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CIVIC ENGAGEMENTS THROUGH A TRANSDUCTIVE
DISCOURSE OF CARE

W hile short-circuiting synapses are prevalent in current practices of cyberculture, symptoms of speed, adrenal fatigue, distraction, and planned obsolescence emerge that call for our attention. Thus, a discourse of care, as a means of engaging with civic affairs, manifests within cyberculture to rehabilitate and alleviate this short-circuited network of industrialized memories. This paper delineates how short-circuited synapses can be palliated by a discourse of care that encourages digital beings to pace themselves and distribute their limited attention towards the critical matters of society. A discourse of care counteracts the production of dopamine by suspending the synapses from circulating in the infinite loop of a reward circuit of speed and obsolescence produced by late capitalism. It is, however, more rewarding in the long-run regarding overall cultural, social, and economic development. As modes of performing and making civic humanities—Australian artist Benjamin Forster's "A Written Perspective," No Somos Delito's Augmented Reality project "Holograms for Freedom," American scientist and science fiction writer Vernor Vinge's *Rainbows End*, and Reiner Strasser and M.D. Coverley's "ii -- in the white darkness: about [the fragility of] memory"—taken together form a discourse of care that aims to challenge the industrialized memories and serve as a possible paradigm of speculation and suspension if not interference with the current techno-capitalized memories. In particular, these practices cultivate long-term vision, intensify elaboration of memories that have been forgotten by humans in the process of accelerated disappearance, and serve as a critical lens to see the world as the naked eye cannot. The discourse of care makes it possible to extend the short-circuited synapses of the brain and the society and in so doing suspend the accelerated destruction of late-capitalist progress.

The Appetitive Industry: Speed, Attention, and Synapses

Not only are humans culturally encoded to accelerate, but also biologically innate to enjoy speed. Thus deep attention and long-circuited synapses are to be acquired through a reverse-cultivation. In his "The Pleasure and Pain of Speed," Tom Vanderbilt brings about how cinema shapes viewers' attention. Vanderbilt, taking cues from James Cutting, expounds that Hollywood cinema tends to use short-cutting not only because it is easier to edit but also because it is effective in capturing audience attention. Viewers are exposed to a considerable amount of short-cutting, fast animated images, and thus have short-spanned attention. The reason behind the programming speed of Hollywood is not only to capture viewer's attention, but also because short-cutting makes viewers happy. Emily Pronin argues that there is indeed a connection among speed of the technics, speed of the thought, and emotions. Her experiment controlled reading speed and fast-forwarded a silent-video to accelerate or decelerate thought speed. In her "Psychological Effects of Thought Acceleration," Pronin discovers that thinking fast not only makes one

feel happier and motivated but also more prone to take risks. Her research suggests that "listening to fast music also can elevate positive mood while listening to slow music can deflate it" (597). On the contrary, long duration makes us feel less appetitive to pursue goals and less engaged. To keep consumers "hungry" for more and make them engaged, the capitalist system produces new commodities within a short period of time. This is a deal made between a digital Faust and a capitalist Mephistopheles since the accumulation, documenting, and consumption of experience make our life more virtual and less tangible. The appetitive industry renders our synapses to be addicted to speed and consumption. Consumers are vigilant, stimulated, and happy mentally in a short-circuited cycle. Nevertheless, this cycle is pernicious to the body that cannot stay stimulated at all times and detrimental to the environment that cannot sustain the lavish consumption.

As the brain is biologically predisposed to feel more stimulated in speed, disrupting a speed culture that is ingrained biologically is not an easy task. The present moment, however, needs a cure in the form of insistent intervention into speed culture to be conducted through cultivating deep-circuited thought that allows space for deep meditation. With this minute tuning of our brain, thoughts, and culture, the detrimental capitalism that is in close tie with cyberculture will be configured to the benefit of digital beings. In his *Taking Care of the Youth and the Generations* (2010), Stiegler remarks:

> Only the establishment of a psychopolitics can constrain the ravages of these kinds of 'innovations' in a world of psychopower, which becomes the public's primary responsibility—notably in terms of the battle for intelligence but first as a matter of public health. It must be a politics of *pharmaka*, of psychotechniques and psychotechnologies. As the battle for intelligence, this psychopolitics must then be translated into a noopolitics, not only through the limitation and regulation of these psychotechnologies' use, especially for the young, but through a transformation of poison into remedy. (92; emphasis original)

Noopolitics, or the politics of the soul, goes beyond the restrictions of policies and technologies, and encompasses the care of the physical, mental, and noetic well-being. The emphasis on translation of care into noopolitics is potent particularly because law and regulations do not completely prevent intentional sabotage from malicious security crackers who do not abide by a consensus of ethical hacking. Stiegler believes that a discourse of care plants the seeds of hope and envisions that this not-yet of the future lies in the discourse of care that takes on several levels and layers. He remarks that "Truthfully, education is an *entirely other* form of care: it is in fact a *metacare*, neither care of the body nor even of numbers of bodies but of what have for centuries been called 'souls,' whose collectivity constitutes *a* spirit" (177; emphasis original). For one, care pertains to the caring of the soul. For another, care can also carry a cultural critique of the society. The care of the soul is referred to as a discourse that reminds digital beings of their retentional finitude and the fact that they are mortals with a body. If the brain is addicted to speed because of the mental stimulation of dopamine, then the digital being should turn away from the poison of technics by deep meditation as it produces dopamine but does not curtail the synapses. Stiegler also notes that the modernity of the early twentieth-century did not provide a critical

instrument to improve the society. On the contrary, modernity contributed greatly to the making of the human into the inhuman. "The State's biopower," he states "as it modernizes, reduces existences to subsistences, to mere producers or consumers: to the diminished status of proletarized beings condemned to inhumanity and inexistence; this is the sense in which Marcuse's thought was referenced in the movement called '68'" (178). Modern technologies, driving the spaceship of Promethean spirit, accelerate the speed, and manipulate human's vision, in an orientation of dehumanization.

Stiegler's concept of care is quite utopian. As he understands it,

> To take care, to cultivate, is to dedicate oneself to a cult, to believe there is something better: the *non-inhuman* par excellence, both in its projection to the level of ideas (consistencies) and in that this "better" must come. This is exactly the *ēthos* for which techniques of the self are required; to take care is to know that since there is a "better," there is a "worse," and that it *must* be combated, without cowardice, since it endlessly returns through the window of those who, whether naïve or presumptuous, believe they have shut it out, or that they can "not give a damn." (178-9; emphasis original)

In other words, to take care is to cultivate critical attention and a belief that something better will come. Education, as a metacare as well as one of the means of making civic humanities, must be installed into the network system of the programming industries in order to counteract the reified discourse of carelessness that is the result of a collective drifting of attention. He remarks that

> In the current world, this metacare must become a psychopolitics, an industrial politics of techniques of the mind, even before it struggles against the disastrous effects of the savage use of psychotechnologies by the programming industries as they destroy attention and consciousness, disseminating a global attention deficit disorder at the very moment when the development of a planetary consciousness is appearing to be the single hope for the survival of we non-inhuman beings. (179)

The problem of distracted attention is just one of the aspects of a systematic disappearance of subjectivity. Attention is not destroyed but diverted to something less meaningful in life and can do damage to our soul and consciousness. The tertiary memories that are supposed to supplement our existence become one of the standardized objects produced by technocultural industry. The project of this industry aims to design a large amount of creative products in a short time. The constant renewing of products satisfies consumer's shopping appetites as well as producer's pockets. The shorter the circuit of supply time, the more customers' attention is digressed to the "newness" of the same product with different color and features. This systematic writing of industrialized memories creates a culture of obsolescence. In line with Stiegler's critique on the technocultural industry, Gregory L. Ulmer provides an alternative antidote. He points out that "The speed of our digital world has created a dimensional pollution, compressing everything into 'now.' This condition threatens to render impossible any democratic public sphere since there is no time for deliberative reason, the persuasion and

argument, needed to achieve the consent of the governed" ("Flash Reason"). The impact of this pollution will take digital beings further away from a deliberative civic engagement that is central to constructing a discourse of care about public affairs. Facing this challenge, he contends that there is a need to invent a new apparatus that is capable of re-directing attention to civic affairs. Navigating in the digital society, digital beings require a wisdom when it comes to participating in civic issues that affect us on a planetary scale. Although prudence is a much-neglected virtue nowadays, Ulmer speculates that it is necessary to revive, update, and take advantage of it at the digital age. He remarks that "Prudence is a time-wisdom, a capacity to make an appropriate decision in an instant of time by taking the measure of a particular situation in its temporal context" ("Flash Reason"). Electrate prudence is the updated version of prudence that supplements with the dexterity of modern technics. By means of encoding electrate prudence into the ubiquitous distraction of the dromosphere, digital beings can augment the possibilities of manifesting deliberative actions.

Stiegler's discourse of care acts out after the flash of electrate prudence. He states:

> Now, these thingly supports of everyday life, which supported the world and the making world essentially grounded in and through this making-trust, have become disposable and structurally obsolescent as capitalism concretized what Schumpeter theorized in his *Theory of Economic Evolution*, namely, the chronic obsolescence of industrial products henceforth furnished and swept away by a permanent innovation leading to an ineluctably self-destructive short-termism. Today, it has become an utter commonplace to see objects disappear into garbage disposals and garage sales faster than they appear on the market. ("Interobjectivity and Transindividuation" 2012)

The "make it new" spirit of the modernism has evolved to "be creative." While designers are not creative based on sustainability, they constantly renew themselves on the creative assembly-line. The creative industry stimulate customers' appetites to expect new products in a shorter span and is concerned less with keeping and repairing things. Extreme capitalism consistently carries out the project of obsolescence in terms of being creative and in the form of service updates. Technological gadgets fit seamlessly into this category. Proprietary software makes profits if it is renewed constantly. While software produces less damage environmentally, hardware poses more of a threat to poison the planet. The culture of obsolescence produces DIYers as alternative producers that scavenge obsolete equipment to make gadgets that are new, unique, and creative in their own endeavors. In terms of the food industry, the rhythm of fast production and disposal elicits Freegans as alternative consumers who salvage food that goes to waste after the expiration date.

To suspend the vicious cycle of short-termism, noopolitics takes part in the production of knowledge that supports the long-termism. If the discourse of metacare is the bone of noopolitics, then attention is the flesh of the discourse. Attention is the first step to initiate translation of long-circuited from short-circuited thought. In Stiegler's account,

> To take care also means to pay attention, first paying attention to taking and maintaining care of oneself, then of those close to us, then of their friends—and thus, by projection, of *everyone*: of others whatever they may be, and of the world we share with them; formation of this kind of attention creates a *universal consciousness* grounded on (and profaned by) a consciousness of singularity. (179; emphasis original)

Stiegler considers that the acceleration of the technics renders us forgetful yet at the same time occupies the brain with overloaded hyperattention. Computing is the contemporary technics that is writing a new grammar of the algorithm, memory loss, and hyperattention. Emerging out of its predecessors, television and cinema, Augmented Reality (AR) devices are looming on the horizon as the future of mnemotechnology. The process of synthesizing AR and reality demands big data and high computing speed. AR is an emblem of current digital culture where acceleration, eyeball culture, and haptic senses together are combined in the total immersion of the digital being.

In the first volume of his *Technics and Time*, Stiegler argues that technics not only configures our synapses, but also renders us forgetful:

> Technicization is what produced loss of memory….With the advent of calculation, which will come to determine the essence of modernity, the memory of originary eidetic intuitions, upon which all apodictic processes and meaning are founded, is lost. Technicization through calculation drives Western knowledge down a path that leads to a forgetting of its origin, which is also a forgetting of its truth. This is the 'crisis of the European sciences.' Without a refoundation of rational philosophy, science—having lost the object itself of any science—leads, it is argued, to the technicization of the world. (3)

Here he argues that calculation initiates a systematic forgetting of origin, which is part of the process of the technicization of the world. The risk of forgetting the truth is contested by alternative perspectives of interpreting truths. "The theme of forgetting dominates Heidegger's thinking of being. Being is historical, and the history of being is nothing but its inscription in technicity" (4). The connection among Dasein, technicity, and history is understood by Kroker as the standing-still of Dasein that can be turned over through meditation. A noetic perspective on the digital being is forming through Stiegler's utopian formulation of the issue of Dasein.

Stiegler maintains that "Dasein is in the mode of 'having-to-be' because it never yet totally is; inasmuch as it exists, it is never finished, it always already anticipates itself in the mode of 'not yet'" (*Technics and Time* 5). He envisions that modern technics develops toward an orientation of political domination where rationalization, in fact, means systems of domination, of purposive-rationalization over communicative action (*Technics and Time* 12). Just as the deconstruction of the Grand Narrative opens up a variegated plethora of petite narratives for subverting and rethinking the status quo, the inventions of computing technologies fragmented our focus, attention, and the ability to conduct critical thinking in times of crisis. Exactly what differentiates analog and digital apparatus is that the essence of the latter is its features of the

discrete, discontinuous, and unchronological. In his essay "The Discrete Image," Stiegler argues that although the essence of analogico-digital technology is manipulation, unlike the "it was" of analogical image, its "not having been" (150) destabilizes normative knowledge produced by the analogical paradigm and invents new knowledge. While late-capitalism is doctoring the grammar of machine writing as a normative knowledge, analogico-digital apparatus subverts the production of knowledge and creates a critical distance and reorients our attention. Analog technology implies continuous and linear time whereas digital technology implies discrete and unlinear time. He writes: "As a discretization of analog continuity, digitization opens the possibility of new knowledge of image—artistic as well as theoretical and scientific" (157). In other words, analogico-digital technology is forming a new paradigm of writing and of "analytic apprehension of the image-object" (159). I start my reclaiming of digital knowledge production through the use of care instead of through the use of destruction by weaving the discourse of creative analogico-digital practice as an elaboration of industrialized memories that are closed by reified narrative of capitalism. The first analogico-digital discourse, as a mode of civic engagement, is analyzed in Australian artist Benjamin Forster's "A Written Perspective."

Analogico-Digital Discourse of Care

Before analyzing how analogico-digital practice[1] is inscribed in Forster's works, an explication of the theory of analogico-digital is needed. According to Stiegler, what has changed over time is not how humans manipulate the technological devices, but technicity itself. Thus the configuration of technicity has to be taken into account in the analogical-digital practices. The development of the image-object from the nineteenth century to the contemporary period is categorized into three stages, respectively analog image (photography and cinema), digital image (computer-generated image), and analogico-digital image. Analogico-digital apparatus bears the risks of short-circuiting and the possibility of long-circuiting social and cultural synapses through ways in which this apparatus configures the mental image of the collective citizen. The increasing possibility of manipulation comes with improved calculation and precision as well as the malleability of our reality in relation to the formation of knowledge in the analogico-digital image. Stiegler states: "The *image in general* does not exist. What is called the mental image and what I shall call the image-object (which is always inscribed in a *history*, and in a *technical* history) are two faces of a single phenomenon" (147; emphasis original). In other words, the new knowledge inscribed in the analogico-digital

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[1] The lecture on the discrete image was given in the 1990s in France with a warning of digitization of analog image, but ended with a positive remark on the future of analogico-digital image. Stiegler states that "new image-objects are going to engender new mental images, as well as another intelligence of movement" (162). Furthermore, he makes a hypothesis that "life (*anima* – on the side of the mental image) is always *already* cinema (animation – image-object)" (162; emphasis original). If life is already cinema, technics translates new knowledge and synaptogenesis into the brain. This invites the spectator of the analogico-digital image to walk into a new sphere that can never been imagined or seen before. This newfound territory is also alarming in the ways that Hollywood industry was dominating the culture industry and inscribing a unidirectional narrative to the general public.

image, as opposed to the normative knowledge inscribed in the analog image, will also change the culture that we interact with and live at the moment.

The difference between the analog image and the analogico-digital image lies in three areas: techniques of manipulation, social impacts, and the degree of discretization and continuity. Even though the analog image, to a certain degree, can be manipulated in terms of framing, editing, and orchestrating to present a reality effect, the digital image can install a reality that has never happened in the past. "Manipulation," remarks Stiegler, "is on the contrary the essence, that is to say, the rule of the digital photo. And this possibility, which is *essential* to the digital photographic image, of *not having been*, inspires fear…" (150; emphasis original). The examples are numerous; for instance, the fake interview with Fidel Castro, and the mediated false news broadcasted by CNN during the war in Persian Gulf (150). The duplicity that comes with the digital image is dreadful not only on an individual level, but also poses great impact on social spheres. The digital image can be employed to beguile civilians in order to gain election victories, establish a regime, and create riots.

On the one hand, Stiegler is skeptical of the impact and dissimulation of the digital image; on the other hand, he considers that the analogico-digital image harbors possibility of producing new knowledge. "The digitization of the analog destabilizes our knowledge of *this was*, and we are afraid of this. But we were afraid of the analog, too: in the first photographs, we saw phantoms" (152; emphasis original). The fear of seeing phantoms has to do with the anxiety of representing the moment that no longer exists. The spectator is not capable of grasping entirely the thing that existed in front of his/her eyes, only the "luminances" (152) of the past. However, the same anxiety arises whenever a new technology is invented. If we consider the change from analog image to digital image as a change of a form of the writing of light to that of the electronic light, then this change resembles the intersection between speech and writing. The digital image is coded with binary language, which depends on calculation and pixels instead of luminances and photons.

The analogico-digital image, however, is malleable in both analogical and digital ways. In the production of this kind of image, "the artist's job is to assemble the analytic elements such that the synthesis will be made more effective. The assembling is a *logos*. The spectatorial synthesis will be made as much by the play of retinal persistence as by that of expectations of sequential connections (these dreams we mentioned, shared by artist and spectator alike) which efface the discontinuity of a montage all the more effectively the more cleverly it is orchestrated" (156; emphasis original). The fear and anxiety that are produced by the digital image can be alleviated by the possibility of destabilizing the normative knowledge as well as the deconstruction of the language and the culture. Quintessentially, the making of analogico-digital image takes two forms of syntheses, which come from the machine synthesis and the spectatorial synthesis. It is also stressed in Stiegler's argument that both syntheses are equally important in the shaping of the new knowledge encoded in the analogico-digital image, as they interact with what Simondon calls a "transductive relation (a relation which constitutes its terms, in which one term cannot precede the other because they exist only in the relation)" (161). The difference between Hayles's concept of feedback loop and Simondon's transductive relation is that human agents are not over-determined by the network of informatics. The network does not overweigh

human agents. Both have to be beneficial in order to sustain a symbiosis. This transductive relation implies that cybernetic network system cannot thrive without having human agents benefit from its reproduction and circulation. The decadence of human agents will directly affect the cybernetic network that serves as the backbone of the global economics, cybernetic wars, and various industries. Thus, the destruction of human agents will also destroy the capitalistic-cybernetic network that sustains current economic system. The economic crisis will not be solved without suspending the exploitation of human agents by means of acceleration and disorientation.

A Discourse of Care Through the Eyes and Speed of the Machines

The first mode of civic engagement is manifested through a disruption of short-circuited synapses which takes place in a video clip that combines video recording and computing algorithm. Forster's "A Written Perspective" translates discourse of care into industrialized tertiary network system through analogico-digital apparatus. His work is exhibited in *An Online Exhibition of the ACMSIGGRAPH: Digital Arts Community* curated by Kathy Rae Huffman who claims that these videos engage with critical social perspectives through the digital technology, which not only captures what humans cannot see with the naked eye, but also what cameras cannot capture. In this 15-minute video footage Forster presents Sydney's Joondalup Shopping City that is seen through the layer of a computing algorithm, a perspective that customers do not otherwise see. He records this commodified place and uses programming language C++ to filter any written word that is not included in the variance and erases it. As the programmer computes "anglophone" as the variance, the result is a black and white animated-image written with anglophone signs whereas other languages are being edited out from the scene. "This custom algorithm," as Forster puts it, "does not look for known letters, but rather in an attempt to avoid anglocentrism checks for properties common to the written word across all cultures." In other words, by showing a space that is being erased by the anglocentric signifier, Forster wants to make a sarcastic comment on this anglocentric-commercialized place. At around one minute of the video, a female underwear brand Triumph is seen on the screen (see fig. 1).
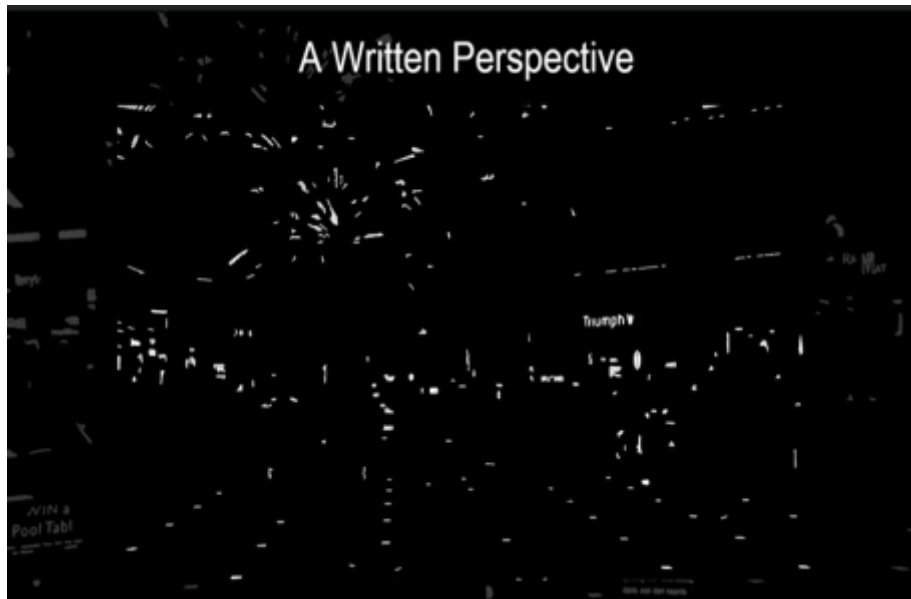
Fig. 1. A critique on anglocentrism from Benjamin Forster; "A Written Perspective"; *An Online Exhibition of the ACMSIGGRAPH: Digital Arts Community;*Web; 16 July 2015

The writing of computing algorithm does not manipulate our vision to feed the hunger of capitalism but provides a critical lens to distance consumers away from the immersed shopping experience. The digital apparatus calculates the data that is recorded in the video and translates the commodified space into a critical space which highlights how capitalism and the logic of the marketplace is primarily anglocentric and has been "written" all over our lived space with signs of triumph, even though consumers do not consciously perceive it this way. Thus the discretization of the image produces a knowledge that transgresses the normative frame of knowledge and makes us ponder how ubiquitous anglocentrism is at play in our everyday life. The grammar of computing is capable of accumulating the data and then translates it into the result that the programmer encoded. This translation of discourse of care into the production of knowledge is vital as the viewing experience enacts a transductive experience between the computers and the viewers in which programming language opens a critical perspective for viewers to speculate on the world that cannot be seen by the naked eye. The process can be seen as destabilizing the mnemotechnological discourse because a computer does not only serve as a device that saves and outsources tertiary memories, but as a critical instrument to enhance our intelligence and expend our understanding of the world. "A Written Perspective" touches upon the idea of pharmakon where anglocentrism is writing a system of domination on top of urban space. By contrasting the world seen by the naked eye and the world represented by analogico-digital apparatus, its difference gives us a critical distance to ponder if capitalism and anglocentrism are the only way of describing the world and of making sense of our existence. The short-circuited synapses will be temporarily suspended by the lure of an alternative knowledge generated by the invisible signs hidden by anglocentric ones. In this case, the analogico-digital apparatus serves as our visual and mental prostheses, makes what is invisible visible to us, and abstracts ideas into concrete representations. The

digital apparatus allows us to analyze the image critically, with the amenities of a computing algorithm. By translating the discourse of care through the analogico-digital apparatus into our knowledge system, the digital being's active digital footprint is encoded with the heterogenetic knowledge that contests with the homogenous knowledge of the analogical production of meanings. Forster's work, as a mode of civic engagement, demonstrates how computing algorithm is of amenities to the discourse of care and how digital beings can be transformed. Kroker's concept of *code drift* best describes the embodiment of digital beings in cybernetic networks:

> Neither global nor local
> Today we are mobile
> We are Code Drift
> We remix/mutate/disseminate/jailbreak
> Code Drift is the once and future
> nervous system -- the genetic drift
> of all augmented data bodies.
> We are AR
> We are Data Flesh
> We are Code Drift ("Code Drift")

His mental imagery of the future is a symbiosis of digital beings with the data they generated and codes they program. The digital being is constantly coding and being encoded by big data. The chain of signification is forming in constant flux.

If Forster engages in civic affairs by means of programming language, "Hologram for Freedom" utilizes AR gadgets to open a dialogue with the law enforcement. This AR project serves as a mode of disseminating civic awareness that shows how an analogico-digital apparatus can encode discourse of care into the reified and normative production of knowledge (see fig. 2).

Fig. 2. The AR presence from No Somos Delito; "Holograms for Freedom"; Online Video Clip; *Youtube*; Youtube; 24 Apr. 2015; Web; 28 Dec. 2015.

On April 10, 2015 a group of activists demonstrated their civil disobedience in the form of a hologram against the Spanish government's Citizen Safety Law, also called the Gag Law that forbids any physical protest in front of the congress building. In resistance to the government's decision to normalize knowledge and confine freedom of speech, No Somos Delito (We Are Not Crime) tried to defend their civil rights by using AR technologies that enabled them to demonstrate in their virtual presence as demonstrating physically will risk paying a fine up to € 600,000.[2] The digital being's double presences allow them to break the chain of signification of State Machine that confines and silences heterogeneous knowledge and translates skepticism into a state controlled "Utopia." This holographic presence of digital beings translates a discourse of care into a state that systemically removes citizen's rights to participate in civic affairs.

The Position of Literature

Forster and No Somos Delito exemplify how the analogico-digital apparatus is capable of translating critical knowledge through synaptogenesis into viewers as a transductive relationship between the individual and the collective technoculture. Thus a techno-capital culture can be oriented towards a noetic noosphere. As a mode of investigating civic affairs, literature serves to speculate on short-circuited capitalism and initiate a transductive discourse of care that configures mnemotechnological grammatization. Vernor Vinge's *Rainbows End* embodies literature's part in problematizing a reified image by bringing forth thought experiments. Although the cultural significance of AR remains minimal in 2016, big data and expedient connectivity to the Internet makes the near future ready for AR to become the next phase of User Interface after command line and Graphic User Interface (GUI).[3] In 2011 the European Union has invested roughly €9 billion on boosting "super-fast broadband"[4] internet speed. In their *Augmented Reality: An Emerging Technologies Guide to AR*, Gregory Kipper and Joseph Rampolla introduce one of the early innovators of AR technology, Chris Grayon. He directs our attention to the fact that: "Through technology with digital memory, which went beyond our human capacity, it would give us the ability *to recall a vast database of memory at a moment's notice*" (120; emphasis mine). In line with Grayon, Tish Shute adds that "the future of AR is data-driven….[and] the augmented experience is all about situational awareness…" (118). It is crucial to note that the ability to enlarge human capacity is to "recall" or access digital memory from a database that can be easily edited to the narrative of those in power and through which

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[2] See: http://www.theguardian.com/world/2014/dec/20/spain-protests-security-law-parliament.

[3] Kipper and Rampolla show statistics of the trend and prediction of the growing usage of AR. In their account, "As of late 2011 mobile phone usage has reached 5.9 billion subscribers worldwide, that's 87% of the current world population, and this trend shows no sign of slowing" (53). They prophesize that just as the other two dimensions of computing—command line and Graphic User Interface (GUI)—AR will become the third dimension computing because of the prevalent usage of mobile phone.

[4] http://www.bbc.com/news/technology-15320628

the long-termism can be curtailed. On the other hand, the digital being as code drift also benefits from the capability of humans to reposition themselves in the transductive network. Situational awareness is the important factor here. There is relatively little discussion on the mutual impact between AR and literature. However, medicine, military, entertainment, commerce, and art, among other disciplines and industries, have been incorporating this new technics into their future development. The position of literature in the digital area can be examined through the issues that emerge between literature and AR.

Vernor Vinge's novel is one of the few cyberpunk novels that draw our attention to the speculative dimension of digital technologies, particularly to AR displays. AR means to the digital being a disruption of reality not in a symbolical sense, but literally because its embodiment of a three-dimensional hologram that conveys higher degrees of verisimilitude than a two-dimensional image. In her "The Limited Capacity Model of Mediated Message Processing," Annie Lang examines how our attention and brain capacity is allocated to a certain piece of information. According to Lang, "The initial step in the encoding process is the determination of which bits of information will be transformed into mental representations. This selection process is driven by both automatic (unintentional) and controlled (intentional) processes" (48). Considering that one is critical, one will consciously select the mediated reality that matches one's goal. Under the condition that speed culture prompts digital beings to be less mindful, automatic selection replaces controlled selection. Orientating Response (OR) is instrumental in directing a viewer's attention to commercial products. She discovers that when a person is exposed to novelty or signal stimuli, the brain creates OR that automatically redirects its attention to the source of information (52). The implication of the research is that when one is confronted by reality and AR, one cannot always tell reality apart from AR. How the mental-representation is encoded into one's brain is based on consciously and diplomatically selecting the mediated reality related to one's goal and unconsciously and automatically tuning in to novel stimuli. This research suggests that by editing related cuts, media producers can trigger viewer's attention and OR to the mediated information and make viewers see it as reality. The digital being as flickering subject is constantly being elicited to trigger OR unconsciously as well as succumbed to the lure of the pleasure that speed brings. With the appropriate cues, AR is a mind candy that not only brings entertainment but also tricks viewers' mind to recognize it as reality. If the digital being's synapses are in synchronization with the transmission of the discourse of care, situational awareness is more likely to be switched on to distance the subject away from novel stimuli.

In the near future represented in *Rainbows End*, luddites are considered obsolete who are falling behind the cultural evolution. Vinge draws on the complex issues of AR technology, including a political critique of cybernetic wars between China and the USA,[5] an observation on people performing back-channeling frequently through Short Message Service (SMS), surveillance,[6] and speed-driven Just-In-Time-Technology.[7] The novel starts

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[5] The Great Powers are Euro-Indo and Sino-American.

[6] Surveillance through big data on the internet is countered by Friends of Privacy that spread disinformation.

[7] JITT, just in time technology is the shortest-circuit in the synapses that speed culture

with a typical sci-fi motif where Alfred wants to save the world from being destroyed in the cybernetic war by installing a virus in the bio laboratory. As the story unfolds, a dialogue is carried out between technology and literature, AR and reality, short-circuited and long-circuited synapses, and how tertiary memories carry the responsibility of taking care of the next generation. In Vinge's vision of the future, reality is a scarcity because every place is tagged by or layered with AR technologies. Ubiquitous mediation makes Glocalization possible as users are situated physically at home while juxtaposing hybrid geographic layers in a cybernetic network. Those who cannot master the wearable technologies will need to be re-educated in school. Vinge explores problems of a world that puts emphasis more on technology and less on the humanities. Juan Orozco and Robert Gu are two main characters who represent the generation gap between a teenager who is tech savvy but a "paraliterate" (148) and an old man who is a poet laureate. The term paraliterate is conjured up by Robert to describe people of Generation C[8] who need keywords to access a broader set of knowledge or information. They have the skills to access the bank of tertiary memories with just a click, but lack of long-circuited synapses that trigger contemplation. Before Robert was diagnosed with Alzheimer's disease, he was a world-renowned poet who was as famous as William Shakespeare. He represents a generation that tends to depend on primary memories and savors long-circuited thought as a luxury. After he receives the Venn-Kurasawa treatment, he recovers from Alzheimer's disease but he has to re-remember everything. Advanced technology also makes the seventy-year-old Robert look seventeen physically. Even though he looks like a teenager, he has to keep up with the advanced technology that has evolved during his big sleep and be re-educated in school to operate wearable or AR technologies.

When two generations clash, values from different cultural heritages are re-evaluated. This collision between long-circuited and short-circuited synapses, between luddites and digital natives, between slow culture and speed culture is encapsulated in a scene where Juan realizes for the first time that mere words can paint a magic world without fancy digital support. In the composition class Robert recites his poem and Juan is impressed and entrenched by the idea that simple words can convey more than the "touchy-feely" (42) AR displays that are installed in Pyramid Hill, an interactive AR Disneyland. If AR is a design of experience, words simulate in the mind a better "experience." The

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creates. The cognitive destruction of frequent short-circuited synapses results in a damage on human's brain. This damage is exemplified in Alice Gu who is stuck under layers of JITT, "a prisoner in her own mind" (340).

[8] Since there is enough bandwidth for us to connect to the internet and Internet of Things all the time, we are called Generation C. According to Gregory Kipper and Johseph Rampolla, "This generation was born after 1990 and has lived their adolescent years after 2000 have been labeled "The Connected Generation" or Generation C because they are continuously connecting, communicating, social networking, searching, and clicking. They all have mobile phones but tend to prefer sending text messages rather than talking with people on the phone. Many of their social interactions take place on the internet where they feel free to express their opinions and attitudes" (131). Generation C also has the mindset to embrace AR technologies. Kipper also mentions that video gaming can actually make learning more immersive and effect, in various realms, such as analyzing information and concentration.

following scene describes Juan's mental projection of a sublime moment evoked by Robert's poem recitation:

> Then he just ... talked. No special effects, no words scrolling through the air. And it couldn't really be a poem since his voice didn't get all singsong. Robert Gu just talked about the lawn that circled the school, the tiny mowers that circled and circled across it. The smell of the grass, and how it squeezed down moist in the morning. How the slope of the hills took running feet to the creek brush that edged the property. It was what you saw here every day -- at least when you weren't using overlays to see somewhere else.
>
> And then Juan wasn't really aware of the words anymore. He was seeing, as intense as anything that ever came from his wearable. His mind floated above the little valley, scooted up the creek bed, had almost reached the foot of Pyramid Hill ... when suddenly Robert Gu stopped talking, and Juan was dumped back into the reality of his place at the rear end of Ms. Chumlig's composition class. He sat for a few seconds, dazed. *Words. That's all they were. But what they did was more than visuals. It was more than haptics. There had even been the smell of the dry reeds along the creekbed*. (64; emphasis mine)

His recitation of the poem astonishes Juan as Generation C has considered the use of ubiquitous mediation a common practice and demeans those without wearables (AR) as second-class citizens who need to be educated back to the social norm. Robert's poem suspends the accelerated speed of Juan's short-circuited synapses habitually intensified by wearable technologies. Even though the computing speed of wearable technologies is capable of calibrating AR scenery and transmitting VR senses through haptic technologies, literature has a magic power of intensifying experience and creates a moment of transcendental uplifting that is beyond the augmentation of reality. Juan does not have any idea of how words convey reality more powerfully than visual displays or any AR layers. "He was a little dazed by the strange form of *virtual* virtual reality that Robert Gu had created…., Juan Orozco had felt the awed silence. And he did that with words alone...." (65; emphasis original). Juan's reaction indicates that he cannot help but being encapsulated by the allurement of long-circuited imagination that he experienced through Robert's poem.

Robert is an emblem of a culture that still values the long-termism that is considered obsolete by a culture that feeds on acceleration and mediation. He embodies a heterogeneous knowledge in a society that deems acceleration a production of normative knowledge. Robert's encounter with the world of ubiquitous computing serves as a critical perspective to our near future. In a society built upon ubiquitous computing and mediation, literature is a subversive critique of the fast streamlining culture. The novel speculates speed-writing and contests with industrial programming in a broader social scope. The library, in which the technology that propels long-circuited thought is stored, serves as a site of resistance to speed culture. A project called Librareome is represented as a counter-discourse to fast digitization of printed books. Although Robert's literary virtuality is a culture "shock" to Juan, Robert himself is also confronted with speed shock. A bridge between these two

cultures is initiated by Sharif the literature major who wants Robert's opinion on his thesis. He alleviates Robert's anxiety with technology by walking him through the University of California, San Diego (UCSD) library where they bump into a demonstration. It is a conflict between Hacek and Sccoochi, the pro-digitization that supports expedited digitization and the anti-digitization of the library that wants to save the books from being shredded. Sharif considers Robert's cooperation with Librareome instead of taking sides with Hacek as a reflection on the position of literature and art in the technocratic society. He says to Robert: "ultimately what you do at UCSD seems to be very much a statement about the position of art and literature in the modern world" (196).

In the novel, the positions of digitized and physical library are presented respectively by two belief systems. After the upheaval between Sccoochi and Hacek, the library is temporarily saved from book-shredding and the positive side-effect is that the conflict generates free publicity. The question is not whether digitization should be allowed but how digitization is executed and how fast knowledge will be digitized to the extent where minute but critical evidence will become ellipsis unnoticed in the process. Shredding and burning books is what Emperor Qing did in the Qing Dynasty to censor dangerous knowledge that posed a threat to the State. In the novel, the Chinese were considered to be experienced in digitization. Tommie told Robert that "the Chinese were chewing up the British Museum and Library faster than we ever guessed. And the Chinese have years of experience in semi-nondestructive digitization" (356). Digitization of tertiary memories pertains to the possibility of micro-editing of history and truth. As a farewell gift, Tommie gives Robert a flash disk that stores information of the entire collection of British Museum and Library, which is digitized by the Chinese Informagical Coalition. Tommie discloses to Robert: "The data is all on-line, along with a lot of cross-analysis that the Chinese will be charging you extra for …. Leaving aside things that never got into a library, that's essentially the record of humanity up through 2000. The whole pre-modern world" (357). If Emperor Qing burned books to control the production of knowledge, the digital library as mnemotechnology might be the modern way of changing the production of knowledge. Thomas leaves an ironic note on how digitization of tertiary memories would change the system of research and how industrialized programming can be used as a system of redacting knowledge involves political agendas:

> So Huertas is out of the shredding business, and the Chinese promise their followups [sic] will be even gentler than what they did to the British Library. Imagine soft pinky robot hands, patiently picking over all the libraries and museums of the world. They'll be cross checking, scanning for annotations – giving whole new generations of academic types like Zulfi Sharif something to hang their degrees on. (358)

The cybernetic network that used to be an amenity and augmentation of the digital being's experience slowly takes charge of the production of knowledge. If academic knowledge production is going to be assimilated into the maneuver of the Academic Machine, then what is at stake is not only the issues of short-circuited knowledge, but also of quantification and calculation of knowledge production.

Hypertexts: Combining Hyperattention and Deep Attention

Fig. 3.   A reflection on memories from Reiner Strasser and M.D. Coverley; *Eliterature.org*; Web; 16 July 2015.

Electronic literature is an apt example of analyzing the possibility of analogical-digital devices and the development of literature. Just like *Rainbows End* in which Robert Gu loses his memory due to Alzheimer's disease, this electronic literary work too demonstrates how the retrieval of sporadic, fragmented, and difficult-to-grab-hold-of memories might work. Strasser and Coverley's work though, other than Vinge's, is designed with graphic interfaces and audio recordings, reminiscent of Stiegler's remark that the digital being suffers from a mass memory loss due to overdependence on digital memories. Thus, digital beings are portrayed as paraliterate, with memories that can only be triggered and recollected after accessing tertiary memory banks in the forms of electronic note-taking applications. A discourse of care is demonstrated through this analogocial-digital work that points the attention to the crisis of short-termism.

It is a visual poem that poses the question of memory loss both personally and culturally. If this clicking on the webpage is analogical to the act of retrieving information from the brain, each click illustrates how digital beings with an oblivious tendency, short-circuited synapses, and hyperattention cope with the process of retrieving memories and history. The further digital beings are heading for a mass oblivion, the more they need to cultivate a discourse of care, to speculate on acceleration, and hit pause for a humanist vibe. The current cognitive science accelerates the culture of obsolescence by strengthening the short-circuited synapses, which then leads to short-termism of production, and ultimately results in mass production of waste and disregard of ecological systems. A culture of amnesia has to be countered through a transductive discourse of care that problematizes short attention. This artwork demonstrates how memories work and what patients with Alzeheimer's disease, amnesia, and dementia experience. This electronic literature also

traces back to the quintessential issue of collective memory: "We build our history thru the experience of our life. Do we loose [sic] our history when we loose [sic] our memory?" Digital beings document tertiary memories to prove that they were there, but paradoxically it is the act of repetitively saving a vast amount of tertiary memories that produces cultural amnesia and render them not being there.

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