The Materialities of Dematerialisation

The consumption of music poses a classic example of the transformative nature of dematerialisation. Where it once existed in a physical environment, rich with customs and physical artefacts that elicited interaction, it now lives predominantly online (Van Campenhout et. al, 2013). The world of music consumption has been transposed to the digital, and as a result, much of the ecosystem that supported it in the physical world has been erased. As we live increasingly more online, the implications of doing so become more significant.

This essay does not intend to criticise dematerialisation, as there are numerous benefits to its offerings. Rather, it serves to highlight what is lost in the process in the hope that it can be accounted for and reincluded in the narrative, even if only to serve as a lesson for the future.

Dematerialisation occurs when artefacts in the physical world move to exist in the digital world (Van Campenhout et. al, 2013). The content associated with the artefact disengages from its carrier (Dourish, 2001), now rendered obsolete, and flows freely as information (Van Campenhout et. al, 2013). Dematerialisation allows artefacts to rid themselves of physical limitations (Van Campenhout et. al, 2012); their content can thus reach a near infinite level of flexibility and availability (Verbeek, 2005).

This liberation, however, from the shackles of antiquity – inefficiency – can have a number of unwanted and unobserved side effects. In perusing a more digitised world, we lose the richness inherent in physical interaction (Van Campenhout et. al, 2012) as well as certain rituals (Greenfield, 2017), and the invisible nature of modern technologies leaves us

unaware of their very material consequences (Crawford & Vladan, 2018; Nesselroth-Woyzbun, 2013).

Artefacts in the physical world have meaningful physical shape, offering affordances (Gibson, 1979; Norman, 1988) and inherent feedback which guide our interaction with it (Van Campenhout et. al, 2013). Information in the digital world is "intangible, dynamic, and transient" (Van Campenhout et. al, 2013), and therefore lacking these physical assets.

When these physical qualities are removed from the interaction, the process becomes less intuitive and relies on a person's cognitive skills to manage the abstraction (Van Campenhout et. al, 2012). As humans are action-driven beings, Van Campenhout et. al (2012) argue, this removes a level of richness from the interaction. Where physical interaction invokes attentiveness and conscientiousness, the digital provokes thoughtlessness due to the effortlessness of engagement (Van Campenhout et. al, 2019).

As well as this deficit, the devices that mediate our interaction with the digital world have "homogenised a whole range of different human tasks and activities" (Van Campenhout et. al, 2019, p.81); we are limited to button pushing, or gesturing on a multi-touch display. Greenfield (2017) shares this point of view in describing how similar our approach is to such disparate pursuits as photography, music, and dating: we open our phone and perform the same set of gestures and even employ the same mindset.

The smartphone has supplanted portable music, newspapers and magazines, calendars and diaries, tickets and boarding passes, business cards, money, even sentimental photos, each possessing an "intensely interconnected ecosystem of commerce, practice and

experience" (Greenfield, 2017, p.12). These rituals have been compiled and homogenised all in the name of practicality.

Dematerialisation is not just a reduction of the physical, but a reduction of the association between technology and its material nature. Digital devices create the illusion that they are called into existence when needed, and retreat to a dormant state when not. Here, the dynamic and transient nature of free flowing information reflects the demands of a population that require instant but fleeting engagement. And the language around digital offerings only widens the gap – terms such as "cloud computing" and "wireless" misdirect people away from technology's material moorings (Nesselroth-Woyzbun, 2013).

Yet digital technologies are heavily material intensive, both in creation and servitude to the owner. It's components have been mined, transported, and assembled, moving through numerous states to become a finished product, whose lifespan is limited to just a few years (Nesselroth-Woyzbun, 2013). Crawford and Joler (2018) mirror Nesselroth-Woyzbun's findings, detailing the polluting extraction of rare earth metals and exploitation of assembly line workers needed to create AI systems and the infrastructure that maintains their function, not to mention the colossal energy consumption required when someone poses Alexa a question.

There is unfortunate irony in the fact that our pursuit of information gain and connection online has left us disconnected from our past and unaware of the material costs of the digital world. As we strive towards ease-of-use, seamless and invisible designs, and above all efficiency, we shed the grounded, human interactions that once governed the artefacts and practices these concepts are applied to. Technological 'solutions' are, therefore, less

the paragon for achieving a particular task and more just another option, bearing trade-offs and requiring thoughtful consideration.

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