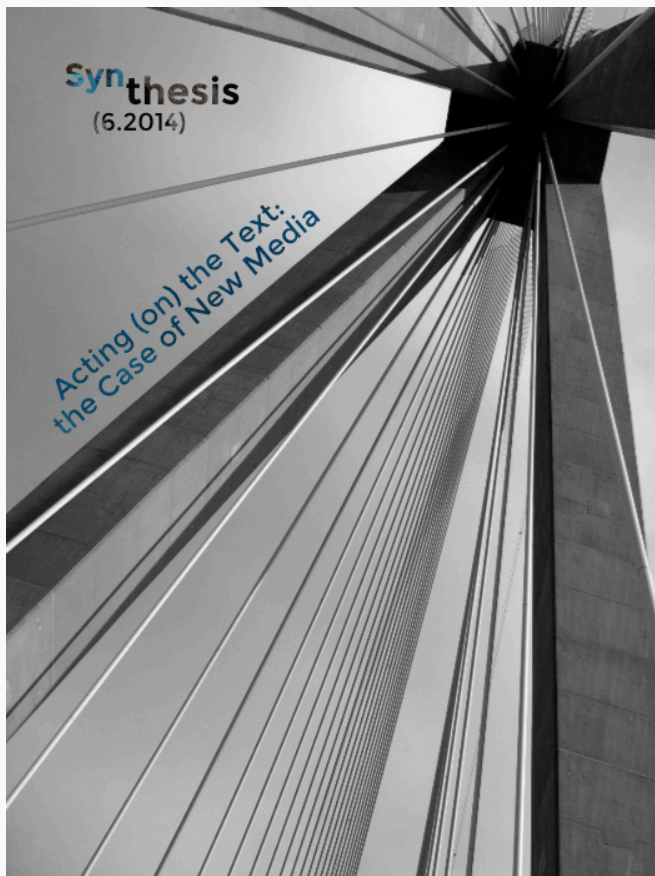


Synthesis: an Anglophone Journal of Comparative Literary Studies

No 6 (2014)

Acting (on) the Text: the Case of New Media



How to Undo Things with Codes: New Writing Mechanisms and the Un/archivable Dis/appearing text

Athina Markopoulou

doi: [10.12681/syn.16174](https://doi.org/10.12681/syn.16174)

Copyright © 2014, Athina Markopoulou



This work is licensed under a [Creative Commons Attribution 4.0](https://creativecommons.org/licenses/by/4.0/).

How to Undo Things with Codes: New Writing Mechanisms and the Un/archivable Dis/appearing text

Athina Markopoulou

Abstract

The discourses of criticism are being transformed at the same time that our writing mechanisms are undergoing a major change. Reflecting on the relationship between our writing tools and our perceptions and taking programmability and interactivity as the main characteristics of new writing media, this essay attempts an approach to how that which is new in scriptural techniques, that is to say, programmability and interactivity, *are undoing* our perception of such notions as the archive and embodiment. The two works which are here commented contain the conditions of un-writing their written trace; the interactor who makes the text appear paradoxically also causes its disappearance by acts of destruction or dispersion.

In the case of *AGRIPPA (A Book of The Dead)*, William Gibson reserves for the reader the role of the destructor of the text through an extreme gesture of interaction which destines the work to erasure and calls for the retrieval of a text that contains the conditions of its own death. In the case of Garry Hill's *Writing Corpora*, the body's acts are created of, create and are turned against writing, they embody and disperse the writing traces, while the body experiences the shift from inscription to embodiment.

Introduction

Centuries after the most important shift in the history of writing media marked by Gutenberg's invention, the material conditions of writing are currently undergoing another major change. This is radically transforming the way writing mechanisms are used as metaphors thus shifting the relationship between our writing tools and our perception of such notions as the archive and embodiment. Contemporary scholars with interest in new media such as Rita Raley have reported a shift in humanities migrating from the realm of stability and preservation to that of ephemerality:

a non trivial project of the humanities ought to be to consider the production of meaning that may not necessarily be preserved, to understand the significance of medial objects and cultural processes that seem to go away. We have a clear vested interest in forms of monumentality (archives, canons, durable inscriptions), but we

have a less recognized interest in maintaining a continuous connection to ephemeral production—in recognizing that which would otherwise disappear. (27)

The fact that Raley chooses to put preservation in the centre of her discourse about the shift that the humanities are currently undergoing is very significant. In this article, I try to demonstrate that the very discourse of criticism cannot but undergo a shift of paradigm and migrate from the metaphorical topos of durable inscriptions to a new topos still to be explored. If Friedrich Kittler, in his 1995 article “There is no Software,” was right that “We simply do not know what our writing does,” we need to shed light on how new digital media are transforming the realm of writing mechanisms as metaphors for memory and reflect on the ways archivability and embodiment¹ are now problematised.

Freud’s argument in “A Note on the Mystic Writing Pad” that memory can be identified with a writing medium was possible on the grounds that western metaphysics are built on the metaphorical topoi of writing and its media. While writing on Freud’s well known text, Jacques Derrida was the first to demonstrate that “the metaphor of writing haunts the European discourse” (*Writing and Difference* 247).

From Plato and Aristotle on, scriptural images have regularly been used to illustrate the relationship between reason and experience, perception and memory. But a certain confidence has never stopped taking its assurance from the meaning of the well-known and familiar term: writing. The gesture sketched out by Freud interrupts that assurance and opens up a new kind of question about metaphor, writing, and spacing in general. (250)

As in the case of Freud, Derrida’s reflections on writing and its metaphors disrupted the discourses of criticism and a new type of confidence was installed that is now again losing its ground. Writing as reflected on by Derrida resulted in a way of perceiving the work of writing as production and deletion of the transcendental difference between “archi-trace” and traces, unconscious and consciousness, absence and presence. This confidence is now shaken and we need to rethink how “the work of writing,” the writing practices and techniques, (un)(re)produce and (un)(re)delete these transcendental differences.

Kittler was very often quoting Nietzsche’s saying “Our writing tools are also working on our thoughts” (*Gramophone* 200, 203, 204, 210). In line with this philosophical position, Wolfgang Ernst emphasizes, as Jussi Parrika puts it, that “our perceptions are dependent on the signal-processing capacities of our devices” (17). In this paper, I intend to explore this relationship of dependence. Departing from Wendy Hui Kyong Chun’s argument that the “major characteristic of digital media is memory” (154), I will engage with the metaphorical space between memory and the writing mechanisms. At the core of this reflection lies the argument that the characteristics of new textual media which alter this metaphorical space are *programmability* and *interaction*. New textuality is defined by the fact that source codes lay, in operative command scripts, the conditions of processing/executing a text (Chun 153); likewise, the reader is invited to re-generate the text in the course of its enactment (Ernst 121). Programmability and interactivity are undoing the meaning of inscription as the metaphorical etching of memory, and are thus altering our perception of such notions as the archive and embodiment. In line with the views of Wolfgang Ernst, programmability is considered here as a quality that brings forth the inherently dual character of

digital media: their “logic replication” becomes distinct from their “physical replication” (Ernst 93). New media are said to be “reading themselves,” in the sense that they enact/execute the logical and reproducible, yet hidden, code that needs to be “embodied” in a separate material body outside the code, in order for it to be processed and thus exist. Embodied apparitions take over incorporated durable inscriptions and encompass the relevant metaphors.

In recent literature about writing media, it is often implied that digital media constitute a better metaphor for memory than analogue media in that, in the former, stability is combined with dynamics. For the first time, the substratum of the written word is not simply a medium of storage of durable inscriptions but also actively operates a process of memory within itself. Derrida says about Freud’s noting pad that: “The machine does not run by itself. It is less a machine than a tool.” (*Writing and Difference* 248). Now the medium becomes able to run itself and perform its meaning production. We could say that the medium is in a way interacting with itself; it is *intr-acting* by being one and operating dually. As Ernst points out,

For the longest time in cultural history, storage of data and the means of operating them have been kept separately. The symbol-processing machine, though, does not separate data and programmes anymore; rather both are deposited equally in the working memory of the machine, to be differentiated only in the moment of data processing. Suddenly a psychoanalytic insight becomes technically true—the dialectic of archive and transference. (123)

Programmability is thus translated in “intro-active” machines able to read themselves. Now when it comes to interactivity, new media create a context that allows the reader to interact with texts experienced in their openness as continually and ubiquitously accessible and networked: “entailing a shift from read-only paradigms to a generative, participative form of archival reading. Source-oriented stock and classical file-oriented archive practices yield to the use-oriented (‘to be completed’) ‘dynarchive’” (Ernst 81). Programming texts for interaction and focusing on co-creation rather than on final products has led to another way of understanding monumentalisation, which a priori cannot be compatible with synchronic experience. The very fact that one can alter the work by interacting with the medium without this being perceived as destroying the body of the work but — on the contrary— as participating in the act that creates it, jeopardises our traditional idea of the original work; we can now speak of works in plural or acts of writing, more than of a written work. In the case of older media, the reader can still materially interact with the text, but in a way that could either alter or destroy the original body of the text and thus create a new instance of the work. In the era of digitality, works programmed for interaction with the reader/spectator *become* the work(s) they are by interaction with the medium. In this sense, they resist becoming a metaphor for uniqueness, stability and preservation as the inscribed letter has often been.

Below I explore how two artworks disclose an unprecedented metaphorical space, in the way they are programmed for interaction with the reader/spectator. In both cases, the reader/spectator interacts with works of which the source programme is written both to write and to un-write the text; that which generates the text also contains the conditions of its disappearance. At the same time, as “our writing tools are also working on our thoughts” (Kittler, *Gramophone* 200, 203, 204, 210), these textual conditions are (un)doing our cultural perceptions, as implied in this essay’s

title.

The first case is William Gibson's *AGRIPPA (A Book of The Dead)*. Although *Agrippa* is presented in the format of a book, its text is in electronic form and it vanishes right after the first time the reader runs it. In *Agrippa*, the act of interaction equals an act of destruction. The project depends on a programme that includes the conditions of its encryption, as well as on the gesture of the interactor which creates the passage from the archivable to the non-archivable and invades the terms of the metaphor of the book as a closed world.

The second case is Garry Hill's *Writing Corpora*, an interactive installation that stages the metamorphosis of the body, moving from writing as incorporated inscription to writing as a commandment for embodiment. The gesture of the interactor here is a gesture of dispersion and actual synchronic embodiment. In *Writing Corpora*, the intermediary metaphorical space between our body and our writing mechanisms conditions the ways in which our bodies are experienced.

AGRIPPA (A Book of The Dead)

The archive always works, and a priori, against itself.

Jacques Derrida, *Archive Fever*

The emblematic *AGRIPPA (A Book of The Dead)* by William Gibson is an early and most famous case of confronting the reader with the question of archivability. The Deluxe Edition of *Agrippa* was presented in a heavy, distressed [case](#) where lied the book, with its title hand-burned on the [cover](#). It contained 63 viewable pages with ragged edges, including [copperplate aquatint etchings](#) by Dennis Ashbaugh. Each copy of the book was partly unique because of the handmade or hand-finished elements. Having taken place early in the history of interactive electronic texts, in 1992, the *Agrippa* project reserved a special role for the reader: by opening the book, the reader was automatically condemning it to disappear. The text by Gibson and the accompanying artwork by Dennis Ashbaugh were programmed to fade away after being experienced once: the last pages of the book had a hollowed-out cavity holding the diskette with William Gibson's [poem](#), which was disappearing in encrypted code after the first time it was run. The etchings by Ashbaugh were also made in an ink that was gradually disappearing after exposure to light. By being the actor and only witness of bringing the book to birth and death, the interactor/destructor was initiating an archiving process based on meta-data, as it happened with the "[online archive of Agrippa](#)," a project by the Transcription Center of Santa Barbara University which provides *Agrippa*'s facsimiles and simulations, the recovered text and various other material from the book's creation and early reception; a dis-embodied archive built on faith.

As early as December 1992, in an event at America's Society entitled "Transmission," one of the diskettes containing *Agrippa*'s hacked encrypted text was run in front of a small audience. In the transcript from the show, the host is quoted as saying: "Author William Gibson and publisher Kevin Begos both figure that some hacker will crack the self-destructing code and copy the disk or that an unauthorised taping of one of tonight's events will eventually be transcribed and passed along on computer bulletin boards" (Kirschenbaum, *Mechanisms* 243). Today, one can find the emulation of the poem, facsimile reproductions of the

vanished pages and different types of meta-documents online.

The successful attempts to recover *Agrippa's* electronic text were not necessarily against the intentions of the creators of this perishable text. Dennis Ashbaugh himself in a short text published in 1993, claimed that:

Agrippa the book is so subject nonspecific that in pursuing its content the hacker, gene jockey, archivist, ol-factrician, or historian cannot help but modify and further alter certain aspects of it by their very perusal, thereby in effect becoming collaborators with the writer, artist, and publisher. The book is in fact so actively unstable that by no mere happenstance the collector/owner himself becomes a contributor to the project. (79)

Ashbaugh's statement is more than crucial for our understanding of what *Agrippa* stands for. Beginning with the opening phrase of the statement, an important observation needs to be made: Ashbaugh refers to "Agrippa the book" as if the existence of another *Agrippa* was implied; there is a latent distinction here. Is *Agrippa* more than a book with a vanishing content? Is *Agrippa* the book *and* something else? The answer of the question might be lying in the closing phrase of the paragraph: "The book is in fact so actively unstable that by no mere happenstance the collector/owner himself becomes a contributor to the project." The *other Agrippa* is haunting the book from the outside; it is a project that is created by the interventions of the readers who doom it to disappearance and then strive to retrieve the content of the book.

Interactivity is here a term loosely applied, exactly because *Agrippa* is an extreme case of interactivity, as it refers to the dual character of the work, to which I dedicated part of my introduction: *Agrippa* is a logical commandment, a source code that destines itself to encryption, and a physical appearance destined to a struggle for recovery, an object of collectors' fetishism. The community of art book collectors, technology freaks and hackers experienced interactivity with *Agrippa* in a two-fold way: the act of interaction consisted both in causing the disappearance of the source-code as the other side of witnessing its material apparition, as well as in engaging in re-generating the source code in order to resuscitate the "book *from* the dead."

This programmed destruction, translated into re-generation, evokes that the *raison d'être* of this interactive work lies in the act that destroys it in order to re-generate it. While commenting on the survival of *Agrippa's* content, Matthew G. Kirschenbaum has argued that "*Agrippa* owes its transmission and continuing availability to a complex network of individuals, communities, ideologies, markets, technologies, and motives...The preservation of digital media has a profound social dimension that is at least as important as purely technical considerations." ("Hacking *Agrippa*" par. 10) No one can argue against Kirschenbaum's statements, especially when he concludes with Randall McLeod's formulation that "the struggle for the text is the text" (*Mechanisms* 213). His conclusion can however be complemented: the struggle against the text *is* the text. It is exactly in these two last statements that lies the substance of a project like *Agrippa*: it is more than a book because it lies in the acts of logical degeneration and re-generation of the material apparition of its content. *Agrippa* programmes the conditions of its apparition and of its physical disappearance. According to Ernst,

Media-operative devices are no longer simply bearers of meaning ("semiophors");

they also generate it...a cultural artifact is no longer an object, for it develops only in its course of execution...Contemporary culture is suddenly confronted with things (operational devices, media) that conduct their dereification–logical replication as distinct from physical replication. (93)

Agrippa is about this distinction, at the very historical moment of *dereification* brought by the shift from printed text to programmed electronic texts. The empty book that remains in the hands of the interactor that has doomed the content to disappearance lies as a monument of the fetishised object. As Chun puts it, “one medium becomes the memory of the next” (155). Here, Gibson uses electronic writing as a memory of the book. The struggle between remembrance and forgetfulness of the older medium is the message of the new medium.

While the content of *Agrippa*’s text interests us much less than the hoax it supports, the text can however be revealing, beginning with the title. Among the works of the occult philosopher Heinrich Cornelius Agrippa, there is a treaty on the magic forces that proper names bear. If magic has always stood for the force that makes words act, then programmability and interactivity are de-sacralised magic: unlike words, the source code is not a generator of meaning but lays the semiotic conditions of the meaning’s execution. Its commandment is a magic spell to be enacted, a contemporary way to (un)do things (not with words but) with codes.

From the very first verse, Gibson predetermines the interacting reader’s uncomfortable positioning vis-à-vis the material object that lies before him: “I hesitated/before untying the bow/ that bound this book together” is the first verse of the *Agrippa* text. The reader’s hesitation to unbound the book is the archive’s last refuge and promise of survival. Once the *Agrippa* diskette was run, the owner/collector found herself with a book without content in her possession: the book would remain as a resacralised object, after the source of *Agrippa* had consumed itself. It would thus become a monument of material resistance, a testimony of the duplicated presence of a new textuality that takes place and enacts time in two embodiments: the inscription of a commandment [in the source code] and its physical embodiment [enactment on the interface]. The former needs to be processed and appear as the latter in order to exist, whereas the latter exists only to process and make the former appear.

The challenge that *Agrippa* imposes to archivability can be understood as follows: in the new media era, the *arché* of the archive is not an ordering discourse in the foucauldian sense; its *arché* rather lies in the act of programming its material apparition. But what if, as in the case of *Agrippa*, the programme or the source code, commands its destruction, and is thus turned against its own *arché* as permanent, latent or available? What if an extreme act of interaction destines the work to erasure? This would seem as the enactment of the derridean *arché* of the archive which is no other than the principle of including the conditions for its own death.

Writing Corpora

When a text presents itself as a constantly refreshed image rather than as a durable inscription, transformations can occur that would be unthinkable if matter or energy, rather than informational patterns, formed the primary basis for the systemic exchanges.

Katherine Hayles, *How we Became Posthuman*

The aim of the discussion of the second work is to shed light on the relations between inscription and embodiment. Garry Hill's *Writing Corpora* (2011) is an interactive installation activated in 2012 by the artist himself and Swedish artist Paulina Wallenberg-Olsson in a performance given at "Laboral, Centro de arte y creación industrial" in Gijón, Spain. With the exception of some sound and video elements that were used for Hill's performance, Laboral still hosts the installation and visitors can interact with it.

The visitor who enters the room where the work is installed will see scattered letters in its middle forming a mass of indistinguishable material that the developers who created the software of the work describe as an "[alphabet soup](#)."² Upon coming closer to the middle of the room, the visitor realises that the only way to interact with the text is to step on it and start kicking the letters, or lay on the ground and violently hit its surface; the letters then move in high speed and then again, some of them, get crystallised in phrases in English or Spanish. The phrases are all idiomatic expressions involving parts of the body. While the reader-interactor remains immobile, the text also remains stable but gets scattered when the interactor moves again. Another visitor may arrive and disperse this crystallised but ephemeral text. No trace of these ephemeral action-texts seems to be kept and the one that created his/her text by destroying another is the only witness of this short-living creation, only confirming the above mentioned saying that "the struggle for the text is the text" or even, that destroying the text is the text.

[Laboral's website](#) gives an interesting, full of metaphors, description of the ways the audience is interacting with the work: "spectators stumble on words which are converted into sculptures that in turn crash into the images." The metaphorical imagery of the whole phrase is very interesting but what mostly interests me here is the fact the words are compared to "sculptures. The author of this text is actually using a metaphor that is central to Hill's work: written words are immobilised bodies, monumentalised bearers of meaning. I suggest that not only words, but also the interacting bodies are converted into "sculptures that in turn crash into images."³

The above mentioned website's text also affirms that "Writing Corpora is about translation. [...] through technology the artist's body is 'translated' into a virtual existence in which the artist himself is given form." To what kind of virtual existence is the artist's body created, if not to the unstable text on which he stumbles? To what extent can this be taken as virtual and how is this returned to the body of the artist/ interactor to give him/ her form?

Derrida writes in "Freud and the scene of writing":

The metaphorical concept of translation (Abersetzung) or transcription (Umschrift) is dangerous, not because it refers to writing, but because it presupposes a text which would be already there, immobile: the serene presence of a statue, of a written stone or archive whose signified content might be harmlessly transported into the milieu of a different language. (*Writing* 264)

The metaphor of translation–Derrida says here–presupposes immobility, a statuesque presence, as the developers of the technology applied in *Writing Corpora* also seemed to unwittingly imply.

Paraphrasing Kittler, I would say that the body needs to “pass through the bottleneck of the signifier” (*Gramophone* 4) in order to memorise itself. In Hill’s work, the successive metaphorical translations that take place force bodily memory through the bottleneck of the signifier in a far more complicated manner compared to single distinct markers inscribed on readable surfaces: the body that steps on the installation is interacting with a software which is translating both its movement and lack of movement into a commandment which is then translated into the flickering textual embodiment of this commandment.

In *Writing Corpora*, letters seem to form constellations out of a matrix characterised by inconsistency, coming together only when the interactive body was becoming a writing tool giving birth to a stabilised text. In order to maintain the ephemeral text it was creating, the interactor’s body has to remain immobile, transforming itself to an extension of the substratum on which the ephemeral text appears.

The title of the work thus acquires a double meaning: bodies are the subject and the object of ‘writing’; the bodies are writing *and* are written. They are writing mechanisms as they are the object of the writing process. They are writing tools and written substrata. As in many cases, when it comes to understanding the metaphorical space between body and writing tools, Nietzsche was the first to perceive the double nature of this relationship and Kittler brought Nietzsche’s reflections into the light of contemporary thought on mediality. Referring to Nietzsche’s early use of a typewriter, Kittler argued that “To make forgetful animals into human beings a blind force strikes that dismembers and inscribes their bodies in the real, until pain itself brings forth a memory. [...] humans change their position—they turn from the agency of writing to become an inscription surface (*Gramophone* 210). The position of the human as a writing tool *and* as a written substratum is at the core of Hill’s work. However, the above statement concerning the age of the type-writer and the position of the human body as an inscription surface corresponds to this historical moment of the type-writer’s appearance as a writing mechanism. If, as Kittler implies, human bodies are cultural constructions that exist since the moment they are recorded through the mechanisms of memory, then the techniques of recording are at the core of a body’s construction. The historical moment in which Hill creates his interactive work is the one where surfaces hosting durable inscriptions give place to embodied information. Our bodies carry messages and are carried by them; they are writing bodies as much as they are written bodies, but as soon as the ‘bodies’ of the texts are subject to mutation, none of the two terms of the metaphor remain unchanged.

The body of the text is experienced as the repeatable projection of an invisible commandment that is inscribed in an inaccessible place and in an unreadable code. The ‘body’ of the text that the human body is generating is therefore losing its character of a forged inscription in order to become a visual translation, the image of a written code. In Hill’s work, this type of replicable embodiment is returned to the interactor’s body, as the unique and instantiated gestures of the human body are being ephemerally stabilised in statuesque stasis in order to give birth to this new form of textual materiality.

*

The reflections of Freud and Derrida on memory and writing mechanisms, with which I started this essay, are currently revisited and reconsidered in the light of new writing media. The two artists that are brought together here aspired to give a

radical twist to the dialectic that has been inherent to writing. They did so by engaging their readers or audience in interacting with works where the written trace can be experienced neither as present nor as absent. Both are about the new possibility of a writing process that commands the disappearance of its visual trace. Gibson played with the apparition and disappearance of his work and Hill played with the embodiment and dispersion of the body's text. The dialectic between destruction and preservation, deletion and reproducibility, *thanatos* and *eros*, is thus used as a means to exceeding itself.

In the case of *AGRIPPA (A Book of The Dead)*, the trace of the archive migrates to its 'outside' through the material destruction of its substratum. The artist reserves for each reader the role of the destructor of the text, but at the same time pays with the desire of the community of readers and archivists to recreate a text which can never be claimed. In the case of *Writing Corpora*, the interrogation that the artist attempts has to do with the metaphor of the human body as a writing tool and a written substratum. The body's acts are created of, create and are turned against writing, they embody and disperse the writing traces, while the body experiences the shift from inscription to embodiment.

The end of the written record does not only concern the record itself. The presence of the written record is owed to the tracing movement which was creating the record while it was always left out of it; the act of creating the recordable, by staying out of it, ensures the boundaries between the writing and the written bodies. These boundaries are now destabilised. A new understanding of the archivable causes the collapse of the 'outside,' as the bodily trace will continue migrating from the realm of inscription to that of embodiment, thus totalising the written record to such an extent that it is getting dispersed to disappearance.

¹ Both the notions of "archive" and "embodiment" are central to this paper. Their philosophical implications and their re-occurrence throughout the history of the humanities –at each era with a different meaning– turn their definition in a few lines impossible. Such an attempt would exceed this essay's scope. However, in order to give an idea about the theoretical context to which the present text belongs, I borrow archive's definition from Derrida's *Archive Fever* as the "accumulation and capitalization of memory on some substrate and in an exterior place" (15) and embodiment's definition from Katherine Hayles as "the instantiation of thought/information" (5), a definition to which Hayles objects in *How we became posthuman*.

² <http://glymmer.net/work/writing-corpora/>

³ <http://www.laboralcentrodearte.org/en/recursos/prensa/noticias/performance-writing-corpora-de-gary-hill/view/>

Works Cited

Ashbauch Dennis, and Gibson William. "Interactions between Artists and Writers." *Art Journal* 52: 4 (1993). Web. 28 August 2013.

- Chun Hui Kyong, Wendy. "The enduring ephemeral, or the future is a memory". *Critical Enquiry* (Autumn 2008). Web. 1 March 2014. <http://www.ucl.ac.uk/art-history/events/past-imperfect/chun-reading>
- Derrida Jacques. "Archive Fever: A freudian impression." Trans. Eric Prenowitz. *Diacritics*, 25: 2 (1995). 9-63. Print.
- . *Writing and Difference*. Trans. Alan Bass. London: Routledge Classics, 2005. Print.
- Ernst, Wolfgang. *Digital memory and the archive*. Minneapolis: U of Minnesota P, 2012. Print.
- Freud, Sigmund. "A note upon the 'Mystic Writing Pad.'" *General Psychological Theory*. Sigmund Freud, 1925. Web. 29 October 2013. <http://home.uchicago.edu/~awinter/mystic.pdf>
- . *Le Malaise dans la culture*. Trans. Dorian Aster. Paris: Flammarion. 2010. Print.
- Hayles, Katherine. *How we became posthuman*. Chicago: The U of Chicago P, 1999. Print.
- Kirschenbaum, Matthew G. "Hacking 'Agrippa': The Source of the Online Text." Matthew Kirschenbaum, 2005. *An online archive of Agrippa*. Web. 1 July 2013. <http://agrippa.english.ucsb.edu/kirschenbaum-matthew-g-hacking-agrippa-the-source-of-the-online-text>
- . *Mechanisms: New media and the forensic imagination*. Massachusetts: The MIT Press, 2008. Print.
- Kittler, Friedrich. *Gramophone, Film, Typewriter*. Stanford : Stanford UP, 1999. Print.
- . "There is no software." 1992. Web. 1 March 2014. <http://raley.english.ucsb.edu/wp-content/Engl800/Kittler-nosoftware.pdf>
- Parikka, Jussi. "Archival Media Theory: An Introduction to Wolfgang Ernst's Media Archaeology." 1-22. Print.
- Raley, Rita. "TXtual Practice." *Comparative Textual Media: Transforming the Humanities in the Postprint Era*. Ed. Katherine Hayles, and Jessica Pressman. Minneapolis: U of Minnesota P, 2013. 5-32. Print.