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Eat Until Your Organ Shuts Up

A Thesis submitted in partial satisfaction of the requirements for the degree
Master of Fine Arts

in

Visual Arts

by

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The Thesis of Jena Cummiskey is approved and it is acceptable in quality and form for publication on microfilm and electronically:

Chair

University of California, San Diego

2016

EPIGRAPH

What will become hunger is initially only a physiologic event (a certain blood sugar level registered by groups of neurons in the brain). This biological event becomes the experience of hunger and desire (appetite).

Gregory Hamilton

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ABSTRACT OF THE THESIS

Eat Until Your Organ Shuts Up

by

Jena Cummiskey

Master of Fine Arts in Visual Arts

University of California, San Diego, 2016

Professor Amy Alexander, Chair

Pierre Lévy conceptualizes the Semantic Sphere as the layer of addressability which connects concepts among content. Digital humanities scholars have developed a powerful discourse surrounding the politics of data sovereignty and user privacy. In the era of the Semantic Sphere, proprietary ownership is further complicated as the information economy shifts away from

data toward computational and collective interpretation games. How do we situate our body in relation to our user content to better understand issues of ownership? This paper presents the content visualization project, *Eat Until Your Organ Shuts Up*, to explore the potential physiological and epistemological discrepancies pertaining to user embodiment. The body circulates blood; the user circulates content.

INTRODUCTION

In her work on situated knowledge, Donna Haraway considers how we should position ourselves “in order to see, in this situation of tensions, resonances, transformations, resistances, and complicities” (Haraway 588). Situated between the discourses of information studies and issues of embodiment, this paper considers the material disorientation of a body’s relationship to objectively virtual, augmented, simulated, and artificial phenomena. In this context, materiality takes command, manifesting the body’s double -the user. The body circulates blood; the user circulates content. This paper presents issues of embodiment within the discourse of information theory, user sovereignty, and collective intelligence to contextualize the hypermedia visualization project, *Eat Until Your Organ Shuts up*. This discussion includes a specific emphasis on the function of the user-content relationship as it pertains to the body and mediating systems of collective intelligence.

CHAPTER I

1.1 Bits, Automata, Data, and Concepts

Universally distributed intelligence requires an autonomous system, which supports a consistent proliferation of cognitive capital valuable to agents and users at local and global scales. This cognitive economy exchanges currencies of information using layers of addressability, which currently connect bits, automata, and data. These layers of addressability, in conjunction with an increase in ubiquitous computing devices, have accelerated the transmission of information for all agents involved in this system. Given that information is situated between the content and mediation, it is inextricably linked to all layers of addressability (Thacker 82). These layers are intrinsically structured to transmit, map, and exchange informative objects of variable currencies.

At present, the layers of addressability do not offer a means of exchanging conceptual currency, so to speak. Pierre Lévy presents the *Semantic Sphere* as the subsequent layer necessary for the cognitive evolution of this system. Lévy describes the Semantic Sphere as the layer of addressability, which ultimately composes a global hermeneutical memory that is both techno-cultural and socio-semantic (Pierre Lévy 288). Lévy describes the Semantic Sphere as the digital equivalent of our biological cortex -the *Hypercortex* of our collective intelligence (291). Where the web provides connections between data, Lévy presents the Semantic Sphere as connections between ideas. Users access information on the web using the centralized search engines, browsers, and social media

connecting data, while the Semantic Sphere would connect ideas among content using personal management systems and collective interpretation games (288).

Eat until your organ shuts up, or *EUYOSU*, speculates one node of semantic addressability to map connections within a user's body of content to trace the hermeneutic phenomena of one user. *EUYOSU* performs an individual interpretation game to quantify the cognitive value of user content through a semantic network of connections and confront the inherent epistemological discrepancies between the sovereignty of the user, digital content, and the body. *EUYOSU* is not a prototype for an alternative mode of personal knowledge management, but an investigation presenting connections between content as a currency of information.

1.2 User Sovereignty

In 1987 Ted Nelson's *Project Xanadu* proposed "a true storage [and linking] system for text and other evolving structures" (Nelson1987). Nelson's concept highlighted hyper textual nonlinear systems for navigating content -with a specific focus on systems of publishing and accessing literary documents. Despite its aesthetic chaos, *Project Xanadu* sought to construct an alternative mode of organizing content that considered new systems of information revision and retrieval. Nearly thirty years later, *Project Xanadu* maintains a conceptual relevance similar to Vannevar Bush's "memex"; however, Nelson punctuates this project with an ethical disclaimer regarding user privacy and "legal good behavior" (Nelson 461). While presumably not within the vision of *Project*

Xanadu, the restrictions expressed in Nelson's disclaimer denote an insular system that, to a certain extent, needlessly asserts limits of circulation within a supposedly collective system. This is not to somehow imply that Nelson opposes collective contribution, on the contrary, this is simply meant to emphasize how issues with privacy and user sovereignty perhaps preclude the user's fear of acknowledging the phantom-organ quality of the repository.

Big data, data sovereignty, and user policies negotiate the realm of personal data as it pertains to repositories typically associated with consumer products, services, and telecommunications. Sovereignty over data held by global telecommunications conglomerates seems to orbit around access to and use of user data in the form of call records indicating location history and relationship networks. We can consider this assemblage of such data as tracing a one-dimensional linear path of a user's private interactions across a network. In the era of the semantic sphere, cloud architecture will develop a rhizomatic path for interpreting content to distill user information. The cloud has promptly taken position as the necessary proprietor for securely backing up user content, and in some cases even rendered desktop bound drives obsolete; reciprocally manufacturing a developing community of renters to incur nominal monthly fees in exchange for a sense of security, ubiquity, and the illusion of liberation.

Cloud storage functions as a repository for digital currencies that have less to do with transactions and more to do with proprietary claims. With the addition of the semantic sphere, the task of determining sovereignty over collective products of personal content stored on the cloud will be progressively

difficult. Data sovereignty considers ownership through a corpus of quantifiable evidence; cloud sovereignty in the speculative era of the semantic sphere is potentially more concerned with ambiguous evidence. Providing objective evidence for say a breach in user policy agreement will be difficult to perceive, as the value produced is potentially deep, local, and subjective information about the user or collective users. However, this is not entirely antithetical to data analysis and sovereignty issues of present.

This discussion on cognitive capital and collective intelligence would not be complete without a brief mention of the cognitive economy of Google's PageRank algorithm. Matteo Pasquinelli describes Google as a parasite within the digital environment. Pasquinelli frames Google's PageRank algorithm in terms of its propensity to glean value from its relation to the relation, subsequently becoming the "first systematic global rentier of the common intellect" (Pasquinelli 2). When Google sends an unsolicited notification reminding a user of a baseball game at four o'clock, this suggestion is the result of previous queries articulated in respect to your search history, message, email, or leveraged information from a connected native app -depending on account preferences. Telecommunications companies store call and cell tower records providing concrete information of which is known to the user. A user's location history recorded as longitudinal and latitudinal coordinates, a list of user financial transactions, a user's message log etc. It is because of this that mainstream conversations concerning sovereignty tend to fixate on ownership over data capable of implication and legal repercussions. Personal data is less valuable to

the user if the loss of equity presupposes a product of equal or greater value to the user. So we can reasonably assume that users concede, or compromise, sovereignty so long as they consider the exchange profitable. If however an exchange is not perceived as a zero-sum gain, solvent, or potentially implicating, debates over data sovereignty become convoluted. User sovereignty is defined by two conflicting desires: the ability to self-identify the boundaries of the user body and to profit from the collective sum of user bodies. These desires surface in the epistemological bias that the user body functions the same as the physical body; in other words, the belief that user is not distinct from physical body.

The 2014, Jeffrey Hancock, Jamie Guillory, and Adam Kramer's controversial paper, "Experimental evidence of massive-scale emotional contagion through social networks" revealed Facebook's internal analysis of user interaction. The Core Data Science Team at Facebook collaborated with Cornell University researchers to conduct this massive-scale experiment by augmenting user News Feeds to "test whether emotional contagion occurs outside of in-person interaction between individuals" (Hancock, Guillory, Kramer 8788). Despite asserting that, "[their work] was consistent with Facebook's Data Use Policy, to which all users agree prior to creating an account on Facebook, constituting informed consent," the integrity of their research was put into question (8789). Many users felt that with no way to opt out of the experiment, Facebook had violated their privacy policy. Thus, the massive 600,00-user experiment resulted in an equally massive social media backlash -indigestible quantity of think pieces, blog posts, and tweets- concerning the ethics of user

experimentation.

The turbulent reaction to this intra-institutional collaboration is perhaps what implicitly prompted Facebook, and similar media companies, to sequester future user research. Was this indignant response due to the violation of user privacy or the unsettling notion that user data can yield information inaccessible to the ordinary user? In either case, this event suggests that users believe themselves to be, in some way, physiologically linked to their content. It is the latter question which will be of primary concern regarding sovereignty in the Semantic Sphere era. If there is one parallel we can draw between user sovereignty and traditional AI, it is this shared tendency to operate from inherent epistemological biases pertaining to issues of embodiment.

1.3 Well-run Machines

It is important to distinguish cognitive computation and deep learning tools of present from the supposedly well run-machine that they claim to work toward, which is considered true AI. Artificial intelligence however, is not a well-run machine if it aims to replicate something, which we do not fully understand in the first place. Thus perhaps, we see weak AI perpetually oscillating between struggling to model human cognition and simulating intelligent processes without the bodily anchor. Alternatively, augmented intelligence research stands in opposition to the disembodied epistemological foundation of traditional AI. First introduced by Douglas Engelbart in 1962, augmented intelligence research is aimed at enhancing the “individual’s basic information-handling capabilities” to

increase cognitive practice (Engelbart 6). A decade later, Hubert Dreyfus expands this discussion through critically approaching the foundations of traditional artificial intelligence research, contending that traditional AI research operates from the assumption that human cognition and experience can be formalized at all (Dreyfus).

Deep learning methods driving Google's DeepMind projects are misrepresented as artificial intelligence initiatives determined to "solve the problem of intelligence" and "make the world a better place" (*Google DeepMind*). And while DeepMind's *AlphaGo* may be the first computer 'intelligent' enough to beat a professional at the game of Go, this project does not confront issues of embodiment to the extent required to create truly artificial intelligence. As of 2016, the set of available Watson services caters to consumer, business, and healthcare markets, showcasing customer insights, business intelligence, and medical research APIs (Banavar). Cognitive computing tools interpret a topography of data, linguistic, and multimedia content on the web and IBM's prosumer services are an aperitif compared to cognitive computation technologies to come. And in terms of the Semantic Sphere, adapting cognitive tools for analysis offer alternative means of interpreting a mélange of unstructured semantic connections.

1.4 Semantic Pools Around A Body

As waves of Big Data enthusiasm dwindle along the shore of substandard analytical processes, attention shifts towards data lakes to confront the mass of

unstructured data currently unable to garner inference. These lakes store raw, presently nebulous, forms of data for future interpretation. External storage, cloud accounts, and digital user archives are the semantic pools of the Semantic Sphere. Content stored on the distant servers of cloud infrastructure houses hermeneutic memories in the form of documents and media; thus, essentially serving as a fertile landscape for producing semantic concepts predicated by collective experience. In contrast, network-detached storage is considerably less valuable as content is isolated from the multiplicity of addressable resources connected on the web. In relation to Lévy's large scale *Collective Intelligence Project*, the interpretation of concepts within an individual user's content enclave could be seen as irrelevant; however, *EUYOSU* speculates network-detached storage as a resource for conceptual mapping in the era of the semantic sphere. *EUYOSU* is hypermedia visualization of a single user's personal content repository, which connects content through framework inspired by Lévy's paradigm for semantic addressability in *Semantic Sphere*. Contrary to the collective games Lévy describes, *EUYOSU* is the product of a user performing an individual interpretation game within a repository of their own content. The goal of this game is to both visualize a circulation of concepts among content, and speculate the function of epistemological biases in user sovereignty.

The original 57,583-file repository was sorted to exclude any duplicate and unoriginal content. The final corpus was reduced to 13,020 salient files consisting of 8,299 images, 3,161 message transcripts, 1,203 text files, and 357 videos created and modified over the course of approximately 7 years. The individual

interpretation game consists of three main components: taxonomy, semantic vocabulary, and content analysis. Content is classified using 12 conceptual categories and 42 semantic terms. The 12 major conceptual categories -ability, affect, capacity, container, expression of limit, interface, landscape, organ, sensation, social function, state, and symptom- stem from Lévy's symbolic system describing the basis of human development. The linguistic analysis of text-based content requires natural language processing to generate a list of relevant semantic terms used for sub-classification. The automated classification of text files is based on term frequency, collocates, and low-level sentiment analysis, while automated visual content recognition uses Watson's Visual Recognition API to address image files. Due to the technical difficulties involved with automated video content analysis, video file classification uses strictly manual methods of interpretation. User content analysis is required to address local properties of content currently untenable using standard machine learning processes.

The visual rhetoric is a procedural exegesis similar to information and data visualization methodologies. While data visualization transcribes quantitative capital among agents and resources on the web, *EUYOSU* strives to address general and local semantic properties of content. Accosting the conceptual properties through literal terms may seem provincial in approach, however universally agreed upon linguistic terms efficiently communicate semantic links in the diverse media ecology of user repositories. Thus, semantic terms are capable of providing informative, legible hermeneutic pathways between

concepts and the multiplicity of phenomena within user content. Sentiment among connected concepts is realized through the visual juxtaposition of content and nonlinear navigation of semantic collocates.

1.5 The User Appetite

Linking semantic connections among user content may appear to be an attempt to visualize an individual's hermeneutic memory as an idiosyncratic lexicon. And from this perspective, it may seem profitable for other users to perform similar individual interpretation games on their respective content. However, *EUYOSU* does not visualize an individual's idiosyncratic lexicon nor does it confirm an individual's pattern of phenomenological experience through digital evidence; *EUYOSU* explores the relationship between user and content.

Do collective interpretation games measure the appetite of the collective? Lévy explains that collective interpretation games can "cause interaction between automatic functions and human perceptions, actions and reactions in self-organizing loops" (Lévy 319). With this in mind, perhaps individual interpretation games have two functions: 1) quantifying the information value of user content through a semantic network of connections and 2) confronting the inherent epistemological discrepancies between the sovereignty of an individual user and the user's body. What is archived and what is lost is entirely reliant on which content the user considers to be essential or potentially relevant. Hubert Dreyfus discusses memory and bodily experience asserting that "present concerns and past know-how always already determines what will be ignored, what will remain

on the outer horizon of experience as possibly relevant, and what will be immediately taken into account as essential” (Hubert Dreyfus, 175). It is partially because of this process that an individual’s content cannot conceivably embody the hermeneutic and phenomenological memory of the individual, but instead, trace the appetite of a single user.

The parasite “has a relation to the relation, a tie to the tie,” but it is never on the thing itself (Serres 39). When Michel Serres asserts, “the well-run machine does not copy the bodies of animals and their organic system, but rather our relations among ourselves” he is speaking of course about the machine, but also, the parasite (Serres 61). Both host and guest can become parasitic, or rather suddenly recognize their parasitic function. The individual interpretation game of *EUYOSU* may offer a moment to reflect on the phantom-organ sensation. In this gesture, user sovereignty has less to do with the individual and more to do with the evidence of a user. This cathartic gesture positions the user as host, and in acting as host, the user is able to reflect back on its function. Thus aligning their sight with the perspective of the parasitic double within the collective from which they are inextricable. The user mistakes itself a guest, but when the host serves the body of the guest, the dinner interrupts itself.

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