sensations are capable of finding the still missing link that hasn't yet gained its attention [13]. And the deeper we discover the meaning and the motive of the events before us, the more fitting is our conceptual reaction commanding the motor nerves through the very same electric firing. Acknowledging the pattern of a more complex one plus one comprising of billions of individuals and their institutions built over a simple one plus one of physical and biological configurations is the first step towards achieving an integral view of evolution. Such a viewpoint fully endorses the openly creative nature of consciousness and the silently demonstrated creative platform of the universe. It automatically prompts us to respect the exclusive space of individual sensations, emotions, thoughts, and decisions -- indeed the intuitive sense of self and freedom, reported by conscious individuals. Once we bring the evolutionary complexity under this new perception, we would also tone down our unrealistic attempts of turning physical, human and social sciences into cold and dry mathematical rigidity.



VI. CONCLUSION

Cosmic evolution can hardly ever be understood through a simple bottom-up analysis. It rather comes across as an ongoing process of creative selection set on a path of lawful expansion until new selections emerge and create their own modules of expansion. Be it the discovery of quantum dynamics, the crack of mighty empires or the sway of old Religions that claim to have surpassed the limitations of nature at least once in a while in the past, everything can be duly understood as part of one and the same series if only we learn to admit the uniqueness of sensation as opposed to material functions. The mathematical rigor that's increasingly hard to find in any given science has finally returned to us under an entirely different format. The much simpler beauty of one plus one built over yet another one plus one can now enable us to physically and intellectually verify and enjoy the seamless interconnections of all scientific disciplines. In plain terms, it tells us that the overall link sustaining all other equilibriums in the universe is that of cosmic matter and cosmic intelligence. Each individual is but a miniscule cell of the larger tree and yet we have the immense potential to feel as if we are the entire tree -- the entire biological and even the 13.8 billion year old cosmic cycle itself.

END NOTES

ⁱ Post-modern scholars generally consider that neuroscience might fully explain the knack of consciousness some time in future or they take the view that it might never be explained through science. For neo-mysterianism, the latter position, read Colin McGinn, Thomas Nagel, Noam Chomsky, Steven Pinker, Roger Penrose and Sam Harris.

ⁱⁱ Standard Model refers to the fundamental fields and particles enlisted by the post-modern theoretical Physicists.

ⁱⁱⁱ Crosswell explains the origin of Carbon, essential for life on earth. The role of stars in making the heavier elements beyond Hydrogen and Helium is a similar process, and it's hardly a matter of dispute within the scientific community.

^{iv} Quite many theoretical physicists have been compelled to return to the anthropic perspective in which everything that occurred in the universe appears to have occurred with the view to make human existence possible.

^v The phrase given by Carl Sagan, the British Astronomer, is extremely popular in today's world.

^{vi} Logical Positivism was a highly popular school of philosophy until a few decades ago and it attempted to reduce all of knowledge under a fixed mathematical structure of statements.

^{vii} A whole list of theories such as Utility, Indifference curve, Market equilibrium and Perfect competition can only enable us to predict trends. No theory would give us the certainty what's going to be the future.

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