

The Need for The Humanities in Medical Education – Part II

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Editors introduction :

Dr Kaushik Bhaumik initially trained as a doctor at Medical College, Calcutta, but left to study French and History at Jawaharlal Nehru University, New Delhi, before receiving his D.Phil from Oxford University. This is the concluding part of his essay arguing for the need for the Humanities to be included in medical education. The first part of the essay was published in the previous edition of the journal.

Biomedical Ethics, Quantum Digitality and Animation :

The final section of my piece could have been titled - **Why As a Rule for Our Times Medicine Should Read Science Fiction Very Deeply**. And indeed, as we start wrapping up, it would be good to notice how I have looped back to literature after having introduced cinema as the ultimate artistic and scientific triumph of the humanities and social sciences from the moment of phenomenology onwards. If the mythic human of anthropology considered the word uttered as a cosmic reality then psychoanalysis turned the mythic into modern phenomenological scientific object that cinema then started to move towards the cosmic yet again, this time the cosmos being filmed real space, rather than a symbolic space of rituals. What was intuitive cosmic revelation for the tribe is the Butterfly Effect for us where the words we speak move oceans in some far away galaxy. As we shall see the cinematic that defines everything we do today has in its new *avatar*, the digital, actually started pushing our life experiences towards a truly lived cosmic experience. *For a Medical Humanities of the future, this new expanded self of the human will be the great horizon of work*. For if ethics is ultimately about the *aesthetic* expectations of the

patient, then a patient with a cosmic frame of experience would have expectations of medicine that patients of our times do not. Of course, the readymade answer to this would be to just compare the medical and psychological needs of cosmonauts to ours. Which is to say, very soon we will need to accord every patient an ethics fit for a cosmonaut. And it is for this reason that medical students must start reading good science fiction immediately if they are to live up to the ethical needs of the quantum human being. Not cinema, because we do not yet have science fiction cinema sophisticated enough to live up to the science, but fiction surely has done remarkable things and in its pages the medical workers of today will find what their fates and duties are in a not so distant future. We shall here be discussing the implications of Big Data medicine and how all the terms we have discussed before - narrative, aesthetic, environment, architecture and cinema fare with the advent of this aforesaid phenomenon. This is a huge field, but I shall try to summarize the foundational assumptions of a world in the making even as we speak. I shall give away the key terms of this section right away here so that it will be easier to follow what follows. The key terms are *design, imagination/imaginary, animation and cosmos*. Indeed, what we shall see is the triumph of phenomenology in the digital and then the whole flip over into something beyond phenomenology towards the quantum. Einstein was classical and phenomenological when he added time as a dimension of our reality, an heir, albeit a distant one, to the classical Newtonian physics. As we all know, what happens after that is the advent of atomic scientists who relativize the very constitutive substance of reality and show up our realities

distributed across different universes created by the spin of quantum particles this way or that and many other worlds in between run by a whole range of physical forces that may not be held commonly across those universes. I shall of course not take the Medical Humanities across multiverses to think through ethics but will tarry with our present times defined by developments in the digitization of our lives and state that, *ultimately, Medical Humanities will have to contribute to and be a part of the larger thing called the Digital Humanities these days.*

The digital is the ultimate expression of phenomenology, in the sense, that everything in the world- from objects to landscapes to voices to sight to smell to oceans to our bodies to all animals to dust etc. can be studied phenomenologically and then this phenomenological data used to create digital *objects* of these things on computers. Digitization is the great end of Pavlov's famous experiment about conditioned reflexes, *the crowning glory of phenomenology really.* Just as Pavlov could extract hunger out as an *object-unto-itself* with no connection to actual food, so the universe is stripped of its properties as a synaesthetic *image* above all, and reproduced on computers. The digital thus replicates the universe and much else as a model created on data following phenomenological methodologies. When we operate on a digital heart we must thank Pavlov for this - the heart is an organic thing reproduced as an object disconnected from its organic settings just as the hunger was for Pavlov's dog when hearing the bell rung. But now instead of just hunger as 'artificial' object 'outside' we are getting the minutest details of our lives right down to how our lives might be affected by galactic currents five universes away. Or rather the reality of digital-driven science today is such that we can easily imagine something like that. Who could have imagined following the planets on apps? All we now need is a Neo-shaman, a Neo-neo-Platonic astrologer to connect planetary tides with the tides

of our minds. Science fiction will give you an exact sense of what I am saying-such people 'exist' already.

Now quickly let me run through two aspects of current digital technologies that are going to revolutionize medicine very soon. One is hard Virtual Reality (VR) and the other is nano biotechnology. Which is to say VR outside of VR toys, and operating on VR hearts is at the toy level of things, is a stupendous and marvellous thing. When I say VR is being used to cure schizophrenia we can in some senses grasp what hard VR is. It is nothing short of replicating our entire organic architecture and environment and treating it through *cinema* to correct instabilities of the architectures of our mind. Cinema-as-VR today is a medicine. And beyond that, the aim of VR is precisely to connect an *artificial environment* to our bodies via sensors so that we live in perfect environments away from the uncertainties of nature and society. Big Data VR is precisely to collect say the sensory systems of all inhabitants of a city right down to the last detail and create an artificial environment and architecture for us to live in as per our real needs. We already have this idea being worked at in the idea of the Smart City. But the Smart City is nothing but the utilitarian Social Medicine version of the actual VR city which wants to be *quantum*-which will follow the shifts in our moods and the uncertainties of our lives and *account for our futures correctly.*

This is where VR in quantum jumps from the symbolic world of fixed signs into the *imaginary*, into the realm of *imagination*, rather than creativity. In wanting to account *totally* for our lives Big Data quantum VR actually wants to account ahead of us what we might imagine our futures to be and work towards that. In short, Alexa, which is the headquarters of Smart City VR, will be developed further through our behavioural data, culled off our buying habits, sexual habits, medical habits and so on to produce a machine that will be able to predict what we need the next moment. At least,

in theory. But theory is important, precisely to understand the *horizon* of desires of the individual who will come to the medical services demanding treatment. Medical ethics is not an unchanging thing, it will need to change and cater to this new kind of individual who arrives at its doorstep. VR also underpins the other thing that I want to emphasize - nanomedicine. So, if we can operate via a VR heart, then the manner in which medicine is designed and produced in our times is oriented towards *infusion* via VR through *nanobots*. Which is to say the future VR city has another layer to it which makes it a fantastic thing to imagine. Not only are we supposed to live in a city which is nothing but a replication of collective nervous systems, but this nervous systems will be infused with nanomedical drugs that will act on the VR architecture of our senses without even getting into us. It is as if one could now actually feed that model of the dog's hunger extracted by Pavlov ringing the bell and the dog will feel satiated. This would mean that we are at all times mood stabilized, healthy, organ repaired as well as connected to an environment that changes and caters to our shifting moods. Needless, to say we have here a very base version of quantum entanglement where the reality observed cannot be disentangled from the condition of the observer. And therefore the world is as we imagine it. Big Data VR is a superlative, even if quixotic, attempt to realize the reality of quantum entanglement. However, all of this is cinema. The digital is entirely based on a visual modelling of data on screens. Starting from the design of genetic and nano-molecular medicines, to buildings, to modelling the universe, the digital replication of the world is a screen media thing and in its holistic aims *wants to complete what might have been the hidden dream of cinema - to be able to exactly replicate the reality of existence*. Here, the digital does in its own way, what the philosopher Henri Bergson (the one who won a Nobel Prize for literature) stated about evolution and life - matter

is image and everything, including formations of universes and evolution is an image thing, something that suddenly found purchase when the possibility of mirror neurons in the brain was posited some years ago. Thus, for Bergson everything that science studies is cinema of sorts. However, this cinema is not the cinema as we know it. At the nano-levels of reality that the digital works with this cinema of life in VR turns towards *animation*, something that we can patently make out from rough digital images that are the first phenomenological object constructs on the computer screen- these images look like cartoons. Just see how all of science today, not just the medical sciences, is done through cartoonish *animation* cinema on computer screens- from models of molecules to tissue structures to bot design and so on. The reason why digital VR cinema tends towards animation is the sheer need to compress huge amounts of data within limited speed and bandwidth. It would be impossible at the moment to store VR life in HD, so huge will be the infrastructural need for such a task. And indeed, it is this huge deficit in current Big Data VR systems that has sent computational experts to seek ways to upgrade to Quantum Computation. The other thing that happens with Big Data VR is the idea of creating architectures becomes a *design* thing, in that digital reality follows a fractalized logic where minutely designed 'territories' are added up to larger pictures, images, films. At the basic level of creating architectures in the digital we have to design things, rather than build them, sculpt them, film them or paint them. Animation is taught in design schools for a reason. Animation requires an eye for minute details that only designers have. Although everything can be said to have a design, but as a craft design is always related to smaller scales of detailed work on creating forms. And indeed, the word design entered the world of the pharmaceutical industry only with the onset of the digital, something we call pharmaceuticals. Nanomedicine is not

manufactured, it is designed. Nanomedicine belongs to a new kind of micro-industry where things cannot be manufactured any longer wholesale as Big Industry of yore was. Even the pill manufactured today is a digital object, cut by digital machines and thus with sharper perfect edges than the pills of the past. Just like the furniture in our houses. Indeed, the whole world of building and making things has folded up into designing micro-architectures. A new kind of micro-phenomenological making of environments - we live in nano-environments today which need to be designed minutely even if we are not aware of it. In creating environments for us Big Data VR medicine remains cinema of a new kind - *it is animation and works through design rather than filming*. But it is also cinema in another sense- in the sense of narrative. Nano-medicine increasingly veers towards the narrative of genetics. And why? Because it is in orienting medication to our genetic profile that the Utopian VR city made of our brains and our bodily functions can be maintained by infusion of just the right kind of medicine for the individual. Nano bio-technology speaks of the body in terms of an organic architecture, an environment, that tells us coded stories about its health which then require the right kind of counter-code, counter-narrative, counter-story to keep things stable. *It is the dream of genetics to run my genome through a machine and produce an evolutionary cinema of me*. And it is interesting to note that code narratives are closer to animation than to realistic cinema. There is something cartoonish about the genetic and other chemical codes that run our bodies, something cartoonish about sodium and potassium channels in our cells and something cartoonish even about histology slides and haematology slides. Indeed, quite a few animated films have been made about cells. So what we have here is code *my genetic stories that need to be designed in animation cinema form that then becomes the thing to be infused into the VR brain via my personal Alexa*. Blockchain wants

to become our own medical supervisor via Big Data VR. Doctors from now on will be designers and regulators of nanomedical prescriptions or better still, if robots do this job, their main job will be to train the bots to do their job properly.

At the edge of multiverses Big Data VR thus encompasses the cellular to the *cosmic* in one breath by merely *echoing* a resonance of all matter on to a computer. But what Medical Humanities needs to keep in mind in all this is that everything in the science here is cultural, bespoke to the individual, to its *aesthetic* sensibilities and its narratives as cinema. The physical reality we inhabit although measurable in numbers, in objective science, nevertheless becomes films when it works through us. Even nature is being made to tell stories and soon we will have biographies of every dust particle, its drift across how many universes across billions of years. *Objective science can therefore merely be the first step towards a more real deep science*, like the tailor taking your basic measurements. How the dress will come about is all about cinema, a creation of a life and its biographies to suit the wearer. *To be truly ethical medicine will need to become cultural through and through*. And this too only as a first step - to orient itself away from the illusion of objectivity of data and techniques. Only then will the science be able to grasp the scale and complexity of what is at stake in this simple thing called 'treatment', what it takes to do Big data VR animation cinema before coming to a diagnosis. And indeed, science in the digital will be the first to admit that it is all about narratives, about films and images. What is interesting is that it is only medicine which truly needs to become this thing since it is the only science that deals with life itself, holistically. Again, only reading science fiction will give the doctors of our times a sense of what this entails. The cinema for this fiction, the doctors will have to make.

Bottomline - Medical Humanities will need to work with architects, environmentalists,

filmmakers, designers, science fiction writers, animators, phenomenologists and last but not the least, psychoanalysts in order to deliver in all that is implied in this new discipline. An analysis which will probably proceed with analyst and analysand facing one another with VR headsets on. When things really become quantum we shall have various *avatars* of doctors/Alexas facing one another in different universes with their own physical laws. But that might take some time to happen.

Recommended Readings :

Phenomenology and Medicine

SK Toombs, *The Handbook of Phenomenology and Medicine*, Dordrecht: Kluwer Academic Publishers, 2001.

Frederik Svenaeus, *Phenomenological Bioethics: Medical Technologies, Human Suffering, and the Meaning of Being Alive*, Oxford : Routledge, 2018.

Frederik Svenaeus, *The Hermeneutics of Medicine and the Phenomenology of Health*, Dordrecht: Springer-Science, 2001.

Havi Carel, *Phenomenology of Illness*, Oxford: Oxford University Press, 2016.

Architecture and Medicine

Andrej Radman and Heidi Sohn (eds), *Critical and Clinical Cartographies: Architecture, Robotics, Medicine, Philosophy*, Edinburgh : Edinburgh University Press, 2017.

Andrej Radman and Stavros Kousoulas (eds), *Architectures of Life and Death : The Eco-Aesthetics of the Built Environment*, Lanham, MD: Rowman & Littlefield, 2021.

Timothy Beatley, Carla Jones and Reuben Rainey (eds), *Healthy Environments and Healing Spaces: Practices and Directions in Health, Planning and Design*, Charlottesville : University of Virginia Press, 2018.

Medicine, Digital, Design

Dietmar Huttmacher and Wojciech Chrznowski (eds), *Biointerfaces : Where Material Meets Biology*, Cambridge : Royal Society of Chemistry,

2015.

Metin Akay and Andy Marsh (eds), *Information Technology in Medicine* (2 vols), New York : John Wiley and Sons, 2001.

Ioannis Vizirianakis, *Handbook of Personalized Medicine : Advances in Nanotechnology, Drug Delivery, and Therapy*, Boca Raton : Pan Stanford/CRC Press, 2014.

VR, Medicine Mental Health

Brennan Spiegel, *Vrx : How Virtual Therapeutics Will Revolutionize Medicine*, New York : Basic Books, 2020.

Emanuele Bisso et al., 'Immersive Virtual Reality Applications in Schizophrenia Spectrum Therapy: A Systematic Review', *International Journal of Environmental Research and Public Health*, 17: 17, 2020. Available online at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7504018/>

Big Data and VR

Ekaterina Olshannikova et al. 'Visualizing Big Data with augmented and virtual reality : challenges and research agenda' in *Journal of Big Data*, 2: 22, 2015. Available online at : <https://journalofbigdata.springeropen.com/articles/10.1186/s40537-015-0031-2>.

Psychoanalysis and Narrative Medicine

Peter Rudnytsky and Rita Charon (eds), *Psychoanalysis and Narrative Medicine*, Albany: SUNY Press, 2008.

Rita Charon et al. (eds), *The Principles and Practice of Narrative Medicine*, Oxford; Oxford University Press, 2017.

General :

Peter Weibel and Georg Flachbart, *Disappearing Architecture : From Real to Virtual to Quantum*, Basel: Birkhauser, 2005.

Victoria Vesna, *Database Aesthetics : Art in the Age of Information Overflow*, Minneapolis : University of Minnesota Press, 2007.

Lev Manovich, *Software Takes Command*, London: Bloomsbury, 2013.