

The entropy of a closed system can only increase, and will never decrease.

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School of Art & Design

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Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my Knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or institution of higher learning, except where due acknowledgement is made in the acknowledgements.

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Abstract

The aim of this practice-based art project is to explore the necessary absurdities of the established systems of scientific exploration, and how those absurdities are amplified when that exploration is undertaken by a layperson. I am presenting the resulting data in its raw state, with no condensation, or concession to user-friendliness. The way that this information is being unpacked and expanded mirrors the second law of thermodynamics, which mandates the expansion of entropy (in this context entropy can be read as information) in a closed system, which can never decrease, and will only increase.

In doing this, I am attempting to take those absurdities to the level of the sublime, so that the effort that the pieces require is felt when one views the piece. In order to access that sense of the sublime, it is important that everything I do, I take to its maximum logical conclusion. For that reason, I use computers extensively because I am able to get much more done, and therefore "everything that I can do" will be much closer that that sublime infinite. The proviso to computer usage is that I cannot do anything whose processes I do not understand, so that the computer does not rob me of the need to exert mental effort, and so that the viewer can still get a sense of that effort.

Preface

It is my belief that raw information, free of interpretation, has a purity to it. It is subjective interpretations of what that information constitutes that muddy the water. Therefore by recontextualising that data so that it is simply numbers, rather than a pop-song (for instance), then one can retain all of the information, while expressing only what is incontrovertibly true about it, thus rendering a “pure” statement.

Introduction

Reading the above statement it is apparent that my work manifests as a hopeless effort. Even if the information presented were “pure”, there would be “muddy” subjective judgments of meaning, and decisions regarding value, occurring between the work and the viewer. The pursuit of purity (in this context, as I have defined it) in my art is meant to be quixotic. This is why, rather than an attempt to present this “pure” information, the installation represents a tension between the 'ideal' presentation of “pure” information and the practical difficulties of the representation of such a thing. My agency as an artist is as a scientific layperson, who through art, wants to amplify the absurdities that I see as being inherent in 'science'.

I have embarked on a project which has involved conducting obscure scientific surveys. The project demonstrates an ambivalence between a deep admiration of science, and a suspicion of the popular assumption that it addresses 'truth'; thus the project could be summed up as a layperson's view of 'scientific truth'. The final presentation of the project may manifest as a misrepresentation of science, as a result of doing this from a layperson's perspective.

As a personal preference, it is my goal as an artist to have as little to do with emotional subjectivity as possible, this includes avoidance of the emotional preference for the sacred over the profane. This is a reflection of my aforementioned deep admiration for science. The sacred and the profane are of equal scientific value, in that they have equal amounts to teach us. The sacred, and the profane are both sources of beauty, and can both be producers of it. I simply want to be as indifferent to that as science would be.

My choices for the sources of the information have been based on considerations of what would give me the greatest amount of information; -i.e. what would be most processable. Those sources include rugby statistics, literature, pop-songs, and religious texts.

As a result of my wish for my art to have as little to do with emotional subjectivity as possible, I want to address, and expose, what is intrinsic about my subjects. By 'intrinsic', I mean incontrovertibly, tautologically, true; when information is addressed at its most basic level, any conclusions drawn are more likely to be incontestable, even if those conclusions are themselves basic, and not very helpful (in a conventional sense). I.e If the conclusion that one draws regarding an object is that: "It is what it is", then that conclusion is less likely to be argued with than if one drew a more complex, or nuanced, conclusion. This is how I *wish* to address my subjects.

Meta-data

This chapter is about the themes, and subjects of my art, yet I'll begin this chapter with a call-back to the introduction. I am interested in meta-data, and the meta-data of the work itself provides a possible solution to the problem set forth in that introduction: the problem of the lack of audience appeal. If my art lacks a clear referent, and therefore any possible basis for the audience to base their projections on, then the meta-data could be its referent. I.e. my pieces often have expository titles, such as "*All the images from the top 100 most downloaded books on project Gutenberg*"; a piece like this has a tautological relationship to its referent, as it is what its title says it is. The repercussion of this is that that internal logic is a source of interest for the viewer; -a bare suggestion of meaning which the audience can start speculating from. It is not a perfect solution by any means, as this iota of meaning is suggestive of a circular logic, which carries no more interest after one's completed a circuit, but it is a start.

I started this chapter in this way, because it is indicative of why I am interested in meta-data, -because of it is tautological relationship to its referent. My art has been referred to as "nostalgic", in that I want my art to have the greatest possible veracity to its referent; I recognise that to do this, I must present all of the information possible, and the inherent tragedy of this is that all of the information that can *possibly* be presented, is not enough to represent all of reality. Here meta-data acts as a saving grace in two ways, firstly, as mentioned above, it provides a way of cheating (presenting the entire reality of your referent is much easier if the referent is merely the title). It also provides a precedent for near-success. -The entire world may not have yet been catalogued, but that is the job of taxonomists, -that is what they are trying to do.

My interest in meta-data could be described as indicative of the problems that I have been discussing in the introduction in other ways too. Meta-data is extra data, it's information that is important to understanding the bulk of the information, but which may not be apparent, (mirroring my inclination towards holding certain pieces of information back). If meta-data is a solution, it is also indicative of the problem.

| The artist Peter Robinson, also faced this problem, though to a much lesser extent. Robinson's work, has certain superficial similarities to mine, but what's apparent, when comparing his canvas covered in binary symbols, to my work, is that it will always be difficult to get an audience engaged in such obscure, but mundane symbols.

Robinson uses meta-data (titles), as a solution too. The piece that I described above is called *Into The Void*, which quite clearly suggests meaningless, and absence. Even if the code, had a meaning, and that meaning were known to Robinson, that title would be very descriptive of the sensation of a spectator looking at the piece, thus the piece has a perfect relationship to its meta-data, while being indicative of the disassociate art that I described above.

Artists and thinkers who share my philosophies.

In deference to the aim that I set out in the introduction, I want to make art that is free of aesthetic *concerns*. I would like to make art that is *indifferent* to aestheticism. "Indifferent" is the operative term here; art that fulfills this objective of being indifferent can be very beautiful, what is important is that it is made without that being a concern.

| The concept of nature is a good context for expressing what I would like to do. Nature *can* be aesthetically pleasing, but it is indifferent to that. Most things in nature are inanimate; they have no feelings, let alone a preference for the beautiful, yet they often are very beautiful.

Kant describes the sublime, saying: "*Whereas the beautiful is limited, the sublime is limitless, so that the mind in the presence of the sublime, attempting to imagine what it cannot, has pain in the failure but pleasure in contemplating the immensity of the attempt*"¹ (Kant, 1787). What Kant is saying is that the sublime is absolute, while beauty is necessarily limited. Beauty is limited to according to Kant, by human cognition. By definition, something must be graspable by the human mind to be beautiful, where things that are sublime are *indifferent* to those limits. Nature (the nature that I wish to emulate) is by Kant's definition sublime. The idea of presenting all the information possible, as I have stated is my goal, is also inherently sublime, as I would be attempting to present something that overwhelms human cognition.

The indifference of nature is a concept that inspired the modern artists of the mid 20th century. Their severe geometric forms were indifferent to human comfort, and were often meant to subvert the "better living through technology" mantra of the time. The neon light of Dan Flavin's sculptures reflected the burgeoning technocracy of America's baby boomer generation. While On Karawa's works made solely of text printed in black on white paper was an exploration of the technological information explosion that was happening at the time, and that was being remarked upon by thinkers such as Marshall McLuhan, and Neil Postman. Modernism has a proven track record with dealing with information technology, and information theory.

The irony here is that Modernist art is not "natural", in the conventional sense (as in being of nature), but is natural in the sense that geometric forms are often seen as being mathematically pure. The pieces were "natural", in the same way that science is. They were exploitative explorations of the natural world.

One of Karawa's works for which I feel an affinity is *One Million Years (past and future)*; it is a list of dates, which span two million years (one million years in the past, and one million years in the future). The piece is in two bound volumes, the first spans 998,031BC to 1969AD, the

¹ Kant, Immanuel. 1787. *The Critique Of Reason*. Retrieved 29/30/2010 From <http://philosophy.eserver.org/kant/critique-of-pure-reason.txt>

second is 1980AD to 1,001,980AD. The obvious flaw, is that one million years is far longer than humans have been on the earth. Our system of dates is entirely arbitrary, so while 1969 is inescapably 1969 (because people were around to call it that), 998,031BC is a construct. Of course one could argue that 998,031BC is just as real as 1969 because years are objectively measurable, we are simply counting back from a named reference point, but we have no way of differentiating 998,031BC from the year before, or after. No chronological scientific instrument is that accurate. So while 998,031BC is real (as real as 1969 at least), it's completely imperceptible, except as a textual construct. As constructed reflections of a natural thing (time) I believe that Karawa's work is a particularly good example of the modernist sublime that I have outlined above.

Another relationship between Karawa's work, and mine is its indifference. The irony of Karawa's work as being that it has constructed these realms (pre-historical dates), while revealing the process, thus it is both a construction, and a deconstruction. It was simultaneously a construction, and a deconstruction of the relationship between human comforts (the naming of dates), and nature (the intrinsic passage of time). The ambivalence required to simultaneously hold two different positions speaks to true indifference.

Such a list of dates is also so large, as to be an overwhelming (or sublime) amount of information.

Another thinker who discussed the relationship between modernist art, and the sublime was Francois Lyotard. Given Lyotard had a reputation as the arch-postmodernist, it's ironic that when it came to art, and art criticism, he preferred modernist art² (Lyotard, 1979, unpaginated www). He too believed that modernism's exactitude allowed access to the sublime. He was attracted to Kant's particular description of the sublime in which he claimed that:

In the 'mathematically' sublime, an object strikes the mind in such a way that we find ourselves unable to take it in as a whole. More precisely, we experience a clash between our reason (which tells us that all objects are finite) and the imagination (the aspect of the mind that organises what we see, and which sees an object incalculably larger than ourselves, and feels infinite).³ (Jean-Francois Lyotard, unpaginated www, 2009)

I believe that my work has the appearance of modernist art, with its mathematical presentation, and scientific allusions. Lyotard paraphrased Kant more precisely, saying "*It [the sublime] refers to [an] experience of pleasurable anxiety*"⁴ (ibid) it's doubtful that a true modernist would have

² Lyotard, Jean Francois. *The Postmodern Condition: a report on knowlege*. Retrieved 23/10/2009. From <http://www.marxists.org/reference/subject/philosophy/works/fr/lyotard.htm>

³ Anon. Wikipedia. *Jean Francois Lyotard*. Retrieved 23/10/2009. From <http://en.wikipedia.org/wiki/Lyotard>.

⁴ Anon. Wikipedia. *Jean Francois Lyotard*. Retrieved 23/10/2009. From <http://en.wikipedia.org/wiki/Lyotard>.

juxtaposed the concepts of pleasure and anxiety. What Lyotard was attempting with that phrase was a postmodernist interpretation of modern art, just as I make modernist art with postmodernist intentions.

That last point is important to note, as it mirrors Karawa's, and my own aspiration to ambivalence. Ambivalent indifference is a marker of post-modernism.

Art which is indifferent to matters of aestheticism can often be breathtakingly beautiful. What matters is that if this happens, it is accidental. I came across an op-ed in the New York Times claiming that conceptual art was destined for redundancy –eventually. The author was not commenting on his own perceptions of the trends art market, but speaking as an evolutionary psychologist (which he was). –His reasoning was that if we've admired the skill to make beautiful things since the dawn of human civilisation, then why would any deviation from that be more than a phase?⁵ (Dutton 2009). Leaving aside the merits of his argument, his comment threw into relief the fact that aestheticism is not high on the priorities list of modern or postmodern art, (although it's not completely off the agenda). I am not alone in my urges to make art in this manner. The idea of purely indifferent art attracts me, if only for the reason that I'm incredibly curious as to what it would look like. What would happen if those of us who did aspire to ambivalent indifference succeeded?

Entropy (2000)

Acts of preservation key into the title of the project: '*The entropy of a closed system will never decrease, and can only increase*', which is the French Physicist Sadi Carnot's second law of thermodynamics. 'Entropy' can be defined as the number of states a thing can be in, and the above axiom states the intuitive truth that left to its own devices, a system can only become more chaotic; -Order cannot spontaneously happen⁶ (second law of thermodynamics, 2009). If one imposes order on a system, then it ceases to be a closed system. An aspect of a profound amount of information is the greater amount of variables, and therefore a greater amount of entropic states, once the second law is given time to kick in. I am in the habit of simplifying the law as 'messes happen'. If I have an immense amount of information, it's inevitable that it will become less readable, or useful, especially if it's in physical, hard-copy form. Paper tacked to a wall will fall down, or get dusty; paper stacked on the floor will get stepped on, and be susceptible to gusts of wind; -fighting this is fighting nature. And so, having it happen is like a performance of nature, and an invocation of a scientific law. However in the case of texts, nature must be fought, -the system must be left open to tampering to bring order.

⁵ Dutton, Dennis. 15/10/2009. Has Conceptual Art Jumped The Shark Tank? *New York Times*. Retrieved 29/09/2010. http://www.nytimes.com/2009/10/16/opinion/16dutton.html?_r=1

⁶ Anon. Wikipedia. *The Second Law Of Thermodynamics*. Retrieved 23/10/2009. From http://en.wikipedia.org/wiki/Second_law_of_thermodynamics.

If aesthetic beauty is not a valid goal, and indifference can only come about as a consequence, as aspiring to it would defeat its purpose (try trying not to try), then what is there to aspire too, but order? Order is more than a proxy of aspiration, however. It's also a visual signifier of science, and taxonomy. As I stated before, taxonomy is a concept that sets a precedent for my project. The argument can also be made that science is the ultimate expression of man's reaction to the sublime. Thus, like my project, science is a comically hopeless effort, and entropy is the foil to that effort.

In that vein Robert Smithson used the concept of entropy as a way of criticizing the modernist movement. In his essay *Entropy and the new monuments*⁷ (Smithson, 1966) he makes it clear that he believes that the pristine futurist aesthetics of the movement cut themselves off from the future as much as they do the past, since, being new objects there's no actual extrapolation involved. Meaning, and energy are only lost. Contrary to the belief of Lyotard, Smithson makes it clear that he believes that the modernists and their works do not reflect the indifference of nature (natural history), and were just as indicative of human whims as any other art. Entropy was their foil, just as much as it is mine. Smithson however embraced entropy. The fine messes that Smithson made (or simply allowed) did explicitly, what the sculptures of Dan Flavin, and Sol LeWitt did implicitly.

Conclusion

Central to the exegesis is the notion of *indifference* vis a vis aesthetics and emotional preferences. Key to this discussion has been the concept of the sublime. As said, something must be graspable by the human mind to be beautiful, where things that are sublime are *indifferent* to those limits. Meta data, as reference data cheats the problem of the impossibility of displaying the infinite, as it is a complete reference to it; meta-data compresses the infinite. The necessary absurdities found in raw data, caused by its impractical impossibility leads to the exploration of entropy, as the closer that approaches the sublime, the greater its potential towards chaos. Raw data is what is absurd and meta-data is a simulacrum of that state, a condensation of that raw data. It is a compromise in the practical limited of exhibition practice.

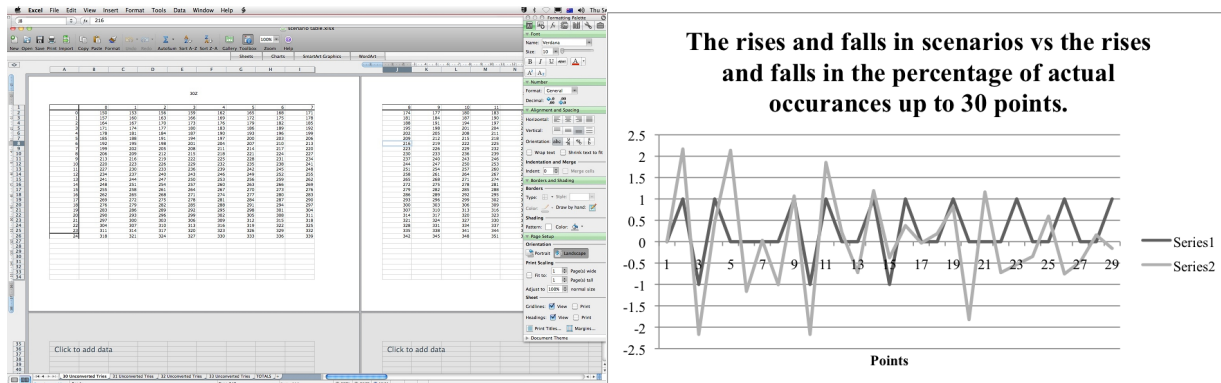
How the creative practice has negotiated these ideas and tested them out has resulted in pieces which can seem insignificant, but are heavy in terms of the amount of information that comprise them. This has caused problems in terms of presentation. However, embracing that problem as an aspect of the work, has made it into a more satisfying problem to negotiate. This is what renders the project that "comically hopeless effort" that I mentioned.

⁷ Smithson, Robert. 1966. *Entropy And The New Monuments*. Retrieved 29/09/2010. http://www.robertsmithson.com/essays/entropy_and.htm

There is also one last point that I feel the need to make: I am not against beauty, I am very happy when a piece of mine turns out visually beautiful. If something is sublime, then its appeal is above beauty. I think that if I'm not thinking about beauty at the time of making, that is the best way of ensuring that beauty is accidental. That is why I place such a premium on the ability, or attempt to be free of aesthetic concerns; though I certainly don't expect that of my audience.

Selected Works from 2010

The prevalence of scores in every international rugby match between 1992, and 2009 compared to the number of scenarios that can result in that score. 2010. Michael Atkins.

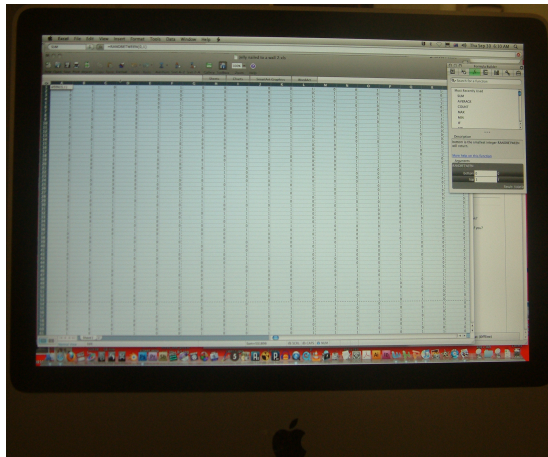


In rugby union, a penalty is worth 3 points, a try is worth five points, and a converted try (goal) is worth seven. Thus, the only impossible scores are 1 point, 2 points, and 4 points. This leads to many, but a finite number of scenarios that can possibly lead to each score up to the highest score ever recorded in a game.

I developed a table to calculate the number of scenarios that can result in each score. The table was spread over 255 sheets of paper. I experimented with the paper tacked to the wall, and displayed lying in stacks on the floor, these experiments never came to a resolution.

The piece at that point demonstrated entropy in a very literal manner in that paper tacked to the wall would fall off, and on the floor, it would inevitably be kicked, and shuffled, and get dusty. When they were in order (in a perfectly ordered state), they could only get less ordered, and loose usable information.

Approximately one million randomly generated ones, and zeros on an excel spreadsheet (Jelly Nailed To A Wall). 2010. Michael Atkins.



This piece is an attempted reversal of the second law, and an example of why such reversals are problematic.

You will notice the word “approximately” in the title. Because the columns in an excel spreadsheet are marked by the letters in the alphabet, and begin repeating when they get to the end of the alphabet (e.g. AA, AB, AC etc), it is difficult to determine which letter sequence represents the square root of one million (i.e. how far the characters should reach horizontally if they are arranged in a square).

The piece, when freshly made is a partial compromise to entropy already. But the process of making it was an attempt to impose order. Unlike *The Prevalence Of Scores*, *Approximately one million* would take a very long time to degenerate, and gain more entropy, but it already has a measure of it.

All of the images from the top 100 books most downloaded on Project Gutenberg at a rate of one frame per second, and compiled into a movie file. 2010. Michael Atkins.



In the above two works, I have demonstrated an interest in presenting “all” of the information. This has been within certain bounds, given the impracticality of such a goal. For instance In *The Prevalence of Scores*, the time period chosen was all the years that complete records exist for, where the current scoring system has been in effect. The bounds in that piece were not arbitrary.

The bounds in this piece have a greater degree of arbitrariness. Project Gutenberg is a an attempt to digitise every text that has no copyright, or a lapsed copyright, and offer them for free download as E-books. Although their catalogue is extensive, it is by no means complete.

Thus there are three practical boundaries on this piece, the lack of copyright on the text, the presence of the text on Gutenberg, and the text’s presence in the top 100 of all texts downloaded. While the first two boundaries are practical (analogous to the time period that *Prevalence* covered), the third represents natural human preferences. In my distant, unemotional way, I considered it an exploration of human nature. -In the way anatomical sketches, and pictures of animals are recurring themes, these are obviously things that the people downloading the text are interested in. I considered this a piece of social science, -a scientific survey of these things. But still, “all” of the information was presented, in a manner that made it impossible to take in. This is the piece that aimed for intrinsic sublimity (where *Prevalence*, and *Approximately One Million* relied on being presented in such a way that demonstrated their size).

The Bible recited by the Macintosh voice utility, and burnt across 75 DVDs. 2010. Michael Atkins.



I am not against aestheticism, just aesthetic concerns. In my art, I do not want to think about what is attractive, and what is not; but my art can be very attractive.

I liked the way that when one looks at the surface of a burnt CD, they can see where the information is burnt on, and where it is not. This seemed to me like a demonstration of the information that is on the CD, in a form that a human could take in, in its entirety, rather than if they placed the CD in a transmitting device, they could only take in the information one piece at a time (although, the trade-off of course, is that the information is now in a form that is meaningless to them). This was my motivation for displaying CDs shiny side out, although I was not disappointed that they turned out to be very beautiful objects.

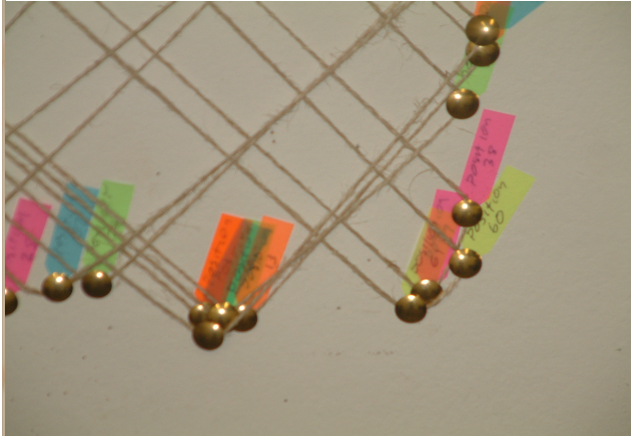
I was thinking of Paul Virilio at the time. I suspect that Virilio would not approve of my approach to making art. In *Art As Far As The Eye Can See*, Virilio denounces the dehumanising attitude in modernist art, claiming that it has seeped into a more general approach to modern life, that leads to people working in fields that have aesthetic elements such as engineering, and design to not consider human habitation in their work⁸ (Virilio, 2010. P127).

I suspect that Virilio would not approve of the way my work tends to regard human whims such as the most popular texts, or the rule changes in rugby union to the 3, 5, 7 system, as practical boundaries to more sublime goals. Nor would he approve of the way I let the second law take its toll on objects that humans have a great deal of sentimental attachment to. I consider this piece a soft rebuttal to Virilio. -Soft in that I was not refuting his assertion, but simply taking it as an example, and showing that I could embrace these beliefs. It was of the utmost importance that the CDs remain in order, when displayed, and the piece is now stored in an archive box (which I now believe to be a superior mode of display). The second law does not reject the possibility of

⁸ Virilio, Paul. *Art as far as the eye can see*. 2010. Oxford. Berg. P127

retention of order, just the possibility of that happening without outside influence. This piece is a sacred object; I am demonstrating the second law in work, by maintaining order, and keeping entropy to a minimum.

All of the locations of the bouncing logo on my DVD player's screensaver over a one minute period. 2010. Michael Atkins.



Scientific experiments tend to be a lot more ad hoc than people imagine. Twine, Post-it labels, and thumbtacks are things that could be quite plausibly be utilized in experiments. However, given that that fact is rather obscure, it is not necessary that the audience is aware of this. The audience sees a scientific survey whose purpose is rather mystifying, but which has whimsically, and absurdly been undertaken with office stationary. They see an aesthetic object.

Like *The Bible* piece, this is also an aesthetic object, but it is not a sacred one. After *The Bible*, I began to see the appeal in aesthetic objects. They give the audience a foothold into the work.

The location of the lens at the beginning of each track on the 1999 EMI reissue of The Rise And Fall Of Ziggy Stardust And The Spiders From Mars on CD. 2010. Michael Atkins.



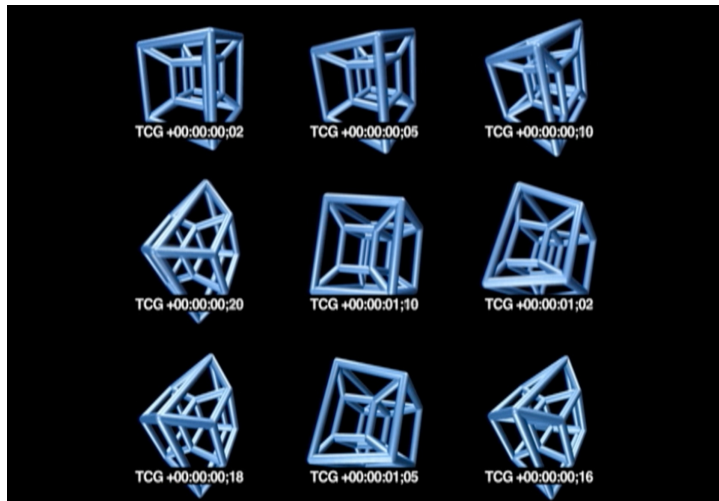
Track 9: "Ziggy Stardust". Laser position from inner spool: 50.1mm.

This piece is a callback to *The Bible* work in the CD theme, though less sacred. When faced with this piece, the audience is compelled to compare, and contrast the images (partially to make sure I haven't cheated). This represents another audience foothold into the work, whereas earlier works relied on conceptual points of interest, which needed to me explained, to be understood.

Again, this piece is a reflection of entropy, and the second law, in that the pieces are ordered, and it is important to their proper transmission of information that they remain ordered; yet it is natural that they will lose order.

However, like *The Bible*, the piece also discusses the information being coded, by demonstrating its mode of transmission.

9 Tesseracts, all rotating at a speed, which is the square of the speed of the tesseract that proceeds it. 2010. Michael Atkins.



A tesseract is a 4-dimensional square. It is to a cube, what a cube is to a square. The only way to render them in three dimensions is to have them constantly rotating.

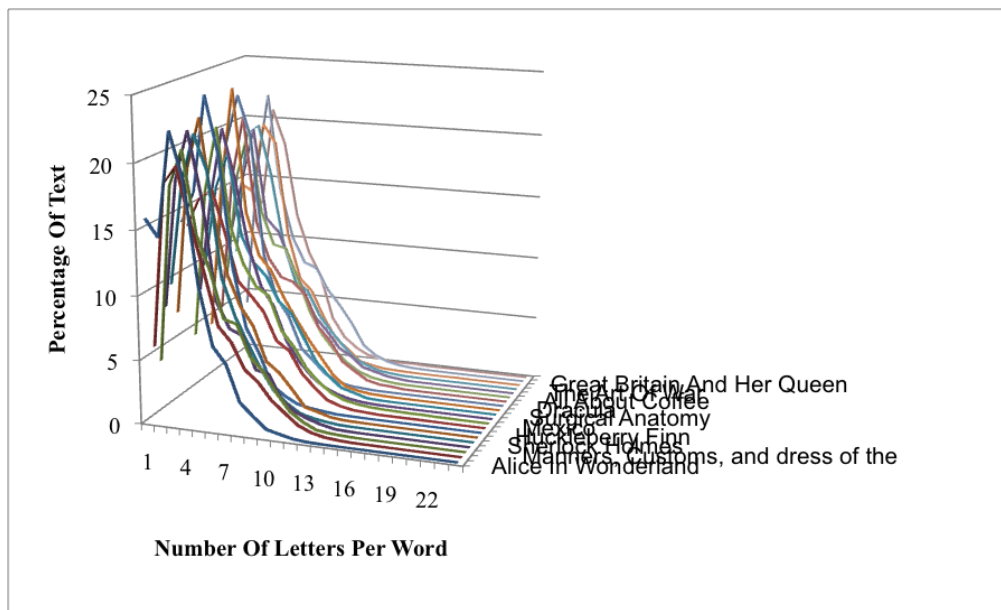
Since a tesseract is a square squared, there's a rhyming joke in that the speeds square, and the configuration is a square. But deeper than that, the way that I have ordered them from slowest to fastest, and the way their speeds are perfectly calibrated to be the square of the proceeding one means that they talk about order, and entropy's effect on order, in much the same way the other pieces do.

However, on this one, I have added timecodes to demonstrate their speeds, to make it easier for the audience to engage in the piece.

Other Works

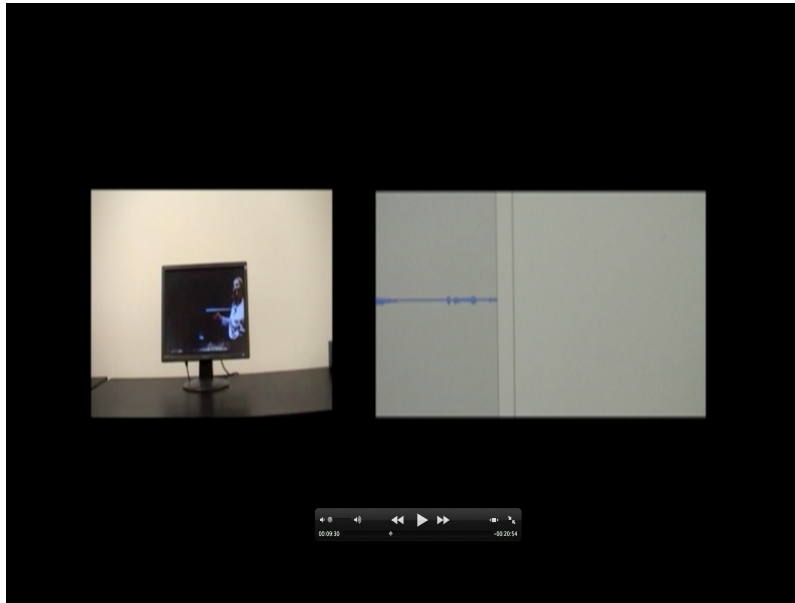
The delineation between these works, and the above works is not 'resolution'. The above works are not necessarily resolved, while some of these works are about as resolved as they ever will be. They are works that I could either not work into the narrative of the project, or were conceptually lacking.

The prevalence of words, by number of letters, in the top 100 texts on Project Gutenberg. 2010.
Michel Atkins.



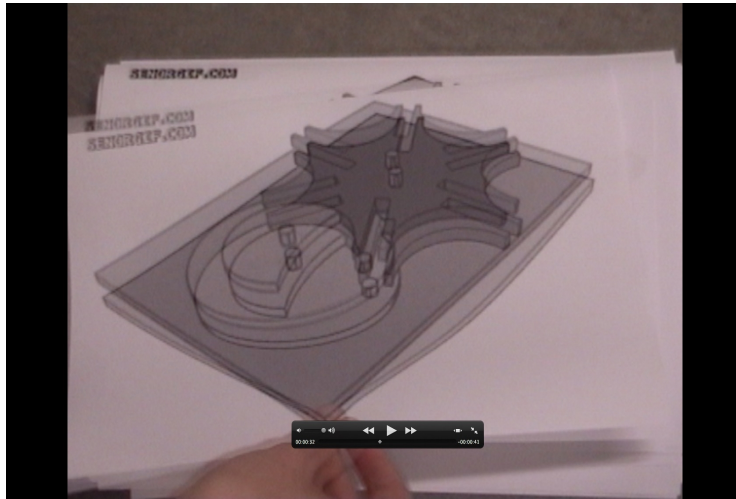
Note: the awkwardness of having 100 items on the Z axis. As an image in a Word document, Word will not render more than twenty.

The Milwaukee Museum of Modern art's DVD catalogue of its performance art exhibition being played, while the DVD's sound track is analysed in real time by computer. 2010. Michael Atkins



I presented this piece as a recording, rather than having it performed live, because as a live performance (being performed by a computer), it was too transitory for my tastes. The information being gathered by the computer, would simply be shown, and leave the screen, (unless it was saved, but that meant stopping the DVD). In this form, it wasn't clear what was being recorded.

The 101 components of the Zen Machine. 2010. Michael Atkins.



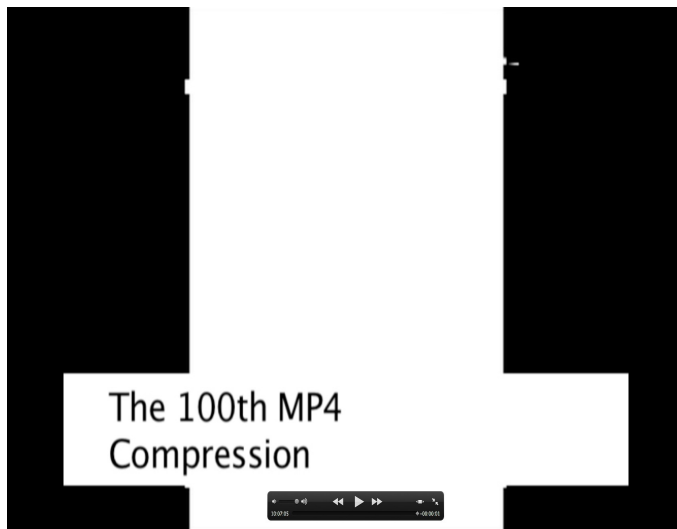
It's hard not to think of this as a sight gag. This is a short animation in which I have printed out every frame, and am manually holding them in front of the camera for a few seconds each.

The extraction of caffeine from instant coffee. 2010. Michael Atkins.



I extracted the caffeine from instant coffee, and filmed the process.

All of the images from the top 100 books most downloaded on Project Gutenberg at a rate of one frame per second, and compiled into a movie file, then compressed to an MP4 format 100 times. 2010. Michael Atkins.



By the 100th compression, most of the frames are just white squares. The artist is an active participant in this; it is forced entropy. Every step in the compression process is there, and because it is 100 times the length of the original piece, it is over ten hours long, and 152 gigabytes.

The piece is a reference to Alvin Lucier's *I Am Sitting In A Room*, in which the artist recorded a recording of of a spoken passage repeatedly, until it was too distorted to be intelligible⁹. As in Lucier's work, as the source is obliterated, what is left expresses the shape of what is distorting it, and the piece becomes a representation of that, rather than of the source.

⁹ Lucier, Alvin. 1969. *I Am Sitting In A Room*.

End Of Year Show.



The images to the left demonstrate how the pieces that were used for the end of year exhibition were presented. The above two pieces are *A million randomly generated numbers between zero, and 100*, and *A graph showing one thousand randomly generated values which are either one, or zero*. These two pieces belong together because they are both dead data; they represent nothing beyond themselves.

The image below shows *Nine tesseracts, all of which are rotating at speeds which are twice the speed of the tesseracts that are preceeding them*, and *A marble, and a ping-pong ball placed in a glass of honey, for the purpose of finding out how long they take to float to the top, and sink to the bottom respectively*. These pieces belong together because they are generating data.

However, they are doing so in a manner that defeats the pretense towards scientific discovery. It's on pieces like this that I demonstrate my role as a lay-person; discover is being made from these pieces (I did record the speeds the balls travelled through their medium, and they are on the piece's title card), however this is not to a scientific standard. It is too a lay-person's standard, and this is to help the audience engage with the information being presented.

Paradoxically, it may have the opposite effect. A pseudo-scientific enterprise that does not



adhere to scientific rigor is a disorienting thing. However since it was done with the opposite effect in mind, it's a complex, disorientation.



The images at the top of this page show *Every pulse in my lifetime accurate to one day, The number of letters per word vs the percentage of text that each word length constitutes in the top 20 downloaded books from Project Gutenberg, and Four graphs that demonstrate the correlation between the calculated number of in-game scenarios that can result in a particular rugby score, and the prevalence of those scores in every international game played between*

1992, and 2009. These pieces belong together because they represent concepts that really exist. Again, this piece explores the paradox of the lay-person's perspective vs the lay-person's expectation of scientific rigor. The pieces are very dense with information, which makes them hard to read, suggesting scientific thoroughness, however that thoroughness does not stand up to scrutiny.

The piece is a representation of science, not a science project in itself. Like I said, I have a deep admiration for science, and this extends to the understanding that I am not a scientist, and do not have the understanding to comment on it, simply to comment on how it is perceived. This is why I err on the side of caution where it comes to scientific thoroughness, and choose not to make any pretense to it.



This lack of thoroughness extends to my decision not to lock the computers, so that the matrix of data that generates the graphs could be changed. This was originally because I wanted people to be able to see that matrix of data. The possibility that people would change the matrix is not unwelcome, as it mirrors the second

law of the project's title. I.e. If people do change the matrix (mess things up), the data will lose meaning, but gain in entropy.

This concept is also mirrored in my decision to use dirty tables, and TV sets with scuffed corners, and the title cards which are A4 sheets placed in front of the pieces (in some case on the floor). They can be moved, or taken, or kicked around; and while I don't set out for that to happen, if it does, it's simply an extension of the concept.

Also, scientific facilities are often universities, or have the same funding issues as universities, so using standard university equipment is a nod to authenticity. This too is a paradox of sorts, as I have already admitted that scientific authenticity is not a priority, contradictions like this add to the disorientation that the viewer experiences.

That disorientation serves a more serious function too, as it allows for an absurdist interplay between science's exactness, and the concepts of entropy that I am exploring. Some aspects of the piece are exact, (or at least accurate), while others are defeated by it.

The last image shows the display of *The location of the lens at the beginning of each track on the 1999 EMI reissue of The Rise And Fall Of Ziggy Stardust And The Spiders From Mars on CD*. Note that in this incarnation, the images are fixed to the wall with masking tape.

Full documentation can be found at <http://the2ndlawofthermodynamics.tumblr.com/>

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