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A Series of Ideas in Formative Topics

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Art as the Progenitor of Philosophy, Science, and Technology

My thoughts now at this moment are that it would be better were I to make some drawings or paintings that could convey a whole story in ten or twelve concise images. Perhaps something like the famous Zen Ox-Herding Pictures, a tradition of drawings that go back to Guo-an Shi-yuan (Ch'an school of Buddhism, China, 12th century CE) and which I recall most clearly and fondly in the paintings done by Zenkei Shibayama, Zen abbot from Nanzen-ji.



For the present time being, I will remain in the realm of words, enhanced with images and hopefully with imagination.

My points here - what I am sharing from others and some remarks of my own contrivance - will lead from the Paleolithic up to the present time, to our present phenomenon of social organization and civilization, and to the cool, exciting, positive things of STEM – our scientific and technical world and the accomplishments deriving from all we have discovered and learned, and made, and built. Wonderful theorems, theories, machines, buildings, and more, and with them, a variety of complexities and also complications, some of which can be quite dangerous. Just as with an ordinary kitchen knife, a pair of scissors, or a portable propane torch. Useful, beautiful in what the instrument can do and even how it can be, in its own right, by itself, but always there is the caveat, the reminder, “Handle with Caution.” Or, at least, there should be such. That is also one of the points being made here, and it is one that often seems to be discounted and ignored in our present world, by some people who can see nothing but the mesmerizing flash, glitter, and feeling of power from the tools our minds and hands have wrought.

A hypothesis is put forth here, namely, that artistic impulses and actions - stemming from a time when humans could experience imaginative things, but when they did not think “like us” with language, with symbols, with “discursive logic” based upon symbols that grew and stand upon a foundation of some type of language or another, including a language of numbering, counting, and drawing quantitative boundaries around the things so numbered – have been the source, in a definite neurophysiological way, for the development of much of what we call today mathematics, science, technology, and engineering.

Radical ideas? Maybe at first glance, but there are plenty of others out there who have been presenting similar cases, arguments, theories. A few will be referenced here, over time, but please bear in mind that whatever is this manuscript, it is not a formal paper or book, but a collection of aphorisms, micro-essays, and perhaps a few other constructs of words and images. What you are reading may even be called a journal or diary, although it is certainly different from “the usual.”

Let me share a few underlying motivations and “refrains in the back of my mind” that have contributed to, first of all, thinking a lot about these topics and this broadly stated hypothesis, and secondly, to the decision to spend more time and energy on it, even researching what others have done and said, and writing some “thing” like these lines here. Some of the motivations pertain to my own inquiries and quests for knowledge, but others are linked with deep concerns about where the STEM in the “whole living plant” of our civilization is leading us, our future growth. Upwards in fertility, fecundity and good fortune for all, or into some weed-like aberration that is not what The Gardener intended.

Hmmm. You can guess from the last sentence that there is something coming that may be of interest to more than art historians and anthropologists.

So let me recap some of these motivations, which are, by the way, not only mine, but shared by many others, based upon direct dialogs and prolific readings. On the one hand, there is everything going on in my world and life about certain areas of scientific research, and technology developments. Necessarily, all of that has involved (and constantly demands active engagement with) the activities by thousands of other scientists and institutions around the world, in a large variety of fields. It means that I and others who walk multi-disciplinary, interdisciplinary and “polymathic” paths as scientists and philosophers must look at, listen to, absorb, digest, and ruminate over a huge diversity of minds and productions. This makes one think a lot about origins of different forms of thinking and how we got to thinking the way that we do about all sorts of things like viewing the world as something that can be explained through measurement and quantification, either mostly, or exclusively so.

§ I will call this driving force for understanding the earliest roots of art and science as the “encyclopedic and polymathic motivator.” Seeing what is going on all around, in the STEM multi-stage theater (or multi-ring circus – depending upon one’s perspectives), leads to wondering about how it all came together, how things evolved, and what is really going on when one is imagining, intuiting, inventing – because it is certainly not only following some “scripts” or “going by the book.” I will call this motivator and everything that goes with it by the acronym, “EPoly.”

§ Closely related to “EPoly” is the motivator that concerns the physico-biological dynamics of perception, pattern recognition, memory and cognition – logical reasoning, and the evolution of this over a very long period of time (for me, the whole of Life itself, going back to the first proto-organisms which began to appear not less than 2.5 billion years ago). This is also about understanding how things moved from x to y to z, but in terms of processes that take place within us, that can be self-observed, but not in the same way that we can observe ants crawling or bees flying or photons transforming timelessly across light-years. Somehow, for me, this explanatory quest leads also to looking at the experiences and processes that go on when someone is creating a drawing, a painting, a sculpture, a dance, a melody, a song, a dress, a necklace. We can also add in here: dreams, daydreams, and that arguable state which some call “altered” and others as “natural, so-so, to be expected,” the visions of shamans and the complex worlds of extreme neurophysiological imbalances (“dis-equilibria” may be a better choice of words) and ec-stasies, where one can literally stand out and away from “center.”

There are many accounts, some first-person, some otherwise, that describe the artistic creative process as being very much like a discovery of some amazing relationship in one of the sciences, or like a proof in mathematics. There are accounts coming from mathematics and the sciences that seem so very much like something that could be said by a Dante, Da Vinci, Mozart or Ulanova. Perhaps that may seem strange to hear, but let me explain this motivator – which I will call the “neuro-cognition-intelligence motivator” (or “NCI” for short) – just a little bit more here.

We have a big argument long-running now for something like sixty years. It’s all about mind and matter and how these two languages fit together. What’s what, what’s either, and how do they fit together, or not. And so on and so forth. Bertrand Russell put it well, I think, when he quipped, “What is mind? No matter. What is

Well, clearly, the arguments go back much further, including long before Descartes and his concerns over “evil demons,” or Maxwell a few centuries later with his. In philosophy and mind and epistemology, and in the foundational years of computer science and the nexus of logic, psychology, neuroscience and computation that became known as “artificial intelligence, we find names like Dennett, Minsky, Searle, Ryle, Smart, Putnam, Newell and Simon. [1-8] It was Hilary Putnam whose 1981 essay coined the phrase, “brain in a vat.” [9] Perhaps, sometime, maybe even in this collection, I will get to writing about all these important roots, but here I only wanted to mention them briefly, and also to point out one important point. There are major topics about what is intelligence, in the first place, either natural or artificial, which are nowhere near to being “decided” or “closed issues.” Things are not as utterly simplistic as certain voices from Silicon Valley, or Singularity “University” would have us believe, particular when claims are made that “AI” will soon surpass, exceed and leave far behind the merely biological, “old-fashioned” intelligence of non-AI-enhanced humans, and that certain corporate entities (we all know which ones) are far along on the path to such “machine intelligence” that mere humans will never be able to comprehend or interact with as peers and equal partners.

We will not solve these arguments here, no, not at all. But we should take note here that these issues, questions, arguments, and debates are tightly linked with what forms a third principal motivator, for me and others, regarding Art, Science, Technology, and Civilization’s Roots and Futures. This motivator I term the “unforeseen consequences and karmas motivator” (or “Karma” for short).

Science and technology, empowered by mathematics, and applications of implementing the fruits of research into tangible, applications, contains and is built from things that often seem incomprehensible to many outside of specialist fields. Results can be surprising and unexpected. Nuclear fission is an excellent example. Lisa Meitner was probably not thinking about how fission of certain elements could be used to destroy whole cities with single bombs. Another is the discovery of certain organophosphate compounds for use as pesticides. Along came sarin, VX, and the whole death-industry of neurotoxin weapons – nerve agents, nerve gases.

We cannot avoid or skirt away from consideration of the dangerous and potentially catastrophic aspects of our sciences and technologies, and the engineering we create through them, and the mathematics that provides the special connectivity between their various components.

First of all, we should openly ask the question, “Why, if something can so beneficial to life – such a means of empowering, engaging, and enhancing the lives of many if not all people and many other living beings – why, then, do we run so often, so intensely, into situations that can make us feel like we are treading upon a smooth lawn that is hiding upright nails, needles and shrapnels of glass within the felt-like bed of grass, or navigating through rapids in a river that grows increasingly more tumultuous, with more and more rocks, and floating logs that are now casting their weight and threatening mass more and more in our direction?”

Are there any answers to such questions, or are these idle meanderings and worries about things that are not so serious, not such threats after all, only speculations by people who are too anxious and see dangers in the new-ness of our techno-prowess? I bring up this question because there are many who do think so and who dismiss the concerns about what the future will bring, and not only, by the way, in terms of the obvious kinds of dangers, such as warfare. I do not think we need to look very far to see that there are potential dangers of several sorts in how we move forward with our science and technology, and that these must be addressed with precisely that objective, personally detached scientific method that we recognize to be so important in how we conduct science and its applications in the first place. However, the fact that there are potential dangers and perils does not mean that we should stop our investigations and researches. There is no going back to a Luddite existence, no Findhorn fantasia, no quaint Hobbiton nestled in a quiet and peaceful Shire where the only technology is soft, safe and daintily decorated with flowers and ribbons.

I believe that there are some answers, and one significant one in particular, regarding how things can and do

¹ Although I have not found the source for Russell’s anecdote, I do believe I have actually seen it somewhere in one of his books.

get out of control and off in directions that many of the “inventor clan” would not approve on for their discoveries and creations. That answer lies mainly in some incompleteness of how things are perceived by many people, both in and out of the scientific disciplines. There is an incompleteness in how our modern and faster-paced, ever-more-complex and simply “hard” to understand science - and our resulting technology especially - is perceived and understood by so many people in our times who do not think in analytical, critical, dialectical ways, but they are driven, either by personal impulses or by external pressures, often from others in their professional organizations and work environments, to make decisions that should involve careful analysis and very critical thinking.

I will claim here that as a society we are so hard-pressed with personal and collective obligations, and stresses, and so overwhelmed by the complexities of many things in the “STEM” world, that we often cannot get a good “handle” on what is going on, and especially, what may be the implications. However, we feel compelled to “get things done,” and so we skimp, skip, shave, and otherwise make short-cuts to our decisions that impact how many new things in the hard, quantitative sciences will be used. Besides, as a general rule, we all want to be optimists and think progressively about the future, and we have been taught since childhood, in nearly every advertisement and commercial on television and now the internet, that there is “Better living through chemistry” (old Dupont Chemical slogan), and that if something is coming from a “university” or from a “Fortune 100 corporation,” or from a “secret government laboratory,” or from some “startup company” that has received gobs and wads of funding, millions of dollars, even billions, from Silicon Valley investors who must surely know what they are doing – well, then, it simply must be good for us and for our future, and ain’t that so?

Well, so much for some kind of starting point for where I want to take things now.

Where I am heading with all this is to put aside the formulae, the equations, the experiments, the software, and everything else, and get back to the feelings and imaginations of someone who may be in a cave in Australia, 30,000 years ago, or in a cluttered studio with canvases, brushes and paints, or in a computer lab with all sorts of CAD and Rendering tools at his fingertips. I want to connect all that to how tools, and techniques, and underlying number-filled, measurement-dominated pictures of the universe can be better understood, and better steered – guided – in terms of future uses and future outcomes that affect everyone, everywhere. I want to state here that Art (the Arts, including literature) presents an integral, essential set of ingredients and utensils for redressing such problems and for helping our society to achieve more, do better, and not “blow it all” through mindless misuse of the powers at our fingertips.

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### ***“Imagining” Powerfully***

Turn down the lights, dim your eyes and any distracting sounds, just for a moment. Imagine...

There was a dawning of intellect and individual consciousness, when humans (in far-removed and separated parts of the planet, like France and the Iberian peninsula, and Australia) began to transcribe what they may have been seeing, literally, on the moist surfaces of cave walls and ceilings (like Koonalda and others in Australia, and Rouffignac in France), and which they were initially tracing, with their fingers (the “finger fluting” cave art, as it is called), into discrete forms, shapes, geometries.

But initially, there was no concept of “geometry” or “measurement.” No “concept” of circle, curve, line, dot, closed-form, etc.

But these were definite forms, definite shapes, without any doubt. Some of the drawings, like certain

finger-flutings, show (from direct observation and then confirmed by careful scientific analysis), were clearly drawn with some sense of direction and completion. Not entirely "random." And certainly there could be remembrance of certain forms – but not in the ways that we tend to think, today, with our cognitively-oriented, language-oriented concepts of how our own memories and pattern recognition processes work.

First the forms became something to share, as forms, without any reference to other "things" in the persons' lives. There was probably no mechanism for thinking about "things" as distinct objects and shapes, because we are talking about a period that could be termed "pre-linguistic" and even "pre-logical." (But this does not mean at all that people back then were living without good logic! Obviously, they had it going on in their brains, they could not survive without it, but they did not express that logic in some "meta-thinking," they did not use symbols to "describe" things like how to start a fire or how to seek out prey, how to hunt or do other things.

(It is interesting to note that some of the paintings studied by scholars such as Leslie van Gelder are attributed to children as young as three years of age. You can imagine how they had open eyes, open minds, just playing with their fingers on the rock surfaces and leaving markings. Alas, no parents to come up behind them and clean off the painted plaster walls and wood furniture - so the children's markings have survived, miraculously, for tens of thousands of years. (I was fortunate to have visited and seen many of these first-hand, particularly at Australian sites, with Prof. Sharpe and other colleagues of his.)

But gradually, there came about something where some shape, some marking pattern, either human-made or natural and perhaps outlined by fingering, by finger-fluting, by scratching an outline with a piece of flint or bone, came to have something definite as a distinct shape, a unique form, with boundaries, with attributes that set it apart from others. Forms became reproducible, distinctive, and numerous - but not yet with numbers or enumeration involved!

This led to making distinctions between "this shape" and "that shape" and also associations between "this shape" and "that other object (tree, rock, animal, human, place, etc.). You can imagine the progression leading from the simplest finger-flutings to representational cave art with animals, plants, inanimate objects, humans, and what you can see in contemporary Aboriginal "dream paintings" such as those in the attached images here. (These are from my personal collection, back in the USA but acquired in Australia; most of these, according to the Native People who painted them or who were connected with the artists, said that these came from the generationally-handed-down Dreams within a clan, and referred to things such as where to find water and edible root foods in the Outback. They are, in fact, maps, painted by often a group of persons, not only one individual artist, and "conducted" (in an almost orchestral sense) by one "primary artist.")

Gradually there developed a set of hand-movements, gestures, which produced particular shapes, and these shapes became unique entities that could be reproduced, copied, shared, and forming the basis of language and interpersonal communications. But also, there evolved something about distinctions between "x" and "y" and how these objects were used by the persons doing the art and participating in the communications, the sharing of experience, and eventually, of abstract reference other things (people, animals, fruits and tubers, water, places, etc.).

Just a couple of quick points here, with unfortunately no time right now to go into more depth:

- Llinas, Pellionisz and others way back in the 1960's and 70's showed how much language, discursive logic, cognitive functions, all of that, was linked to the neurobiology of the cerebellum (!) and basic arm-hand-finger movements and gestures --- verbal development arising out of doing things with the hands. So it is with babies, if one watches them progress over the months and then into years. (But alas, if the infants are whisked off to "day-care prisons" after a

week or two following birth, and then at too early an age are shoved in front of TV sets and then given Android tablets or iPads to mesmerize them and keep them occupied, and if cursive writing is dropped from the schools as it has been for the most part in USA now), then Something Big Gets Lost, Undone, and Dis-Abled. More on this later, but it will be too much and too distracting for now.)

- Wittgenstein, I love to remind people, pointed out ever so clearly that "*the Meaning is in the Use.*" Heidegger, Gadamer, and Derrida, among others, made similar points even though with often very different concepts and language style. "What do you mean by [the drawing that some people might say, "It looks like a person, with the head of a falcon"]?" ----- "How are you *using* that drawing? To tell a story about what you saw in a dream last night? To make others be in awe and deference to you and your group of people? To say that you know something that others do not? Or perhaps to describe something that you feel and "know" but you or your audience does not have the concepts, much less the word-strings, for describing, because it is too different, too new to your world of discourse, such as something pertaining to intuition, to knowledge about things going on in places that cannot be seen or heard in the usual manner, to knowledge that comes from some "resonance" between people across vast distances, something that in future centuries or millennia may be termed "collective coherence quantum entanglement" or something of the sort. But certainly in 3,000 BCE there was no way to think or talk about any of such things...
- So the Art of drawing different shapes, pre-descriptive, pre-cognitive, pre-logic, pre-language, helped through gradual practices, through repetitions, through "artistic experimentation" – of the sort that is basically of the same sort done by a painter with brush and canvas, or a composer - to establish some habits, some patterns, of how our brains operate in different circumstances when we cannot even describe what is going on inside our heads to ourselves, much less other persons. And this appears to have been going on for tens of thousands of years, long before anything emerged like we have seen in Egypt, Mesopotamia, India, China, in periods only about 2,000 years BCE.
- We can imagine (there, that word again!) that from these gesture-patterns, there began to evolve language with sounds, leading to words, and then something miraculous taking place inside the individual – being able to associate particular images and other memories with the internal voicing or the external hearing of those sounds, those proto-names, of things that perhaps had been seen, heard, felt, or otherwise sensed, and including also things like drawings on cave walls.

Skipping rapidly ahead in history, we come to a time when all of a sudden, relatively speaking, form and structure took a decidedly new turn into complexity. Now there is the practice of engineering involved, in the beginnings of everything from agriculture to buildings made of mud, wood, stone, or anything. This is a different turn to using language and measuring things. Now we are building things that serve functions for groups, things that can outlast an individual life or that of a whole generation. Furthermore, we are extending the use of architecture from the temple for the goddesses and gods in the heavens, to other structures that advance the interests of individuals and societies, and particularly, those groups who rule and control those societies.

There is a threshold here, and it is linked with many transitions in individual and collective, socially-shared consciousness. These are transitions that emerged in many parts of the world, beginning roughly around 2,000 BCE, and ushering in social and cultural changes that share some of the

following, not necessarily all together, but with some common grounds that I believe are very important for us to consider in our present times. A brief and rough list is here:

- Matriarchal-strong family and society → patriarchal rulership, inheritance, and “ownership” in the family and the larger society
- Mother-goddess worship → Father-gods
- Deities that spent a lot of their time and energy having sex and creating new life → deities that spent a lot of time weaponizing, fighting, warring, killing
- Focus on beauty, sensuality, and “the Aesthetic” → focus on making tools, temples and other buildings, ships, and generally, making sure that they served well for warfare
- Simpler lifestyles without huge attachment to buildings, structures, permanent towns and urbanization → strongly hierarchical societies and lifestyles with increasing emphasis upon buildings and especially fortifications
- Focus upon a natural science that seems to have been strongly influenced by astronomy to a science separated from Nature and increasingly emphasizing rules, forms, and technical utility

These common grounds affect how STEM has evolved, and how it has increasingly been applied. At the same time, much began to change in the arts, including, gradually, perhaps imperceptibly but definitely as one reaches the last few hundred years and what we sometimes term the Industrial Revolution, a separation and pulling or pushing apart of Art and Science. Art becomes “only art” and science progressively becomes “only technology.”

And here we are today, when even the most basic and fundamental scientific research is controlled, managed, bound and tied, with being able to show concrete, near-term, definite outcomes that all should produce practical, utilitarian, financially profitable technologies. OK, this and other statements here have some generalizations, some personal opinions, some “emotion and pathos,” but first of all, these are all just a collection of first-hand extemporaneous thoughts, a set of notes (unedited so far, as of 25.March.2018), and the Beginnings of what can become more refined, more exact, more objective and comprehensive.

### **A point about historical transitions of a neurophysiological type**

I am thinking about Julian Jaynes seminal work from 1976, “The Origin of Consciousness in the Breakdown of the Bicameral Mind,” [10] and in particular his discussion of the differences in mythic perception and thinking between people from, for example, the times of Rameses, Homer or Moses, as distinguished from those of Plato and Aristotle, and later, in the two thousand years plus, since the dawning of a decidedly different type of consciousness about self, other, and world. Jaynes made the case that a bicameral mentality – characterized by cognitive functions being divided between one neurological part of the brain that embodied roles of a person “speaking” and issuing authoritative commands, and a distinct other part of the brain processing a “hearer/listener” which follows and obeys commands - was the typical, common, ubiquitous state of human consciousness until certain “threshold events” commencing mainly around 3000 years ago and in certain regions characterized by more advanced technological civilization including the formation of city-states and, with them, bureaucratic control structures – governments, rulerships – that now



physically embodied, with live persons and tangible edifices and visible rules – everything concerning the command and control structure.<sup>2</sup>

[This is as far as I have written thus far on what was intended to be only a few paragraphs or pages of a “first entry” in some type of journal-style composition. Well, things have become a bit more structured and complicated, in only 2.5 days. Here are some “Future Directions” ideas, and then a “start” on references and bibliography.]

### **Future Directions with all this:**

From cave art of the hunt and everyday life to art that gets into other dimensions and space – the shamanic world

Megaliths and Stonehenge, etc.

Measurement, plans, drawings for functions

Time for some few to sit and think, to observe, and to begin to Measure

Where comes now the rise of the patriarchal/paternalistic culture, and the transition from matriarchal and Goddess-centric culture?

Next comes repression, force, and imposition of Form and Structure. From creative design we come now to imposition of concepts and practices, and eventually imposition of belief structures, not just external physical things.

Where does it occur that suddenly the universe, Nature, is something to be quantified, measured, put into numbers, and where does this process then make Nature Un-Living?

What the Greeks did, a progression in art that led into mathematics and science. First came Aphrodite and Apollo, then Pi...

What role can the Arts play with today’s STEM? Let’s consider QC, QT, and things that seem hard to grasp, and why are they so hard

How can the Arts do more than basic “science communication” of “hard ideas and concepts” to audiences that are not deeply (educated, working, immersed) in STEM, or to science/tech people who are not specialists in certain fields (e.g., quantum physics, biology and computing, or robotics, or intelligent information and computing systems)? How can the Arts do more of the following:

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<sup>2</sup> Jaynes’ work appears to be mostly downplayed and ignored in “mainstream” psychology, sociology, and anthropology, but also, we see in our very present era, a prominent downplay and putting to the side of others’ work as well – Jung, Campbell, and others in the Jungian tradition.

- Assist in the creative, inventive, discovery-making processes
- Assist in “non-algorithmic” thinking
- Open up paths to thinking about STEM that is outside the normal “rules” but still consistent with what is generally accepted theory and practice
- Clarify things that often turn into “fuzzy and imprecise” dialogues and presentations, including texts, which then bring about resistance from “mainstream STEM” (the criticism of things being “metaphysics and mysticism”) - even though there may be some very good ideas in what is presented
- Assist in STEM becoming more integrated with the social issues and problems we face as a human species and as an ecosystem on Earth
- Assist in reducing, radically, swiftly, the incredible push toward developing more and more powerful weapons and other means of forcible control, domination, and destruction – in other words, “Art directing Science and STEM away from the Edge of the Abyss.”

## References

- [1] Daniel Dennett,
- [2] Marvin Minsky,
- [3] John Searle,
- [4] Gilbert Ryle,
- [5] J. J. C. Smart,
- [6] Hilary Putnam,
- [7] Allen Newell,
- [8] Herbert Simon,
- [9] Hilary Putnam, (1981 essay)
- [10] Julian Jaynes, “The Origin of Consciousness in the Breakdown of the Bicameral Mind,” Houghton Mifflin, 1976

## Bibliography

Chirag Dalibar, “Truest Art of Them All: From Paleolithic Cave Paintings to Graffiti,”  
<https://www.researchgate.net/publication/275274671>, DOI: 10.13140/RG.2.1.2518.4809

David Finkelstein, [Melancholia paper]

Eugene Garfield, “Art and Science. Part 1. The Art-Science Connection,”

Eleonora Barbieri Masini, "The Relationship between Art and Science,"  
<https://muse.jhu.edu/article/607161/pdf>

Pásztor E., "Reflections about the relationship of science and art," Orv Hetil. 2001 Jul 1;142(26):1405-12.  
[Article in Hungarian], abstract in English at <https://www.ncbi.nlm.nih.gov/pubmed/11478037>

Margaret Richter and Jess Wallis, "The STEAMY Relationship between Art and Science,"  
<https://www.ebsco.com/blog/article/the-steamy-relationship-between-art-and-science>

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