

Loss, Relief

Christo Allegra / UCLA DMA MFA Thesis / June 2010

For Brian Bauman, my husband.

145427,"2001-09-11 11:39:22",001261472,"Someone just mentioned that the date was 911 "
145428,"2001-09-11 11:39:23",000552639,"me. "
145429,"2001-09-11 11:39:23",001052412,"5310 "
145430,"2001-09-11 11:39:23",001414650,"314-9129 "
145431,"2001-09-11 11:39:23",001090149,"HE DAY. BE SURE TO SPEAK TO SOMEONE WHEN YOU GET IN. THX. mreding "
145432,"2001-09-11 11:39:23",000942112,"TEST: TEST "
145433,"2001-09-11 11:39:23",000965689,"bdbp4231: Disk utilization of /bome filesystem 81% is greater than 80 "

145434,"2001-09-11 11:39:23","001071425","ST "

145435,"2001-09-11 11:39:23","001070390","HARTFORD RT15N/B X86 OFF RMP ALL LANES OPEN "

145436,"2001-09-11 11:39:23","000113387","10am MAP64542 CI "

145437,"2001-09-11 11:39:23","000046901","(031109110005)1 PAM/LISA 262-783-0543 KOHL'S MENOMONEE WI 18800-00-2 "

145438,"2001-09-11 11:39:23","000143793","From: root@ecstnfs.ecst.com - [Tue Sep 11 "

145439,"2001-09-11 11:39:24","000459423","vmendola@moneynd>Please meet in V Mendola's office at 11:40 AM "

145440,"2001-09-11 11:39:24","001213207","THIS IS A TEST PERIODIC PAGE SEQUENTIAL NUMBER 0151 "

145441,"2001-09-11 11:39:24","001401700","TEST: TEST "

145442,"2001-09-11 11:39:24","001004695","(30)TEST: TEST "

145443,"2001-09-11 11:39:24","001253030","(19)TEST: TEST "

145444,"2001-09-11 11:39:24","000763198","TEST: TEST "

145445,"2001-09-11 11:39:24","001650373","From root at 11:36 AM EDT: \IFMX_ER@ibm28 - 01000004 RECV@greater than 40000 elements behind - 148980 on ibm28 \ [C.informix adminpri] "

145446,"2001-09-11 11:39:24","001051535","14123966022- "

145447,"2001-09-11 11:39:24","001606118","vmendola@moneynd>Please meet in V Mendola's office at 11:40 AM "

145448,"2001-09-11 11:39:24","001050545","390-0524 "

145449,"2001-09-11 11:39:24","001401345","Please Call-5-3867 1814 "

145450,"2001-09-11 11:39:24","002589034","Plant 42 now in Threatcon Delta, Site 3 entry is now closed all traffic diverted through site 4. "

145451,"2001-09-11 11:39:24","000000329","THIS IS A TEST PERIODIC PAGE SEQUENTIAL NUMBER 2398 "

145452,"2001-09-11 11:39:25","00046499","THIS IS A TEST PERIODIC PAGE SEQUENTIAL NUMBER 2398 "

145453,"2001-09-11 11:39:25","000143793","11:30:24 EDT 2001] dilbert: /tmp: less than 10% free (= 100%) [08] "

145454,"2001-09-11 11:39:25","001787949","HOST_HAS_MESSAGE [56] "

145455,"2001-09-11 11:39:25","001784397","Please call me at 8-227-5156 or 925-277-5156. Mike Griffin [48] "

145456,"2001-09-11 11:39:26","001650373","From informix at 11:37 AM EDT: RECV@greater than 40000 elements behind - 187884 on. ibm61 [C.informix] "

145457,"2001-09-11 11:39:26","000981367","cobaugh***Mandatory*** Due to today's events I need to make sure everyone is ok. Please contact me @ 469-255-1105. You are being instru "

145458,"2001-09-11 11:39:26","001049463","solely for the individual or entity to whom they are addressed. If you have received this email in error destroy it ... "

145459,"2001-09-11 11:39:26","000970782","brchapmaHas ATT contacted you? they need confirmation all have acces to thier network Brent. 68867 "

145460,"2001-09-11 11:39:26","001005990","Tune i "

145461,"2001-09-11 11:39:26","001402038","681-6539 "

145462,"2001-09-11 11:39:26","000076486","From Robin Horton Sub:Kevin is at a Perkins Restaurant parking lot at the corner of I-25 and Colorado Blvd. You will need to take the south exit. Msg "

145463,"2001-09-11 11:39:26","000871932","sloguel FYI, Chicago office being evacuated. -stacey "

145464,"2001-09-11 11:39:26","000459386","GREGORY THOMPSONCan I make love to you real soon? Do You Yaboo!? Get email alerts & NEW webcam video instant messaging with Yaboo! Messenger <http://> "

145465,"2001-09-11 11:39:26","000924774","dacollinClearly, no one should be in the "

145466,"2001-09-11 11:39:26","002589034","Threatcon Delta applies in the immediate area where a terrorist attack has occurred or when intelligence has been received that terrorist acti "

145467,"2001-09-11 11:39:26","000535781","All train breaks bas "

145468,"2001-09-11 11:39:26","001397640","From Megan (Birm): Please call Sheldon Yellen in Birmingham 248-594-1144 "

145469,"2001-09-11 11:39:26","001036385","Hotel confirmation at Fairmont: 96438833-VLC; 90766218-RB "

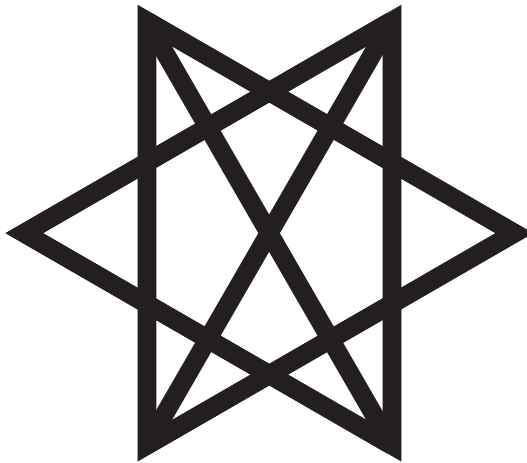
145470,"2001-09-11 11:39:27","000535781","been cancelled for today.....LindaAdams (8:32 AM/SEP 11) "

145471,"2001-09-11 11:39:27","000493654","Frm: Lotus Notes Mail Admin For Partition 1 "

145472,"2001-09-11 11:39:27","001064381","NWE URALS CRUDE DIFFS TUMBLE AFTER BRENT SURGE "

145473,"2001-09-11 11:39:27","002535270","Frm: Lotus Notes Mail Admin For Partition 1 Sub: LNMAL01 Log Crash Message Txt: [Tue-Sep 11 10:58:06 2001] IntellWatch Monitor: WARNING - Server LNMAL01/SAV/GAC MAY HAVE crashed. Waiting 1 "

145474,"2001-09-11 11:39:27","000718660","From: IPN@IPN911.net - UPDATE: Unconfirmed Reports of Plane Crash at Camp David now IPN [69] "



*Above all else, it is about leaving a mark that I existed: I was here. I was hungry.
I was defeated. I was happy. I was sad. I was in love. I was afraid. I was hopeful.
I had an idea and I had a good purpose and that's why I made works of art.*

-Felix Gonzalez-Torres

Tower One. Foundation.

“It was shallow thinking to maintain that numbers and charts were the cold compression of unruly human energies, every sort of yearning and midnight sweat reduced to lucid units in the financial markets.

It fact data itself was soulful and glowing, a dynamic aspect of the life process. This was the eloquence of alphabets and numeric systems, now fully realized in electronic form, in the zero-ness of the world, the digital imperative that defined every breath of the planet’s living billions. Here was the heave of the biosphere. Our bodies and oceans were here, knowable and whole.”

-Don DeLillo, *Cosmopolis*

Information artists perform a paradox. Information and its discourses rely on comprehension and the delivery of answers to their process. Practices are focused primarily on the utile, answers to problems, solutions to issues, and meaningful results. As information has increasingly become part of the texture of daily experience, there is an expectation raised by information’s very delivery that it will be processed and understood by the information artist. Information without comprehension creates an imbalance in understanding, an anxiety that displaces meaning, and evidences a representational failure. This inability to process and construct meaning from our own data producing activities creates a void, a widening gap that demands resolution, waste until further notice, it begs to differ, it suggests futility. As Felix Gonzalez-Torres says, “We have an explosion of information and an implosion of meaning.”

Contemporary information, its modern representation in practice, and its politics are framed by two figures. Otto Neurath and Edward Tufte, respectively sit at the beginning and end of the modern construction of the information design discipline and are evangelists in their belief in the ability of representational graphics to

signify universal truths. Otto Neurath (1882-1945) was an economist and philosopher who worked for the Austrian government linking social metrics, the measurable statistics of society, its production, consumption, and distribution, to a pictorial language that could be shared back with the lowest common denominators of society. The approach was initially called The Vienna Method, a product of logical positivism and unified scientific theory, and it developed into a graphic language that was codified and delivered through European government agencies. Neurath's Isotype Institute developed a mature visual methodology for data presentation. The philosophical mission was to design a pictorial language that could be comprehensible by all, a universal representational form that could describe the macro trends and themes of the society that produced them creating a virtuous circle of knowledge for societal benefits. By sharing these statistics through a common symbolic vocabulary the state could visually explain the economic and social truths that defined the whole of its behaviors.

Edward Tufte (1942 -) the leading national figure of information design, was most recently elevated to a position where he is responsible for the explanation of the billions of dollars that were poured into the void created by the Great Recession (2008.) He has become President Obama's visual accountant for the greatest loss of capital since the Great Depression. Fundamentally, Tufte's beliefs are similar to Neurath's, the graphic delivery of meaning and a universal method of communication are within our grasp for positive outcomes determined by a visual logic. In a handsome series of monographs, information design methodologies are elaborately researched and delivered in succinct visuals that simplify and elucidate the approaches to communicating data in a series of monographs. Tufte's work is oftentimes presented in cross-country tours where attendees from design, business, marketing and finance disciplines sit together to learn information design in a motivational workshop setting. The perfect chart is fetishized and an ideal is constructed for the audience to attempt to replicate. Tufte teaches that the right graphic representation can disrupt and redirect action in the pursuit of better outcomes. The information graphic as an object can sit outside of discursive politics to provide a complete truth that can be understood irrespective of situational logics.

Neurath's legacy is defined by the two institutions that he directed; the German Museum of War Economy (Liepzig, 1918), and the Museum of Society & Economy (Vienna, 1925). These spaces were a manifestation of Neurath's philosophical work as a visual information theorist. These museums were public institutions that synthesized the information of their present time, visually explained the cultural conditions graphically, with

the goal of rationalizing the economy, “which is progressively unfolding and developing meaningful connections through normification and typification”¹. To accomplish this task and visualize the invisible meaning that would need form, Neurath also created the Department of Transformation.² “Transformers” were trained to distill important information and construct visual displays that could effectively disseminate macro and micro information that was beyond the grasp of the everyday worker and described their conditions. Abstract images encapsulated the information so to create “signs that speak no more than necessary.”³ The ultimate political goal of the enterprise was “Gemeinschaft,” a total solidarity among the people. Yet with all of the effort, process and pragmatic communication technique that went into this effort, and with the rich set of tools and rules that Neurath’s Isotype Institute left to communication methods, the dissolution of imperial power through an informed worker revolution never came to a satisfying arrival point for Neurath. The idealism that fueled the development of this modern utopic ideal for language faded in his later years his belief in a socialist cultural reform was replaced with a cynical detachment far removed from the philosophy that spawned his legacy.

“Experience shows that the working masses are very much inclined to copying bourgeois precedents and are not especially inclined to accept plans that are meant for them specifically.”

Neurath’s final information design work was done for the British Ministry of Information in 1943 as a series of propaganda films, three years after his escape from the Netherlands during the Nazi invasion.⁴

The scientific empiricism that Neurath espoused through his communication methods, while revolutionary and profound in their approach to information, is still bound by many of the inherent issues of representation. As Ben Fry frames in his methodology for information design, step 5 is “Represent”, and representation opens up fundamental paradoxes for an information designer. Fry hints at this complexity in his process, “How you choose to represent the data can influence the very first step (what data you acquire) and the third step (what particular pieces you extract.)”⁵ If representation can affect the data which is gathered and how it

1 Nader Vossoughian, *Otto Neurath: The Language of the Global Polis* (New York, NY: NAI Publishers, 2008) p. 53.

2 Ibid., p. 59.

3 Ibid., p. 63.

4 Ibid., p. 152.

5 Ben Fry, *Visualizing Data* (Sebastopol, CA: O’Reilly Media, 2008) p. 9.

is organized to construct a picture, then subjectivity is defined as a fundamental part of the “objective” process that is described by the information design process. When Neurath states, “show no more than necessary,” a rich set of ambiguities emerge in the information design discipline. Intentionality and individual latitude in the construction of a display, representational choice and the iterative process of fabrication build a politic. The rationalist ethos that are espoused and the discrete, inert solutions to our information complexities in reality facilitate additional complex subjectivities. The information designer is resituated as an interpreter bound by the irrationalities and polemics of expression.

Neurath’s global polis never adopted the constraints of his imposed formal vocabulary and in the end his prescription was ineffective and irresolute. The rationalist global politic of the Vienna intellectuals never achieved the social revolution it hoped to bring to fruition and without a state agency to fund and distribute its framework, it closed. In a Blitzkrieg-ed London, Neurath was approached to help to develop new housing based on his original ideas on how new forms of housing could impose better social constructions for the proletariat. This final opportunity for him to institute his social vision and implement an organized strategy for the “modern gypsy” has an ironic edge to it. An opportunity to finally overlay a new system on a destroyed and chaotic landscape was made possible through the brutal efficient power of an orderly system of mechanized warfare, a physical manifestation of the systematic, logical and reductive thinking that was espoused in his diagrams decades previous. Ultimately Neurath’s death precluded the realization of this final vision.

The hubris of Neurath’s attempt to reach around the globe and create a total and absolute Ur language that could facilitate a state-developed truth also reflects in the hubris of the earlier statement by the financial trader protagonist of Don DeLillo’s *Cosmopolis*. The assumption that the world is reducible to representation and through that representative mirror one can see all, exposes a desire for absolute power and control. The methodology describes an imperial politic is fundamental to the origins of information politics.

Ignoring subjectivity does not remove it from existence, excluding its messy manifestations does not make the representation more true, just more simplistic. Yet in that act of simplification in representation, the politic enacts and the “poker tell” manifests. By choosing what to not include, what to exclude, the narrator moves into the foreground and points to an outcome with an “objective” artifact of the process. But in that choice, the politic is imprinted, historicism is enacted, and authorship is defined. How can a universal language of

interpretation enact its distribution? The reversion to a formal analysis, which is espoused by Neurath and Tufte is that there are tenets that are so profound in our comprehension that they constitute a natural language that is accessible by all. From the perspective of a semiological or linguistic perspective, the success of Neurath's language and the universality that it achieved is as much a function of the power structures (the official bodies of the political institutions and their politic) that disseminated the work as Neurath's methods and their underlying meanings. Power is inherent to the success of new language construction and its adoption. Where language comes from is as important to its distribution and uptake as what it says. Fundamental to languages construction is the accompanying relationships that allow it to achieve a critical mass of comprehension. An objective ideal for meaning is crucial to this mission as it diminishes the complexities of communication by veiling politics which can raise issues of identification. Additionally, when subjectivity is introduced or a loss is hinted at in this construction of language, it can call into question the formal hegemony of the state's ability to communicate and construct meaning, threatening the system.⁶ The system then is challenged to reinstate its control through enforcement and political action.

Laszlo Moholy-Nagy was a design contemporary of Neurath's and an aggressive opponent.⁷ His opposing philosophical stance was "We cannot establish a universal intellectual attitude or cultural standard from one vantage point only, such as cognition by means of logic, or the sciences, nor indeed from the arts exclusively. In order to form a comprehensive attitude to existence, we must start simultaneously from emotion and cognition." Integrating the psychological and emotional approach to the design of communication creates possibilities for unknowing vs. a notion of information as a consuming mechanized process of collapse to singular meaning. Moholy-Nagy counters a design approach that pursue an infographic Babel with all languages collapsed into one universal representation, allowing us access to Edward Tufte "cognitive paradise of explanation, a sparkling and exuberant world."

Implicit in this invocation of the Garden of Eden (a place of no return) are many questions that begin to configure access and construct desire. How does one attain this paradise? What are the rules for entry? How much will it cost? Tufte says this paradise is open for everyone as, "the principles of analytical design are universal — like mathematics, the laws of Nature, the deep structure of language — and are not tied to any par-

⁶ Ronald E. Day, *The Modern Invention of Information* (Carbondale, IL: Southern Illinois University) p. 56.

⁷ Op. cit., Vossoughian, p. 129.

ticular language, culture, style, gender, or technology of information display.”⁸ If you are unable to access these “principles of analytical design” because you are not that type of universality, Tufte can teach you. It is in fact his lucrative business, selling the skills to construct meaning. While Neurath’s approach stemmed from a socialist origin, Tufte operates via a classic American business model. Creating desire out of compendiums of rich information graphics in hotel ballroom seminars around America, Tufte is an evangelist for understanding through better graphics. The well rehearsed and tightly managed seminars are attended by professionals from a range of backgrounds. Finance, science, business administration, software development and design are all represented. The one day seminars hit on short topics that describe how to create more effective graphic presentations of data, and rules are set down, no chart junk, powerpoint is bad, software designers and drug dealers both call their product audience users, etc. pithy points for the high consumers in an information society. In the midst of this business communication course, there are also fetish objects from Tufte’s personal collection. Original tomes from Galileo are circulated by grad students wearing white glove and panning down the aisles, just out of reach. Tufte jumps back and forth around the room, wireless mike running the whole time, a motivational speaker for the information presentation vanguard. Over the books, he flips the pages back and forth, the oil from his fingers commingling with that of Galileo’s. As Tufte moves from one lesson to the other, a new vocabulary formulates a community. Post-seminar this language can be implemented and recognized as a class of thought leaders. A unifying factor for a segment of the elite communicators in business who have now experienced the potential of better Excel charts. In the pursuit of great presentations in the board room, a new weapon has been added to their arsenal for driving the point home.

The crown jewel of Tufte’s presentation is a retelling of his account of the Challenger disaster as an example of the dire consequences of bad information design. Tufte posits that the Challenger accident could have been prevented by a better chart faxed to the launch committee. The causal relationship between temperature and O-ring failure (the sealant rings on the fuel tanks) was ineffectively described by the engineers and hence they were unable to convince high level NASA officials of the impending disaster. Tufte frames his discussion by referencing the various political attributes that attended this decision, the NASA bureaucrats and their missives, the suspect corporation contracted for the lucrative engagement, the unrealistic demands

⁸ Edward R. Tufte, *Visual Explanations* (Cheshire, CT: Graphics Press, 1997) pg. 9.

of the shuttle launch schedules, all the way up to Ronald Reagan who was expecting to talk with Krista McAuliffe, the first teacher in space, as part of his State of the Union. So many complex affective factors are described, a massive ecology of power dynamics and complex communication strategies. Then Tufte, summarily dismisses all of these factors as inessential dynamics of the tragedy. “Had the correct scatterplot or data table been constructed, no one would have dared to risk the Challenger in such cold weather.”

There is a context to this argument that needs to be unpacked, since this statement has been a fundamental event in the adoption of the information design discipline and its market penetration as a communication medium. Tufte’s altruistic indignation is undermined in several ways by the effect of his choice.

By framing the entire incident as the consequence of a bad chart, Tufte absolves power and corporate decision makers (the same types of senior level managers who take his courses) from the fatal outcomes of their processes. Tufte places the responsibility squarely on the ability for a graphic device, an artifact, to communicate independent of its context. The “correct” solution, Tufte’s re-chart is based on an approach coached in retrodictability, relying on hindsight, utilizing additional evidence and experience at Tufte’s disposal that was outside of the timeframe and constraints that the scientists had to operate within when they constructed their conclusions. Tufte has evidence of the results far beyond their knowledge including the Challenger explosion itself. The chart that would have saved the Challenger is based on a situational context that can never be re-enacted and Tufte’s unabashed refusal to reconcile that delineates a motivation. Tufte’s ideal solution (whose effect requires several pages of context and explanation) that only he could have made also implicates Tufte’s own need for resolution of this trauma, skews his implied objectivity, and revealing his need for a psychotherapeutic moment⁹. Tufte creates a chart that becomes totemic, an iconic image that exists in an alternative outcome that can help to bring comprehension to the incomprehensible. However, the most problematic dynamic that Tufte introduces through this argument is the appetite he whets for his workshops and publications, the desire and commodity he creates through an implicit contract that in the practice of his techniques his students will be able to prevent profound tragedies.

When one looks at the handwritten, carefully written text that was sent in the conclusion fax that were received by NASA officials, the typographical tenor of those letters, has a certitude. All capital letters describe

⁹ Op. cit., Tufte, p. 140.

with generous leading and careful bullets, “O-RING TEMP MUST BE $\geq 53^{\circ}\text{F}$ AT LAUNCH.” The projected temperature was between 26° and 29° for launch day. Tufte’s charts speak a different vernacular than this statement, a more complex vernacular that references statistics, science, and high design aesthetics, yet an artifact is still subject to interpretation. Interpretation and meaning is then contingent on the politics of distribution and the dynamic forces that frame them. Tufte engages in a discussion that this situational expertise is learnable by all, that just as his clear presentation of the information shows visual conclusive irrefutable proof, so could everyday scientists learn this method and disrupt the sometimes irrational decisions that are made in the pursuit of outcomes that may have less idealistic notions. Yet this seems like an impossible proposition as the construction of meaning is dependent on authorship and the power behind the message. Power can fundamentally shift and redeploy language with new purposes and meaning. The State of the Union address on January 28, 1986 still happened, Ronald Reagan’s grave address contextualized the impossible outcome of the explosion and situated a framework for comprehension. It is possible that the address changed very little in its philosophical tone, a martyr for the state is still a hero for the state, the fundamental logics, methods and narrative are still in model, what changes is the tone.

The Space Shuttle’s failure was a loss for the everyday American, the opportunity for a civilian to escape to weightlessness and touch black space for a moment was what was at stake. And McAuliffe’s subsequent death was a necessary loss, friendly fire (connected to the Apollo launchpad explosion within hours), a calculated loss in the pursuit of a scientific progressive ideal that would aid the funding of Reagan’s futuristic vision of lasers in space battling MX missiles in the last throes of the Cold War. To these dynamics that pressed on the event and weighed heavily on the interpretation of “O-RING TEMP MUST BE $\geq 53^{\circ}\text{F}$ AT LAUNCH.”, Tufte says, “Regardless of the indirect cultural causes, there was a clear proximate cause, the inability to assess the link between cool temperature and O-ring damage on earlier flights.”¹⁰ Tufte in this instance defines his stake in a universal, apolitical, unemotional rationalism and irresponsibly ignores the role of power in interpretation and meaning construction while converting the unresolved trauma of the Challenger event into a messianic role for himself with lucrative benefits.

This critique of Tufte does not discount the rigorous and effective work that he has done in developing the language, methods, and implementations of information design. Those contributions to the field are useful.

¹⁰ Ibid., p. 40.

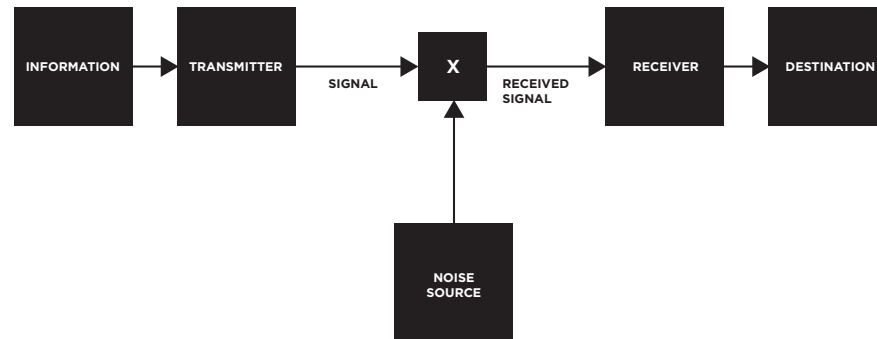
The concepts of small multiples, effective difference, the analysis of disinformation and other lessons create communicative possibility and facilitate an aesthetic and cognitive discourse. However it is important to describe the dynamics of power that are abstracted through these presumably inert presentations. As for Tufte, his new position in the Obama administration, seems to reflect the early position of Neurath in the Museum of War Economy. Our contemporary war is simply played out in the referential relationship to “the Economy” and our museum exists as an internet destination for all to access in its reductive displays of TARP spending, an incomplete answer to questions we have likely forgotten.

The data itself is never neutral; it is collected for a reason, and processed and presented for specific purposes. In other words, ‘There is no such thing as raw data.’ Cartography historian Denis Cosgrove once advised attendees at a mapping conference to ‘always make maps; always question maps.’ The same should be said of information visualization.”¹¹

For Neurath and Tufte, a critique could be extended to their expressions of the information discipline in itself. By evangelizing methodologies that posit an objective pursuit they describe a subjective layer of politics that references the desires, motivations, power structures and social constructions that require information to be delivered through devices that hide their political conditions. Adoption and distribution of this construct situates its politics within a history of its cyclical ascensions and descensions as a technique and connects the historical implementations of the approach to describe a macro relationship to the needs of specific regimes.

The pursuit of an objective truth in modern information politics is not just defined by these two practitioners of the discipline but also by the most referenced theorists of the 20th century, Claude E. Shannon and Warren Weaver. “The Mathematical Theory of Communication” diagrams the construction of information into a series of binary relationships between the sender/receiver, transmitter/receiver and signal/noise.

¹¹ Peter Hall, “Critical Visualization” in *Design and the Elastic Mind*, edited by Libby Hruska & Rebecca Roberts, (New York, NY: Museum of Modern Art Press 2008) p. 130.



This model describes how a message can travel between sender and recipient and the various elements that can affect its successful transmittal.¹² The message is described like an informational spermatozoa struggling through a hostile environment of dangerous noise to impregnate its destination with meaning. Protection of the message and its proper dissemination to the intended audience is fundamental to this construction. The destination has no agency in this model and is a receptor for delivery. The recipient is an idealized, unexcitable bottom, silent, inert, dependent and completely subject to the will of the transmitter for a pure delivery of the message. Weaver's definition is born out of a post-WWII ethos where triumph is defined by nuclear missiles delivering their payloads into the earth to exert an act of willful destruction in the name of construction and then reified by a modern communication infrastructure that evolved from it. This theory constructs an oppositional and defensive politic against the affective, and situational aspects of communication. Counter efforts and encryption become methods to subvert noise in an effort to maintain the signal and maintain for a idealized purity, a "Purity Of Essence" maybe? As if in a response to the invention of M.A.D. (mutually assured destruction) an alternative is developed, M.A.C. (mutually assured construction.) This diagram describes the possibility for a technology based media arms race against noise in the pursuit of a pure signal.

Ronald E. Day's critique of this conception of information is clear, "Classical information theory fails to account for nonrepresentational affects of communication or language." To quote Shannon and Weaver, "An engineering communication theory is just like a very proper and discreet girl accepting your telegram. She pays no attention to the meaning...Language must be designed (or developed) with a view of the totality of

¹² Op. cit., Day, p. 42.

things that man may wish to say¹³ What is fundamentally problematic in this thinking is that this communication theory “obliterates language and being’s historicity and reduces agency and affect to operational functions within designed social systems.” It also suggests that awareness is privileged and inaccessible for transmitters and receivers. They are a functional artifact of a process of control. “The proper and discreet girl” in this context is a vessel for a payload and has not affective power in her role. In reality, she is the information designer and how she interprets the signal and the communicative nuances of the expression allow for its existence and fundamentally binds it to her construction of it.

Day continues his critique of the stripping of affect from communication in his analysis of Norbert Weiner’s The Human Use of Human Beings.

“By conceiving of language in terms of information and communication and by conceiving of information and communication in terms of ‘systems’ of constant exchange values that cross discursive real or ‘currencies’...Weiner’s reduction of language to a communicational and informational economy avoids an encounter with language or affects in terms of radical alterity, fracture, and chaos...Following information theory, the central problem of cybernetics is to reduce or eliminate the ‘no mans land’ of language as a whole out of which, as Heidegger put it, language speaks...What frightened Weiner is not simply noise or jam but the fear that meaning man not originate from some singular place or agency ... if meaning and language as a whole were not, indeed, inherently subject to the assumptions and metaphors of communication and information theory, then Weiner’s conception of a communicational state would cease being a democratic utopia and would begin appearing as a struggle between language and community and state power.”¹⁴

Noise again defined by Weiner is an intrusion on the prescribed outcomes of communication, something to be plotted against and defensively and offensively battled as it threatens the signal and subsequently the State. Noise is a communist threat that affects control and power. This tension forces the construction of environments that protect communication from dangerous situational dynamics in the pursuit of a free exchange between parties that have codified and agreed on the format for the transmission. It is an act of exclusion. This paradox as Day points out constructs a method for pure communication via systems that enable that communication, inform it and then embed a situational logic that is fundamental to the message. The conditions for this pure communication insert the politic into the message. The extension of this is that there is point in which the protection that enables clear communication becomes a form of noise. Control degrades the signal.

¹³ Ibid., p.45.

¹⁴ Ibid., p.49.

Lossy transmission is anathema to a progressive approach in communication theory. The Cold War information theorist pursues absolute communication through an asymptotic relationship, approaching the zero of pure communication, an infinitesimal degree out of reach, but ever desired and ever idealized. This reaction to noise builds a militarized relationship with command and control approaches drawing the battle-lines against the dissociative and interpretive possibility in an attempt to establish a beach head in the regulation of meaning. This effort capitalizes on the well-worn philosophies, rhetoric and funding strategies of U.S. hegemony post-WWII and declares a war on non-systematic methods of communication while metastasizing a type of communication that can be delivered by the dominant platforms of distribution. Yet despite these great efforts, noise still prevails, like a terrorist threat, we deploy forces against the empty enemy, entropy. Noise threatens _____ that something might be lost.

“The philosophical and linguistic problem of the ‘noise’ of what lies outside of the essential state of man is thus directly related to the political stability of the liberal conception of the State.” Incomprehension then disrupts the tenacious hold the State has on language through its methods of distribution and language management. And noisy nature exercises its tendency towards chaos and entropic death.

“The chattering of the apes, the lion’s roar, even the hardness of the earth are all, thus, problems for man because they are possible threats to man’s very being unless they become understood within the categories of man’s knowledge and truth. But humans do respond to nature’s ‘noise.’ As threat or as wonder, as fear or as curiosity, affect forms a line of communication, resting against yet still escaping knowledge.”¹⁵

Is this a problem? or “the problems of man?” The situation this describes seems to still define itself through the dynamics of supply and demand, a consumerist notion of comprehension and a political choice delegating power and the control of interpretation. Signal vs. noise constructs a dualistic notion, an eternal opponent for the battalions of meaning seekers to fight, but for whom and what reason? To create a new order, a complete understanding? or is the goal really a figment, a motivation for the discursive to exert its social exercise and be deployed in a way that reifies power?

Paul Virilio in the [Aesthetics of Disappearance](#) describes the role of the picnoleptic, a contemporary subjective state, as one in which, “the sensation takes over the logical order.”¹⁶ This state he describes as one where

¹⁵ Ibid., p.57

¹⁶ Paul Virilio, [The Aesthetics of Disappearance](#) (Los Angeles, CA: Semiotext(e), 2009) p., 45.

the participant's engagement is in the de-prioritized texture of the experience instead of an iterative privileging of information and its context, the expectations are "to look at what you wouldn't look at, to hear what you wouldn't listen to, to be attentive to the banal, to the ordinary, to the infra-ordinary. To deny the ideal hierarchy of the crucial and the incidental, because there is no incidental, only dominant cultures that exile us from ourselves and others."¹⁷

The picnoleptic perspective is defined by priority-less awareness. Noise is no different than signal. The hierarchy in the categorical is defied, with singularities and multiplicities commingling to construct schizoplicities. Schizoplicities are tenaciously constructed by the associative dynamics of aphasic remapping. Data element binds to data element through the cognitive associations in the subjective interpenetration of the experience resulting in a vivid logic of incomprehension, the infinite regress of ever associating layers of subjectivity. Information becomes bound to the unutterable.

"Aesthetics, Ethics, Metaphysics—these matters of value, Wittgenstein agreed, lay in the realm of the unutterable. But it was natural and inevitable that men should speak of them, and much could be learned from the way in which people went about their foredoomed task of trying to say the unsayable. Moreover, it would not be clear where the boundary of sanctioned speech lay until an attempt had been made to cross it and that attempt had failed. Such efforts Wittgenstein regarded with benevolence. He treated them as reconnaissance expeditions, perilous to be sure, but well worth the effort expended on them."¹⁸

In this state, information can become enigmatic. It offers itself up as a dream, delirium or hallucination. This state allows the media to reference its own "lack", its own inability to signify, and engages the non-symbolized as part of its construction. Within this construction, data and information are comfortably incomplete, flawed, and perceptually defined, personal, dysfunctional, and heterogeneous in meaning. Without meaning's objective constraints, subjectivity emerges with the construction of referential associative meanings. This semiotic space used in the pursuit of visualization builds a "subjective polytopia"¹⁹ and the role of data analyst reconfigure to that of the "data psycho analyst." Informational factors map to referential interpretations and construct opportunities for the psychotherapeutic. Julia Kristeva frames the possibility of a therapeutic moment, as a moment of transference, occurring when previous traumatic situations can be compensated for

¹⁷ Ibid., p. 47.

¹⁸ Stuart H. Hughes, "Delta," in *Seeing is Forgetting the Name of the Thing One Sees*, edited by Lawrence Weschler (Los Angeles, CA: University of California Press, 2008) p. 119.

¹⁹ Julia Kristeva, "Psychoanalysis and the Polis," *Critical Inquiry*, Vol. 9, No. 1 (Sept 1982): p. 81.

by the construction of interpretations removed from “obvious, immediate, realistic meanings so that the meaninglessness/madness of desire and beyond that, so that every phantasm is revealed as an attempt to return to the unnameable.”²⁰ Visualization by the “data psycho analyst” must take into account the close proximity between semiotic meaning and non-meaning, and recognize that even in this therapeutic moment, transformation is yet another iteration of “interpretation which refuses to perceive that it winds around a void.”²¹

Our “data psycho analyst” has a stake in the realm of the derive, the psycho-geographies defined by the Situationists. Guy Debord’s “Discours Sur Les Passions De L’Amour” is an artifact of a data psycho analyst’s process, a visualization of interiority in public view. Data abstraction becomes more obvious the greater the scope or the more particular in its purpose, until the relationship between signifier and signified becomes impenetrable, the referent is lost. This interpretive maps implement subjectivity within the construction of the informational object. Mapping methods can construct spaces no longer policed by the official or objective account of the landscape but rely instead on the detournement.

Representational breakdown in a Lacanian sense breaks down the relationship between signifiers and temporal continuities dislocating the individual and the experience to construct a schizophrenic state where

“The experience of the present becomes powerfully, overwhelmingly vivid and ‘material’ the world comes before the schizophrenic with heightened intensity, bearing a mysterious and oppressive charge of affect, glowing with hallucinatory energy. But what might for us seem a desirable experience — an increase in our perceptions, a libidinal or hallucinogenic intensification of our normally humdrum and familiar surrounds — is here felt as loss, as “unreality.”

As meaning is lost, the materiality...becomes obsessive...an incomprehensible incantation...a signifier that has lost its signified has thereby been transformed into an image.”²²

The image requires contextualization and places demands back on language to repair the relationship between sign and signifier, instantiating interpretation and semiological construction in order to reify the hegemony of meaning. This signature identifies its conditional subjectivities.

²⁰ Ibid., p. 86.

²¹ Ibid., p. 87.

²² Frederic Jameson, “Postmodernism and Consumer Society,” in *The Anti-Aesthetic* edited by Hal Foster (WA: Bay Press, 1983) p. 120.

Linguistically, information situates itself as an authoritative construction of language and capitulates to its power structures by leaving them hidden, unquestionable and opaque. The factual is acceded to through methods of distribution and the information consumers expectation's of veracity are mitigated via an unquestioning conception of any source's reliability. Only when the factuality exceeds the source's power do shades of truth invert to shades of lies and are disclaimed and dismantled. Information is true until proven false. Yet, information is mediated by language and relies on its semiotic dynamic in its construction. The mediation of language deploys explicit and implicit structures, so information like any other media product is defined by historical construction and sociopolitical factors and its dependencies of conceptions of meaning. Information performs as any other cultural object, its context is crucial and its deployment paramount. Data (information sans presentation) is observed, it is found, while information is derived. These two content forms, data and information, rely on two design methods for their construction, access and presentation, respectively. Within these design methods the subjectivity of the observer is exercised and their politic lies in the resulting document. The framing of the found truth, constructs a situation identified by Frederic Jameson as a "False Realism", an objective artifact of a subjective process. Subjectivity implicates the dialectical role of the "data psycho analyst" and reifies the discursive act of language. The perceived futility in subjectivity is denied through the very act of performative expression.

The "data psycho analyst" believes in loss in a way that is different from the patriarchs of information theory. Loss is a reference to the whole. Loss and corruption is an accepted part of the systematic construction of meaning. Loss is inherent and a signature of a larger unknowable and creates opportunities, new spaces for interpretation that subverts power dynamics. Any interpreter can enter and emerge as Kristeva's void is beyond control and beyond language, an ever-present threat to the State's agenda and an opportunity for the individual to participate in their own subjective realms on their own individual terms. Loss becomes a relief, a reverse print of all that cannot be said, the poetic space of knowing/unknowing, like a Racheal Whiteread cast it defines its space through its emptiness, its trace an act of hypertropy. "When you look, it is formless; When you call, it echoes." -- Fuyu²³

²³ John Looi, *Zen of Creativity* (New York: Ballantine Books, 2004) p. 204.

How can this loss, this aphasiatic state function within the realm of information theory and its practice? The challenge of describing this void is a fundamental manifestation of the contemporary visualization discipline.

As Lev Manovich's describes visualization's motivation is the,

"The desire to take what is normally falls outside of the scale of human senses and to make visible and manageable aligns data visualization art with modern science. Its subject matter, i.e. data, puts it within the paradigm of modern art."²⁴

This pursuit Manovich frames as an exercise in the anti-sublime. An exercise in reducing the incomprehensible scale of the unfathomable into "into manageable visual objects that fit within a single browser frame."²⁵

Yet Manovich is dissatisfied, because the arbitrary and subjective choices are never made explicit. Bound by a method that hides its own subjectivities through reductive representations that closet their choices, they are untrue. Contemporary visualization has become an ironic form (albeit inverted) or it is the product of an insane ego²⁶. These pragmatic representations mask an expressive act. This expressive potential is back-grounded, and Manovich discusses the hollow feeling this constructs for him in experiencing Liebskind's Holocaust museum, the arbitrariness evidences itself more profoundly in its dislocation. This failure of the representation to speak creates opportunities for new strategies for the data artist, new ground to be explored, an opportunity for the data psycho analyst to emerge.

For me, the real challenge of data art is not about how to map some abstract and impersonal data into something meaningful and beautiful – economists, graphic designers, and scientists are already doing this quite well. The more interesting and at the end maybe more important challenge is how to represent the personal subjective experience of a person living in a data society. If daily interaction with volumes of data and numerous messages is part of our new "data-subjectivity," how can we represent this experience in new ways? How new media can represent the ambiguity, the otherness, the multi-dimensionality of our experience, going beyond already familiar and "normalized" modernist techniques of montage, surrealism, absurd, etc.? In short, rather than trying hard to pursue the anti-sublime ideal, data visualization artists should also not forget that art has the unique license to portray human subjectivity – including its fundamental new dimension of being "immersed in data."²⁷

²⁴ Lev Manovich, *The Anti-Sublime Ideal in Data Art*, 2002, www.manovich.net/DOCS/data_art.doc, p. 11.

²⁵ *Ibid.*

²⁶ After seeing Jonathan Harris lecture at UCLA DMA in Fall of 2009, the major issue that struck me was his discussion of "Why irony is bad and you should never use it." Irony is mean, it is difficult to implement, it doesn't make things better. These banal directives seemed to sit in opposition to the work that was then shown by Harris where he worked to describe all of human emotions through a chart. Suicides, bad lunches, and true love all sat in this compendium of smartly designed, well colored forms. If Harris doesn't realize that encapsulating human emotion into a chart is a form of irony, then the concern is that he actually believes that he did it. In that case, we find ourselves in the same realm of Neurath, where the egotism of the designer describes a politic that throws out massive amounts of information and meaning is lost for the aggrandizement of an individual who has messianic tendencies. It is also the type of thinking that leads to fascistic notions of difference.

²⁷ *Ibid.*, p. 15.

Human subjectivity and the role of the “data psycho analyst” then for Manovich can attempt to go beyond the reductive act of data pornography. The quick satisfaction of mapping a massive data set into a formulaic representation that privileges our power over the infinite and the unknowable is a cheap thrill, another act of reified power, a multiplier in the implosion of meaning. How do describe this invisible? How do we explain absentia?

Kenya Hara discusses an approach to communicating the massive information that we experience not from a reductive, representational approach but through a process bound in exformation.

“I want to speculate on the form as well as the function of information, not for making things known, but for making things unknown.”²⁸

Exformation is a strategy that can be employed by the “data psycho analyst” in order to create space for interpretation. It is a way to crack open the encoded and allow for new narratives to emerge from a re-situated context, a displacement of information and experience. This activates a space for the information to re-perform its meaning outside of the conditional situations of its formulation, or to enact its “false realism.” The discursive potential of this method relies on its ability to encourage a dissonant space created by oscillating shifts between syntagmatic interpretation and paradigmatic construction. A situational logic can emerge that is inclusive of personal and subjective experiences.

Tor Norretranders has a more defined conception of exformation. It is a byproduct of a computation process where information is discarded to create accounts. Norretranders calls this an act of mislabelling, we consider the account to be the information. The account is in fact the subjective result of a logical process that collapses an event through the discarding information, which becomes exformation. Exformation is the byproduct of a process, incitation, which compresses a large quantity of information and constructs an account. The account is then transmitted. The information unfolds on the other end through a process of excitation and is unpacked with all of the personal associative logics that construct meaning. These internal subjectivities evoke the exformation. The quality of the information that is unpacked by the receiver is related to the depth of the information and the contextual prescience of the situational conditions of the receiver by the sender.²⁹

²⁸ Kenya Hara, *Designing Design* (Baden, Switzerland: Lars Muller Publishers, 2007) p. 376.

²⁹ Tor Norretranders, *User Illusion* (New York; Penguin Group, 1999) p. 111.

By embracing subjectivity within the theory of exformation, Norretranders sets sender and receiver as equal participants in the act of communication. Empathy and ambiguity is designed into this system. It as if Norretranders moves the transmitter and receiver of Weavers diagram inside the information and the destination implicating their responsibility in fabrication and comprehension and in a deft moment, employs the same logic that Kristeva describes as a “subjective polytopia” and the data psycho analyst is back around the fire telling stories through the poetry of the individual experience, myth-making.

Enactment seems to be essential to the incitation and excitation of the information. The information becomes an actor in a larger stages of the interpretative realm. Unpacking meaning through the conditional aspects of its historicity employs strategies of translation to situate the message in a performative medium. The theater of information allows data to perform³⁰ and act out its narratives through the affective attributes of its context. Moholy-Nagy describes a theater of information in his essay “Theater, Circus, Variety”

“The historical theater was essentially a disseminator of information or propaganda, or it was an articulated concentration of action derived from events and doctrines in their broadest meaning --- that is to say, as “dramatized” legend, as religious (cultist) or political (proselytizing) propaganda, or as compressed action with a more or less transparent purpose behind it. The theater differed ... through its own particular synthesis of the elements of presentation: Sound, Color (Light), Motion, Space, Form (Objects and Persons). With these elements, in their accentuated but often uncontrolled interrelationships, the theater attempted to transmit an articulated experience.”³¹

Total Theater is a chaotic organism where the purposes of information are suspect and the subjectivities outed to create reflexive constructions of meaning. Total Theater defines itself through uncontrollable functions within the framework of an articulated experience. Within this model, Moholy-Nagy constructs an expansive antecedent for the construction of future information visualizations. The physical and temporal manifestation of the content, the opportunities for exponentially interpretive possibilities are sketched, as space is identified, as is the communicative potential. Materiality and its evocative language of individualized aesthetics, the excitation of information for the personal experience within a shared context is articulated even as it is collapsed from an universalized object into a subjective opportunity for comprehension.

³⁰ What does the data look like, How does it perform, references a dualistic notion of the concept. The data psycho analyst can rely on the spaces that are constructed by the gaps in language to find materials, metaphors and entry points for investigation and representational possibility.

³¹ Laszlo Moholy-Nagy, “Theater, Circus, Variety”, in Theater of the Bauhaus, edited by Walter Gropius and Arthur S. Wensinger (Baltimore, MD: The Johns Hopkins University Press, 1961, 1996) p. 50.

“We envision total stage action as a great dynamic-rhythmic process, which can compress the greatest clashing masses or accumulations of media — as qualitative and quantitative tensions — into elemental form.”

Through this representational strategy, the data performs its construction of meaning, incorporating its own lossy, indeterminate qualities, even as it evokes the vivid expression of the now. Reinforcing the destinations role as a constructor of meaning. The qualitative and the quantitative, interpretation, narrative, and construction exform the massive broadcast of quantitative experiential data to reconstruct intentionality even as it subjugates it via specificities. Objective rationalism is utilized in the construction while performance deconstructs its script into a reconstruction of the experience for the interpretation and subsequent recollection by the participant. Moholy Nagy’s system is very different than the prescriptive systems of Neurath and Tufte, in fact the instruction is defined by its very lack of definition.³² Total Theater creates a space that is designed to oppose reductive logic and encourages active new unforeseen implementations of the discipline. The power of the interpreter and the power dynamics of dissemination are dismantled.

“In today’s theater, stage and spectator are too much separated, too obviously divided into active and passive, to be able to produce creative relationships and reciprocal tensions. It is time to produce a kind of stage activity which will no longer permit the masses to be silent spectators, which will not only excite them inwardly but will let them take hold and participate — actually allow them to fuse with the actions on the stage at the peak of cathartic ecstasy.”³³

This is the informational effect, data immersion, subjective polytopia, a condition of schizoplicity shared by ones situational conditions, ultimately unshareable and inevitably discursive. Moholy-Nagy describes the construction of the sublime message as it embeds its own temporality in its encoding and transmission while embracing its immediate recognition of inherent loss in transmission even as it deploys it as a strategy. The output is fed back into the input and the artificial is made tangible. This physicalization of the information through a multi-dimensional affective communicative strategy challenges the aggregation of power and generalized methodologies for the consumption and control of language. The data psycho analyst can deploy these spaces for the psychotherapeutic, a virtual couch, in the form of physical intervention in time.

³² Hans Haacke mirrors Moholy-Nagy’s strategies and updates this conception of Total Theater within the context of systems art. Many of the methods and rules of Haacke, have counterparts in this essay.

³³ Ibid., p. 68.

Recollection / 2010 New Wight Gallery

How does recollection function when the structures that contextualize memory iterate based on "new evidence." The hijacking of rhetoric and the subsequent blind retribution has left a significant record over the last 8 years. What closure or conclusion do we arrive at when the window closes and the physical scars are repaired? I am looking for specificity within the objective representation, a space where one's local trauma can be replayed without judgement.

Materials for *Recollection*.

450,000 text messages from Wikileaks.org in Nov. 2009 that document the 24 hour period of 9/11

4 Staples brand grey filing cabinets stacked into two towers

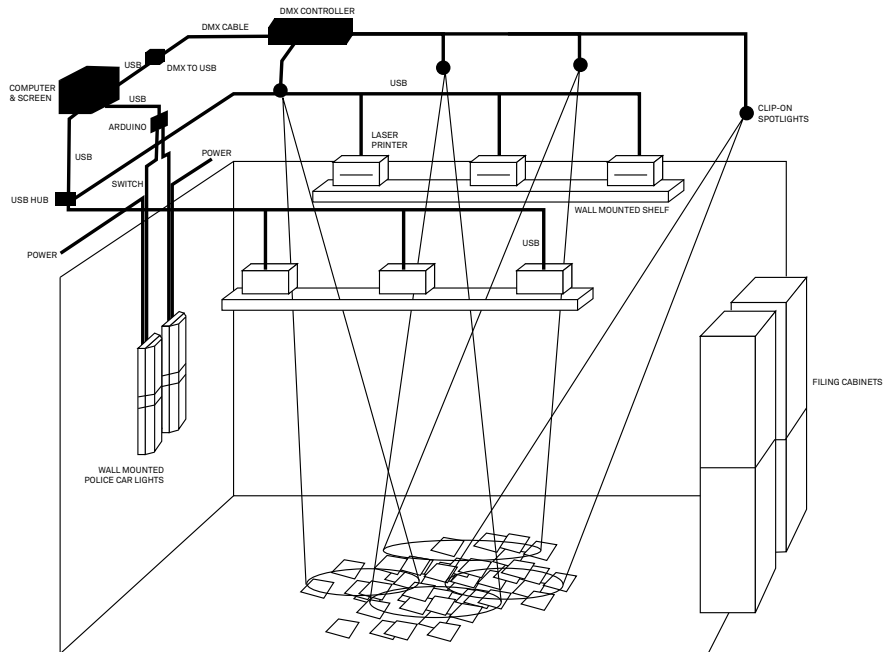
8 Brother personal printers

10 cases of laser paper

1 DMX Controller to USB

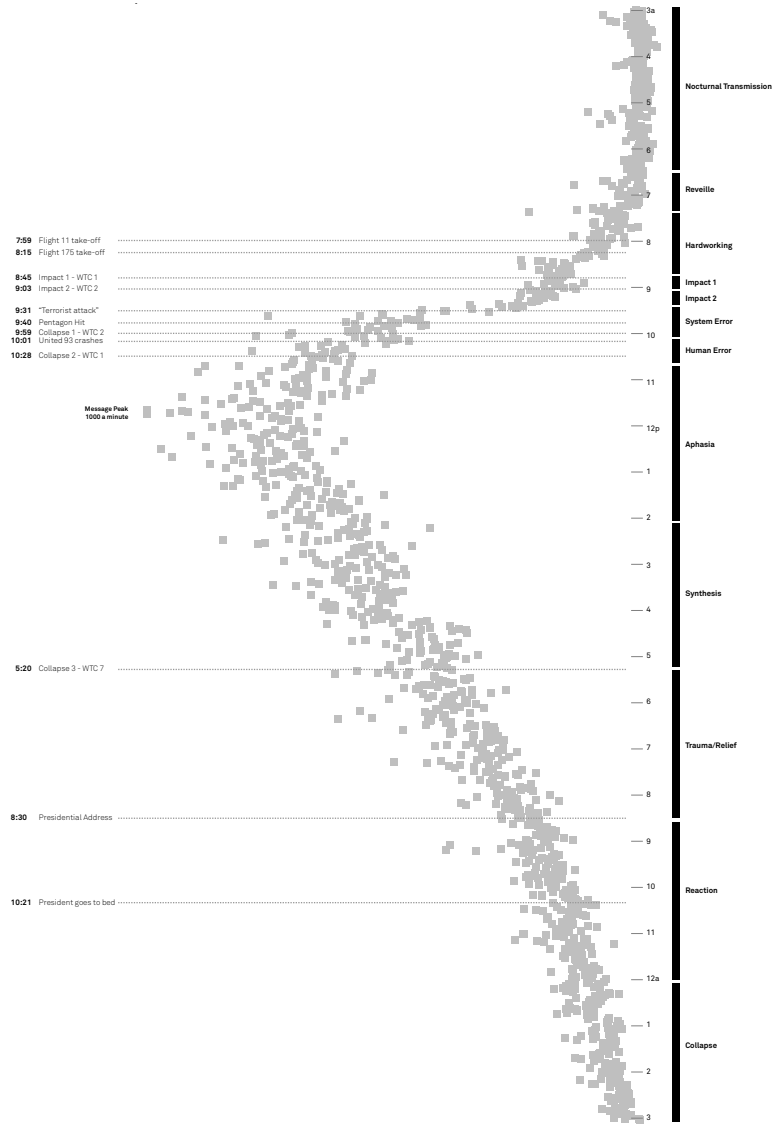
2 Infinity Police Takedown Lights controlled by Arduino

Install Layout.

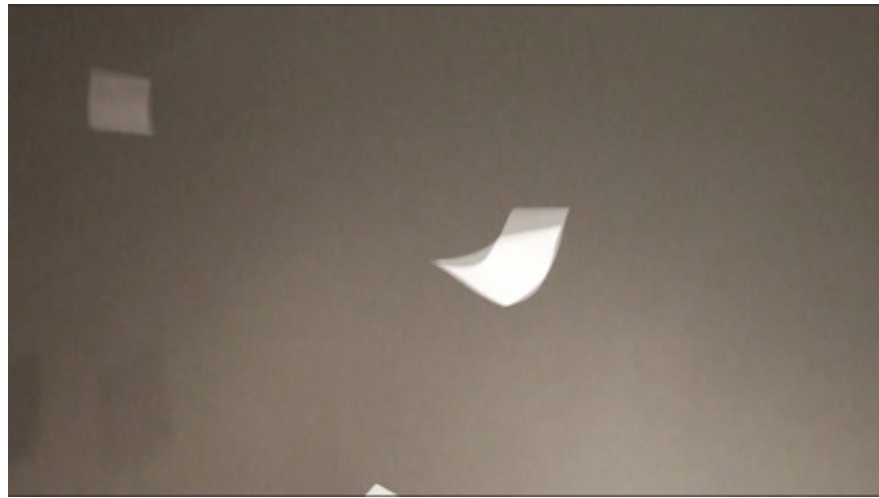


A series of DMX controlled spotlights are mounted into the ceiling to control the lighting effects of the experience. Triggers are sent to dim and control the spotlights that coordinate with a series of scenes that are defined by the database. Police car lights also fire based on the scenes, building to a stroboscopic effect at the peak of message printing. An array of printers is also mounted in the ceiling and rhythmically print text messages, each page that is printed, contains all of the pages sent to an individual pager for the day. The pages that are printed at each moment are related to the overall distribution curve of message for the day. Two towers made of filing cabinets cast a shadow through the space.

Database and Algorithm



The distribution curve of the messages that were sent over the course of the day serve as a narrative device, a manifestation of Freitag's triangle through the arc of the event. Out of this event a series of scenes are overlaid that work with the rest of the apparatus to create a range of conditions.



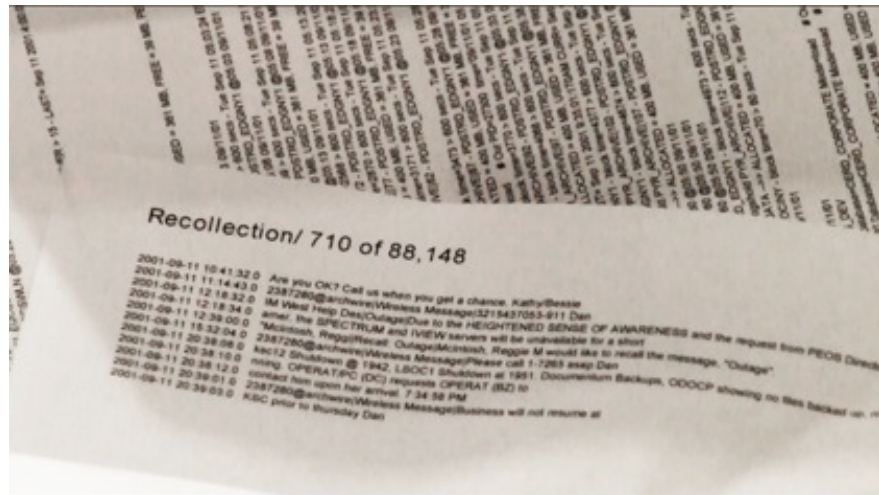
"By now the twin towers are icons, as familiar in souvenir shops as those little miniatures of the Empire State Building. We have all come to some sort of accommodation with the towers, God help us, and there have even been moments when I have seen them from afar and admitted to some small pleasure in the way the two huge forms, when approached from a distance, play off against each other like minimal sculpture. But the buildings remain an occasion to mourn: they never should have happened, they were never really needed, and if they say anything at all about our city, it is that we retreat into banality when the opportunity comes for greatness."

— Paul Goldberg, *The City Observed: New York - A Guide to Architecture of Manhattan*, (1979) PP. 11



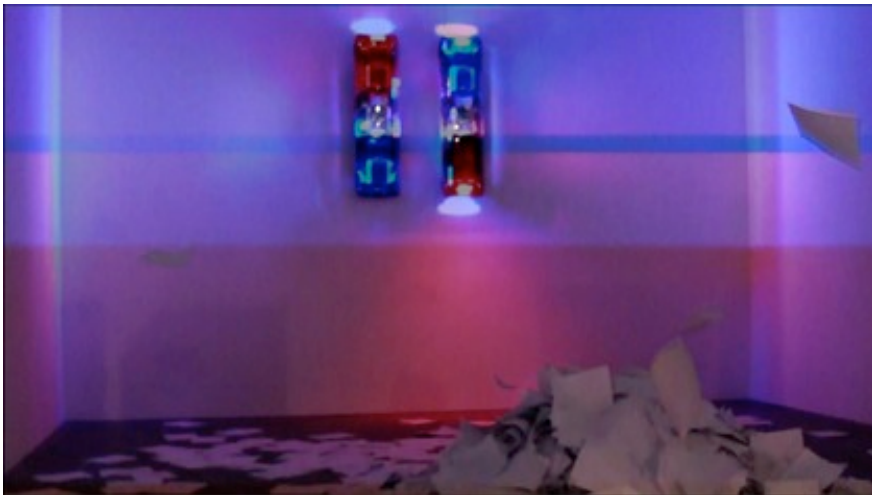
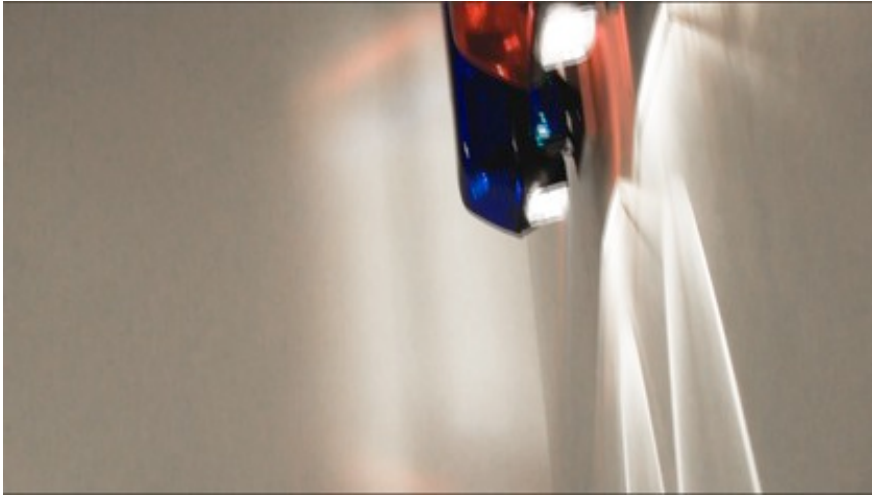
"No single person's story can give a complete or even accurate picture of a multifaceted situation. More relevant here is the impossibility of any single person's accessing and experiencing all the data, given the quantity. However, we can attribute to these databases of stories and recordings not an unknowable entirety, but an accuracy and truth that no individual story can claim. A picture of 9/11 in New York City is contained in the database of individual texts—the truth, if not the whole truth... When we access the database, we are well aware that our experience is a path through it—exactly that, one single path. This knowledge that we are getting a partial, though ordered, view conveys the idea of a larger meaning contained in the database as a whole, a meaning that we can never comprehend."

—Weinbren, Grabame. "Ocean, Database, Recut." in *Database Aesthetics* edited by Victoria Vesna (Minneapolis: University of Minnesota Press, 2007) p. 68.



"When he reflects on a metalanguage, the semiologist no longer needs to ask himself questions about the composition of the language object, he no longer has to take into account the details of the linguistic schema; he will only need to know its total term, its global sign, and only in as much as the term lends itself to myth. This is why the semiologist is entitled to treat in the same way writing and pictures: what he retains from them is the fact they are both signs, they both reach the threshold of myth endowed with the same signifying function, that they constitute, one just as much as the other, the language-object."

— Roland Barthes, "Myth Today," *Mythologies* (New York: Vintage Classics, 2000) p. 115.



"Digital performance may work in a literal fashion, like a movie, to re-create and present a memory in a clear visual or narrative form...but it may equally represent memory in more impressionistic or abstract terms. Just as recent theories of trauma memory and post-traumatic stress disorder have suggested that 'it is not a memory at all, but an unwilling repetition of components of a traumatic event,' performances may depict momentary flashbacks and transitory recollections...parts rather than wholes. In doing so, they accord with understandings of how memory stores information not as a linear visual narrative, but in idiosyncratic 'emotional sets.' Specific memories are triggered through a stimulation of the emotional sets brought on by complementary mental and physical feelings or by external stimuli such as sights and smells."

— Steve Dixon. *Digital Performance: a History of New Media in Theater, Dance, Performance Art and Installation*. (Cambridge, MA: MIT Press, 2007) p. 545-6.



"[Gonzalez-Torres] accomplishes in his work the clearing of a meaningful space in the present for memories of the past. He shapes memories -- his and ours -- into works of art that offer not only the pleasures and consolations of reflection, but also the possibility of transforming the present. He uses individual memory as a tool to counter the artificial separation of the 'personal' and the 'public,' a distinction that works in practice to delegitimize whole categories of lived experience. And he uses it to work against the processes of suppression and exclusion through which the powerful write the story of the past. FGT recognizes memory as fragmentary and uncontrollable, and that these qualities in no way diminish its power. On the contrary the most intimately personal and unstructured series of recollections has within it the capacity to disrupt apparently much more powerful public histories, and to bring forth alternatives."

— Russell Ferguson, "The Past Recaptured" PP. 25

Tower Two. Recollection.

The act of recall is based on stable associations within our memory that consolidate over many years, but in order to access new facts and experiences, initial sparse linkages must be constructed and woven into the construct of one's individual existing knowledge. This presence of images which define and refine over time through the connectivity of experience is dependent on initial moments of construction. This aggregation of individual sense constructions are fragile in origin and suspect to physiological and mental conditions. Mnemonic methods can be used to weave this fabric deeper through devices of self-conditioning and media can insert itself into the set of images that define experience, but memory construction relies on a locus, the event.

Recollection. is then inherently dependent on the situational aesthetics that define memory construction and its subsequent psychic nesting and deployment. Conditionally, events of physical/mental stress can affect the initial tenuous effort of memory construction. Situations like hypoxia (oxygen deprivation) can confound the information capture that leads to rich memory construction. This can create a familiarity of events without recollection, a construction of feeling without the mnemonic artifacts of the experience to explain it. Gaps remain that must be remediated.

This situational condition can serve as a description for the collective memory of the social framework, the definition of each memory an individual within the collective network of potential memories/individuals, creating rhizomatic implications of the singular event and the multiplicity of experiences that define it. The indexical construction however is not static but an ever dynamic construction weaving linkages, editing and redefining the relationships that will build its tensile strength through the force of meaning. Within a time

based linearity, state changes with infinite continuity and finite state drifts. This database of collective memory codifies an unknowable mass. As Lev Manovich frames it this database is inherently unwatchable, but its constructive act represents a social possibility. The collective experiences a greater set of potential narratives than that of exclusive authorship and offers the possibility of new meaningful conclusions to be communicated, shared, and deployed via the forces of the relational structure, its tensegrity.

The 9/11 record has been defined by these efforts, numerous databases of various types of media have been created to remediate the gaps. This event dictated by unprecedented possibility (at least for U.S. Citizens) defied traditional narrative methodologies. The loop of the WTC fall has been predicated by the disaster narratives of Hollywood so often that its unreality is unresolved through repetition. The first person account, the 9/11 story, the memory recollected became the media format that defined this event. The asbestos laced dust that traces the lungs of the survivors is particulate activated with every breath. It is the matter with the memory.

9/11 marks broadcast media's inability to define authenticity, its screen was compromised with the fictive/reality blend defined by the documentarian aesthetic of the late 90's as instantiated by handheld cameras and reality style. The Bush election exacerbated this mistrust. The news was "wrong," they didn't know the outcome. Like an inverted "War of the Worlds", the relationship felt so fictive on screen, so unreal, that in NYC one had to look out the window to see if it was really happening and it was. The stereo effect of the broadcast and the event created a sense of experiential dissonance, an amplifying feedback loop.³⁴

A decade long handover to the "man on the ground" via cellphone cameras, Twitter accounts, and Facebook updates ensued defining a post 9/11 media landscape where our isolated individuality can be employed by the network for recollection on demand. Real-time subjective granularities construct the causalities that define meaning relationships deployed by the data structure. The cameras of the panopticon are in our hip holsters. Nowcasting promises us our fifteen minutes as the audience posts real-time comments to our video and the

³⁴ "What is distinctive here is the seeming disallowance of the deferral of experience. Trauma, however, in its classic formation, and as it has been accounted for thus far in this book, remains dependent on an economy of belatedness that is the psychic space in which the overwhelming might be held. It is in the possibility of such a space that representation can emerge as some kind of version of the traumatic. Without representation, in all its deferral, trauma implies an absolute form that we would never know. In other words, the naming of trauma would be denied, and loss would be beyond any management. In its instance of portrayal, 9/11 collapsed the difference between event and its representation, implying the evisceration of adaptation to the circumstances of trauma by way of the very visual culture accounted for it in the first place. This is by way of saying that in the loss of deferral, deferral was all; the real that is the traumatic was severed from its relationship to the belated. Moreover, the immediacy of repetition—deprived interiority of its own space of processing, its own construction of the imagined time in which the mind might make sense, or not, of such an event, in accordance with its own measures of scales and materiality."

twitter accounts of the Iranian election protests are being jammed with "disinformation" from the Iranian security apparatus.

"The years before the attacks have been thoroughly hashed out through the report of the 9/11 commission and by memoirs and histories. The eight years since, a time of unremitting warfare, has had no similar opportunity for taking stock. Regrettably, no trial can provide closure for the traumas of that day."³⁵

Taking stock of what has happened, its outcomes, the time between the event and now, and how we reconcile that with our own feelings seems to offer many entries into content research and a media form. The hijacking of rhetoric and its blind retribution has left a significant record over the last 8 years. How does recollection function when the structures that contextualize memory iterate based on "new evidence." What closure or conclusion do we arrive at when the window closes. Where is specificity within the objective representation of the monumental. Is this the modern day trauerspiel ³⁶?

My thesis is an active search to find a pathway out of the arch, "official", stereotypical event-narrative and attempt to reconstruct/re-materialize the personal, the emotional, the memory-al event as it lives inside its survivors, its re-collectors -who carry it with them like so many particles of toxic dust.

Recollection is an investigation into individual and collective memory recall/reconstruction using a vernacular of office equipment and the vocabulary of work persona/professional experience. The pieces that make up the collection are literally constructed out of everyday office materials. Filing cabinets are stacked on top of one another to create towering totems. Printers and copy paper are activated with paged memos stored in a database of messages run off of a laptop computer. Stock photographs captured for use in a business presentation are enlarged and hung on gallery walls. Layering the context of professional work among artistic expression, these objects are in conversation with one another (and with themselves) on a semiotic level. The shift from cubicle into white cube invigorates a semiotic tension - Duchamp's readymades further dramatized by a cohesion among the objects. They create a dynamic field of representation, challenging assumptions about the relationship of Art and Work, and revealing hidden layers of meaning activated in the objects and in our individual and collective memories.

35 Steven Simon, "Why We Should Put Jihad on Trial," New York Times, November 17, 2009, <http://www.nytimes.com/2009/11/18/opinion/18simon.html>

36 The Trauerspiel foregrounded the arbitrary nature of the linguistic sign and its imposition on a mute sad nature. In Trauerspiel, the meaning of language is hollowed out in the uncontrollable proliferation of allegorical figures and emblems. Graeme Gilloch, *Walter Benjamin: Critical Constellations*, Univ. of Salford, UK, 2002) p. 58.

Further influencing the conversation is the content embedded in the artwork's form. The printed pager messages are not from an anonymous workday. These messages were archived on September 11th, 2001. The messages were broadcast to and from the WTC, and the content of the pagers ranges from technical alerts to personal prayers. The program used to print the paged messages pulls from the database via a Pager ID number - each printed page collates messages that were received by one individual pager number, and each message is listed sequentially, text after text consecutively by time of day. What emerges on each printed page is an incomplete portrait of a singular intended recipient, a discrete individual - her/his responsibilities at work (Database offline, please reboot), concerned loved ones ("Please Call Home"), personal tastes (stock market news, coupons, etc), and habits. Automatically generated "work" messages coexist with the most intimate hopes and fears, job duties and conference room reservations commingle with CNN headlines and catered lunch purchase orders.

These printed pages are carried by the weight of themselves on a flight path to the gallery floor. The printers generating the texts are installed above the exhibition space, and once emerged from the machines, the pages float dynamically to the ground. This gestural language activates the portraits in a concrete dramaturgy. The portraits captured in printer ink on copy paper are freed - the objects are given a subjective agency, a life of their own. Information is organized and exhibited. Observers are free to interact with the pages, to track and collect them, to read each partial portrait for clues about the intended recipient, and to engage with the piece on a personal, contemplative level.

Vertically mounted on the wall are two police bars, red, white and blue and interfaced to the algorithm that distributes the prints. As the narrative builds, they exercise their power, strobing on a wall, unable to arrive at the scene. Next to each other, the pair references the new logo of the World Trade Center Memorial. Two bars mirror the 11 in 9/11 and the architectural forms of the WTC.

The paper portraits accumulate on the gallery floor in a scattered pile. This "official" mess is seen in relief to the towerly order of the twin filing cabinets. These cabinets are empty save for file folders; are the pages intended to fill them? Are observers invited to work within the piece, filing the portraits in the cabinets? How to make order out of this chaos, and to what end? How can you file away a life?

Ground Zero - Valentines Day 2010.

I am interested in this Yves Klein blue that seems to wrap the buildings in lower Manhattan. I notice it on the Deutsche Bank building that is still being deconstructed. Filled with debris from the WTC collapse, it is slowly being taken down floor by floor, wrapped to prevent its content from blowing out and spreading its toxic time capsule. The blue is a color that diverts the viewers of attention, allowing the gaze to slide off and move along. The construction at Ground Zero is wrapped in this blue, a fabric wall around the chainlink and barbed wire. I circle the footprint, construction workers are in and out. On a Sunday, Valentines Day. Halfway along the block, the wind whips and pulls a section of blue back, you can see in. The curtain reveals. There is an involuntary response from each passerby, they look over or their body language reveals an interest, and occasionally someone pulls it back stands and stares. A couple walk by, she is holding a rose for Valentines Day, they headed to the PATH train after a Sunday brunch date in NYC, she stops at the flap, looks in at the raw wound in the ground, she takes the rose and places it in the chain link fence, a gesture of respect in a unceremonious workzone. Her camera is out then, a photo taken, the rose is removed and they walk away as the wind blows the flap shut again.

The recurring theme in art related to this trauma is that the event of 9/11 and its unfolding aftermath are unrepresentable, that to attempt an articulation of the memory, or a re-animation of fragments of memory, is somehow perverse. This discussion of authorization is a conversation about power, and accordingly, what is or is not authorized reflects back on those who patrol the borders of taste. Mary Douglas, in her seminal text *Purity and Danger*, describes dirt as “matter out of place”. What is considered taboo reveals as much about the system that labels it such as any particular piece of artwork approaching the subject called into question. Painful or taboo subjects, challenging or “incomprehensible” forms - who dictates what is acceptable or unacceptable in an artistic investigation? These are interesting concerns, but if taken seriously, what is the implication? That art should only attempt to articulate what is known or knowable? That subjects should only be broached if they fit a certain authorized criteria?

Lisa Saltzman in “Making Memory Matter”, addresses these questions in context of Kara Walker’s work “the index emerges as a form rather than a function of representation, as a point of reference rather than a referential structure of representation, as a vestige rather than a viable means of representation.” By constructing forms from a position of posteriority and distance, the work begins to “work through the past, as passed, even

as the past haunts the contemporary imagination.³⁷ In relationship to 9/11 the witness as the official account of history, event, and primary experience is buried within the volume of rich media that surrounds the event, to truly experience the event is to self-negate the history, as the true experiences are defined by their own mortality in the event. The witnesses are guilty witnesses, living survival of their lack of participation in a monumental, global, and ever present reality that questions, were you really there becomes an impossible question to answer requiring the posteriority and distance which Walker employs in her work, the identity is confounded by its recurrent dislocation while remaining trapped by a moment out of one's own agency. Reflection and recollection construct an access point for re-experience that establishes new vantage points for reflexive analysis and memory management. This inherent lack of participation in the defining aspects of the event (death and annihilation) creates a conundrum for the participant with resolution ever out of reach and the gaps and glitches widening and deploying the hallucinatory ephemera of Post Traumatic Stress Disorder into the everyday. Clocks read 9:11 twice a day and the memory is activated out of time and unrequited recall emerges to replay the events out of context ad infinitum. The image can never be resolved, it blurs as it is focused on, it vacates as comprehension attempts to construe it.

There is a rich tradition in art that is concerned with active investigation, failure, partial truths, multiple truths, etc. Experimental/language poet and John Cage scholar, Joan Retallack, discusses the challenge of approaching the unknowable/unrepresentable through artistic practice in a collection of essays, *The Poethical Wager*. Retallack describes something beyond aesthetics or poetics in an experimental vein. She outlines a meta-aesthetics, a poethics, as an active pursuit of truth in art-making as opposed to the re-inscription of rote nostalgias or demonstrations of empty design exercises. She uses the metaphor of a wager to describe the risk inherent in approaching subject matter and artistic form that could be deemed inappropriate or challenging.

“If innovative ideas with the best of intentions are likely to be misunderstood and maligned, isn't it better to forgo the trajectory of the swerve for routes more familiar and thus more widely intelligible from the outset?... My inclination is to respond by identifying a certain poethics of responsibility with the courage of the swerve, the project of the wager—what I call a poethical attitude. Swerves (like antiromantic modernisms, the civil rights movement, feminism, postcolonialist critiques) are necessary to dislodge us from reactionary allegiances and nostalgias³⁸

³⁷ Lisa Saltzman, *Making Memory Matter* (Chicago: The University of Chicago Press, 2006) p. 64.

³⁸ Joan Retallack, *The Poethical Wager* (Los Angeles: University of California Press, 2003) p. 3.

Retallack's ideas resonate with the impetus to present **Recollection** as thesis artwork because the "official" narrative of 9-11 is so limited, so policed. Her embrace of art-making as risk-taking pushes beyond borders of authorization and into an active investigation of in/comprehension. Post-attack, mass media was/is employed to shift the unimaginable catastrophe of the WTC attacks into pointed social and political movements of international aggression, world war, domestic cultural conservatism and beyond. If art can't be used to investigate or challenge the official story, if the collective understanding of the event leaves no room for an individual's textured experience or conflicted memory, then, clearly, the culture is headed into fascist territory. Poethical inquiry is based on a commitment to individual artistic agency, cultural responsibility, and the belief in the constancy of the unexpected. It embraces articulations that other aesthetic paradigms may deem unworthy because it understands that official judgement is decidedly limited, and that artwork may be articulating a truth, a texture, a feeling that a culture at any given moment may not have the ability to comprehend. This is the wager, the risk - to bring something into a world that may not accept it, and to, yet, do it anyway.

What becomes clear in the artwork is its acknowledgment of incomprehension, its embrace of failure or incompleteness. It is an articulation of the trace, of partiality. Critique of the work as perverse stems from a hierarchical disgust of unknowing or unarticulated feeling. Additionally, the work creates a space for emotional engagement and contemplation. This can be interpreted as an aesthetic disengagement or coarseness, but what the work is providing is an invitation for the viewer to participate in the meaning on several levels - critically, emotionally, physically. Roland Barthes has said that "It is no longer the sexual that is indecent but the sentimental."³⁹ In a media art context there are a lot of tropes that deal with its disconnect between the real and feeling. **Recollection** is artwork that is investigating, as much as it is employing, media. The interplay between the "thingness" of the object, its understood purpose, and its re-contextualized activation creates a vibrational slippage - the multiple purposes of each coded object conflict with one another. The investigation is not just academic, but also emotional and textural. The content addresses grief but is not about about the surface or the representation, rather, there are a lot of hidden pieces - linguistic fissures emerge as places or nodes to contemplate. The "anonymously paged" become traces of distinct individual lives. Critiquing the work based on the emotionality⁴⁰ around the subject matter is inappropriate because it denigrates

³⁹ Roland Barthes, [A Lover's Discourse](#)

⁴⁰ "We call work like this in Germany, boo-hoo art" — Christian Moeller

expression, and by doing so, creates a hierarchy of interpretation that privileges one kind of experience (conceptual a-ha!) over another (mysterious grief and the attempt to articulate the hidden meaning of objects).

Recollection, to some degree, is about queering objects as to free them from their official use, and in doing so, uncover other possibilities of interpretation/meaning, to reveal ambiguities in official vernacular and challenge dominant (often gendered) paradigms. Office furniture is collectively understood as bland and utilitarian. Printers create mechanical noise that is intrusive and should be ignored. Copy paper is cheap and recyclable. Likewise, successful office personas are detached and unemotional, driven on profits and progress. For a male identity, it's difficult to cry or express emotion (in an office setting, it is verboten). What happens when that world of bland devices and cold business detachment overlaps with insurmountable grief? What does it mean that our understanding of the event is filled with memories employing a vocabulary of "matter out of place", of charred and partial memos arching in a dirty rainbow over the NYC harbor to touch down in grassy Prospect Park? Of conservatively dressed business men in tailored pinstripe suits covered in dust particles? Of broken architecture and collapsed economies?

Articulating loss is a difficult thesis, but the partiality and incompleteness of comprehension should be addressed. This feels like the only honest way to discuss a history that is collective - to include a space for challenge or interruption into the artwork as a way to acknowledge its own failure. Language is predicated on codes of comprehension. By overlapping contexts of art history (classic sculptural aesthetic conversations, minimalist strategies, monumentalist gestures), social utility (the temporary worker as ghost, stock photographic subject as inconsequential) and contested histories (survivor testimonies, "real"/journalistic footage), the work is asserting itself as something beyond categorization, as a screen to read multiple stories in. To expect the work function in a "universal" way is to deny the work its complexity and the very function it is attempting to serve.

The term loss is vital because of its absence from conversation by its very definition. We don't discuss loss oftentimes, because in our culture people want to know about gains. Loss is awkward and too personal. Loss is not talked about within the context of technology, somehow that is not a worthy pursuit because it's not following a hyper-realistic perspective. The expectation in media art is that one presents an idea technologically,

and there is a desire for interpretation, to interpret something that there is a perspective or “answer” that they will come away from it with - and that that participation is progress.

The return being just as sudden as the departure, the arrested word and action are picked up again where they have been interrupted. Conscious time comes together again automatically, forming a continuous time without apparent breaks... However, for the picnoleptic, nothing really has happened, the missing time never existed. At each crisis, without realizing it, a little of his or her life simply escaped.⁴¹

The picnoleptic state is a contemporary state, the continuity and narrative of history is assembled on-demand, context is provided no longer through time and space, information space has created an omnipresent everywhere, every time that defies linearity and modernist terminologies. This dense rhizome spurs a schizophrenic state of associative logics that are determined by relative proximities determined less and less by modern structures of power and more and more by media interfaces unaware of their own implicit impact. The medium's delivery messages uptake and codifies interpretative possibility through the interface. The effect of the wash is that the efficiency of a database schema can unwittingly take on the construction of meaning and it's cultural adoption. This is an invisible choice yet on with enormous impacts. If McLuhan teaches us to look for the medium in order to understand the agenda of its framing device, the contemporary condition relies on a lost intent in format construction creating haphazard output when it loses its presentation method. Mining information forms separated from their intended displays pursues an inquiry into the demediated, defetishizing the immediacy of hypermedia, while providing a layer of criticality and reflexivity in its redeployment.

Information design, pares down semiotic meaning. There is a positivist approach to data and usability in the information design discipline, that value is attributed to certain sets of data and that information can be clearly presented to capitalize on a certain set of criteria - if you get the information, you'll understand and then you'll have an answer and technology has the same deterministic issues. If we make the tool, we'll be able to use to solve the problem. Art practice, as opposed to information design, is valuable because it allows for critique of those values - it offers possibilities to problematize those assumptions, to discuss the spaces that get constructed or the grammars that get codified, the frames that become increasingly integrated into the presentation so as not to look like frames at all, but rather objective “data.” **Recollection** focuses on those

⁴¹ Op. cit., Virilio, p. 19.

edges vs. washing over them to get to one final answer. Information design specifically has a whole construction that has to do with "Give me the answer so I can go make a decision." **Recollection** is about questioning the ideal of information as expertise, the concept that can give an answer in order to discuss "How much of the experience is texture" and "How much is tied to a lack of resolution. What is unresolvable." Does a refusal of figuration speak to the form of an anti-form or is it attempting the sublime.

"Since 9/11, the 1990s latte pause has ended, even for the comfortable middle class, much less for the anxious artist class. Now all social classes in the United States realize that a future dominated by data systems might prove just as bloody and ironic as the twentieth century. The noisy era of data storytelling has begun. And it aches."⁴²

⁴² Norman Klein, "Waiting for the World to Explode: How Data Convert into a Novel," in *Database Aesthetics* edited by Victoria Vesna (Minneapolis: University of Minnesota Press, 2007) p. 86.

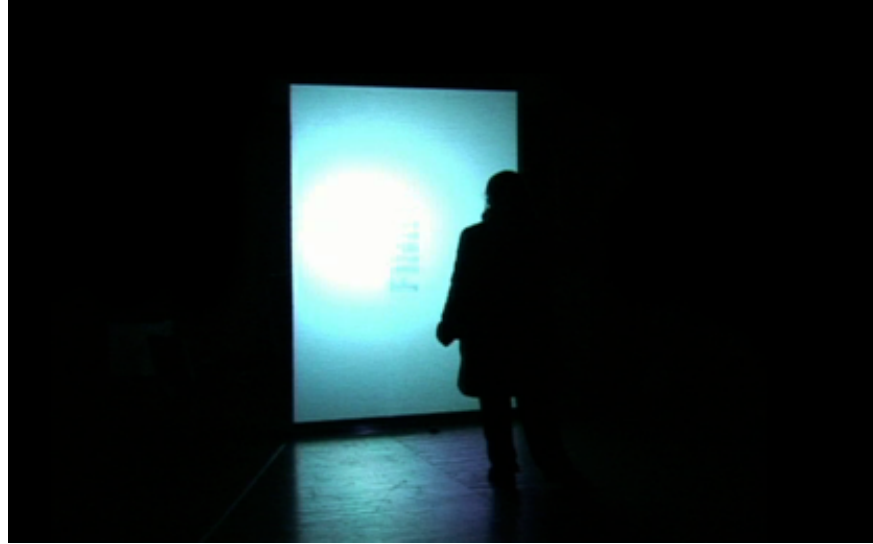
The Chase Information Wall - Sept 11, 2001

I didn't go into work that morning, I had worked late the night before and besides Sept 10th is Brian's birthday so we celebrated in our neighborhood in Fort Greene. Two bottles of wine and free birthday cake because things finally felt great, our experience in the city had stabilized. The move had been tough, but work was good for both of us, we were happy to be together, happy to be back in NYC where we met, a new chapter ready to be written.

The first call came from Brian's mother "Thank God you are alive." "What are you talking about?" No TV. Only a 1940's AM Radio, the old ones that you imagine the family in front of, staring at, a disembodied voice emanating. Jamaican patois described the events as they happened. Need to get to a TV, go to a friend's house down the street and I can't look at the TV, trying to reach Brian, they aren't letting him go from work at his advertising job, he's doing research for the Pokemon pitch. "Get out of there, get home." A photographer friend goes to the roof to shoot the Towers on fire, he comes downstairs and the first one falls. He gets stoned. What is the right response here? Brian makes it back, dusty, terrified, more hours in front of the TV, I want to be there with my friends, but I can't look at the TV, I grew up without one and I never felt conditioned to have the right amount of distance from the images on screen, I believe them too much.

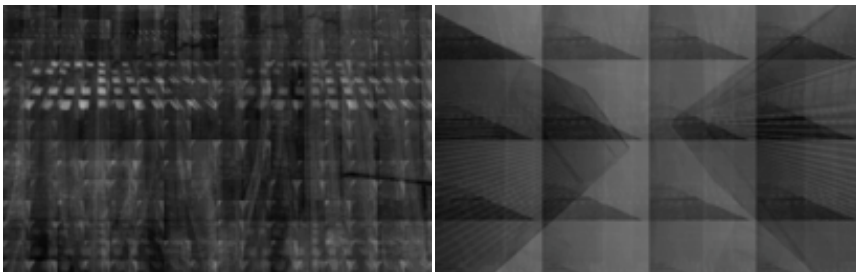
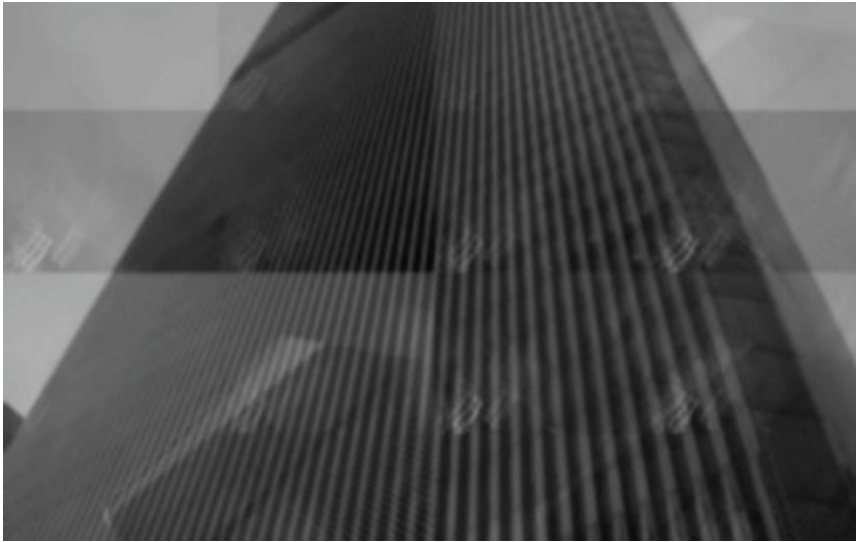
We go for a walk, 4 of us, through an orange haze that is thick and lung-filling, I need some fresh air, and we're walking down Myrtle Avenue, still walking, maybe we'll go to the Brooklyn Promenade to see it ourselves, but the air is too polluted, too toxic, it tastes metallic, like chalk, but the color is terrific, hazy vermillion. Out of nowhere a door opens and a guard ushers us into a giant corporate lobby, "Get in from out there," he says. Older, African-American, wearing a corporate security blazer, we all stand in front of a giant Nam June Paik video wall, overwhelmed. The images are dancing rhythms of light and texture, hyper-colored, synchronized in spots, seemly chaos in others. The only sound is the singing of the national anthem, broken, out-of-key voices, but a chorus, and my eyes orient on a row of screens in the center. Real-time live displays of the Washington politicians on the capitol steps singing as if their life depended on it.

Survivor Status



Fundamental ideas and strategies employed in ***Recollection*** are an elaboration of an artistic practice that was first developed in residency at Anderson Ranch. The subject of the WTC attacks and remembrance was investigated in “Survivor Status”, a multimedia interactive installation. Hours after the initial attack, a website was uploaded to the internet as a way to efficiently collective up-to-the-minute statuses of employees from the World Trade Center plaza buildings. Individuals themselves, or family/friends, could access the site to let the world know a person was accounted for. The statuses to choose from were “Okay”, “Fine”, “Missing”, and “Critical”. This became the raw data that was incorporated into the artwork. As a viewer approach the sensor driven environment of “Survivor Status” a cross dissolve of overlaying images of the Twin Towers locked in a continual rotation from morning to day to night to morning on repeat, brightened to white with the statuses cycling through at high speed. Assignment of these statuses are irrelevant the event has passed yet, they remain cycling through in a location out of time. As the viewer proceeds toward the screen, the white brightens until they are closest of all and the installation broadcasts a psychedelic burst of leaves, cycling through the changing colors from green to red to bare and back again. The texture of the life-cycle is referenced while the leaves address the volumetric scale of change.

Memory Loss



Memory Loss is a subsequent work that was developed out of this investigation. Using the photographs that were taken of the WTC pre 9-11 on my way to work or on my way home, a program was created in Processing to assemble them into a multi-layered grid where a singular image is created out of densely composited multiple. The image is eroded and blurred within the application to address the intense complexity and distance one has to the traumatic memory past, the system generates these constructions ad infinitum, none of them ever define the image, yet in every permutation a new recombination attempts to represent that which is gone. The loss is inherent in the visualization of the image. These images “return from the realm of the apparitional and spectral to take hold of history and give it material form in the present.”⁴³

⁴³ Saltzman, Making Memory Matter, p. 69

Thank you.

Victoria Vesna for saying "You are an artist, now go make the work."

Mark Hansen for inspiring me at BAM in 2001 with an early prototype of Listening Post.

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Ben Fry for teaching me Processing in a week.

Casey Reas for challenging me while supporting me.

Henri Lucas for understanding.

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