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**Failure for dummies: intersections in emotive objects, busy
women and meaningful pursuits**

**A thesis presented in partial fulfilment of the requirements for
the degree of**

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Catherine Barbara Caudwell (04250478)

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Abstract

This extended essay explores a historical investigation into the connections between women and machines, particularly focusing on the traditionally gendered processes of sewing, weaving and other processes deemed 'handicrafts' and how they parallel techniques in the evolution of the technologies we recognise today. Within this relationship, the nature of these acts to provide comfort is investigated and related to the practice of art making. This historical lineage is examined in the present day where digital and electronic technologies impact everyday life and cause new a brand of anxieties that require a fresh approach to healing and soothing. Through the analysis of this research my practical input and output are informed and result in the development of an installation of objects that examine the electronic object and how it can be imbued with or reflect these realities.

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Wish, Loom and Doom, 2010

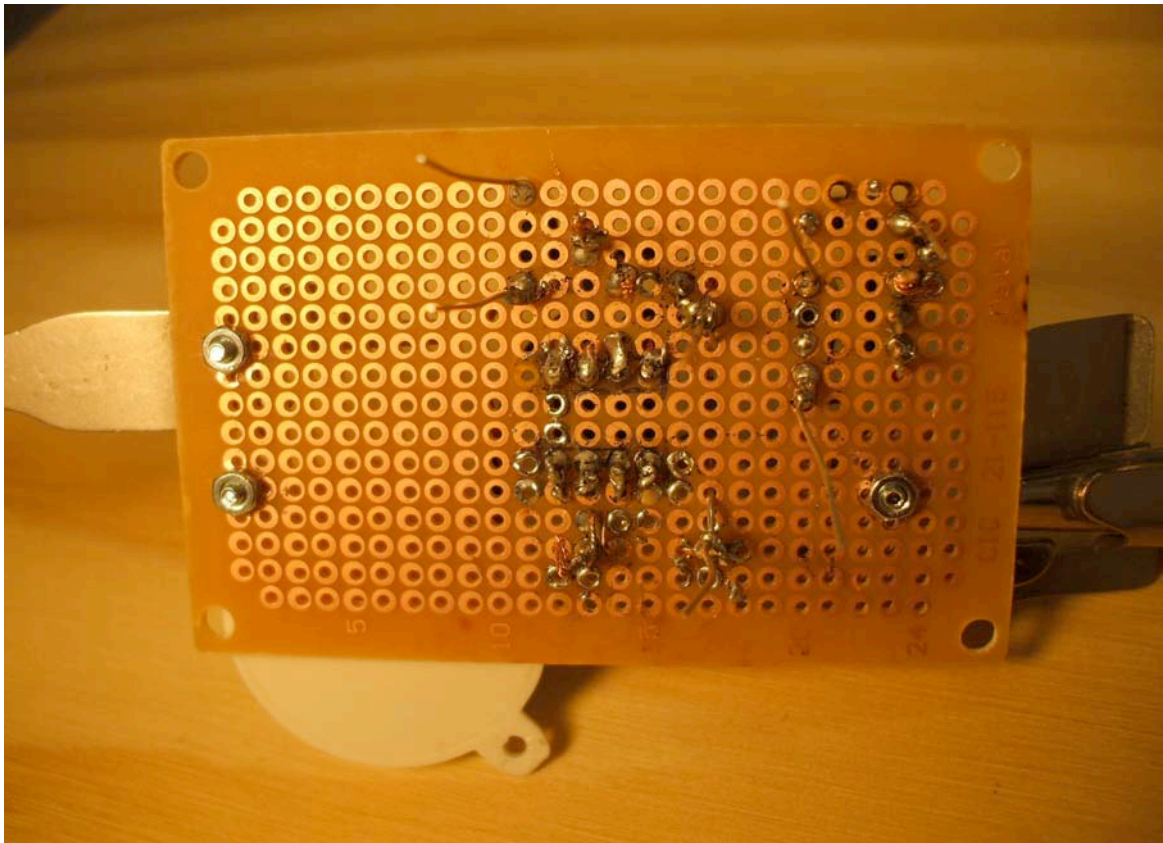


Figure 1

1: Unfathomable mistakes

This project was inspired by two important occurrences: one being an occurrence two and half years ago and the other my awareness of Sadie Plant's *Zeros and ones*. In June 2007 I picked up a soldering iron for the first time with every intention to make my own intelligent robot. I would quickly learn that this was not going to happen any time in the near (or distant) future. Not only did I lack the skills, equipment and knowledge required, I suspected I lacked the intelligence to complete such a project. Nevertheless I continued following instructional projects that would teach me the basics of electronics and occasionally completed them to a working standard. When the circuit boards I made did not work, I found it very difficult to locate and address the issue. My finished projects rarely performed as I imagined they would or as the instructions informed me they would.

I realised quickly that my method of learning was imperfect. I had been following tutorials in the form of books or the Internet, guides that presumed nothing of how I as the individual might understand concepts and could not pick me up if I fell by the wayside.

My frustrating and failed attempt at building a robot and mastering electronics in general eventually led me to the considerations that this investigation aims to address. Why was it so important to make an object of this nature for myself when I could purchase it so easily? Was it for my over all well-being and sense of satisfaction? Could a faulty object be more emotive and valuable than a perfect one? How has the existence of Internet forums and tutorials impacted on the way we learn and make things?

In *Zeros and ones: Digital women and the new technoculture*, Sadie Plant discusses the interconnections between female and machine. She writes of “Those apparently inconspicuous, well behaved little creatures who spent their time making lists, detailing procedures, typing, sorting, coding, folding, switching, transmitting, receiving, wrapping, packaging, licking the envelopes, fingers in the till” (Plant, 1997, p.76). Plant

relates these actions to the ancient relationship between women and textile processes and states that there has always been an obsessive and addictive quality to weaving and spinning yarn, “a temptation to get fixated and locked in to processes that run away with themselves and those drawn in to them” (Plant, 1997, p.62). Weaving consists of a complex network of interconnected elements, a concept that we can recognise in the technologies of the present day. These ideas are very relevant to my practice as they draw parallels between my lifelong involvement with sewing and my recent induction into the field of electronics.

What began as a study of the relationships we form with machines specifically designed to replace human leisure activities has evolved into an exploration of the relationships we form with hand made objects, value in the process of making and how one might deem an object to be meaningful, useful or successful. The scope of my investigation has largely been restricted to objects that are intended to improve quality of life in some way, be it practical or spiritual. Through the course of my research I have aimed to weave these concepts together, culminating in the sculptural installation work *Wish, Loom and Certain Doom*.

“This project doesn't do anything useful at all!” (Project KJ8224 An Electronic Cricket)

This was the introductory statement of an instruction sheet for my very first electronic project, a circuit that beeped and flashed lights when a small microphone picked up sound. It has since been a source of great confusion and puzzlement. Is it not rather counter productive to label something as an exercise in futility? Are we supposed to consider the implications of adding something useless to our possession? In what context does it not do anything useful? Why would a project designed to teach the basics of electronics claim to be useless? Calling something useless is useless. The territory between useful and useless is endless. Usefulness is the serving of a certain

function. It is advantageous, helpful or of good effect. Uselessness is the being or having no beneficial use. Futile. Ineffective. The space between useful and useless is my territory of exploration. In the crossfire of these two opposing elements I will discuss the historical background of women and their place in the technological process. Through the concepts of various theorists and practitioners such as Sadie Plant, Anthony Dunne, Fiona Raby, Jan Verwoert, Sherry Turkle, Robert Pirsig and David Weinberger, and the interrogation of key terms I will explore the electronic object in terms of human connection, and my own practice.

2: The parts you'll need

In *Retooling* Rosalind Williams grapples with technological change and innovation from her unique perspective as a historian and “participant-observer” (Williams, 2002, p.5) of MIT's world leading engineering program. Williams explores the role she plays in the complicated social structure of a previously male dominated area. In a family with a generations old affiliation with MIT, Williams is well aware of the gender discrimination embedded in the fields of engineering and science. She notes the absence of women in high ranking positions in such areas, reasoning that these women are less deterred by lower pay or benefits, but more specifically “they drop out because the more they look at the world they are headed for, the less they want to live there” (Williams, 2002, p.203). She suggests that the significant feminism of today is humanism – women seek to define a fully human life rather than adapting themselves to the male definition, and this includes exploring alternate models of working life to achieve this (Williams, 2002).

Williams draws attention to a prejudice I have come to understand as both a female and an artist. The world of electronics even at hobbyist level is suspiciously guarded. While trying to pick up the basic skills necessary for my work I was introduced to a surprising amount of sexism and mockery. It certainly seems that inclusion in this elite order involves proving oneself as a serious contender and more importantly 'one of the boys'.

My intention has never been to make objects that are marvels of engineering or even particularly innovative in any way. Instead my approach is as a person of average scientific intellect trying (and often failing) to learn a new skill any way I can. I took my first science paper in physics at the age of 21 and received a B+ grade. To me this mark told me my rightful place in the field of engineering: hobbyist and avid on-looker. My intention is also not to provide critique on scientific institution, but rather to ask more questions than there are answers for regarding the human desire for technology – be it

home electronics and appliances or the uncharted frontier of artificial intelligence – and where a female with no real experience or training can find a place in this.

In 1980, The U.S defence department began using the ADA programming language. The code was named in honour of Ada Lovelace, who, over one hundred years after her death was recognised as the world's first computer programmer. Ada's mathematical code written for Charles Babbage's Analytical Engine was conceived from close examination of the Jacquard Loom and the punch card system it employed. Babbage and Ada saw potential for this technology to be employed in calculating engines, the precursor to the modern day computer.

The introduction of the principal which Jacquard devised for regulating, by means for punch cards, the most complicated patterns in the fabrication of brocaded stuffs, rendered it possible to endow mechanism with such extensive faculties as bid fair to make this engine the executive right-hand of abstract algebra. (Lovelace, 1842, cited in Plant, 1997, p.18)

Ada was an integral cog in the refining process of this machine and the method adopted from the Jacquard Loom firmly tied a tradition of handicrafts to one of the roots of modern technology.

It can be said that women have a history as the handmaiden to technology. Plant (1997) draws attention to this connection noting, “When the term computer was a term applied to flesh and blood workers, the bodies which composed them were female” (p.37). From the 1880's onwards women's presence in clerical work increased with unprecedented speed. By 1920 women held 90 percent of all typing and stenography roles (Lupton, 1993). The secretary became the activator between man and machine. While employers were discouraged from displacing male workers, whose need for work was essential rather than frivolous, type writing did not yet hold any established sexual history so the

presence of women was not a cause for concern. Manufacturers of office appliances began to feminise their products, appealing to the typist rather than her male employer. A brochure for Royal Electric Type Writers (1962) insisted: "She (the secretary) likes the sculpted beauty of the Electress. It's quietness, it's colours, the crispness of the work it churns out, and it's size: full sized but not bulky" (Royal Electric in Lupton, 1993, p.47). Typing became another task of the process driven female. Another mindless and hypnotic routine to fill the leisurely day.

The repetitive tasks of women, specifically handicrafts have long been employed as a tactic for busying idle hands. The processes of sewing, knitting and weaving have been known to promote well-being. Plant (1997) suggests that data and information are stored in cloth in the sense that the process of making is so absorbing that the finished product is saturated with thoughts and memories of those that produced it. She also notes fabrics have long been woven to "invoke magic – to protect, to secure fertility and riches, to divine the future, perhaps even to curse"(p.66). It follows then that through the process of making anything by hand it becomes infused with meaning and intentions, whether good, bad, comforting or harmful.

I am interested in exploring the role of contemporary art to provide comfort and healing, especially for afflictions that result from changes or advances in modern life. As we create new symptoms and sufferings from our advancing technical systems we also create new and increasingly efficient remedies to counter them. Where electronic space is the problem, it may also contain the antidote. As much as I intend to navigate the human desire for technology, I am also curious about our aversion to it and our desire to define things as physical affliction.

Jill Medvedow writes that "as contemporary life is increasingly shaped by confrontations with illnesses and treatment, the idea of healing as distinct from cure is

increasingly relevant” (Medvedow cited in Morgan, 2003, p.7). She further notes that contemporary artists have explored this concept and sought to provide psychological comfort through ritual, narrative, metaphor and movement (ibid). I am interested specifically in objects that seek to provide soothing and therapy through their very presence.

There is much less pressure placed on the idea of soothing rather than curing, indeed anything can be soothing if we believe it to be. In this example the term 'placebo' will be integral to my discussion. The placebo effect occurs when a patient is prescribed an action that will improve their condition but is not informed that is in fact completely inert. This may cause the sufferer to believe that the intervention has improved their well-being and this belief or change in attitude may have an actual therapeutic effect. The word placebo by it's original Latin definition means “I shall please” and I am interested to examine the relationship between this definition and the expectations placed on the contemporary artist to provide or deliver an experience to their audience.

A nocebo, meaning “I will harm” is the negative counterpart of a placebo, where the pseudo therapy performed has a negative and undesirable effect on the patient. This has relevance to my investigation of technological artefacts and failure as there is a relationship between object and user, which can be easily effected.

Melancholy is another concept I will discuss in relation to my practice and relevant artist models. Melancholy has had various definitions throughout most of western history. These have ranged from an abundance of black bile affecting a person's temperament, to imbalances in the qualities of purity, passion, energy, darkness and inertia (Radden, 2000). The most common modern definition of melancholy is pensive sadness or pensive introspection.

Since the writings of Aristotle there has been the enduring view that melancholy is more likely to afflict those who have mastered the arts and seek higher learning. 15th century philosopher Masilio Ficino proposed that in the pursuit of brilliance the soul must draw in upon itself “as from circumference to centre, and while it speculates, it must stay immovably at the very centre...contemplation itself, in its turn, by a continual recollection and compression, as it were, brings on a nature similar to black bile” (Ficino 1482, cited in Radden, 2000, p.90). I am curious to investigate whether an object can have or inspire a melancholy state, in the sense that its function or purpose alludes to faults and inconsistencies in human nature. Can a placebo be melancholic? I propose that this occurs when object that falls short of its expected function and the subject of its usefulness becomes debatable.

Within the discussion of existing in the in-between, the term hybrid has become very relevant to my line of inquiry. The general definition of a hybrid is something of mixed origin or composition. Gerfried Stocker and Christine Schöpf argue that hybridity is the signature of our age, that it is “emblematic of the casualness with which we have established ourselves in real, physical habitats as digital, virtual domains” (Stocker & Schöpf, 2005, p10). They also state that digital media art falls into this category, as it is the connection of art and technology that results from the recombination of numeric, genetic and atomic codes (ibid). Hybridity is also usually a dead end: most hybrid animals, such as mules are sterile. My practice is concerned with applying hybridity to objects, specifically ones pertaining to a function or usefulness of some kind. Where does such an object belong? Is it enough to simply create something unique?

“Is contemporary art merely the manufacture of 'consolation objects' in an increasingly alienated world, or is there a role for art beyond the recreational?” Jessica Morgan's inquiry interrogates the transformative properties of art (Morgan, 2003, p.13). My own question is whether these 'consolation objects' can have value in themselves if they divulge the eccentricities of present day life.

3: What does it do

In *Design noir: The secret life of electronics*, Anthony Dunne and Fiona Raby (2001) propose that through conceptual design individuals could be prompted to question and debate the value of electronic objects in everyday life. Their method is to create:

Alternative and often gently provocative artefacts that set out to engage people through humour, insight, surprise and wonder. The suspension of disbelief is crucial – if the artefacts are too strange they are dismissed, they have to be grounded in how people really do behave. (p.63)

Essentially these objects can be viewed as tools to encourage the viewer to reflect on bigger issues such as the electromagnetic qualities in our environment and legal, cultural and social rules. Dunne's extension of this concept was to have “retained the popular appeal of industrial design while using it to seduce the viewer into the world of ideas rather than objects” (Dunne, 2005, p.147).

Jan Verwoert proposes a similar mode of working as “mini concepts for maxi ideas” (Verwoert, 2009). Performing a small gesture to spark a thought process toward a larger topic. This idea fits into Verwoert's larger discussion of audience expectations for artists to 'deliver'. He questions whether artists are set an impossible brief to deliver an epiphany or proof that something has happened. I wonder if an object can completely subvert 'delivery'. By engaging people through “humour, insight, surprise and wonder” (Dunne & Raby, 2001, p.63) does an object distract people enough that they will fail to see how pointless it is? This is where the concept of a melancholy objects is important, instead of reflecting the pinnacle of human intelligence an object can also demonstrate imperfect state of being decidedly average.

4: Putting it together

As an experiment I have engaged in a process of badly followed instructions. The objects I have put together are assembled from instruction sheets, tutorials and diagrams. There is sadness to this method of making; at first there is an initial pride in constructing something by hand, something that works, and something that is correct. What follows is the disappointing realisation that one is simply recreating someone else's ingenuity. More optimistically, when instructions are badly followed (or badly written) there is the opportunity to make something new and unique. By changing the context or environment that the object exists in new issues and functions come to the foreground.

In *Zen and the art of motorcycle maintenance*, Robert Pirsig (1974) discusses the nature of instruction and assembly manuals. A set of instructions he was particularly fond of offered the suggestion that the assembly of something requires great peace of mind. Expanding on this Pirsig proposes that when making anything “the ultimate test's always your own serenity. If you don't have this when you start and maintain it while you're working you're likely to build your personal problems right into the machine itself” (p.153). This concept is similar to Plant's previously mentioned assertion that data is transferable from weaver to cloth. While Pirsig's example was the assembly of bicycle, both this and the act of weaving involve a specific pre-defined process of connecting individual elements to one another. I would suggest that rather than the assembly of something requiring or inspiring peace of mind, it provides the maker with insight into their own mind or condition and it is this revelation that may cause or reject inner peace.

The issue of the individual in relation to the instruction is of relevance here. Pirsig details an instance where his friend, artist Robert DeWeese, was frustrated by a set of confusing assembly notes for an outdoor barbeque. The problem with these particular instructions stemmed from their structure and language style, that which was common of engineering and technical writing. Pirsig defined the issue: “science works with chunks and bits and pieces of things with continuity presumed, and DeWeese works only with the continuities of things with the chunks and bits and pieces presumed. What he really wants me to damn is the lack of artistic continuity, something an engineer couldn't care less about” (Pirsig, 1974, p.153). This instance is a good example of how instructions cannot anticipate the viewpoint of the instructed. Step by step instructions assume a linear approach to making, which may not be the method adopted by the individual using them.

Freud once observed his daughter at work on a loom and came to the conclusion that weaving, thought to be the only feminine ingenuity, was in fact just the replication of the natural growth of pubic hair. Here was Anna, “working to cover her wounded pride, her missing sense of self, the holes in her life and the gaps in her mind... Her work is a natural compensation for a natural flaw. All she can discover is her own in-completion” (Plant, 1997, p.24). Anna's approach to work caused her father further distress still. Her methods were back to front, upside down and “contrary to any rational approach”. Plant (1997) argues that in fact, knowing something backward and inside out is superior to knowing anything in a straightforward procedure (p.26).

Ada Lovelace was diagnosed by her physician as suffering from hysteria¹ early in her short life. At times Ada was convinced her backwards methods and un-ladylike pursuits were to blame for her condition. She wrote: “Many causes have contributed to produce the past derangements; and I shall in future avoid them. One ingredient (but only one

¹ Hysteria, meaning literally 'wandering womb', was thought to be a female affliction where the womb would float around the body causing madness, fits and fevers. One of the causes was supposedly 'unwomanly pursuits' such as mathematics science and engineering.

among many) has been too much mathematics” (Lovelace, 1841, cited in Plant, 1997, p.32). She was at odds with herself, sociable and reclusive, cautious and reckless, “swinging between megalomaniac delight in her own brilliance and terrible losses in self-esteem” (Plant, 1997, p.32)

Plant defines this hysteric process as “Starting at the end, and then engaging in a process that simultaneously assembles and dismantles the route back to the start” (ibid). She references the term ‘rhizome’, defined by Gilles Deleuze and Félix Guattari (1988), as having “no beginning or end; it is always in the middle, between things” (Deleuze & Guattari cited in Plant, 1997, p.124). Rhizomes form and are networks, expanding upwards, outwards, dividing and beginning again somewhere else. The concept of existing between things has become central to my investigation. I also attribute the notion of interbeing to Internet tutorials where the user obeys step-by-step instructions that deny learning and skip over the basics of something, leading to an incremental loss of understanding.

Arriving at an area such as electronics without any background knowledge or preliminary preparation is a concept I have chosen to adopt as a method of making. I propose that the outcome of such an endeavour would be a reflection on the many objects employed in everyday life that fail to live up to promises. I am prompted to consider whether anyone could be exceptionally brilliant at being average. To be heralded as a genius one must possess an exceptional natural capacity of intellect. Intellect being the capacity for thought and knowledge. Could one have an exceptional capacity of mediocrity? Would it be possible to be a mediocre genius? Deleuze and Guattari suggest “a path is always between two points, but the in-between has taken on all the consistency and enjoys both an autonomy and a direction of its own” (Deleuze & Guattari cited in Plant, 1997, p.123). When we are caught between trying and failing the end result is unclear, when one exists in the state of being average the journey could end in success or failure, or neither, or both. The ‘in-between’ is where I seem to find

myself, imbued with basic knowledge but free from the gravitas of technical correctness, blissful in my ignorance.

In my self-imposed role of the mediocre and capricious female, I have explored the rhizomatic network that is the Internet, following links from other links until I found areas of interest that diverted my course.



Figure 2

Electronic organism diverts attention with pretty light, steals joules

[VIEW ALL STEPS ON ONE PAGE](#)
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[step 2](#)
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[step 4](#)
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FEATURED

intro Electronic organism diverts attention with pretty light, steals joules

Mischievous little organism distracts with bright light while stealing joules from batteries, especially ones thought to be dead! Trap one and rest easy knowing your batteries have been squeezed out of every drop. Careful! It has a talent for shining its bright light at you, which at the right angle could be blinding, or mildly annoying.

suitable for nimble fingers and a good work ethic!

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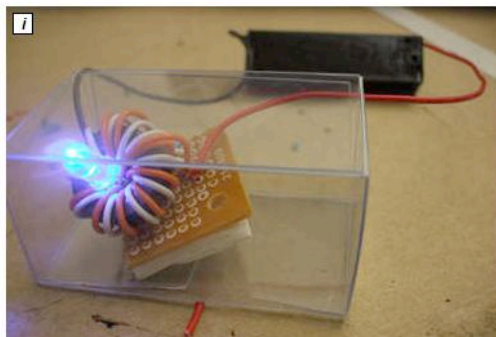


Figure 3

5: Tech talk: how does it work

If the intention is to make objects (or artefacts) that fail, or perform something outside their expected function, then narrative is a valuable tool in doing so. It is also important to acknowledge that certain types of language are irrevocably attached to many objects, for instance electronic objects come equipped with associations of a scientific or mathematical nature. Through the manipulation of such truths an object's value or function can be shifted.

Electronic organism diverts attention with pretty lights, steals joules (appendix A) was an exploration into revealing an invisible action. My intention was to imbue a frivolous gadget with capabilities and depth that far exceeded its actual purpose. This could ultimately set the object up for failure and great disappointment. I followed an Internet tutorial for a 'joule thief'; a simple electronic circuit that attaches to a dead battery and completely drains it while powering a single LED. I was attracted to the name 'joule thief' as it gave the project excessive anthropomorphic qualities. I enjoyed the idea that someone would intentionally make an object that in turn would steal from its creator.

By recreating and re-contextualising the joule thief, I was asking the viewer to consider why such an object is alluring. Does its futility make us sympathetic to an irrelevant existence? By publishing my own tutorial and presenting it alongside the object itself I manipulated the perception of the 'organism' (Fig 3). Through the act of publishing the tutorial it became possible for the joule thief to evolve as though it were living, because it could be adapted, enhanced and spread further by others. By the connecting nature of the Internet my 'mischievous organism' had the opportunity to interact with other people in their personal spaces.

In her book *Evocative objects* Sherry Turkle collects various accounts of people and their relationships with everyday things. The narratives built around these objects anchor them to memory, form relationships and provoke ideas. Annalee Newitz expresses her deep affection towards her laptop, which she relates to her first love, someone she knew only over the Internet. "His breath was the sound of the fan cooling the CPU. I heard his



Figure 4



Figure 5



Figure 6

voice in the sound of my modem..." (Newitz cited in Turkle, 2007, p.89). Newitz notes that the human brain is well suited to suffusing objects with emotional value because we naturally link ideas together in memory (Newitz cited in Turkle, 2007, p.91).

Nathen Greenslit examines his daughter's fear of the vacuum cleaner and how she managed this by denying its identity as a frightening object. She confronted the vacuum and forgave it for scaring her; she accepted it for who it was (Greenslit cited in Turkle, 2007, p.138). Through the narrative she created around the vacuum cleaner Greenslit's daughter displayed a complex relationship with a household item.

Human beings love to form attachments, even to inanimate objects, so it makes sense that the idea of objects reciprocating these feelings is appealing. Love your toaster, it loves you right back. We claim them as 'my first pair of shoes' 'my first car' 'my first robot'. These are relationships that will stand the test of time in our memories. One could assume that such attachments form strongest with the objects we live and interact with in the home environment.

Frank Tjepkema and Peter van der Jagt's *Do break* (Fig 4), Marijn van der Pol's *Do hit* (Fig 5) and Jurgen Bey's *Do add short leg* (Fig 6) are three projects that conceptually highlight and celebrate faults and inconsistencies in contemporary design objects. When presented with a damaged object we are encouraged to view it as unique and perhaps even feel sympathy for it.

Do break (2000) is comprised of a porcelain vase which has an inside layer of silicon. After purchase the owner can smash the vase and the silicon will hold the shards in place, making a completely unique object.

Do hit (2000) is a large hollow stainless steel cube that comes complete with a large hammer, the concept being that the owner can bash and sculpt the cube into a chair of their liking.

Do add sort leg (2000) is a familiar looking chair with one deliberately short leg, prompting the user to stack or place any object of their choice underneath to make the chair usable.

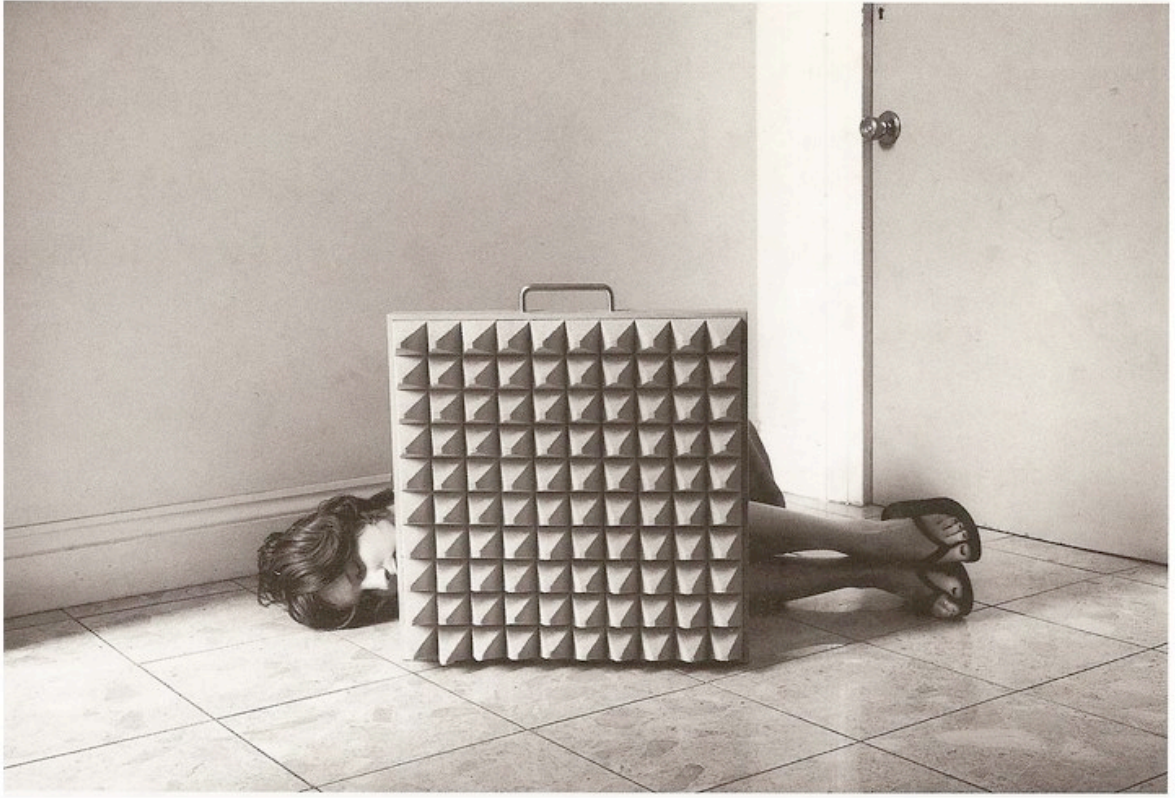


Figure 7

The use of narrative is evident in the photographic images used to represent these objects. The items are viewed in their intended setting of a private home, here surrounded by an individual's personal possessions, the vase or chair is activated and fulfilling its intended purpose. These are objects are someone will live their life and connect with, and even more so as they are unique to them. The image for *Do hit* depicts an exhausted man standing alongside his own tailor made yet imperfect chair, his face full of self satisfaction. By leaving this final step of production to the user, the designer makes their experience precious in its home-made faultiness.

In *Placebo project (2001)* Dunne and Raby adopted out conceptual artefacts to people who felt they had sensitivity to electro static and electromagnetic fields. All the artefacts featured specialist material that dealt with electromagnetic fields in some way. *Electro-draught excluder* (Fig 7) was designed as a protective barrier against radiation from electronic objects, although being constructed from conductive foam; it is not grounded and therefore cannot actually absorb any radiation (Dunne & Raby, 2001). This was an object dealing entirely in invisible actions. It was useful in the sense that the user may be have been comforted by it's presence if they were only partially aware of the object's function, or lack of function. The narrative that introduced the object to the user gave it context and purpose. The individuals participating in *Placebo project* were essentially treated to the furniture equivalent of a sugar pill. By releasing these artefacts into other lives, the designers were able to investigate people's attitudes and experiences of electronic contamination in the home environment.

While these previous examples have taken a scientific or object based route in their conceptual therapy project, other practitioners have experimented with more spiritual and ethereal modes of healing. Morgan notes that artists such as Joseph Beuys have seen that the therapeutic potential of art required transference of creativity from the artist to their spectator. Implicit in this was the belief in a primary state of being or 'origin' that the artist had to access for healing to occur (Morgan, 2003). In Beuys' practice this state was represented in his work through the use of animals, minerals and vegetables as well as the cultural or mythical origins of society. The presence of these factors was intended to "re-energise contemporary man, bridging the gap between

alienated urban life and some sort of natural condition” (Morgan, 2003, p14). This intention is highly applicable in the present day, where the gap stretches beyond urban life towards digital.



Figure 8



Figure 9

6: Trying it out

'Self soothing' is a concept I define as DIY solutions to ease anxieties of present or future situations. I am interested in the extent in which we let such solutions or objects intrude into our daily lives, especially those that are meant to relieve a fictional or self invented ailment. I have explored the idea of 'self-soothing' in a variety of forms. One Internet forum contributor offered this advice:

Ground yourself.....

Get heavy bare copper cables. Attach them by clamps around your ankles. Say at least ten foot long.

Where ever you walk around the house you will be grounded and no charges can build up even while wearing thick rubber soled shoes. Your dogs will love you. Cats will love being able to play with the copper snakes crawling around your house. (Cosmic, 2009)

Internet forums provide a multitude of low cost solutions to technological sensitivity. My interest is in the reality and practicality of these situations. This wary attitude toward technology has been a constant tension between human and machine provides a space for unique objects and materials that exist to fit a very specific, and possibly fictional function.

In response to a forum discussion I constructed a basic device that could be worn around ones ankle or wrist, and when connected to a metal surface would drain the user of static electricity (Fig 8). I used the forum's suggestion of very long thick copper cable. By activating the object in my own home it developed a narrative and became a problematic device, meaning that while the object worked in theory, in practice it was exposed to the realities and conditions of my home, most notably the presence of pets and furniture. This became quite the situation as a heavy copper wire can easily catch on or wind around objects while also providing much excitement to one's cat.



Figure 10

Another trawl for static sensitivity solutions yielded J.B Brown's suggestion:

It's a short-term problem in your case so you don't want to throw a lot of money at the problem. Keep pots of water slowly simmering on the stove with a ringing timer to remind you to check them...turn off when you go to bed...back on again in the morning. Hang wet (but not dripping on the floor) towels all over the place...on wire hangers in/on every door jams ...yeah it looks stupid but it's just during these cold snaps.

it takes gallons..YES GALLONS of water per day for MANY days before you will begin to notice any real difference (Brown, 2009)

In response to this DIY solution I tested an installation idea in a windowless room at Massey University (Fig 10). The room had cables running through the ceiling that may cause a build up of static electricity.

I also used this as an opportunity to explore smell in an installation setting. I wet the towels in a solution made up of water and fabric pre-cleaner, which had a soapy, chemical scent. I also attached copper wire between the towels as if to ground them. This work had almost the opposite effect of the previous test as it had been taken out of the 'home' context and placed in a white walled neutral setting, where by it was unlikely to be affected by people or animals enacting their daily routines around the objects. This test led me to consider the possibility that I could create spaces that would have an overall healing effect on the people inside, or even sooth the space itself.

7: What to do next

In 1929 psychologist and philosopher Jean Piaget defined four stages in the concept of 'life'. In the first stage anything functioning or capable of activity is regarded as living. In the second, movement of any kind is considered spontaneous and therefore alive. During the third stage spontaneous movement and movement activated by an outside entity are separated and only spontaneous movement is considered as alive. In the fourth and final stage the concept of life is applied to animals and plants only (Piaget, 1929, p.194-195)

In the 1980's, Turkle expanded on Piaget's study with the advent of computer technology and electronic 'smart' toys. Children were frustrated when, while observing the inner workings of an electronic object, they could only find microchips and wire, rather than mechanical systems of gears and levers. The same level of understanding could not be reached as the mechanisations had become much finer and infinitely complex. Turkle explains that children came to define 'life' in computers by their level of responsiveness. It was their technological opacity that prevented them describing its behaviour in terms of physical processes and movement (Turkle, 1997).

In 1997 Bandai electronics launched the Tamagotchi in New Zealand, and I turned 11 years old. This was undoubtedly an eagerly awaited birthday gift. Like most children I grew weary of my virtual pet in a short space of time, and was unaware that this children's fad would have a significant lasting effect on my view of technoculture.

Virtual pets initially were magical – the emotive language that they were imbued with made them seductive and exciting. The careful arrangement of pixels presented a fantasy being that was neither animal nor human. This creature began its 'life' as a

limbless blob, it's hopeful expression a reminder of how much it needed you to ensure it's survival.

My 11-year-old self did not waste time exploring the reasons why I, and most other children, abandoned our digital friends so quickly. It did not occur to us that this wondrous object was originally intended for a metropolitan Japanese audience who often had restricted living space in close proximity to others. Such conditions were not usually animal friendly but the realm of cyberspace provided boundless space for an electronic companion. In terms of physical space New Zealand children had no such need for a compact and quiet pet. We were also unlikely to realise that the captivation of these objects came down to a simple case of mathematics, and a restricted combination of inputs that would lead to different outputs.

In his text *Exhaustion and exuberance* Jan Verwoert suggests that “consumer society conversely proclaims to be founded on the principal of limitless choice” (Verwoert, 2008, p.91). He cites the Microsoft slogan “where do you want to go today?” as an example, their question implying that their products were equipped with an infinite amount of choices and options where in fact, as with all computing machines, their system is based on the binary logic of either/or choices (Verwoert, 2008). Just like the case of my tamagotchi, the user realises that where you will go today is entirely up to the predefined options of circuit board.

Had my tamagotchi contained a glitch in its programming it might have been a different story. If some accidental line of code or faulty component had caused my virtual pet to require twice as much feeding or become ill and demand medication every few minutes it would have been far more valuable to me. I would have felt needed by my defective friend and would have loved it all the more knowing mine was one of a kind.



Figure 11

For her project *Tweenbots* Kacie Kinzer constructed simple cardboard robots that had the ability to roll in a straight line (Fig 11). Attached to each 10 inch tall object was a flag imploring passers by to help them reach a predetermined destination. The robots were then let loose in the streets of New York and documented with hidden cameras.

The artist's intention had been to create a narrative about people's relationship to space and our willingness to interact with what we find in it (Kinzer, 2009). What Kinzer actually discovered, however, was an unfolding story of human empathy for an anthropomorphised object. The journey of each Tweenbot became an example of people's willingness to engage with “a creature that mirrors human characteristics of vulnerability, of being lost, and of having intention without the means of achieving its goal alone”(Kinzer, 2009, para. 5) It seems that the presence of a face is crucial to the engagement between pedestrian and Tweenbot. By adding a simple happy expression to the object it becomes endearing, although lost and ill equipped for its journey, the Tweenbot happily soldiers on with its mission. It seems so certain of a positive outcome that it would be difficult not to feel any emotions for this cardboard box.

Kinzer's addition of the flag to communicate with people became the brains of her robots. Instead of a complex tracking and navigational system, the life of the Tweenbot hinged on the individuals who encountered it and whether or not they chose to send it in the right direction. Like my *Electronic organisms* the object developed a life beyond the artist's making.

8: To regulate tensions

Bruce Collier casts a shadow of doubt over the glowing legacy of Ada Lovelace with this comment:

It is no exaggeration to say that she was a manic-depressive with the most amazing delusions about her own talents, and a rather shallow understanding of both Charles Babbage and the Analytical Engine... To me, this familiar material (Ada's correspondence with Babbage) seems to make obvious once again that Ada was as mad as a hatter, and contributed little more to the 'notes' than trouble... I hope nobody feels compelled to write another book on the subject. But, then, I guess someone has to be the most overrated figure in the history of computing. (Collier, 1970, cited in Swade, 2000, p.168)

Doron Swade offers the opinion that this brutal comment is directed more towards Ada's legacy than the Countess herself (Swade, 2000). Ada is no doubt an alluring figure. She was the offspring of poet Lord Byron and mathematician Anne Milbanke. Ada is the patron saint of women working in a technological world, and I would suggest she was a little bit ridiculous.

When I first encountered Ada Lovelace she awed me. Reading about her mammoth contribution to the world as I know it forced me to consider my own position in legacy of female electronics enthusiasts, if I had a position at all. Now I am prompted to consider the opposing view that the Ada we are so often presented with is a sham created entirely by her own delusional writings and a bizarre relationship with someone who did effectively contribute something of value to society. Perhaps Ada's 'genius' was really how effectively she presented a portrait of brilliance.

Inspired by the intriguing case of Ada I explored the idea of releasing absurdly wrong information in a creative writing experiment entitled *Genius and mediocrity: A how to guide* (Appendix B). My concept was to write inspirational suggestions for the mediocre genius in all of us. I included alternative readings of schematic diagrams and electronic fact sheets while also encouraging the reader towards their own experiments in failure and wear it as a badge of honour.

For example:

The mediocre genius is all about hope; trying is the first step towards failing, but if failing is your goal then trying is the first step towards *succeeding*. Consider your audience; show your work to people who know less about it than you. Think about your language; practice using jargon from a field unfamiliar to the general public. Words can have multiple meanings and are open to interpretation so be creative. Remember: there are no wrong answers, only *new* answers. (Appendix B, p.2)

9: Reproducing symptoms

In 2002 Julie Powell set herself the task of making all 524 recipes in *Mastering the Art of French Cooking* by Julia Child in 365 days (Powell, 2002). She wrote a blog about her experiences and life in general on a day-to-day basis over the course of the project. The project became a massive success and was adapted into a novel and a film. I think this particular story is an example of the mediocre ingenuity I speak of. Julie Powell was not trying to become the next Julia Child, nor was she trying to 'Master the art of French cooking' – something which surely requires a little more training than a cookbook. From her perspective failure in these daily endeavours would be favourable because her retelling would become endearing and human to her audience.

It seems to me that the intention here is to document an ambition, something that was occurring in parallel to the daily grind that so many of it's readers were engulfed in. Someone was attempting an impossible task that was put so tantalisingly within reach. Will you really be a master of French cooking when you reach the final page? Probably not. If the reader could follow all instructions down to the letter and accurately identify and rectify any mistakes so as not to repeat them, then yes, you possibly could 'Master the art' or (whatever that meant) in the 1950's when the book was written.

What do you end up with after completing the uncompletable? A strong hatred for French cuisine? As part of my experimenting process I followed a tutorial for a *Magno-sniffer (magnetic sniffer probe whistler thing using a hall effect sensor)* (Proteon, 2006). I used all the right bits and pieces (to my knowledge) and reached the last step of instructions, therefore I made a *Magno-sniffer (magnetic sniffer probe whistler thing using a hall effect sensor)*(Fig 12). Did it work in the way it was intended? I do not think so. Would I really be able to tell if something I made which I did not fully understand was doing it's job sensing a field that I cannot sense myself?

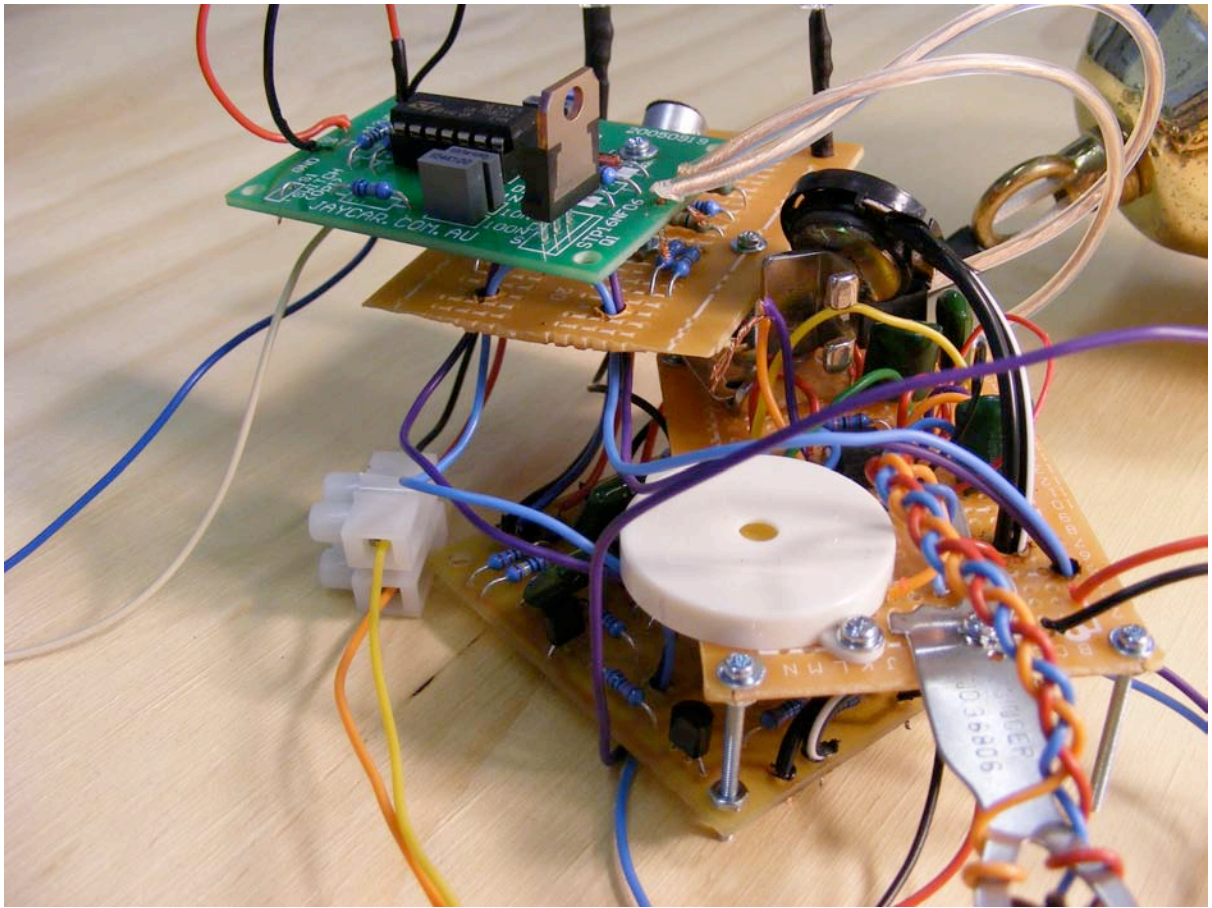


Figure 12

Pirsig argues that a material object can never be right or wrong, the matter that everything consists of does not have ethical code to abide by. What is important, he states, is whether the object of observation gives you satisfaction or not. "There isn't any other test. If the machine produces tranquillity then it's right. If it disturbs you it's wrong until either the machine or your mind is changed" (Pirsig, 1974, p.153). My *Magno-sniffer* was a testament to my mediocrity and provided much more to reflect on than if it had done whatever it was supposed to do. I can gain satisfaction from this and the fact that no one else has a *Magno-sniffer* that looks like mine.

10: Intermittent symptoms

David Weinberger makes the observation that we are now entering a time where “to understand something is to see how it isn't what it is” (Weinberger cited in Stocker & Schöpf, 2005, p.76). He makes this claim in defiance of Aristotle's Law of Identity: “A thing is what it is and isn't what it isn't” Weinberger's argument is a specific case of Internet photo sharing where an individual can tag an image in multiple categories that despite being applicable to the subject matter will make it eventually impossible to track down. His example is a snapshot of Buckingham Palace; one could tag this as “London”, “guards” or “my vacation”. What we call something is what it is and how we communicate it to others. Weinberger argues that since the advent of the Internet “a thing gains more meaning by having multiple local meanings” (Weinberger cited in Stocker & Schöpf, 2005, p.77). This differs from the standard model of knowledge and meaning where just as there is one reality; there is only one structure of knowledge, and the definitions we have of things are filtered by appropriate experts.

In terms of physical objects, one could say that many things are not entirely what they are defined as and our relationship with them becomes a question of language. A coffee maker does not actually make coffee; the user makes coffee aided by a process performed by the machine. Electronic objects promise to make our lives happier, easier and more efficient, but they also tell us that we are incomplete. Without cell phones we cannot be easily reached, and may miss out on important opportunities and valuable pieces of information. Without beds and pillows we will be stiff, tired and therefore unable to live our lives as effectively. Our need for things goes far beyond necessity to the point where we try to fix anything remotely troubling in our existence. If suffering from nightmares one can purchase a dream catcher. Is there anything in the physical being of a dream catcher to suggest that it is actually capable of catching dreams? No. Yet a dream catcher is exactly what it is because it always has been and was created for that purpose.

The concept of placebos goes far beyond the realm of science. The worlds of mysticism and spirituality produce a different brand of soul soothing and calm conjuring. The



Figure 13



Figure 14

dream catcher, originally a symbol of unity among Indian nations, has become a suspicious object mass-produced and pedalled by souvenir stalls and new age healers. It is now largely a decorative object with vague soothing connotations. A dream catcher can be classed as a placebo as it is advertised as a device to catch bad dreams if it hangs above a sleeping person. By knowing this, the sleeping person is psychologically comforted by its presence and may have better dreams. I was curious to explore whether combining mysticism with scientific theory would make for a more convincing placebo.

Dunne and Raby suggest that electronic objects can 'dream', meaning that they leak radiation into the space, objects and people around them. They relate this to the widely used phrase 'smart' electronics, which are objects with enhanced functionality. "Electronic objects, it might be imagined are irrational – or at least they allow their thoughts to wander. Thinking of them in terms of dreaminess rather than smartness opens them up to more interesting interpretations" (Dunne & Raby, 2001, p.8). The idea of 'dreaming' rather than 'leaking' put an almost touching spin on household appliances. With this in mind one could say that we appreciate rather than resent them.

After reading Dunne and Raby's take of electromagnetic radiation I created *Electromagnetic dream catcher* (Fig 13). This object was a hybrid of new age spirituality and scientific functionality. By building a working electromagnet, albeit a very weak one, the *Dream Catcher* would have it's own magnetic field and the ability to 'dream'. Combining this with the expected function of a dream catcher made the object seem almost believable as a calming device. The process of making an electromagnet involved wrapping a metal core with insulated copper wire. This was a tedious and monotonous process which linked back into Plant's previously mentioned portrait of inconspicuous, well behaved women "...switching, transmitting, receiving, wrapping, packaging..." (Plant, 1997, p.76).

The digital age comes equipped with a new take on healing devices. USB gadgets have become the convenient antidote to all the ailments of the digitally inclined. Human



Figure 15



Figure 15



Figure 17

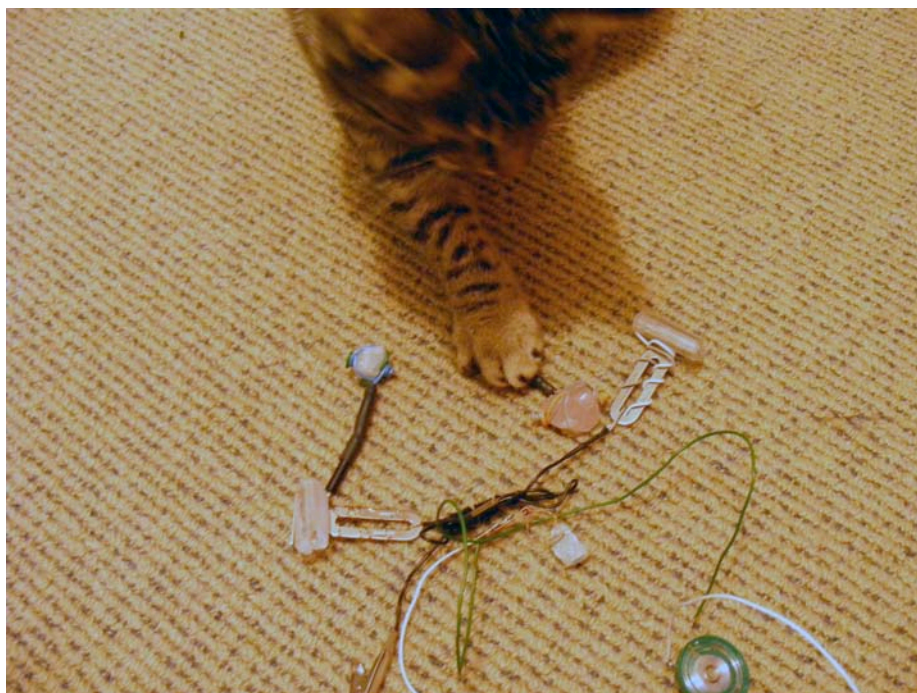


Figure 18

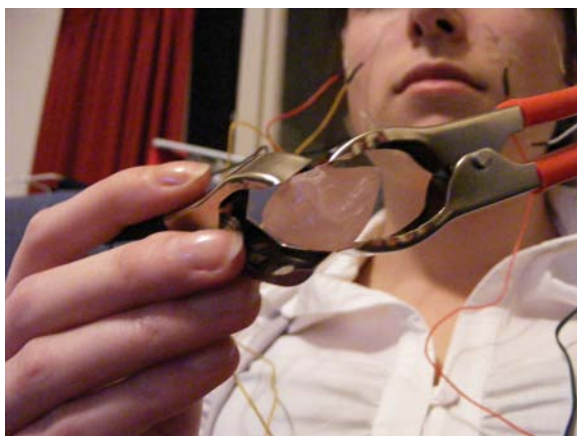


Figure 19



Figure 20

interface devices make the digital tangible and extend the online experience into physical space. Through USB we can have our hands and beverages warmed, control an aquarium and have our horoscope read to us. Online store Strapya-world offers “your healing gadget pet USB adorable owl” (Strapya-World.com), a plastic owl that when connected will blink and move occasionally, all the while performing a mysterious 'healing' function (Fig 15). Whether we choose to believe healing of any kind will occur, this language has an effect, especially the non-specific 'healing' that may fix problems we did not know we had. We are drawn to the idea that the presence of a pleasant little gadget might improve us.

Baby trees (Fig 16) also serve as a convenient antidote to our overly digitised world. Tiny living plants grow within a capsule cell phone charm. Here is a little piece of nature treated in a most unnatural way. Why do we 'charm' things? Are we implying that our cell phones are deficient and need to be augmented with a neat little touch of the natural world? Are we wishing our appliances and devices good luck for their own functions and endeavours? My use of the term 'charm' is confined to an ornament that is alluring in its supposed benefit.

Electronic devices often serve as charms themselves. They make promises of simplifying your daily routine, relieving stress and even bringing forth prosperity. Perhaps when equipped with a charm adorned cell phone we become a whole being, completed by our life easing gadget or organic specimen.

I assembled a range of charm objects out of various crystals and insulated wire. Most of these assemblages were connected to a clip so they could be attached to a person or object and channel their healing properties through them (Fig 20). Crystals are another material synonymous with new age healing. Like the *Electromagnetic Dream Catcher* I was attempting to make a spiritual concept vaguely scientific. I experimented with these objects in different contexts, as trinkets for my cat (Fig 18) and accessories for people.

I felt that these experiments were unsuccessful. The concept of the object being specifically linked with an individual made the work problematic and even as images I felt that the idea of non-functioning and failure was lost. From this experiment I decided



Figure 21



Figure 22

to explore works that would perform an often-invisible function in spaces that were entered by the viewer rather than being activated by the body. This included thinking about objects that together formed an installation and how they might relate to each other.

Continuing with a more installation based approach I put together a test grouping of objects (Fig 21). The scale of the elements in this test were still very much trinket sized so I considered distancing them to occupy the space. By having the animal figure leaning upwards it created a connection between it and the small electromagnetic dream catcher. By including a non de-script animal form with my gemstone objects and dream catcher the installation referenced a mystic ritual of some kind. This work signified an important step in my process and I began to consider objects in relation to one another and the overall space. This work also led me to consider employing different heights from floor to ceiling. I liked the idea of a hanging object, as it would create a presence of something presiding over the room.

Informed by these previously mentioned test works and the many other trials carried out over the course of my research, I moved towards the idea of a installation with a central object that would operate under the intention of emanating soothing powers from within its being.

11: Fault tolerant

The medicine bag is a practice of healing that has been widely proliferated into the terrain of new age culture. The bag can consist of herbs, twigs or leaves of some significance. In *Dream catchers: How mainstream America discovered native spirituality*, Philip Jenkins details the popular DIY approach to spirituality and inner healing. Of particular relevance are the writings of Wolf Moondance, a prolific visionary who describes rituals that the ordinary reader can perform at home:

These might include a medicine blanket, to be used in ceremonial as a shield of safety, literally a spiritual safety blanket... She recommends creating a spirit medicine bundle, a larger version of the medicine bag, made up of special objects appropriate to one's personality or spiritual calling. (Moondance, 1995, cited in Jenkins, 2004, p.185)

The idea of a 'healing bundle' as an object is intriguing. Where does such an object reside? The 'bundle' falls into a similar category as my previous explorations of remedies for technological ailments. The medicine bundle is literally a melancholic object; it is drawn inwards in itself, housing objects for introspection in its dark interior. Such objects sit uncomfortably and unnaturally in their intended home environment. In fact they are homeless items that should have never left the realm of theory. These unfortunate things are 'boundary objects' and are neither purposeful enough to be an appliance nor interesting enough to be a decoration. They can only serve as a placebo.

There is a certain amount of spiritual healing expected for the audience of an artwork. Like the Shaman, the artist is expected to provide something of value, be it insight, helpful information or life changing experience. Verwoert (2008) proposes that since manual labour has become absent from the lives of much of the Western world, "we have entered a culture where we no longer just work, we *perform*" (Verwoert, p.90). He suggests that artists create jobs for themselves "exploring and exploiting our talents to perform small artistic and intellectual miracles on a daily basis" (ibid). This concept relates to many of the processes I have enacted over the course of my research. By deliberately following instructions that deny learning, and making things based on my ill-conceived theories I have performed the role of mediocre hobbyist. Beyond this I

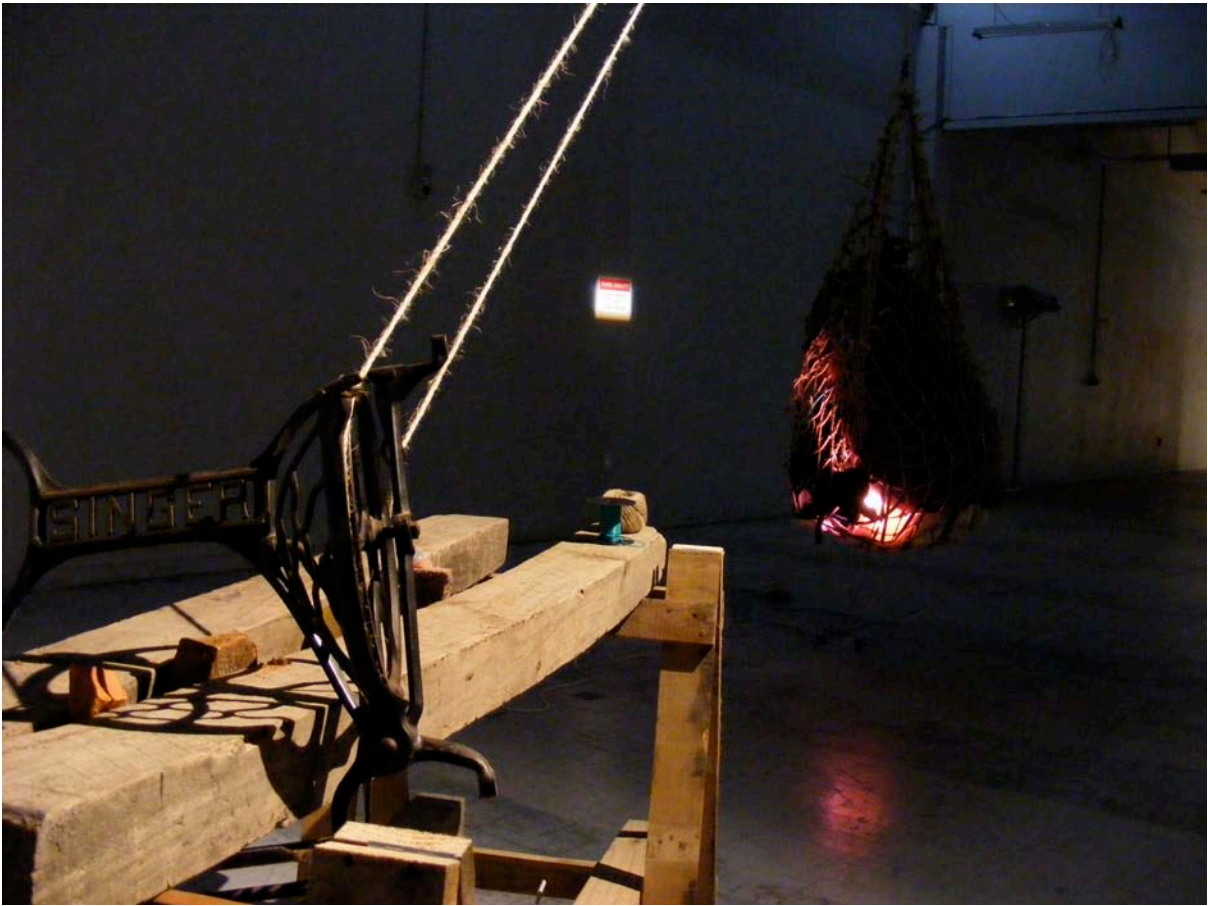


Figure 23



Figure 24

have attempted to tie myself into the lineage of women in roles of production, performing acts of weaving, soldering or sewing. When Verwoert mentions the absence of manual labour he is discussing the necessity of certain processes. Women no longer need to produce their own cloth to make clothes; they do so for entirely different reasons. These acts of making trigger miracles on a personal scale. These are concepts that I explore and clarify through the development of my installation *Dish, Moon and Spoon*.²

For *Place in space*, an exhibition in a large disused industrial space, I presented the first version of my installation *Dish, Moon, and Spoon* (Fig 23). My intention was to employ some the healing or charming concepts I had explored earlier but in a drastically different setting. I considered the scale of the space to be very important and it seemed logical that the bigger the area to be charmed, the bigger the charm object. With the concept of DIY healing in mind, I set out on several quests that would involve becoming my own factory worker. I also wanted to employ the concept of making something entirely based on my own theory rather than practicality.

The central focus of the installation was a large-scale medicine bundle suspended by a pulley system from the ceiling that was anchored down by a heavy construction of timber and antique sewing machine parts. The bundle itself was constructed out of a rope net made by hand. This process in itself referenced the previously discussed notion that through the intense act of crafting by hand, an object becomes steeped in feeling and intention. Plant (1997) details a woman at work on a machine. "She works automatically, only has half a mind on the task. Transported by rhythm and monotony, she wanders off, drifts away" (p.125). I wonder if this state is the opposite of Ficino's 15th century assertion that the act of mastering a difficult cerebral area induces melancholy (Ficino, 1482 cited in Radden, 2000). Perhaps by engaging in the basic and monotonous task of constructing my net I was able to recalibrate my mind to the state of tranquillity? If so, could this be transferred to the audience as Morgan discussed in Beuys practice? (Morgan, 2003) My handmade net is unique in its wrongness. Each

² The title *Dish, Moon and Spoon* derives from words taken from nonsense poems; the intention was to draw connections between seemingly random elements.



Figure 25



Figure 26



Figure 27



Figure 28

individual join in the rope is tied by hand, making it both recognisable as a net yet foreign in it's construction (Fig 24).

For this initial version, I filled my bundle with a collection of objects varying between healing, superstitious or fragile. *Electromagnet dream catcher* was included in the net, under the misguided assumption that a healing net would be more comforting with another healing object inside (Fig 25). Also inside the bundle were ten 'electronic crickets' that were the first circuits I attempted to make when learning to solder. The crickets make chirping noises when they pick up nearby sound and vibrations. This addition gave the net a certain anthropomorphic quality that I'd hoped would encourage people to connect and interact with.

This work consisted of three main elements, the medicine bundle, the support mechanism and an instructional sign reading: "Think quality! Good enough is not good enough". The sign serves as a reference to productivity and performance in the work place (Fig 26). It also creates an underlying tone of irony as the objects in this work are mis-guided Together these objects conjure an industrious approach to the act psychological comfort.

For my second test of *Dish, Moon and Spoon* (herein retitled *Wish, Loom and Certain Doom*) I included the frame that had served as my loom for constructing the net (Fig 27). This was important as it brought the process into the presentation, which was important to the reading of the work(fig 29). Pieces of rope were left behind on the frame; they became the residue of the process that had been carried out (Fig 28).

Through the presence of these off-cuts a connection was drawn between the bundle and frame, which raised the issue of construction and productivity. For this work I revisited my previous use of damp towels as a remedy for static sensitivity. Instead of filling the net with miscellaneous objects, I contained in it 30 maroon bath towels. This gave the medicine bundle a stronger link between the ephemeral practice of healing and the practical science based approach. This also created a link to the Internet tutorials and forums I have consulted for healing concepts. I felt that this installation needed an element that people could connect with and feel empathy for. Including an object that inspired this in people would give them greater understanding of the work.

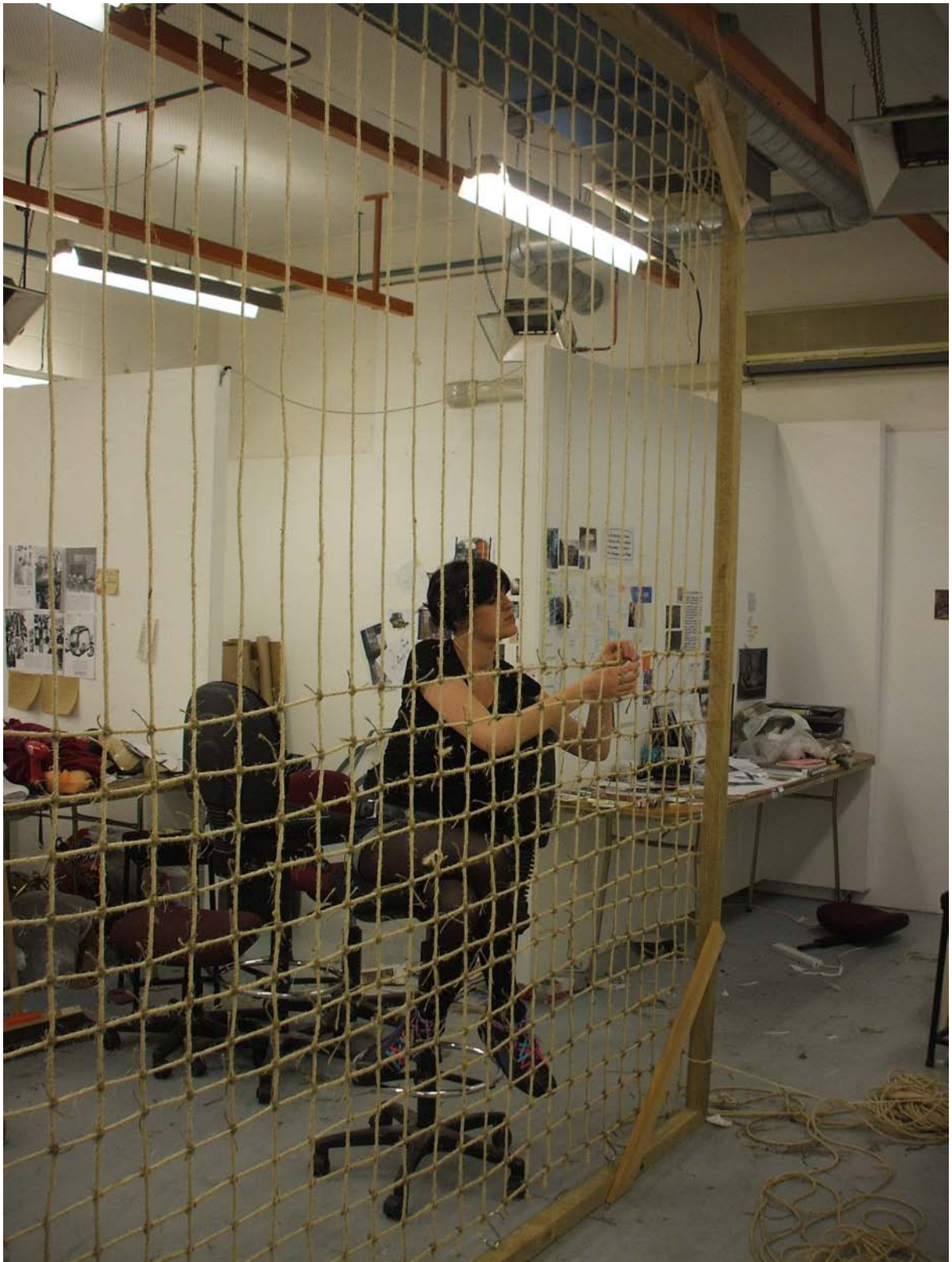


Figure 29

12: The relevance paradox

Throughout my Masters project I have questioned the value of learning and understanding new subjects. In my case it has been electronics and the way they function. Weinberger cites philosopher Martin Heidegger's example of the hammer in his own discussion of how we understand objects. Heidegger proposes that to understand what it means to be a hammer one must understand the outer ripples of knowledge that led to the need for and existence of a hammer, these being that a hammer drives nails into lumber which is made from trees that are rooted to the earth and grow towards the sun. We also must know that our economy pays people to transform tree in to lumber and that we have purposes as humans because we have needs, because we are not gods (Heidegger, 1927 cited in Weinberger, 2007). In the case of the hammer, such pieces of knowledge are relatively common but the overall point is that the implicit web of relationships gives the things in our world meaning.

I will return to the example of the circuit board. Inside the casing or body of an electronic device or object is a miniature city of circuit boards connected by highways of wire and copper pins. On these boards are an assortment of resistors, capacitors, transistors, potentiometers and so forth. Also present in every circuit is an integrated circuit that houses infinitely smaller subsets of the overall system. Integrated circuits are highly sensitive, merely touching them or soldering their pins to a board in the wrong order can easily render them permanently useless. I can identify a circuit board, I can identify the individual components of the board, I can even identify if those parts are doing what they should be. I cannot however, identify the individual parts of an integrated circuit and fix things that are faulty. There will always be an increasingly intricate circle of knowledge that I am not admitted entrance to. The more I learn the more I am aware of how little I know.

Weinberger reminds us that for several millennia philosophers have told us that "knowing is the highest of human mental activities" (Weinberger, 2007, p.203). He suggests that understanding, not knowledge, is what we're aiming for when engaging with others and that the Internet is a means to share ideas and work them out together. In this theory we are exposed to multiple understandings of the world because our

engagement with others thrives on difference. Weinberger notes that “traditionally difference has been a sign that knowledge has not been reached: there can be only one knowledge because the world is one way and not any other. But there will always be multiple conversations and therefore multiple understandings” (Weinberger, 2007, p.204).

Weinberger's position links back to my conceptual how to guide on becoming a mediocre genius where I coin the phrase “There are no wrong answers only *new* answers” (Appendix B). While this is an extreme example and arguably wrong in itself, my point is that terms like 'correct', 'wrong' or 'failed' are just as subject to the pitfalls of understanding as anything else. By not knowing the science behind an electronic object we are left to rely on the description given to us, which can help it retain a presence of mystery and magic. As discussed previously, objects that 'dream' are much more compelling than objects that leak radiation (Dunne & Raby, 2001, p.8). The Tamagotchi is another example; failing to understand the miniature complexity of its circuit board made it possible to see the magic and autonomy of a pixelated blob. Just as it is woven into cloth, magic can be infused into the web of connections that form a circuit.

13: NTF (no trouble found)

The concept of interconnection has been present throughout my investigation. Webs, circuits and weaves have linked and extended ideas, theories and practical exploration. My final installation *Wish, Loom and Certain Doom* aims to reference this. My investigation of rhizomes introduced me to the term 'node' which represents a point of intersection. I thought it fitting to finish my practical work with this concept. Mysterious healing node is an object that I constructed to counter-weigh my medicine bundle.

The node I created is a stitched intersection of ideas and materials. Like a stem in botany, or a vertex in a network of circuitry. This object is where the ideas assembled in my research meet. It is also an intersection aesthetically, a hybrid. It sits at a crossroads of animal, plant and electronic device. My hope is that this object will inspire empathy in people. By using my electronic crickets inside the node, it becomes receptive and responsive. Mysterious healing node also glows softly, emanating soothing warmth from within. Inspired by *Healing gadget pet USB adorable owl*, I made promotional tags that explicitly informed people of the object's intentions; the promise of mysterious healing (Fig 32). This element refers back to my discussion of definitions, and how not entirely comprehending the mechanics of something can lead to a more interesting conclusion.

By situating them together, mysterious healing node and medicine bundle create a dialogue of function and use. The construction of this work has been a process of "detailing procedures, typing, sorting, coding, folding, switching, transmitting, receiving, wrapping, packaging..." (Plant, 1997, p.76). Through Plant's portrait of busy women I have threaded myself into a lineage of productive women and the processes they employ. In this work I attempt to tie a cord between Ada Lovelace and myself. My final installation is intersection of past and present, useful and useless, failure and hope. My attempt to create an environment of soothing is more than likely a failed one, but the attempt is valuable, as is the journey to this point.

As a final gesture I constructed my mysterious healing node out of jacquard. This act ties my practice to the mechanical loom that served as the seed for the computer technology that I have employed in learning many of the processes present in my work.



Figure 30



Figure 31



Figure 32



Figure 33

The materiality of the Node creates contrast with the Medicine Bundle, which is a hand-woven object employing an ad hoc loom. These objects together form a tension between complex engineering and hobbyist DIY, cerebral ingenuity and mediocre logic. These objects are consolation objects: stand-ins for a more effective means of comfort. Through their faulty nature they become melancholic, serving to trigger introspection on the state of electronic objects to break or fail to live up to their promised function.

Through the theories and concepts explored in this research and subsequent practical output, I have defined my viewpoint as an artist. In many ways my practice is a result of the point in history I am working in. The extreme influx of digital and electronic devices in our lives inevitably affect psychological state, resulting in the need for new ways to sooth and comfort. As I have stated, art is a position to do this from. The presence of the Internet also drastically impacts the present day, going as far as to challenge how we define and think of the objects in our lives. Within this technologically advanced condition, overseen by an umbrella of innovative engineers who constantly devise new ways to mould and manipulate science into astounding new creations, I am prompted to consider my own standing. As much as I originally wished to be a part of this hallowed circle of experts, in my own average aptitude I have found a perspective that mirrors the inevitable outcome of the physical world. As my creations break and fail to live up to expectations, so do all things in nature. While failure is the commonality, the individual and unexpected faults of an object make it unique.

Informed by my background in sewing, I have developed a method of constructing objects by stitching, joining and weaving separate parts together. These acts find common ground with the networks of components and connections formed by the act of soldering circuit boards. As previously suggested, in these repetitive tasks one can find tranquillity and comfort. From my fateful endeavour to build a robot I have extended a process of researching and making, and come to the conclusion that I will probably never make an artificially intelligent robot, But in act of persevering I have found comfort and insight in the tasks of making and hopefully found a foothold in a legacy of technological handmaidens.



Appendix A

Electronic organism diverts attention with pretty light, steals joules

by [catherine233](#) on April 20, 2009

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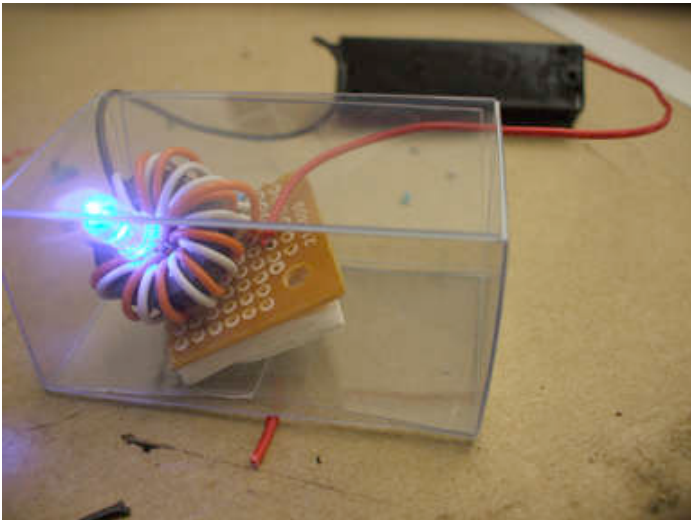
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Intro: Electronic organism diverts attention with pretty light, steals joules

Mischievous little organism distracts with bright light while stealing joules from batteries, especially ones thought to be dead! Trap one and rest easy knowing your batteries have been squeezed out of every drop. Careful! It has a talent for shining it's bright light at you, which at the right angle could be blinding, or mildly annoying.

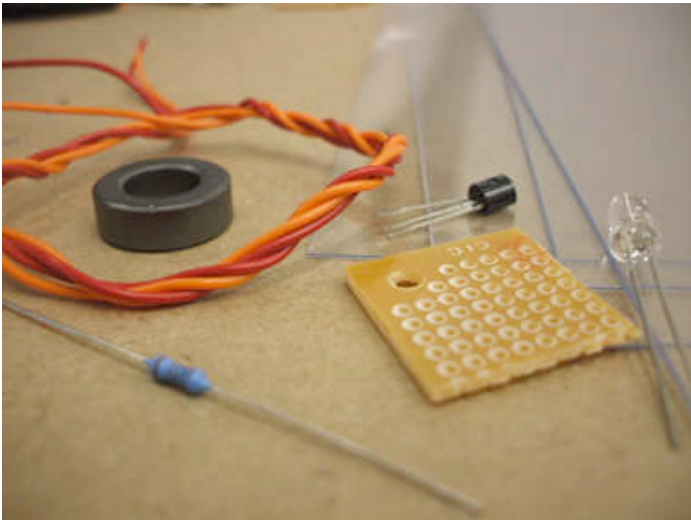
suitable for nimble fingers and and a good work ethic!



step 1: Internal organs

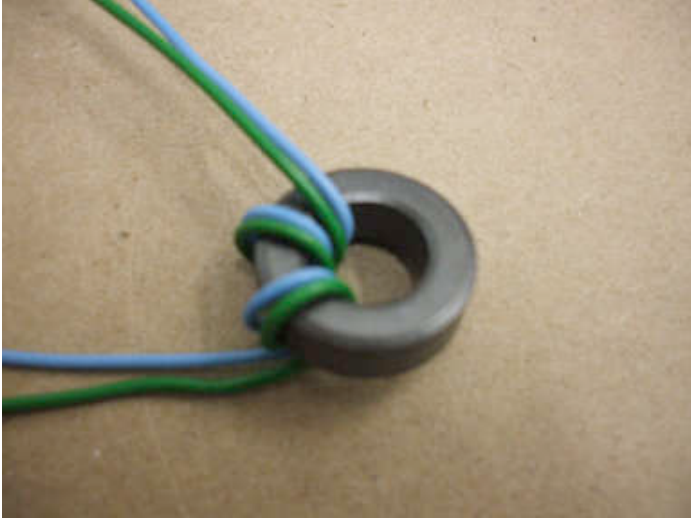
Time to obtain body parts:

- 1 x Prototype board (cut down to 2cm x 2cm square)
- insulated wire (in exotic colours!)
- 1 x Ferrite core
- 1 x 1K resistor
- 1 x 2N3904 transistor
- 1 x Superbright LED (blue or white)
- 1 x single AA battery holder
- thin PVC sheeting (for observation box)



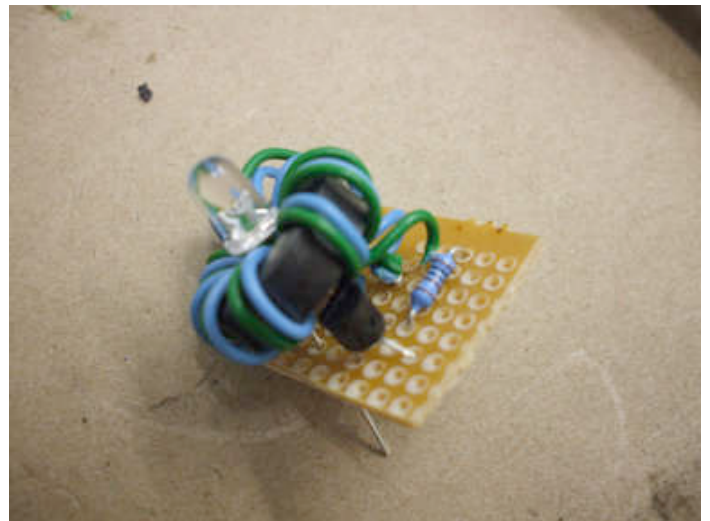
step 2: Make a heart!

Now if this little creature's body is going to work, it'll need something to pump life into it! Using contrasting strands of insulated wire, wrap together around the ferrite core. When it's filled up (about 8 turns) twist together two alternate wires from each side.



step 3: Transplant...

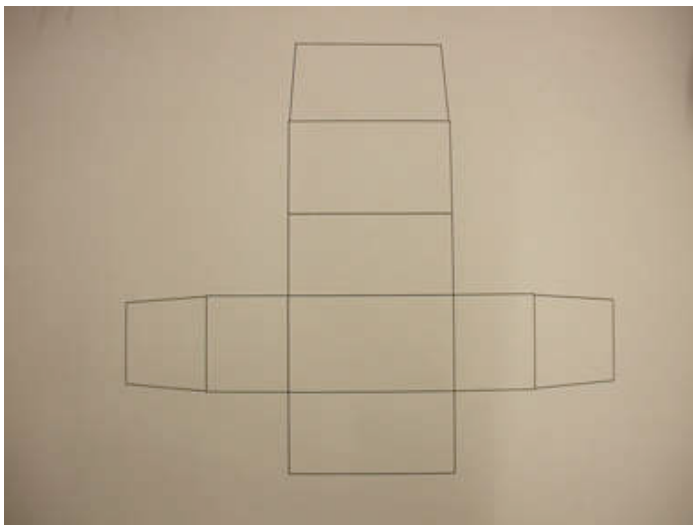
- Fix the three wires (veins) coming from the core into the prototype board (our skeleton).
- Add the resistor to the board, soldering one of its leads to one of the single leads coming off the core.
- Insert the transistor into the board. Attach the other resistor lead to the middle transistor lead.
- Insert the LED through the middle of the core and through the prototype board.
- With the positive (longer lead) side of the LED on the right facing the flat side of the transistor, solder the outside transistor leads to the LED leads.
- Solder the remaining single wire coming off the core to the positive LED lead.
- Solder the negative battery holder wire to the negative LED (flat side) lead.
- Solder the positive battery holder wire to the double wire off the core.



step 4: Contain your organism!

Better contain your creature so it doesn't sneak away...

- Make up a net: this one was length: 60mm x height: 30mm x width: 35 mm. A bit bigger than a match box.
- Use a scalpel to cut out of PVC and lightly score the fold lines.



step 5: Make an army!

Be careful, they have a way of finding each other! Together their light is even more momentarily distracting, but think of all the batteries to be cleaned!



Related Instructables



How to Create a Jewelry Organizer (video) by gianny1



Jar of Flashing Lights by botronics



Casset Player Safe by XOIIIO



Led and Resistor Sex by kclv1988



Capacitor Charger by Tetranitrate



Sexy Secret Book! by Kipkay



Easy Electronics Organization by TXTCLA55



Casset Player Safe Mod by XOIIIO

Appendix B

Genius and mediocrity: a how to guide

Be a genius/mediocre hybrid. Its fun!

begin here:

Assess your intelligence level – ask yourself some simple questions, are you referred to often as a genius? Do you find yourself consistently thinking outside the box? Get back in the box. Following instructions has its best results from the safety of the box.

What are your hobbies? Are you interested in areas that would usually require years of training and education? Are you naïve? Are you delusional? Has anyone ever defined you as having 'delusions of grandeur'? Do you lie to yourself often? Try to get yourself into this head space.

Choosing your next project can be daunting. It is important to be ambitious, try looking in areas you know little to nothing about, that way you can maximise your learning potential. If possible choose projects with words you don't understand or have never heard before. Drastically over estimate your skill level: be optimistic, If it is your first time in a particular field, for all you know you might be a genius at it. Don't be afraid to throw money at the problem either, this will make you feel like you've achieved something. Instructions can be confusing and often written badly so don't hesitate to summarise them yourself, put things in language familiar to you.

For example:

*“you need to design a PCB with a DSP or micro controller and an acceleration sensor and some other robot circuits, like motor control, some sensors...
the acceleration sensor senses the acceleration (speeding-up and slowing-down) of the robot, creates a voltage output ($V_{out}=V_{bias}+acceleration*number$) which is measured by the and the analog/digital converter in the DSP. In the DSP its already represented as numbers. Sample rate can be 200-600Hz.”*

Could be summarised as:

design a circuit board that has feelings. Put it on wheels. When something accelerates it speeds up. You can sense that that something is speeding up because it looks like it is going faster than it was before. Also if it hits something, it will be felt differently at a faster speed. So: output (how hard something hits something) = how fast thing on wheels is going. This could be measured by ramming something into yourself at a fast speed. The output would be pain. You can represent this in numbers by how fast things go. A sample of this being that 10 km is faster than 5km.

Lets try some pictures:

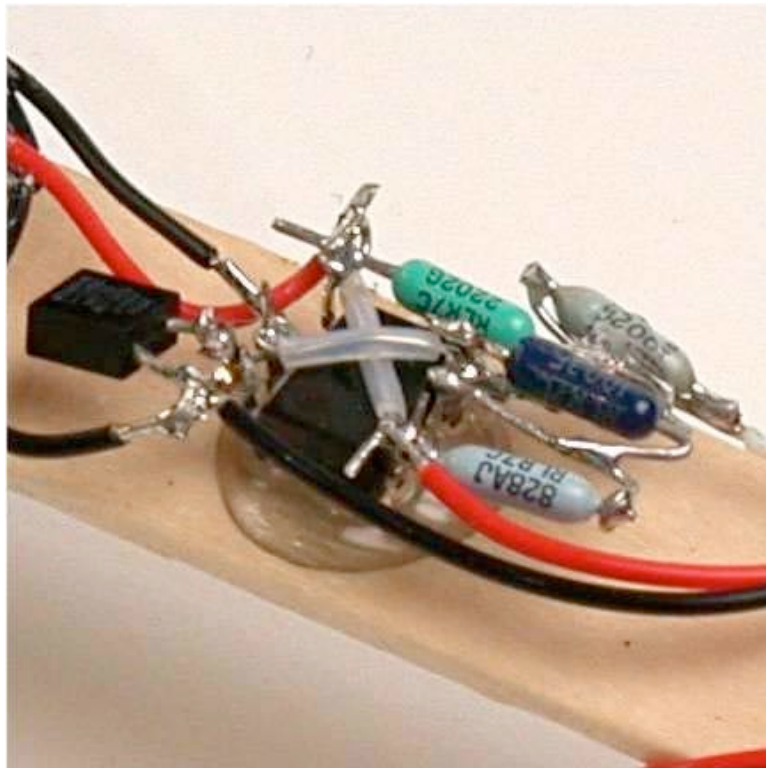


Fig.1 Proteon. (2006). Magno-sniffer (magnetic sniffer probe whistler thing using a hall effect sensor).

Try desperately to decipher this image. Attach small coloured parts to the bigger black part. Some things need to be attached to themselves.

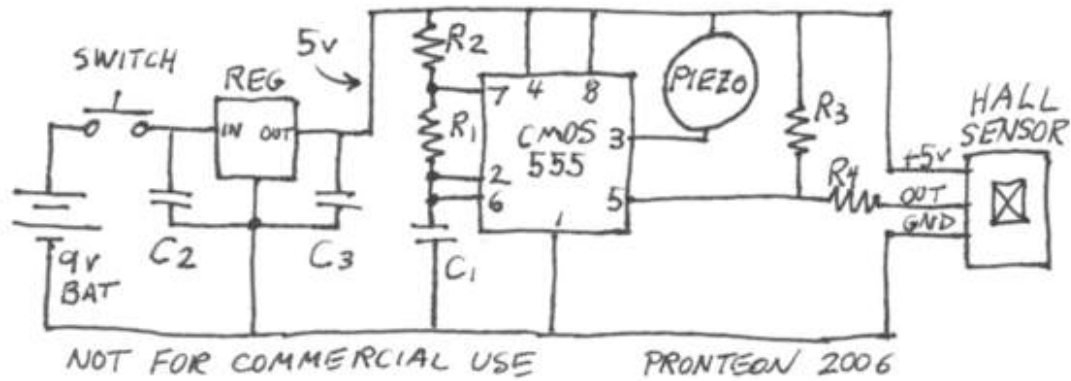


Fig.2 Proteon. (2006). Magno-sniffer (magnetic sniffer probe whistler thing using a hall effect sensor).

Some things are attached to a lot of things. Try to make physical things that resemble this. Bare in mind that some parts do not look like they do in the picture. Name the parts you are using, assign them numbers as well. The R parts could be rest stops while your working.

The mediocre genius is all about hope; trying is the first step towards failing, but if failing is your goal then trying is the first step towards *succeeding*. Consider your audience; show your work to people who know less about it than you. Think about your language; practice using jargon from a field unfamiliar to the general public. Words can have multiple meanings and are open to interpretation so be creative. Remember: there are no wrong answers, only *new* answers.

The phrase 'ignorance is bliss' is highly relevant here. If you don't know what your creation is meant to be doing, then you don't know that it isn't doing it. Think about your projects feelings; does it want to be made 'correctly'? Or does it want to be original, unique and special? The mediocre genius is unique and special too, and therefore likes to construct things in a unique and special way.

Anyone can be anything. Call yourself an 'engineer' if you feel that are one. Terms are vague; do you feel like an accountant? Do you count things sometimes? Exactly. Words like 'good' or 'talented' are subjective; who is to say what counts as a 'good' brain surgeon or a 'talented' structural engineer?

Lets think about quantum mechanics for a moment. In this field nothing is certain, the state of a subatomic particle can never be specified because observing one aspect of it will drastically change another. So, basically, nothing can ever be made properly, because maybe in making something you are drastically changing it so it won't ever become what it set out to be. Physics is the world, if you live in the world you are a physicist. Equally, if you work on tiny model cars you are a quantum mechanic.

Take theory at face value. Assume things about physics and engineering without wasting time 'verifying' things. Can we assume that electromagnetic fields alter your soul? Yes. Yes we can. Are all occurring fields in nature directly related to your 'aura' which is most likely the 'field' around your soul? Makes sense. If something makes sense to you, it is probably a fact. Trust our instincts, own your distorted view on reality.

Radio waves once created are never destroyed. Try to collect some, something might happen.

Live in the land of infinite problems and unfathomable mistakes. Its nice. Warm even. Once you admit to yourself that your usually wrong about things then you start being right! No one can tell you what you already know.

Image credits

Fig.1. Author, *Attempted circuit*, 2009, electronic components, breadboard.

Fig.2. Author, *Electronic organisms*, 2009, electronic components, AA battery.

Fig.3. Author, *Screen shot Electronic organisms tutorial*, 2009, Retrieved April 25 2009 From <http://www.instructables.com/id/Electronic-organism-diverts-attention-with-pretty-/>.

Fig.4. Frank Tjepkema & Peter van der Jagt, *Do break*, 2000, Porcelain, rubber, silicon, 15 x 34 cm.

From *Simply Droog 10 + 3 years of creating innovation and discussion*, (2nd ed.). (p.57), Moors, A., & Ramakers, R. (Eds.), (2006), Amsterdam: Droog.

Fig.5. Marijn van der Pol, *Do hit*, 2000, 1.25mm stainless steel, hammer, 100 x 70 x 75 cm.

From *Simply Droog 10 + 3 years of creating innovation and discussion*, (2nd ed.). (p.57), Moors, A., & Ramakers, R. (Eds.), (2006), Amsterdam: Droog.

Fig.6. Jurgen Bey, *Do add 'short leg'*, 2000, laminate, chromium, plated steel, rubber, 40 x 45 x 83 cm.

From *Simply Droog 10 + 3 years of creating innovation and discussion*, (2nd ed.). (p.58), Moors, A., & Ramakers, R. (Eds.), (2006), Amsterdam: Droog.

Fig.7. Anthony Dunne & Fiona Raby, *Electro-draught excluder*, 2001, conductive foam.

From *Design noir: The secret life of electronics*, (no page), Dunne, A., & Raby, F., (2001), Basel: Birkhäuser

Fig.8. Author, *Dave with static anklet*, 2009, copper wire, telephone cord, alligator clip.

Fig.9. Author, *Dave with static anklet*, 2009, copper wire, telephone cord, alligator clip.

Fig.10. Author, *Damp towel installation*, 2009, towels, copper wire, wooden trestles.

Fig.11. Kacie Kinzer, *Tweenbots*, 2009, cardboard, Central Park, New York, Retrieved January 16, 2010 From <http://www.tweenbots.com/>.

Fig.12. Author, *Failed magno sniffer*, 2009, electronic components, breadboard, insulated wire.

Fig.13. Author, *Electromagnetic dream catcher*, 2009, steel, insulated wire, 12v battery.

Fig.14. Author, *Electromagnetic dream catcher (detail)*, 2009, steel, insulated wire, 12v battery.

Fig.15. Cube Works, *Owl USB gadget*, 2009, Retrieved October 5, 2009 From http://www.strapya-world.com/categories/2331_4370.html.

Fig.16. Babytree, *Mobile gardening cell phone strap*, 2009, Retrieved October 5, 2009 From http://www.strapya-world.com/categories/12_3202_2285_4234.html.

Fig.17. Author, *\$2.00 charm on sewing machine*, 2009, rainbow bridge charm, sewing machine.

Fig.18. Author, *Dave with electronic trinkets*, 2009, crystals, insulated wire, electronic components.

Fig.19. Author, *Electronic trinkets*, 2009, crystals, insulated wire, electronic components.

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Fig.20. Fig.19. Author, *Electronic trinkets*, 2009, crystals, insulated wire, electronic components.

Fig.21. Author, *Installation test*, 2009, polar fleece, Dacron, crystals, insulated wire, metal.

Fig.22. Author, *Installation test(detail)*, 2009, polar fleece, Dacron, crystals, insulated wire, metal.

Fig.23. Author, *Dish, Moon and Spoon*, 2009, rope, electronic components, Singer sewing machine treadle, timber, acrylic, vinyl, assorted objects, The Print Factory, Wellington.

Fig.24. Author, *Dish, Moon and Spoon (construction detail)*, 2009, rope, twine.

Fig.25. Author, *Dish, Moon and Spoon (detail)*, 2009, rope, Electromagnetic Dream Catcher.

Fig.26. Author, *Dish, Moon and Spoon (detail)*, 2009, acrylic, vinyl.

Fig.27. Author, *Dish, Moon and Spoon (2nd installation)*, 2009, rope, electronic components, Singer sewing machine treadle, timber, acrylic, vinyl, towels.

Fig.28. Author, *Dish, Moon and Spoon (detail)*, 2009, timber, rope.

Fig.29. Author, *Dish, Moon and Spoon (construction detail)*, 2009, timber, rope

Fig.30. Author, *Wish, Loom and Certain Doom (detail)*, 2010, rope, electronic components, towels, Jacquard, Dacron.

Fig.31. Author, *Wish, Loom and Certain Doom (detail)*, 2010, Digital image.

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