

2019 introduction to PhD ‘The social and neurophysiological effects of television and their implications for marketing practice: An investigation of adaptation to the cathode ray tube’, Merrelyn Emery, Department of Marketing, UNSW, 1986.

Merrelyn Emery,

September, 2019

I have decided to make this work more easily accessible as we are now well into the digital era without any apparent comprehensive and rigorous attempt to really assess what this group of technologies is doing to us as homo sapiens sapiens or people with awareness of awareness (consciousness as defined by Chein, 1972). This is a critical point as we are not just smart animals but that species with the ability and judgement to save or destroy our one and only planet.

It gradually became clear during the 1970s that our critical cognitive abilities and consciousness itself was being negatively impacted by the new technologies based on the cathode ray tube (CRT). The thesis was written when this was the dominant technology being employed in our search for more efficient and effective ways of working, learning, being informed and entertained. Like all innovations it was subjected to diverse explorations.

While the results of this research and others like it around the world received publicity at the time and many people started to be more careful about the way they used TV and how many hours their children spent in front of it, most people today would be unaware of it. It seems medical advice about the necessity for strict limits on children’s screen time is being widely ignored. Also since then, the technology has not only changed but proliferated to the point that it is almost impossible to avoid. If it is having even some fraction of the deleterious effects on our central nervous systems as were found with the CRT, we need to know about it.

So the thesis will bring those of you who are interested up to scratch with the research as it stood in 1985 and hopefully, it will alert you to the need for a multidimensional series of tests that can illuminate the effects of various digital forms on the functioning of the human central nervous system (c.n.s). Without this absolutely fundamental database we have very little chance of making any coherent sense out of the mass of diverse and scattered research results about individual and social behaviour. And remember some of this is dire, social media via mobile phones have been implicated in the suicide epidemic - content or medium or both?

One of the points made early in this thesis is that our predominant way of approaching the world, our world hypothesis of mechanism, has led to regard technology and progress towards innovations in technology as a ‘good’, usually without doing any serious cost/benefit analyses or in fact any analyses at all - until reality finally makes itself heard which is usually too late to put the genie back in the bottle. The classic case is of course nuclear but we now have good reason to suspect that digital may join it.

Today the CRT does not survive outside museums but the characteristic features of the signals to the screens and the screens used then and now, while different, are fundamentally the same.

“The critical features of CRT technology are however clear: it is a technology which is

- (i) which is radiant, rather than reflective as in projected cinema

- (ii) the object, thing or content to be viewed is contained within the medium, the technology itself, which
- (iii) exploits a particular ability of the human perceptual system to perceive meaning” (p15-16)

That the signals and the screens are fundamentally the same as the CRT based will almost certainly be disputed by some for good reason; they are not identical. It is for this reason that research in this field cannot really make any great leaps forward until a further set of tests is undertaken. These are outlined in more detail below.

All the research to 1985 confirmed the fact that the major undeniable effect of the CRT was cortical slowing. While different projects used different technologies to measure the effects, not one found evidence of cortical acceleration or even normal functioning. Nor does there appear to be any such evidence today. That there was a problem with the new medium was obvious to Arnheim as early as 1935 when he warned that television creates “the dangerous illusion that perceiving is tantamount to knowing and understanding”, could “put us to sleep” and “shrink the mind” (quoted on p16).

Today we have rapidly growing mounds of evidence, far too much to document here, that digital technology is doing precisely what Arnheim warned of: the effects include shrinking attention spans and short term memory, addiction and a range of personal and social problems that implicate deviation in normal c.n.s functioning. All of these problems were foreshadowed in Part II of *A Choice of Futures*, Emery & Emery, 1976. In Chapter 9 in particular, the links between such phenomena as reduced cortical functioning and lack of intellectual analysis, habituation or addiction, hyperactivity, impulsiveness, deficits in short term memory, exaggerated emotional responses, were tracked and explained.

Today the technologies include not only televisions sets and computer screens but the ubiquitous mobile phone now being handed out to tiny tots who can’t take their eyes off the ‘glowing rectangles’.

We also have plenty of the same misleading claims about the ability of digital technologies to educate our kids using exactly the same set of theories that commit the serious sin of omission of critical differences between recognition and recall. We also have the marketers continuing to employ their now well honed practices of exploiting the imbalance of emotional to intellectual or cognitive responses to the medium in all its forms to the point where the internet, including social media, has basically become a medium of commerce rather than anything like a well informed citizenry or democracy.

All of this will be contentious because as with the first airing of data suggesting serious problems in the 1970s and 1980s, there are wealthy and powerful vested interests involved in all these technological variants and their uses. However, it is time that uncertainties be put to bed and we learn just what this group of digital technologies are doing to individual human nervous systems and by extension to our personal behaviours and social capacities. Until we have a clearer picture of these effects we will only be guessing at the long term consequences of rushing into digital devices with screens.

A well designed series of tests can tease out these effects:

- it should use modern forms of scanners which can tell us exactly what levels of activity there are in which parts of the brain
- subjects being children and adults, males and females with low and high SES
- watching TV with various contents ‘educational’ and otherwise
- using mobile phones with various types of screen with various content for passive viewing versus purposeful work

- using computers with various types of screen with various content for passive viewing versus purposeful work

If similarities are detected between these technological variants, and if they resemble the effects found with the old CRT technologies, which is what I suspect, it would tend to confirm that it is the radiant rather than reflected light which was the determining factor. However, it is still possible that all variants have features which exceed our capacity to adapt. This may be speed of signal or some other aspect which can only be investigated through empirical experimentation.

The conclusions of such a series of tests can hopefully serve as a guide to more discriminative uses of this powerful digital technology and help us prevent any long term damage that may be being done at both the individual and societal levels. Both technological change and deliberate modification of usage are possible.

What humans can do, humans can undo (within limits).

Now is no time to be creating another form of human disability when we need all our collective potential to solving the problems that surround us. Now more than ever before, we need to heed the age old wisdom of living directly in and experiencing the world around us rather than assuming that our machines which mediate our appreciation of our realities represent 'progress'.

Let us hope that we can find the wherewithal to put our latest technological wonders to the test to discover what they are actually doing to us and following that, how best we can employ them to achieve a more desirable future for planet Earth and all her inhabitants.