Digital technologies, the state of the social environment and the human mind

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April 2023

Increasingly digital technologies are coming under scrutiny as they slowly become 'smarter' with the inevitable anxieties about them replacing jobs if not whole industries. With the more recent generations of AI however, the concerns have shifted significantly. Generative AIs, so called, which can write sort of original text and answer fairly simple questions have been posed as a stimulus to a radical change to the causal texture of the extended social field with dire predictions for human futures.

The first part of this note is concerned with some thoughts, and clarifications, about the current state of the extended social field, the L_{22} in the shorthand, and its relationship with some of the most visible contributors to its causal path. Not least of these is 'generative AI'.

The second part is about what is happening to the human mind as data is in the process of coalescing around specific hypotheses. It is important however, as even if only a part of these observations prove to be correct, they pose highly significant questions about the future of our digital technologies and the evolution of the human mind.

The L_{22}

Before we embark on an exploration of the effects of digital on the $L_{22,}$ it is increasingly obvious that there will be further loss of jobs with the new forms of digital. It is wise to remember that there are easy solutions to this, even if it becomes widespread. It now seems the perfect time to introduce a UBI, a universal basic income, sufficient to sustain a comfortable livable life. Of course, it can be phased in with various objections overcome and don't be fooled by the current low unemployment rate. The most relevant measures are hours worked and for how much an hour. These tell a different story to that of 'full employment'. More people and families every minute are really struggling. AI is but another push in the UBI direction.

It is important to remember that 'jobs' are not a necessary part of life, they didn't exist before the Industrial Revolution so are quite a recent social evolution. People can fulfill their basic needs as measured by the 6 psychological requirements, the 6 criteria, in ways other than jobs and evidence of the effects of a UBI so far shows that people get the social support they need from other sources although some create businesses with others. There is not a lot of evidence though that they create the rigid 9-5 type jobs so ubiquitous in today's economic landscape. The most important benefit of the UBI however, is the beneficial boost to good mental health, something which is suffering immensely at the moment.

The L_{22}, the extended social field, and particularly its current causal texture is not widely understood despite the ubiquity of references to the 'turbulent environment'. There are similarly endless mentions of uncertainty and unpredictability not always justified in their context or in terms of their particular subject matter.

Some of the misunderstandings spring from the origin of the uncertainty and some of it from the way knowledge about the L_{22} has been created. Emery & Trist knew in 1965 that there had been a breakpoint between an environment in which values were stable, the Type III or 'disturbed reactive', and one in which they had become unstable, the Type IV 'turbulent'. It was in this latter environment that *relevant uncertainty* became a distinguishing feature, precisely because value systems were no longer stable. People were changing their minds, changing what they fundamentally valued.

However, Emery & Trist were not at all sure why that breakpoint had happened.

There is a good discussion of this in *Futures We are In*, 1977, in the 3Vs paper, *Youth, Vanguard, Victims or the New Vandals?*, 1978, on the website and also in the revised edition of FWI on the website.

In the original book, Fred identified 5 trends that "greatly enhanced the complex interdependencies and the sheer amount of relevant uncertainty in our societies" (p13). However, even through the writing of this extensive discussion of the transition to the Type IV and bureaucratization as a fifth major contributor to that transition, Fred was beginning to have doubts, to recognize that having to add reasons for the transition was a sign that something was amiss, that he was missing the mark for the real cause of the breakpoint. What was to come is foreshadowed in his sentence "This rather makes you wonder which is the 'counter-culture' in our present society" (p28).

Fred was already repudiating his conclusion of five trends by the time the book appeared in print, by researching and writing the 3Vs paper which he presented in 1977.

The 3Vs paper really is a quite remarkable document, full of detail about that particular remarkable period and insights that proved accurate decades later.

He saw that what has transpired in the period immediately after the war, and the beliefs of the generations born around the war, did constitute a cultural revolution, one with long lived ramifications in which we are still immersed. He specifically mentioned a new set of ideals (p9) which are still with us, now widely accepted but occasionally still having to battle it out in our politics. That battle over decades has had a profound effect on our history as I have documented in *Did 9/11 change the World? Tracking the Future.*

"I could not clearly identify why the change had come about" (p14) as his view of the emergence of the Type IV became increasingly hazy. "I had been looking in all the wrong places for what pushed us into turbulence" (p15)

What he then saw clearly after his realization and research was that the change had come about because of "the demise of two silent assumptions that had provided the historical rationale for the persistence of the principle of hierarchical dominance, namely

1. that there is not enough to go around to support everyone at a decent standard of living, and hence some centralized bodies or agreed practices must exist to ensure survival of the 'worthy'
2. preservation of the nation state as prior requirement for having adequate centralized power to allocate, and hence all individual aspirations must be subordinated to the nation's requirements for waging war and to preserving and enhancing that power" FWI, 1998, p11).

The tremendous productivity of WWII destroyed the first assumption while dropping the nukes destroyed the second. After thermonukes were created and tested, the powers adopted the MAD strategy which effectively convinced everyone that the notion that their nations were there to protect them had become a sick joke.

These two assumptions were the glue which had anchored the individual to subservience to the state. With that force for stability, and all the stable values that accompanied it gone, people were free to value what they pleased as they had already started to do. They rapidly started to evolve new value systems, some of which proved workable but others didn't and so were dropped as new ideas were created. Consequently there were many changes in mind as people slowly tried to discover what deep down they really valued. This process of dramatic change became highly visible during the period known as the cultural revolution in the 1960s and 1970s.

Unfortunately there are not a lot of people who have read or taken heed of the 3Vs paper and this has led to the continuation of wrong views about the origin of the Type IV field.

Perhaps the most common is the belief that changing technologies of all types are a source of 'turbulence' or relevant uncertainty, and responsible for the nature of the current social field. However, if this was the case, we would have had a Type IV environment a long time ago as technologies have never ceased changing.

Breakthroughs in science and technology and new forms of communication were two of the previous hypotheses Fred specifically repudiated as determinants of the change from Type III to IV. Compared with the momentous convulsions society went through after the war, these reasons are superficial and totally unable to account for the disjunction. Pulling the rug out from the basic beliefs of the whole of humanity is a commensurate cause for these convulsions.

Of course not everyone was enamoured with the new ideals and steadfastly stuck to the old ways. For many years people were divided, some angrily denouncing the new ways and 'lack of respect for authority' as others tried to navigate their own paths. This particularly showed up in subjects like schools where some were in favour of exploring new methods for learning while others decried the move away from the tried and true 3Rs and rote learning. We still hear echoes of this today. It showed up in Search Conferences where there were far more conflicts in the Most Desirable Futures that there were in the Most Probable Futures, i.e. the conflicts were precisely in the areas of values and ideals.

Over time, those conflicts have drastically diminished and today it is rare to get a conflict in the Most Desirable Future. Today, conflicts are more likely in the Most Probable Future because linear projections can no longer be relied on as a basis for scenarios.

With the advent of what is provisionally called 'generative AI' we will see a new generation of claims that this new tech will increase relevant uncertainty – it won't. Certainly there will be increased uncertainty about whether the note you just received was written by a human or AI but it won't change any minds about the ideals they should be following. And as Fred identified above, the cultural revolution ushered in a new set of ideals.

It is that new set of ideals that is now the most pronounced and distinguishing feature of our current environment. And there is powerful evidence available that demonstrates that this set is increasingly widespread. Nowhere is this more evident than in our politics.

The discipline and mindless adherence to old political parties is well and truly breaking down and accelerating. The rise of Independents has been inexorable and even if it takes a tumble next federal election because of the popularity of the Albanese government, it will be but a blip in the process. The trend will return.

The current state of disquiet as well as outright rebellion within the Liberal party at the moment over the Voice as Dutton tries to enforce a No vote is yet another sign that authoritarianism is on its last legs. It is not just the personality of the Leader of the Opposition that is causing them electoral problems, it is the nature of the policies they are putting in front of the Australian people. They are obviously a million miles from what most Australians are prepared to consider, let along vote for. Albanese too may run into problems if he doesn't soon begin to seriously address the cost of living and housing problems as well as more adequately getting top of climate change.

This is only one area in which we can see the consolidation of that new set of human ideals, in the processes of Search Conferences as above are another. As the consolidation of the new set of ideals proceeds, so relevant uncertainty will further diminish. Our long journey towards a new Type II as outlined in *Searching* 1999 will slowly proceed.

The human mind

First, I believe much of the doomsday thinking about the new 'generative AI is unwarranted and really a product of anxious and fearful minds. It reminds me in many

respects of the American flight to the hills in panic about Y2K and the 'preppers' who are always on the look out for a catastrophe.

Some of the thinking appears to hark back to that classic film *2001 Space Odyssey* as the thinking is seriously disordered in confusing animate and inanimate. A recent example concerns the new generation of 'generative' AI along the lines of if you teach this AI to fish it will rapidly teach itself many other disciplines and then fish the oceans to extinction. No it won't. Only some human entity possibly equipped with this AI can do that.

The truth about AI is that it can do only what is programmed to do and it remains a tool, an instrument, certainly one with certain abilities but it is not flexible as a purposeful person is (Ackoff & Emery, 1972). A recent article documented some of the misunderstanding about these so called very smart AIs and how these misunderstandings come about (Sinha, 2023). They have no semblance of human understanding but are great mimics and fool people into thinking they are intelligent because they parrot the huge amount of text they have been 'trained' on. They have no sense of purpose and don't understand meaning. That is why a small amount of noise can throw an AI result into serious error as many models have shown. Many of the statistical models have created mistakes with drastic consequences such as the GFC (Sinha, 2023).

One area which should arouse worries is that of autonomous weapons systems. I can't image why anyone ever thought this would be a good idea but anyway, they exist. The dangers are obvious, particularly given the not so shining success of their cousins in the transport domain. The hype about autonomous or driverless cars rapidly cooled after a few went on the road and trust in them varies poll to poll but rarely rises much above 30%. Given that reality is far more complex and unpredictable than anything one of these systems can be trained on dooms them to novelty value. Or should do.

Sending these autonomous systems into a battlefield in the fog of war is just asking for something far more horrendous than a few humans running amok.

Recently the Centre for AI Safety(2023) released a brief statement: "Mitigating the risk of extinction from AI should be a global priority alongside other societal-scale risks such as pandemics and nuclear war". The list of signatories is impressive but it would have been useful to have *some* elaboration so we could judge the quality of thinking that has gone into this sentence.

It all makes you wonder why all these modern miracles don't concentrate on doing something genuinely useful like relieving humanity of much of the drudgery involved in many jobs, but I suppose that drudgery is far from evident to the tech whiz kids in their elevated socioeconomic heights.

Second, our rush into digital technology more generally has had, and is still having, dire consequences for human futures but not because of AI. There are more seemingly pedestrian but far more profound effects on the human mind. In 1976 Emery & Emery published a *Choice of Futures* which documented what happens when a signal or stimulus from a functioning TV moved through the human brain. It showed we could increasingly expect a widespread range of problems including hyperactivity, addiction and social problems, most particularly in children whose central nervous systems were still in formation. At that time, there had been only one empirical test but by 1985 there had been nine (Emery M, 1986). Every single test showed consistency of neurophysiological effects most particularly a shift from a majority of fast, beta wave activity to slower wave activity. There has never been any test ***not*** showing cortical slowing, i.e. a reduction of beta waves and an increase in slow waves. This cortical slowing especially in the left cortex indicates a reduction in cognitive or analytic processing which has significant flow on effects, not only of an intellectual nature.

The question at that time was: is it the result of the frequency of the signal or the fact that it is radiant light? We are not adapted to radiant light nor can we process frequencies above a

certain level. In the time since those studies were published and today, signals on all our various digital devices have changed but the effects appear to be constant. This constitutes a natural experiment over time showing quite clearly that the most powerful force is that of radiant not reflective light. I consider the matter effective demonstrated.

More recently Baroness Susan Greenfield, a neuroscientist, published a book called *Mind Change*. Her major thesis is that the human brain adapts to its environment and as digital technologies have severely changed the environment with which we interact every day, it is changing our brains. Despite this logical and correct thesis her book received a torrent of negative if not excoriating reviews.

It is the detail of her thesis and the fact that she did not specify a causal agent for the determinant of the change that seems to have caused most of the angst. The book consists of over 300 pages of basic data from research studies world wide, largely to the effect that we are suffering from shorter attention spans, less ability to delay gratification and feel less empathy with a shaky sense of identity. It amounts to a major individualization of a life for a species that is anchored in close, cohesive groups within cohesive supportive communities.

Her observations mirror my own as study after study has rolled in documenting failing memories and attention spans with increases in social problems which seem related to high levels of digital usage.

In addition, there is the obvious and highly visible fact of addiction where people cannot leave their phones alone for more than a few minutes regardless of where they are or what they are doing. Some become agitated when separated from their phones. This is only a more acute form of addiction to that of watching TV we observed during the 1970s.

Another very unfortunate effect appears to be some difficult reading text on paper. It is almost as if our brains can easily read only from one medium or another. The more one reads from a screen, the more difficult it becomes to read on paper. This adds up to what I have privately started calling *'digital brain'*. This is merely an observation at this point and needs rigorous testing in a longitudinal study.

Greenfield says that the quality of some of the criticism she received can be judged by headlines such as 'digital rots your brain'. I sympathize as this is exactly what turned up in the media after we published *A Choice of Futures* – 'TV rots your brain', 'TV causes brain damage'. Our research was ridiculed by people who had a very lucrative stake in using and promoting the technology we investigated.

The second class of criticism revolved around the lack of causation. This is a valid criticism because Greenfield uses mainly only visible personal behavioural effects or social data. Her many references do not include any to our work. That is a shame as our research does provide the missing link to her work as it provides that specific agent which is missing from hers. It is complementary. I have followed her work periodically because I could see that she was compiling the bigger picture at the personal behavioural and social levels that validated the many predictions we made in 1976.

Her work concentrates on the implications of the content of the digital media while ours examined the nature of the medium itself, the great divide that Marshall McLuhan publicized as the medium and the message, or in the case of television, the medium and the massage. To this very day, there is a reluctance to examine the medium as most media studies look only at varieties of content. This fuels further controversy and argument as most content such as games or porn show a variety of results which merely demonstrates the variability of the humans who use them. As we demonstrated with our research, much if not all of this variability disappears at the level of the medium. We are definitely hardwired to adapt or not to different media.

Until we redesign screens so that they use reflected instead of radiant light we will continue to experience widespread problems with digital technologies. If you are skeptical

about the severity of these problems ask yourself if we can really afford to have too many more people addicted to digital devices with increasing cognitive decrements and decreasing capacities for effective human or interpersonal transactions. This is not just an individual problem, societies only function when people work together comfortably and effectively in communities of various sorts to hold the whole together. Try and imagine a society where there is total laissez-faire – basically no community, a totally privatized and dissociated people taken to its logical societal conclusion. Not necessarily because they don't want to but because they have become so bad at it, inept at navigating human transactions.

We know from human history that isolated people develop a whole range of pathologies starting with loneliness which fuels suspicion and doubt. Isolated people shrink psychologically while it is only in close supportive relationships that people can really develop their potential as has been discussed many times (Emery M, 1999).

At the moment, humans are expert communicators, despite what some communication trainers might tell you, with extraordinary sensitivity to every nuance in another's verbal and non verbal behaviours (Labov & Fanshell, 1977). If we were to lose this extraordinary sensitivity to others, it would be bad news indeed.

There is no doubt these changes are happening and we have a pretty good understanding of why so why not start to take it seriously before the decrements get any more out of control?

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PS 10.7.23.

For those worried that the generative AIs are seriously smart with perhaps the capacity to destroy us, there is a useful correction in the *New Scientist* of 3 June, 2023, p11, 'Test using capital letters easily sorts AIs from humans' by Chris Stokel-Walker.

Researchers tested 5 large language models (LLMs) including ChatGPT on the following test:

"IsCURIOSITY waterARCANE wetTURBULENT orILLUSION drySAUNA?"

All the models failed the test while none of the humans did.

While it is possible that in future the LLMs might be able to pass this test if they are properly trained for it, that is also doubtful because of the way LLMs break text into chunks to process the data. AIs don't understand these sequences at a word level as people do.

Such simple tests make it extremely difficult to imagine how such a simple and quite inadequate machine, good at doing only what it has been specifically trained on could take over the world. Rather than worry about AI, it might be time to renew your efforts to convince governments to immediately and severely reduce emissions.