DiY participatory culture: Allowing space for inefficiency, error and noise.

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Abstract:

'Successful' and perpetually 'new' media encloses our technologies within a 'Black-box'.

These Black-box media operate from within a tamper-proof enclosure, obscuring the

material workings and limiting our engagement to seamless interactions with efficient,

ubiquitous and 'invisible' machines. Deviations from the efficient invisibility of Black-box

media are excluded as error and noise within the system. On the other hand, DiY (Do it

[Y]ourself) culture, in its re-use of garbage, old, discarded, broken and redundant

technologies, represents an engagement with the characteristics of materials removed from

the limitations of a 'complete' paradigm or Black-box approach to our engagement with

technologies. This not only assigns value to the excluded narratives of inefficiency, error and

noise but also enables the material agency of techno-ecologies to enter into a form of

"techno-animism", displacing the human as the centre of control and representing a shift

away from the paradigm as a socially constructed agent of enclosure. If this is the case, what

are some of the strategies used by DiY culture to exert this shift away from the human-

centred paradigm towards a material engagement with our cultural technologies? This

paper acts as a brief introduction to the techno-animist practices of DiY culture, offering

examples of localised practices alongside some of the theoretical concerns.

Keywords: DiY, participatory culture, Discard, Garbage, Techno-animism

1



Figure 1: "Radiomancy¹ device" by the Cult of the Dead Light-Bulb (2014)

The decaying, mould covered radio circuit in the *Radiomancy device*, a coin-operated electrical shrine made by the *Cult of the Dead Light-Bulb* (CDLB), introduces the idea of a techno-ecology as a hybrid of human and non-human interactions. It also suggests a playfulness in which decaying and broken technologies represent a re-dispersal of agency to include non-human 'material-desires', what I will describe later as a 'techno-animist' approach to the objects around us. In terms of a paradigm shift, I want to look at ways in which our sense of control and agency can be shifted away from the human-centred, socially constructed paradigm, towards allowing material agency, decay, error and inefficiency a place within the process. This will involve using examples of Do it [Y]ourself media to enable the image of an 'ecology of technological debris' to emerge. This begins with the use of faulty materials, such as garbage, and leads to the techno-animist practices of the CDLB which use 'contradictory combinations' of elements as a strategy to open up spaces for participation between different paradigms. An underlining theme of this paper is the difference between 'successful' media, i.e. Black-box media, and the participatory

¹ "Radiomancy": A form of divination devised by the multi-author, techno-animist group the *Cult of the Dead light-Bulb* (CDLB).

practices of DiY (Do it [Y]ourself, media) representing an engagement with the technological debris which follows in the wake of progress.

In engaging with this subject my question concerns the transformation of agency: the shifting forms of power which accompany the recurring paradigm shifts from 'new' media to 'old' redundant media technologies — who (if anyone) controls the environment of a technoecology? What forces of agency are present, what are the actants and how are they dispersed? I have employed ideas from a combination of Bruno Latour's "Black-box" (1987, 1999), and Thomas Kuhn's 'paradigm shift' (2012) to describe our participation with the 'invisible' and 'ubiquitous' 'successful' media. Black-box media are the various technologies and applications of current media, offering agency and promising empowerment but, at the same time, preventing participation through closing our access to the 'workings'.

The emerging media art practices of DiY or "Do it [Y]ourself" culture represent a shift in the Black-box paradigm of participation. Do it [Y]ourself is a term adapted from the more individual oriented concepts of DiY: as a combination of the individual 'yourself' and the collective 'ourselves' ([Y]ourself). DiY practices are examined through their use of recycled materials, garbage and everyday objects which have been re-functioned into new contexts and paradigms of thought. The displacement of the individual 'you' draws inspiration from Jane Bennett's *Vibrant Matter: a political ecology of things,* (2010), in which the individual human and the non-human materials of engagement form a collective assemblage of actants:

An actant never really acts alone... A lot happens to the concept of agency once non[-]human things are figured less as social constructions and more as actors (Bennett, 2010, 21).

Allowing the idea of agency to include non-human elements is a way in which the 'completeness' of Black-box media can be broken open to reveal complexities which threaten the coherence of the participatory culture paradigm. Bruno Latour's "Black-box" (1987; 1999) refers to groupings of accepted scientific data which are collated into a coherent functional unit of thought. Like the pre-determined technological forms of participatory 'new' media, the processes and workings within the Black-box become "invisible" since it has become accepted that a certain effect will result:

[the Black-box describes] the way scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become (Latour, 1999, 304)

The "success" of Black-box media is in its self-evident ability to resist the fragmentation which occurs when technology is made redundant and is reduced to landfill. The successful Black-box media is technology which is "efficiently" advancing ideas of technological progress: the current and ubiquitous media technologies prior to their fragmentation as garbage. This can also be looked at in terms of the second stage of Thomas Kuhn's idea of the paradigm shift - the opaque "normal science" (2012) which passes unquestioned and represents an accepted field of knowledge held together through the will to coherence. If successful technology is "invisible" and "opaque", then an engagement with garbage and discarded technologies, as a strategy of engaging with 'error' rather than 'success', becomes a way in which technologies can become a visible "thing" (to use Jane Bennett's term of inexactness and indeterminate agency) — enabling a participatory culture of engagement within the materials of a techno-ecology. DiY culture tends towards a deeper emersion into the techno-ecology in terms of recognising the interdependencies between human and non-human material agency.

Table 1: Differences between Black-box media and DiY media.

Black-box media:	DiY media:
Agency is contained within human intention.	Agency is dispersed within the materials techno-ecology.
Components are structured into a single enclosed unit of functionality.	Participation becomes an engagement with materials and components of media.
The enclosure is tamper-proof and process is hidden.	A material engagement with the processes and workings.
'Successful' technologies become invisible.	Error is a visible part of outcome.
Participation is restricted to generating content.	Participation is in adapting the techno/cultural 'form' (not just content).

The short film *Hamburger Dandy* by Afrika Psuedo Bruitismus (Hurtado-Saura, 2011) utilises 'error' in the re-use of a decayed 1984 VHS advert for Pioneer's Laserdisc system (image below). The characteristic VHS video artefacts, glitches and dysfunctions are used as visible symbols of the transformation of a 'successful' media towards landfill redundancy. This compares the 'readable decay' of analogue technologies to the 'all-or-nothing' qualities of the digital.



Figure 2: Two Still images from *Hamburger Dandy* by Afrika Psuedo Bruitismus (Hurtado-Saura, 2011)

Hamburger plays on the fact that the laserdisc technology has been reduced to landfill before the remains of the video cassette technology have completely disappeared as an archiving tool. The 'perfect' media of the laserdisc is therefore invisible until rendered on the surviving archival form of the distorted VHS copy. In this way the Laserdisc advert is refunctioned from a view of the future to an 'error' from the past — a paradigm shift from the invisible to the visible. As suggested by Latour's Black-box, it seems we can only see technology when the seamless surface is broken by a glitch, a distortion, or a pixelated image — the artefacts of decay.

During the transformation of media to garbage, an inevitable outcome of the processes of progress, Black-box technologies cease to function as 'complete' enclosures and instead resemble a series of fragmented and isolated components and materials: they allow an emergence of non-human actants to enter the field as an interconnected 'network'. A network, in the sense of Latour's *actor-network-theory* (1999; 2005) and Jane Bennett's

vibrant matter (2010), resembles an assemblage of interconnected agents, linked together in complex ways which decentralise control. In terms of agency, Black-box media suggests a socially constructed mode of viewing which is imposed upon the world of 'things'. However, when action is viewed as an engagement with, rather than a domination of, the non-human material world, agency becomes something existing partway between human and the material. For Lambros Malafouris agency is only manifested in action, that is, the power to affect change only becomes manifest within the processes of action. In this case, practical action becomes a networked process of agency, something which exists between the human and non-human elements, intention and materiality, a "material engagement" in which the characteristics of materials are entangled with the human:

There is no way that human and material agency can be disentangled... while agency and intentionality may not be properties of things, they are not properties of humans either: they are the properties of *material engagement*, that is, of the grey zone where brain, body and culture conflate (Malafouris, 2008, 22)

This view of agency, as occurring between the human and non-human, is highlighted by the practices of DiY culture: a "material engagement" in which the human interacts with the available objects of refuse and the material components of broken discarded media. By opening the Black-box the DiYer begins to participate with the materials and components enclosed within, operating in the "grey zone" between human agency and material agency. This form of engagement with media technology acknowledges material agency and escapes the absolute connection between human intention and agency.

Basic material characteristics are often incorporated by the DiYer, for example, the disposable aluminium pie plate, used as a snare drum by Greg Locke in his robot garage band *The Trons*, is valued for its acoustic tonal properties rather than for its pie-holding capabilities.



Figure 3: The Trons use of a pie-plate as a snare drum (Greg Locke)

The material characteristics of a discarded aluminium pie-plate, to change shape and acoustic dynamics with each hit of the drum stick, means that minute sound variations are introduced into the drum sound, creating a feeling of human agency from non-human elements². These 'errors', in the structure of the pie-plate to retain a fixed shape, represent an engagement with materials in which agency is dispersed between the human and the material, as an on-going process. However, *The Trons*, being a robot band, go one step further than Malafouris' material engagement, since they are a machine engagement with the materials of the pie plate, representing a deeper entanglement between human and non-human agency.

Abrupt changes to the technological environment, for example, the paradigm shift towards digital media, creates a side-product of e-waste, discard, debris and garbage: materials which are readily available for free or at reduced cost for new emergent techno-ecologies to feed on, and an engagement which allows space for materials to 'participate' in the process. For example, we never know what objects we may find in the garbage patch and to what new uses these objects may suggest themselves – by engaging in garbage materials we have

² Interviewed by the researcher 07-December-2012.

already allowed agency to pass away from the human-centred to that of the material. The exclusion of garbage from the techno-ecology of mainstream participatory culture is as 'noise' within the communication chain, discarded equipment is 'inefficient' for the current paradigm of progress, and elements of the old paradigm are connected to 'error' and removed from circulation. In a material sense these items of error are expelled from the central idea of progress — they are deemed as having played their part and are no longer needed. These excluded objects and ideas become elements of 'inefficiency', 'error' and 'noise' — unwanted items which disrupt the coherency of the new paradigm.

Within the process of transforming Black-box media to garbage, components of technologies are isolated and removed from their validating structures. As John Scanlan observes, this allows materials to be removed as objects of exactness:

Garbage does not strictly refer to an object, but is a jumble of inexactness... a return to some [basic] material condition... [a discarded,] degraded husk of some former object, it seems to lack conventional referents... garbage is the remainder of the symbolic order proper (Scanlan, 2005, 14-17).

The return of technology to a "[basic] material condition" enables the DiY practitioner to engage with components usually contained within the Black-box of overarching functionality. Once media is broken down into components the "symbolic order" of materials is open to re-interpretation and evaluation – the Black-box is removed allowing new configurations to be negotiated between the DiYer and the material, forming new languages or "symbolic order[s]" with the non-human characteristics of "inexactness". In an aesthetic sense, the use of garbage is an engagement with that which is excluded from the body of knowledge: something outside of the 'paradigm' of Black-box media, formless items which re-surface in new configurations. Garbage become ripe for inclusion into other media networks, assigned new values, and new functionalities. This relates to Kuhn's 'paradigm shift' since the concept of garbage exists in the *pre-paradigm phase* (2012), in which, as Scanlan suggests, there is no consensus on any particular theory characterised by the "inexactness" of where materials fit within the overarching paradigm of progress: "There is no determinate and singularly applicable concept of 'garbage'... no 'social theory' or concept of garbage at all" (Scanlan, 2005, 14). This can be compared to the participatory paradigm of

successful Black-box media, suggesting that DiY culture is a shift away from the human-centred paradigm towards the agency of non-human elements.

At Xtreme Waste, a recycling centre in Raglan, New Zealand, a range of functioning, semi-functioning and broken items become available for DiY practitioners to re-use. One of these DiY practitioners is Felix Modregal, who incorporates broken and recycled components into his range of home-made oscillators.



Figure 4: "Pie-dish oscillator" and amplifier made from discarded objects (Felix Modregal)

The oscillator is an electronic musical instrument which produces sound on the most basic level of pitch and volume using the square wave generated by logic circuits originally used in early calculators. The logic circuits of the calculator, as designed by Jack Kilby, are early examples of integrated circuit, later developed into the central processing unit (CPU) of the present day digital computer, the basis for the technology of new media participatory culture. By returning to the simpler versions of the CPU the 'pie-dish oscillator', pictured above, engages with the technologies and materials of participatory culture to re-function the original intended uses of the circuitry. The sound contains some 'essence' of the logic functions of the calculator, a binary zero/one or on/off oscillating within the audible frequency range, however, Modregal has also incorporated the broken and semi-functioning components salvaged from garbage. The error of a broken pitch controller (the potentiometer or 'pot') into the circuitry of the oscillator enables the characteristics of the

dysfunctional component to become an actant within the sound. When connected to a modified tape-recorder, used as an amplifier, the resultant sound is difficult to place within a single recognisable musical tone or Scanlan's "symbolic order".

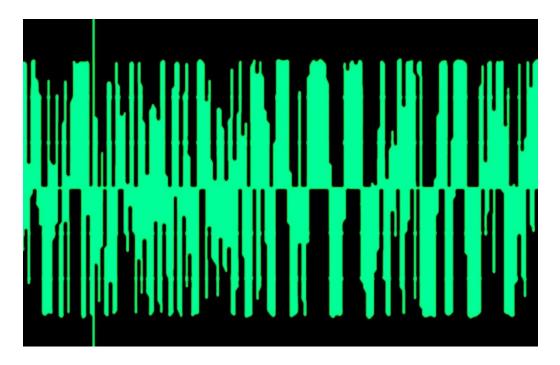


Figure 5: Sound wave resulting from a combination of broken components and logic circuits.

The above image shows the 'broken' patina of the sound resulting from a combination of simple square-wave circuit with the indeterminacy of the faulty potentiometer — the 'indeterminate pot'. I have used this image as an example of a techno-ecology, as it is a combination of orderly coherence and "inexactness" evoked from the combination of garbage and logic. Its form also resembles a landscape shaped by a natural process, such as the action of wind on a sandstone formation of rocks, whilst at the same time there is also a regularity of shape which remains as the residue of the square wave pattern. The simple on/off oscillation of the square wave, generated by the logic circuit of the re-functioned calculator components and altered by the 'inexactness' of the broken component, has become alike to a faulty light-switch caught in the indeterminate 'grey zone' between on/off. The re-functioning of the contradictory elements of digital logic circuit and the

unique characteristics of a faulty analogue tuning component, suggests a process in which complete technologies are broken down and combined as separate elements to form an emergent structure. Modregal places value on the characteristics of the sound as a structure of its own: a language of expression which emerges from the combination of discarded components; a network made from rejected technologies which affect the 'form' of the artwork³. By introducing contradictory combinations (logic and disorder) the black-box, associated with enclosing technologies and maintaining a distinct field of knowledge (the paradigm), is broken open and displaced as a means of centralising agency. This also displaces the maker of the artefact, Modregal, as the centre of its creation and control, meaning that, the resultant networks of media are decentralised in terms of the multiple agents affecting the process.

The contradictory combination of logic and inexactness, pattern and chaos, forms a process which Jane Bennett (after Gilles Deleuze and Félix Guattari), defines as an 'assemblage': an "ad hoc grouping of diverse elements, of vibrant materials of all sorts" (Bennett, 2010, 23). The connections created in an assemblage rupture the coherence of the unified paradigm so that:

The effects generated by an assemblage are... emergent properties... emergent in that their ability to make something happen... distinct from the sum of vital forces of each materiality considered alone... [it] is never a stolid block but an open-ended collective, a "non-totalizing sum" (Bennett, 2010, 24).

The "non-totalising" aspect of the assemblage of materials reflects a view of media based on 'inexactness' and process rather than the 'completeness' of the Black-box media towards functionality. By remaining 'incomplete', agency in the assemblage is dispersed amongst human and non-human actants - a practice in which the "vital forces" of materials are entangled with the conscious intention of the human, forming an indeterminate and "openended collective" of materials contained within the assemblage. By recognising agency in materials, the human participant is decentred as the primary element in the assemblage.

³ Interviewed by the researcher 21-February-2013.

This means that agency is dispersed throughout the materials and that agency becomes "enmeshed in a dense network of relations" (Bennett, 2010, 13) – with each component, both human and non-human an equal part of the ecology.

Other DiY practitioners, such as the *Cult of the Dead Light-Bulb* (CDLB), extends the strategy of 'contradictory combinations' to create 'non-totalising assemblages' from different paradigms of thought. The CDLB is a multi-author collective working in the medium of DiY zines and kinetic sculptures to highlight a "techno-animist" approach to human relationships with technology. The animist belief, associated with religious beliefs in parts of Indonesia and South-east Asia, is a view of materials as 'living' or sentient creatures — a view that objects possess their own form of agency and ability to exert affect. This is described by CDLB as an autonomous "alchemical essence" within everyday found objects, alchemy being the ability to change between states of being. According to CDLB the objects most empowered with this form of agency are those which have limited contact with the conscious intention of the human: everyday objects incorporated into the assemblage which are "found without conscious effort":

The practice of using found materials reflects the philosophy that claims certain 'readily available materials' to contain more of the alchemical essence due to the fact they were found 'without conscious effort' (Anonymous, 2000).

For the CDLB the "alchemical essence", and therefore the agency of materials, increases with the removal of original functionality of the object, placing value in the discarded light-bulb as a potential site of transformation, as an "'Alchemical Transubstantiation'... within the filament of the burnt-out bulb" (Anonymous, 2000). The practices of the CDLB are situated between animist religious views, in which there is a 'spirit' of consciousness within every object, and a DiY practice of working with the readily available discarded materials at hand: a non-totalising assemblage of multiple paradigms, 'techno-animism', in which materials are regarded as co-authors. For the CDLB, the materials of the techno-ecology are 'vital' and of equal importance within the flow of agency as the human components. This echoes Jane Bennett's "neo-animist ontology" (Bennett, 2011, 120) in the way that material agency can override human intentions to produce a coherent functionality, such as

Bennett's example of the 2003 North American black-out of the electrical grid (24-28). An example of 'neo-Techno-animism' is shown below in the kinetic sculpture work of the CDLB.



Figure 6: Radiomancy device by CDLB - use of radios for divination.

The Radiomancy device is a coin operated kinetic sculpture which uses discarded technology to assist in the divination practices of past times. Radiomancy, as a combination of the words "radio" and "mancy", is a playful adaptation of traditional divination techniques such as 'cartomancy' - fortune-telling or divination using a deck of cards, or 'necromancy' - a messier version of divination involving the dead. The radios pictured above are each tuned to different FM spoken word radio stations and, when a coin is inserted from the front of the device, an electronic switch selects each channel for one second duration, interspersed with empty channels of silence. The resulting sound is a randomly cut-up voice collage assembled from the various channels which, as suggested by CDLB can be used in a similar fashion to other more traditional technologies of fortune telling and divination, i.e. a message which is more than the sum of its parts. For the CDLB electrical power is equated with an "invisible supernatural force", a "life force" which flows through everyday objects such as "television sets, toasters, [and] tape machines" (Anonymous, 2000). This is a departure from the orthodox technological view of electricity, except in the observation that electricity is a Black-box power which we cannot see, and therefore, in these terms easily equated with an invisible supernatural energy. This spiritual quality of technology, in

which technology is seen as possessing a life of its own, is inherent in the interplay between spiritually and technology claimed as a documented phenomenon in Jeffrey Sconce's *Haunted media: Electronic presence from telegraphy to television* (2000), in which the early years of the telegraph was, at the time, equated to the disembodied communication between spiritualist mediums and the dead. Over the years the 'haunted presence' of media has been excluded from the technological paradigm and along with it the neo-techno-animist idea that materials and technologies possess agency along with human intention.

In a similar way, the performance practices of the *Psychic Radio Ham Society* (PRHS) involve a re-functioning of everyday objects, as documented in the film *Alchemical Pilgrimage*, made by collaborators in the *Cult of the Dead Light-Bulb* project (Snake-Beings, 2002).



Figure 7: Still image from the film The Alchemical Pilgrimage: Re-functioning of the television broadcasting mast at Te Aroha by the Psychic Radio Ham Society.

The above image shows the transformation of the television broadcasting mast on mount Te Aroha, in rural New Zealand, into a site of techno-animist pilgrimage. In the performance the mast becomes a focus for the group as the source of a mystically encoded signal,

affecting the inhabitants of the small town of Te Aroha with an "alchemically encoded message" embedded within the radio waves, "causing excess brain static and interference with the intuitive processes of the human psyche" (Anonymous, 2006, 6). The re-functioning of the television mast into an object of mystical significance is part of the process of 'breaking down' the mass-media into its component parts, which occurs within the narrative of the film. This strategy of intentional mystification of the technology of the everyday can be seen as a "gesture toward the inadequacy of understanding [something] simply as a machine" (Bennett, 2010, 25), and a strategy of opening the black-box of radio transmission to allow new configurations of meaning. Within the materialist paradigm of the twenty first century it would be an 'error' to link the electrical science of radio transmission with the alchemical practices of the medieval ages. The combination of two different and incompatible paradigms, such as occurs with the Psychic radio ham society, takes the form of a non-totalising assemblage and a re-functioning of discarded belief systems and materials.

DiY media represents a way of breaking down Black-box media to create a participatory culture which operates outside of the pre-configured paradigm offered by 'new' media. DiY culture facilitates a shifting paradigm of inexactness and uncertainty which echoes the precariousness of our techno-ecologies and their impact on the environment. By bring discarded technologies back into the flow of participation the seeming stability of the Black-box media paradigm is brought into question. The view of agency as human intention implies that materials are secondary within a human-centred view of the world. The 'normal science' of the paradigm, when technology is proceeding 'successfully', makes the materials and components of Black-box media invisible, further centralising human domination over the world of things. A shift away from 'paradigms' means that the Black-box of teleology is also broken down and we can start to view the world of objects separate from the dominance of human intention, opening new vistas into the techno-animist life of objects.

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List of figures:

- FIGURE 1: "RADIOMANCY DEVICE" BY THE CULT OF THE DEAD LIGHT-BULB (2014)
- FIGURE 2: TWO STILL IMAGES FROM HAMBURGER DANDY BY AFRIKA PSUEDO BRUITISMUS (HURTADO-SAURA, 2011)
- FIGURE 3: THE TRONS USE OF A PIE-PLATE AS A SNARE DRUM (GREG LOCKE)
- FIGURE 4: "PIE-DISH OSCILLATOR" AND AMPLIFIER MADE FROM DISCARDED OBJECTS (FELIX MODREGAL)
- FIGURE 5: SOUND WAVE RESULTING FROM A COMBINATION OF BROKEN COMPONENTS AND LOGIC CIRCUITS.
- FIGURE 6: RADIOMANCY DEVICE BY CDLB USE OF RADIOS FOR DIVINATION.
- FIGURE 7: STILL IMAGE FROM THE FILM THE ALCHEMICAL PILGRIMAGE: RE-FUNCTIONING

 OF THE TELEVISION BROADCASTING MAST AT TE AROHA BY THE PSYCHIC RADIO

 HAM SOCIETY.