

Unhelpful Tools: Reexamining the Digital Humanities through Eugenio Tisselli's *degenerative* and *regenerative*

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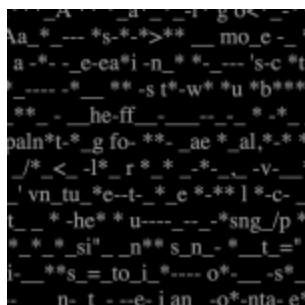
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Included in the Gathering: Electronic Literature [Frame]works for the Creative Digital Humanities

*Via close readings of Eugenio Tisselli's **degenerative** and **regenerative**, "paired works that become progressively less comprehensible the more users interact with them," we are able to grasp the ecological costs of the time we spend online. And we can begin to recognize, with Justin Berner, a concern with permanence and ephemerality in the digital sphere that is not unique to the work of Tisselli. It is, rather, a common thematic concern throughout the*

*history of electronic literature. The term that Berner advances for this literary countercontext to the instrumentalism of the Digital Humanities, is **digital posthumanism**.*

By the moment users become aware of what is happening in *amazon*, one of Eugenio Tisselli's most recent works, they have already become complicit in a simple, digital rehearsal of this precious biome's destruction. Running a block of code that we have been instructed to copy and save as "amazon.HTML", we witness a forest of green "trees" (represented by the "*" symbol) become replaced by brown numerals at an ever-increasing speed until, after a few minutes, the screen becomes almost entirely covered by these ever-changing digits, soon resembling an indecipherable, illogical stock ticker where once there was a peaceful forest. Characteristic of the Mexican-born, Barcelona-based artist's oeuvre, which features works that similarly use algorithmic processes to explore the real-world, material effects of the digital, *amazon* obliges its users to recognize the exploitation of natural resources for an ever-more-abstract concept of growth in a capitalist economy today based on digital tools and increasingly controlled by algorithms.

In addition to being united in this critical posture, many of Tisselli's works operate with what could best be described as an unaccommodating, destructive inertia: when interacting with them, we end up witnessing a process that we are powerless to stop. This dynamic is especially apparent in *degenerative* and *regenerative*, paired works that become progressively less comprehensible the more users interact with them. Exemplars of the critical use of digital technologies, these two works will serve as the objects of this

investigation, which is interested in how electronic literature can, first, help redefine the current relationship of the digital humanities to the instrumentalist logic overtaking the western academy and, second, demonstrate possibilities for a future in which the humanities are not only digital, but also, posthuman. Briefly reviewing the literature that critiques the digital humanities for its complicity in the neoliberalization of the western university, the first half of this paper will then offer a reading of *degenerative* and *regenerative* that focuses on how the mechanism of each work obliges its users to reflect on the materiality of code. Following on this, the latter half of the paper will first reconcile the speculative possibilities offered by the digital humanities and the posthuman, then analyzing how these paired works of electronic literature, by privileging the role of assemblages comprised of human individuals and groups as well as non-human actors in effecting change and being affected by these works, question the agency of the individual human subject.

Originally published in 2005, *degenerative* and *regenerative* are today accessed through an information page that explains the project and provides a way to view the changes they have undergone since their initial publication: in *degenerative*, a webpage with a paragraph of text gradually became reduced to a black screen over the course of forty-four days as a character was “destroyed or replaced” each time the page was visited, while in *regenerative*, a paragraph on a similar webpage has been expanding into incoherence as it extracts and adds text from any referring pages. Similar to *amazon* in their intentionally-unaccommodating nature, these paired works are representative of Tisselli’s general interest in creating objects – texts, web pages, images – that become corrupted or disappear in response to a user’s interaction: in addition to the forest of “trees” that are replaced by brown numerals in *amazon* and the web pages that are progressively corrupted in *degenerative* and *regenerative*, Tisselli’s oeuvre includes *The 27th || El 27*, a work that crudely translates an article of the Mexican constitution into English as the stock market rises, and *fadeaway*, in which a picture of Tisselli disappears, pixel-by-pixel, into a screen of white each time someone visits it.

In spite of this tendency for creating objects that disappear or otherwise deteriorate, Tisselli is also quite unabashedly interested in describing and archiving his works, with each one being accompanied by an explanatory text or, often in the cases in which the object has become substantially transformed, prior versions of its existence. These countervailing tendencies are not unique to the work of Tisselli, but rather represent a common thematic concern throughout the history of electronic literature. From the seriousness and spectacle of William Gibson’s famously disappearing (or, perhaps more famously, *not* disappearing) poem *Agrippa*, to the absurd humor found in *The Fall of the Site of Marsha* by Rob Wittig, to the critique of frictionless, user-friendly Web navigation found in Noah Wardrip-Fruin’s *Impermanence Agent*, there is a rather established tradition of works that oblige their users to simultaneously consider permanence and ephemerality in the digital sphere. Not only do these works highlight this seeming contradiction, but they also importantly manifest a teleology of destruction that their users must confront when experiencing them in their now-archived states. Made to either disappear or become corrupted in some way, yet preserved

to be records of their former, original states of functionality, such works critique the prevailing, neoliberal concept of utility in the digital sphere championed today by a neoliberal consensus comprised of the technology industry, government initiatives, and education programs. In particular, these digital objects, having become records of their intentional destruction, exist as an affront to an ethos of building and of growth in which value is determined in a uniquely instrumentalist fashion.

The Digital Humanities and Instrumentalism

More than just considering how *degenerative* and *regenerative* critique notions of instrumentalism, this paper is interested in how these paired works by Tisselli can help reconsider instrumentality in relation to the digital humanities, an area of educational activity that has become famous – or infamous, depending on the point of view – for its emphasis on building things and its accused complicity in western academia’s neoliberalization. While this association with building things has made the digital humanities a rather polemical topic in academia over the past few decades, much of this discussion – whether defending, opposing, or offering hopeful criticism of digital humanities – offers a very limited view of what digital humanities is or could be, principally considering large-scale projects of digitization such as the Text Encoding Initiative or what Franco Moretti calls “computational criticism,” that is, the application of computational methods to explore humanistic inquiries that would otherwise be unrealistic. Entering into this discussion, it is the general provocation of this first section of the paper that when we use poetic objects such as works of electronic literature – instead of analytical objects – to approach and evaluate the ethos of building that is so central to the digital humanities, we arrive at a different conception of instrumentalism in the digital age, one that can hopefully be used to further develop a digital humanities that critically reflects on the technology with which it is intending to redefine the humanities.

As manifest in the field’s fundamental and seemingly-interminable “hack vs. yack” debate, the problem for the digital humanities is whether the building of digital objects (archives, analytical tools, databases, artistic works, etc.) for humanistic purposes in and of itself constitutes academic scholarship, or whether such building needs to be accompanied prominently with a theoretical element that will critique both the object of study and the methods used to study it. Although there has been no lack of papers declaring that this argument has been settled, the issue once again came to the fore after the 2016 publication of an article in the *Los Angeles Review of Books* by Daniel Allington, Sarah Brouillette, and David Golumbia in which the three authors claim that the neoliberal bias and the emphasis on building over theory are not simply bugs in the system, and that the digital humanities are not only complicit in but have “played a leading role in the corporatist restructuring of the humanities.” While their argument is neither uncommon nor novel, the fact that it is still relevant reflects how the neoliberalization of higher education has, if anything, accelerated in the years during which the digital humanities have become established in academia.

Similarly, as Robert Grusin, Wendy K. Chun, and Alan Liu respectively argued some five years prior to the *LARB* article, if the digital humanities wants to do more than just serve an instrumental role – to do more than simply serving as a “handmaiden” to other disciplines (Liu) or offering skills that are directly and immediately applicable to the contemporary job market (Grusin 83) – then it needs to stand in opposition to the logic of instrumentalism that pervades the western university as refashioned by neoliberalism, engaging with theory to offer explicit critique of its methods and advancing its own critical theory of the digital (Liu). In particular, Alan Liu’s oft-cited entry into the building/theorizing debate of the digital humanities has maintained its significance to a large degree because of the way in which it connects this academic debate to its greater social context: if the fear of the traditional humanities upon confronting the digital humanities and the changes they have wrought to the university system is that of a future in which the humanities serves an increasingly-instrumental role in academia in relation to STEM fields, then, as Liu notes, “they are just the canary in the mine for the problem that modern society has with instrumentalism generally.”

While never directly invoked, Heidegger’s denunciation of Enframing hangs over Liu’s essay as the latter writes of a modern society in which “instrumentality became radically overdetermined” (Liu), of a human use of technological instruments that becomes, at once, essential as a marker of what makes us human and that which dehumanizes us, makes us into mere instruments in a modern capitalist system of global proportions. In a similar fashion, albeit more explicitly Heideggerian in her formulation, Chun’s hopeful critique of the state of the humanities, digital and otherwise, comprehends the problems facing the humanities as owing to their “capitulation to a bureaucratic technocratic logic...an Enframing,” (Chun and Rhody 4) a logic that the digital humanities perpetuates in its “alleged promise to save the humanities by making them and their graduates relevant, by giving their graduates technical skills that will allow them to thrive in a difficult and precarious job market” (Liu). Following their Heideggerian critiques of the western university and the place of the digital humanities within it, both authors come to a very Heideggerian conclusion.

The danger of technology for the German philosopher, its Enframing logic by which man becomes mere standing reserve for the use of a global ordering, is, in a countervailing fashion, also its saving power insofar as it allows man to achieve what he cannot in and of himself (Heidegger 9, 18-19). To capture this saving power requires moving beyond the view of technology as solely an instrument, it obliges man to “catch sight of what comes to presence in technology, instead of merely staring at the technological” (19). Thus, withholding some optimism for the possibilities of digital technology, what Chun and Liu prescribe is a critical application of these technologies: rejecting digital humanities for its novelty or its use of tools heretofore shunned by the traditional humanities, they both call for those who identify as practitioners of digital humanities to take advantage of what many consider to be their dual citizenship in academia – that is their unique position to bridge the great divide between STEM and humanities fields – by using their intimacy with the digital as a means to offer a humanistic critique of these technologies. In the words of Liu, this

translates to a digital humanities that “[practices] instrumentalism in a way that demonstrates the necessity of breaking down the artificial divide of the ‘two cultures’ to show that the humanities are needed alongside the sciences to solve the intricately interwoven natural, technological, economic, social, political, *and* cultural problems of the digital age.”

While the proclamations and prescriptions made in articles such as those by Chun and Liu were significant for theorizing a more critical digital humanities in the austerity-plagued, post-Great-Recession period in which they were published, they now appear increasingly urgent in a 2020s decade that will be defined by a pandemic and its ensuing upheaval. As the pandemic and its initial response has manifest the horrors and injustices of a world beholden to an Enframing logic that sees most of humanity as nothing more than Standing Reserve, it is clear that a critique of instrumentalism is needed now more than ever. Not only has the Covid-19 pandemic made undeniably conspicuous these existing inequities and dangers of the digital world, thus making clear the necessity of a more thorough and critical reexamination of many of the tools on which we have come to rely, but they have also brought about an urgent need to create new digital tools, such as those for contact-tracing infrastructures and virtual learning environments. Yet, for as much as this pandemic-ridden world requires the building of new digital tools to solve some its most pressing problems, it also requires building these tools with a critical approach so as not to perpetuate or exacerbate many of the existing social, economic, or political problems that have defined the digital age. Emerging from such a crisis with a world that resists sustaining the currently hegemonic Enframing logic thus demands a humanities that both takes a leading role in critiquing this world and goes beyond its traditional bounds.

Against Instrumentalism: *degenerative*, *regenerative*, and The Thingness of Code

Exemplars of the building of digital tools for critical ends, *degenerative* and *regenerative* demonstrate how the digital humanities can develop a posture based not on the instrumentalist logic of building tools or databases for the purpose of answering humanistic questions, but one that is instead based on a practice of critical reflection on the role of the digital as it has become immanent in the act of humanistic inquiry. Obliging us to not only witness, but to dwell in the malfunction of code, these two works by Tisselli exhibit digital tools that betray their instrumentalist design and end up inhibiting communication.

Following on the work of Davin Heckman and James O’Sullivan, who use these paired works of Tisselli together with two other works of electronic literature to argue that “at the very least, electronic literature can reflect upon its own constraints, through poesis and techne” (102), this paper similarly sees in electronic literature the opportunity for a defamiliarization of the commonplace, instrumental usage of digital media. Heckman and O’Sullivan see the disruptions of works such as those by Tisselli as “hopeful monsters” (108) whose aberrant presence within a media ecology seeks to disrupt the equilibrium of the functioning system;

however, they also see this disruption is limited insofar as it likewise serves an instrumental purpose, sustaining the market's unceasing desire for innovation and change (108). They conclude that electronic literature is limited in its ability to effect change within the technological milieu that we inhabit, but that, instead, its role should be that of disrupting the order of things, of questioning the rules or laws that determine how this system functions; in doing so, it makes this home un-homely, using the direct translation of Freud's concept of the *unheimlich* (110). In other words, they contend that works such as those by Tisselli, by questioning the way in which signification occurs through a digital medium, disrupt the comfort, the homeliness or the ease we feel when confronting the functioning of a post-digital world in which the digital milieu *is* the milieu, as Berry has argued (26). The critique of Heckman and O'Sullivan recognizes the limitations of electronic literature insofar as it cannot disrupt this system of media underpinning a globalized neoliberal society, but it still maintains significance through its disruption of the rules of this system, of its obstruction of the process through which signification occurs in digital media.

Heckman and O'Sullivan's paper thus serves as a helpful point of departure for this investigation, putting forth as it does an argument for the possibilities and limitations of the disruption that Tisselli's works can effect in a contemporary, neoliberal world beholden to an Enframing logic. Diverging from their analysis, this reading focuses more prominently on the code of Tisselli's work, using the intentional breakdown of communication seen in *degenerative* and *regenerative* to explicitly critique the instrumentalist logic as it appears within the digital humanities.

In their current state, the works resemble two ill-fated, interrelated characters in a modern parable on the perils of message transmission in the digital age: *degenerative*, a web page whose HTML code is corrupted by deletion or replacement each time it is visited, is now a black screen on which there are no characters; *regenerative*, which similarly is degenerated with each visit but is conversely regenerated as it attempts to extract and randomly incorporate characters from any referring pages into its HTML now offers a long, incoherent scroll whose blocks of colored text, taken as a whole, resemble more a crude work of geometric abstract art than it does web page. In 2005 when they were made active, both originally appeared as rather simple web pages with a paragraph's worth of text that used a provocative tone and rhetoric to inform its readers (or, logically, given the procedures that determined the way in which the work changed over time, the originary reader) of their passive complicity in the respective work's transformation. As mentioned previously, access to both is now mediated through an information page that offers links to the original page, the current page, and, in the case of *degenerative*, ten intermediary pages of decreasing coherence. By giving prominence to the narrative of transformation in addition to the current result of each work, Tisselli highlights the rapid devolution of the text from coherence to incoherence, from utility to uselessness. Both works, through the way in which they show the viewer the transformation from successful communication to incoherence, emphasize the

importance of code for digital communication. That is, the web page for either work fulfills its instrumental goal so long as it communicates, but it otherwise becomes a broken tool, revealing that which it had originally concealed: its materiality, its code.

On the aforementioned information page for *degenerative*, Tisselli provides a list of hyperlinks that offer the viewer the opportunity to turn the clock back to 2005 and see the work as it existed on chosen days of its transformation. The contemporary viewer can thus progressively read and interpret the way in which the original text stopped making sense, seeing how the HTML code, the mechanism by which the text appears on the user's chosen interface, gradually overtakes the original text: font names such as "Helvetica" and "Arial" show up in various lines, while symbols and punctuation, which at first just interrupt the flow of communication, soon become predominant before their presence, too, becomes gradually reduced. In other words, the text goes from communicating as a natural language, to communicating as a corrupted, semi-comprehensible formal language, to not communicating in any language. The contemporary viewer thus experiences the progressive transformation of the text first as the struggle between the natural and the formal language to effectively communicate, and, eventually, as the negation of any successful communication; the significance of the code in sustaining the instrumental purpose of the text rapidly goes from being a minor consideration for the viewer to the undeniable reason why the text ever made sense.

Moving from the viewer's experience of the work as it exists today to the mechanism by which it functions offers a similar reflection on the instrumentalism of digital technologies. Specifically, the actual code of *degenerative* echoes the predatory rhetoric of this original text by attacking itself and effecting its own destruction. To be entirely precise, there are two levels of code that lead to the work's degeneration: the one (a PHP script) that performs this process and the other (an HTML file) that suffers the changes brought about by the users' interactions with the web page. Specifically, each time the page is visited, a PHP code either deletes a character of the HTML code or replaces it with one of five predetermined punctuation marks, rewriting the HTML with each successive visit. Regardless of whether we focus on the PHP or the HTML code, both provide a critique of instrumentalism insofar as both stand out as faulty tools: one becomes useless by virtue of not communicating, while the other expressly causes this miscommunication. Significantly, natural language, that which is so important for human communication, is not directly targeted by this process: when the PHP code chooses to replace or delete a character of the HTML, it does not discriminate between those parts of the HTML that have a formal function and those that have a natural language function. Nonetheless, once the page is visited for the first time and it begins destroying the HTML code, the natural language becomes irrelevant: the strings of text written by Tisselli could have just been paragraphs of nonsense and it would have been equally incomprehensible.

Functioning in a similar way, the incoherence of *regenerative* is one not of destruction, but of excess, providing further nuance to the critique of instrumentalism seen in *degenerative* by emphasizing the volatility of the interaction between formal language and natural language. Using much of the same code as its associated work, *regenerative* additionally includes a section of its PHP code that extracts HTML code from any referring pages (i.e. any pages that link to *regenerative*, other than Tisselli's home page, of course) and then randomly places that exiled code into *regenerative*'s HTML file. The result is that today, the long scroll that appears when visiting the page for *regenerative* is comprised of a mass of incoherent characters: text describing font color and page layout predominates, words are cut off halfway, irreproducible characters abound, and characters in Cyrillic and Standard Chinese script occasionally appear, making about as much sense to a monolingual Anglophone as the rest of the massive text. Facing this, Heckman and O'Sullivan invoke McLuhan, writing that "The medium is the message. And the message is to make the operations of the code apparent, unavoidably obtrusive" (108). While incontrovertibly making the medium perhaps the only comprehensible message of the work, the incoherence of *regenerative* represents more than a glitch or error repeated ad nauseam. By amassing all of this misplaced HTML code, the PHP script that performs the mechanism of regeneration for this work creates an HTML file that exists in a no man's land of incomprehension: having uprooted segments of code from their original context and brought them to this page, *regenerative* demonstrates the precarious volatility that sustains digital texts. The code works, just not here. Thus, while resisting the fate of *degenerative* and not becoming a black void of a web page, *regenerative* shows that there is more than one way for digital texts to not make sense.

Albeit in a way that is perhaps more explicit than in other works of electronic literature, these works confirm the conclusion of Katherine N. Hayles that all works of electronic literature are bilingual, existing in both formal and natural language ("Print is Flat" 72-3). More than just making code apparent though, *degenerative* and *regenerative* do so by intentionally programming their code to fail and then explicitly presenting those failures: they do not simply lead us to a kind, generally-informative error message, but instead force us to inhabit and dwell in the discomfort of a code that becomes increasingly more errant and less functional. Although they may be bilingual insofar as they require both formal and natural language to make sense, these works show how the precarity and volatility of the former can quite easily preclude the functionality of the latter.

By making code and, more accurately, the failures of code, so readily apparent, Tisselli's paired works of electronic literature reveal the oft-ignored thingness of code, in this way resisting what Chun in *Programmed Visions* describes as a digital instance of the "erasure of word for action" (22). Far from being, "a magical entity...a source of causality" (Chun 51) that brings forth something from nothing, these two works not only flip this instrumental ethos on its head – making nothing out of something – but they likewise make users complicit in the breakdown of that chain of causality that brings forth text and images through the mechanism of code. By having code literally erase itself (more accurately, by having the PHP

script erase or corrupt the corresponding HTML file) in response to user interaction, Tisselli precludes this digital erasure of word for action, making code, in its full, material thingness, apparent to its users. Viewing the works today and being presented the narrative of their respective processes of breakdown in this way obliges the viewer to confront obsolescence – the gradual wearing down of each work’s instrumental functionality – in a way that does not commonly occur with digital tools.

As described earlier in the review of Liu’s article, the danger of digital humanities’ emphasis on building tools – or, simply, the intransitive act of “making” – is the danger of an uncritical and unopposed instrumentality. Digital humanities, perceived in the most instrumental fashion, hence becomes valued for making tools that answer questions in a manner that was heretofore impossible due to questions of efficiency or scale while failing to engage in any critique of the transformation in material conditions that have made such methodological tools possible. Such a digital humanities, absent any critical posture, reifies what Chun terms the ideology of code. By using *degenerative* and *regenerative* as examples, this section has argued that electronic literature, while similarly using the affordances provided by code, does not further conceal the abstractions of the digital. Borrowing the metaphors describing source code used by Chun in *Programmed Visions*, we can say that the presence of code in electronic literature obliges the user to consider its role as more of a specter than a daemon, more of a dirty windowpane than a transparent window through which we can see the world (51). A digital humanities that sees as its defining exercise not an analytical tool, but rather the critical reflection on the material existence and role of code in a post-digital world, such as that which is found in works of electronic literature like those by Tisselli, thus represents a shift in perspective that could hopefully allow digital humanities to adopt a more pertinent, critical role within the humanities at large.

Moreover, Tisselli’s reflection on the materiality of code in these works expands the critique of digital tools beyond the individual user. As will be more thoroughly developed in the following section, an essential component of both *degenerative* and *regenerative* is how they emphasize the role of collective action, instead of individual agency, in effecting transformation: individual humans, working in concert with other humans and with algorithmic processes, change these texts in an unpredictable and perhaps undesired fashion. In this way, these works additionally open up a space for questioning the role of the individual human subject and thus oblige their users to think beyond the human and the humanities.

Beyond the Humanities: Posthuman Assemblages in *degenerative* and *regenerative*

As Matthew Kirschenbaum articulates quite clearly in his article “Digital Humanities As/Is a Tactical Term,” the use of “digital humanities” has always been, to varying degrees depending on its context, a provocative rhetorical device. For Kirschenbaum in the early 2010s, this meant that it was a “mobile and tactical signifier,” wielded at different moments

and in different situations to, in some fashion, bring the tools or the object of the digital into a traditional humanities in which it was lacking: it could oblige departments to more actively theorize digital media, to consolidate a form of scholarship using methods of analysis that had been heretofore excluded from traditional humanistic scholarship, or it could create networks between academic communities that could not otherwise be articulated. The precise definition of this field, for Kirschenbaum, is unimportant so long as it can effect action, so long as it can produce humanistic scholarship that is, in some way, digital. Put differently, by appending “digital” before the vaunted idea of the humanities, one declares that there is something about the humanities that cannot be captured within its current activities or ambitions.

While far from offering a solution to what many see as the erasure of traditional humanistic critique, Kirschenbaum’s commentary allows us to better contextualize “digital humanities” within the ever-growing collection of fields whose names propose a new, speculative future for the humanities by adding some modifier: in the past ten years, we have seen proposed, for example, the inhuman humanities (Barnett), the posthuman humanities (Braidotti), the environmental humanities (Rose et al) and the particularly-relevant post-digital humanities (Berry). Berry’s proposal, building off the work of Florian Cramer, who declared the post-digital and defined it as, “either a contemporary disenchantment with digital information systems and media gadgets...or a period in which our fascination with these systems and gadgets has become historical” (Cramer 13), contends that in a world in which the digital is ubiquitous or, in Berry’s words, “when the computational has become hegemonic” (26) nearly all human activity is in some way mediated by the digital and the digital in turn has come to affect how humans approach the world. The post-digital humanities thus recognize that the digital is so embedded in being human that both the object of and the practice of all humanistic inquiry today is to some degree mediated by – altered through unavoidable contact with – the digital.

If the original, tactical provocation of “digital humanities,” then, was intended to make space for digital methods or objects within the slow-moving structures of western academia, then a “post-digital humanities” points to a reconsideration of this provocation. At the very least, by going further than the original provocation that was the “digital humanities,” Berry’s proposal emphasizes how the digital has reached a point where it now obliges us to reconsider what it means to be human, in this way overlapping considerably with the field of posthumanism, which likewise has proposed a rebranding of the humanities by means of adding a qualifying adjective in front of this hallowed term.

Rosi Braidotti, the academic who put forward the “posthuman humanities,” succinctly states that the posthuman constitutes a “de-centering of ‘Man,’ the former measure of all things” (*The Posthuman* 2). It is a Janus-faced paradigm that looks back to intellectual movements that have questioned the Western construction of the “human” – especially the postmodern critiques of individual subjectivity exemplified by Deleuze and Foucault, as well as those schools of thought such as feminism and post-colonial studies that have interrogated the way

in which the ideal of “Man” has been constructed out of difference from other, historically-denied subjectivities – while at the same time looking forward to the technological and environmental reconfigurations that endow with a contemporary urgency this decentering of the human subject. Although this analysis will, as it develops, more comprehensively examine the posthuman, for now, Braidotti’s concise definition and this brief summary provide a helpful starting point for understanding how Tisselli’s *degenerative* and *regenerative* open up a space for questioning the role of the individual human subject, demonstrating a process of change that is best comprehended through a posthuman framework that encompasses the collective, performative actions of complex human and non-human assemblages.

In the most simple way, the two works are instantiations of Aarseth’s landmark concept of the textual machine, wherein the operator (what was earlier in this essay referred to as the “user” or the “viewer” depending on when they had accessed the work) accesses and makes meaning from the text using the combination of the verbal sign and the medium (Aarseth 20-22). Even if, in Tisselli’s works, the triadic machine proposed by Aarseth is user-hostile and comes to impede the transmission of a coherent text, the performativity and the emphasis on the machine found within this framework represents the first way in which we can see how the actions that occur here are not solely determined by human agency: in a rather explicit way, the user/operator is made aware of how their reading of the text occurs through a process of feedback between this user and the machine. The constraints may be determined by Tisselli’s original programming, but the random action of the machine still plays a significant role in determining the process and the outcome of each work: even if only one person interacted with, for example, *degenerative*, the actions taken in accordance with a program’s algorithm in response to this singular user’s non-trivial interactions with the text would represent an example of action that occurs beyond the agency the individual human subject.

Yet, as this hypothetical shows by virtue of being hypothetical, the changes to both *degenerative* and *regenerative* were not the consequence of a lone individual’s effort, but instead the result of the interaction between the algorithmic processes and the collective, uncoordinated effort of multiple users connected by the network affordances offered by the Internet – a fact best exemplified by the different linguistic scripts on display amongst the nonsense of the latter work’s current state. That is, given the conditions set by Tisselli’s program, it was a network of collective action interacting with the machine that transformed the works in a non-teleologic fashion. To see either work as determined by a singular human subject, such as Tisselli, would be to confuse the establishment of the work’s parameters with the final outcome of the text. Even the curated, contemporary version of the work, while compiled individually, displays the way in which the autopoietic specificity of this distributed assemblage has transformed the original text.

By demonstrating how action can be effected by an assemblage, *degenerative* and *regenerative* gesture towards the posthuman. As Braidotti argues, operating within a Deleuzian framework that is likewise informed by Latour's Actor-Network Theory, the posthuman "envisages...a transversal inter-connection or an 'assemblage' of human and non-human actors" (*The Posthuman* 45). The individual human subject, when approaching the interface of either of these paired works, must confront the fact that their individual action lies on the same plane as that of the other users and the machine's computational processes. It is not just, as a line from that original text of *degenerative* warns, that "your visit will leave a permanent mark," but, significantly and in a way that invokes the complicated causation of global climate change, that one's individual mark cannot be comprehended amongst the totality and unpredictability of actions that effect change on the web page. Individual agency is wholly subordinate to collective action.

Similarly, interpreting the posthuman manifest in these works through a slightly different binary framework, specifically, Hayles' use of cognition as the axis on which she seeks "to expand the spectrum of decision makers to include all biological life-forms and many technical systems" (*Unthought* 115), these two works oblige us to pay special attention to the feedback mechanism that operates between the two classes of what she terms *cognizers* – the human and the technical system – that have dynamically created these two works through their interaction. Such an interaction – what Hayles in her earlier, seminal work on the posthuman described as distributed cognition (*How We Became* 290-291)– is impossible to comprehend if cognition is seen as residing solely within the cognitive capacities of the human. This is evinced by the way in which Tiselli's archival preservation of each work can only present a static documentation of the changes, failing to capture the dynamic interactions that occurred as users interacted with these works.

Yet, regardless of who's posthuman framework is employed, this analysis has so far only established that these works are in some way transformed through a posthuman assemblage. In addition, and perhaps owing to the fact that each work's respective texts were created to be destroyed, this paper's entire analysis has so far almost entirely focused on form at the expense of content; however, it is, precisely, the content that gives meaning to and helps understand the consequences of these assemblages. In fact, instead of seeing this assemblage of collective action as a positive or even a neutral formation, the examples of *degenerative* and *regenerative* appear to be cautionary tales about the destructive capacities of such assemblages and the possible negative outcomes brought about by the collective action of multiple individual human subjects acting together with a technical, digital process they do not entirely understand. Nonetheless, although Tiselli's two works bespeak the destructive capacities of such posthuman assemblages, their preservation and their original texts provide the opportunity to reflect on the posthuman and its consequences.

First, and rather simply, the curatorial preservation of these works allows the passive viewer of today to contemplate the process of transformation of each work, allowing time to draw conclusions and understand precisely what occurred and how. Second, and more

significantly, the language used by the original texts by Tisselli makes their users aware of their complicity in a collective action that both includes and exceeds their individual actions.

This is first evident in the genre of these two texts: even though they serve a rather instructive purpose (they are essentially an instruction manual for their users), both are written in a rather personal voice that directly addresses the reader, ostensibly evincing the fact that they were emitted by an individual human – in other words, they are clearly meant to be read as authored by the name found under the title in the page's header: "eugenio tisselli." The "appearance" of the artist/creator on the original page establishes a tension between the sovereignty of this individual and the distributed actions of the page's viewers/users; when encountering this page, the writing makes it undeniably clear that this work comes from some human. Thus, even with a consideration of the constraints set by Tisselli, the transformation of the work over time is, by virtue of the personal register of this original text, an exhibition of this struggle between the limited control of this individual, human creator and the assemblage's collective capacity for action for which he has created the conditions for emergence.

In the text for *degenerative* as well as *regenerative*, this personal voice of the creator addresses the work's viewers and refers to them indirectly at various moments, oscillating between the pronouns of address over the course of the text. For example, in *degenerative*, Tisselli writes "¿repeated viewing can kill? ¿are our eyes predators of their targets? // your visit will leave a permanent mark. this page will not be the same after you visit it." This happens at other moments in the text, as well as in the text for *regenerative*, but in this example we clearly see the fluctuation between the more communal ("our eyes") and the more personal ("your visit") forms of address. In the context of the work, the use of the ambiguous second-person "you" individualizes the actions of each user while the use of the first-person plural obliges those actions to be considered as part of a more communal project: it is *my* visit, but it is *our* degeneration/regeneration of the work.

While these two literary techniques make an individual user aware of their collective agency, it is the rhetoric of predation and contamination employed in both texts that disabuses the belief in the innocence or neutral effects of the collective force of assembled, individual actions by humans and non-human. In *degenerative*, it is a language of anthropophagic and predatory consumption of the textual body through the visual medium, while in *regenerative*, it is a language that emphasizes the decay and abnormal growth suffered by the textual body; what unites these two texts is their uncomfortable insistence on the flesh and on the biological exigency of consumption. Exemplifying an aforementioned tendency found throughout Tisselli's oeuvre, apparent in his artistic as well as his essayistic works, both of these themes remind the users of the material effects of their collective action on a medium that so prominently conceals its materiality through seemingly immaterial interfaces. In other words, this language points to the biological and, more comprehensively, the environmental effects of what are often conceived of as inconsequential, immaterial actions (for example,

visiting a web page). In doing so, the assemblage effecting change and being affected during the transformations of these two works comes to encompass the environmental, whose agency is manifest in a much more subtle, indirect manner.

In this way, Tisselli's works explore the emergent dangers and possibilities offered by assemblages that act through a cognitive process distributed amongst humans and technical systems. In addition, the rhetoric of consumption and of bodies that is so prominent in both works likewise obliges one to think the posthuman as more than just the links between humans and digital technologies, and to consider the non-*anthropos* life with which we are entangled, to borrow the posthuman vocabulary of Braidotti and Hodder. The assemblages we are forced to confront when participating in or just viewing these two works make clear not only the way in which humans today are inextricably embedded in – they act as part of and are acted upon by – such posthuman assemblages, but also, quite significantly, the way in which assemblages can effect material changes on the world through a process that conceals by virtue of imperceptibility the individual contribution to these collective, material effects.

The critical reflection provided by *degenerative* and *regenerative* realizes the same objective as much of posthumanist theory: it reveals what is an already-existing condition by offering a new paradigm with which to comprehend it. However, in the case of both, more than just being a work that manifests the posthuman and reflects on the consequences of this shift in paradigms, it is a digital work. Although the digital age offers a new urgency or perhaps a new vigor to reconsidering the historical construction of the human, most theories of the posthuman do not require the digital to maintain their relevance or coherence. It is, thus, because of the significance of the digital posthuman in *degenerative* and *regenerative* that these two works can help grasp the intersection of the digital and the posthuman in reconsidering the humanities.

Conclusion

As Braidotti notes in the final chapter of her treatise on the subject, by a rather simple logic, if the human subject was formerly the proper study of humanity, and if the posthuman has come to supplant this historical construction of the human, we will then have a posthuman humanities to reflect this readjustment (*The Posthuman* 159). Whether or not the realization of this logic will occur, the project of the posthuman humanities seeks to, paraphrasing the environmental humanities' similar project of reconsideration, "thicken" the notion of the human that stands at the center of the humanities as it is practiced today (Rose et al 2). In a manner that is analogous to the aforementioned way in which using "digital humanities" (and now, post-digital humanities) serves as a provocation indicating an insufficiency in the traditional humanities, proclaiming a "posthuman humanities" declares the humanities are limited by their basis in this contested historical construction of "the human." In terms of the digital humanities, the solution is not to subsume it into the much broader scope of the

posthuman humanities, but rather, through their common effort to signal the exclusions of a framework restricted by the human, to emphasize that any formulation of a posthuman humanities is implicitly a digital humanities.

Similar to the posthuman, the digital humanities at its most provocative and most speculative displays the limits of an existing paradigm. The two objects analyzed in this paper, Tisselli's *degenerative* and *regenerative*, not only demonstrate an alternative approach to conceiving digital humanities that provides a more critical engagement with instrumentalism, but also reveal the entanglement of the digital with the posthuman, helping situate the digital humanities amongst other provocative contestations of the traditional humanities.

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