

## *Reclaiming the Future through Remediation and Transmediation*

Hui-Chun LI, Yancheng Teachers University, China

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### **Abstract**

It is uncertain what the future will hold for the humankind, but it is certain that artificial intelligence will play a pivotal role in shaping this unknown future. Artificial intelligence is a buzzword that we hear frequently. Whether we are aware of it or not, its application to real-life situations is ubiquitous and prevalent. One of the commercially-driven applications of artificial intelligence is the recommendation algorithm which has fallen short on funding the promise for the future of our digital well-being in society. The algorithm capitalizes on consumers' data for generating more revenues. Despite this gloomy picture of the future, I argue that electronic literature, in the process of remediation and transmediation, can inspire and open up the closure stemmed from recommendation algorithms and provide a ray of hope for the future. I elucidate this redemptive power through Daniel C. Howe's "AdLiPo", "The Deletionist" created by Amaranth Borsuk, Jesper Juul, and Nick Montfort, Ian Hatcher's "Working Memory" and María Mencía's "Connected Memories." "The Deletionist" and "AdLiPo" disrupt and remediate industrialized memories with strategies of erasure and culture jamming. The web application and browser add-on provide a critical reading to the original webpages whereas "Working Memory" and "Connected Memories" critique on the recommendation algorithm in the form of transmediation. These digital poems reconstruct, transform, and translate a sense of care into a world that is largely dominated by algorithms.

Keywords: recommendation algorithm, remediation, transmediation, future, care

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## Introduction:

It is uncertain what the future will hold for the humankind, but it is certain that artificial intelligence will play a pivotal role in shaping this unknown future. Artificial intelligence is a buzzword that we hear frequently. Whether we are aware of it or not, its application to real-life situations is ubiquitous and prevalent. From selecting a favorite song or a movie to delivering take-outs, predicting the weather, profiling future suspects, diagnosing the early onset of diseases, and predicting financial gain, artificial intelligence has been developed to improve our lives in the future. One of the applications of artificial intelligence that users of the internet see is recommendation algorithm. Various researchers have been working on innovating recommendation algorithms in distinct sectors with ground-breaking methodologies, including a recommendation algorithm called surprise me (Kensuke Onuma et al 2009)<sup>1</sup>, online-learning resources (Wei Chen et al 2012)<sup>2</sup>, chance discovery (Dezhi Kong et al 2019)<sup>3</sup>, preferences to music (Jennie Silber 2019)<sup>4</sup>, and accelerating recommendation algorithm (Yang Li and Zhitao Dai 2019)<sup>5</sup>, among others. Recommendation algorithm ostensibly becomes a just, reliable, and valid reference to the phenomenal world. Recommendation algorithm becomes the go-to person or saga of the digital society, instead of experts of a specific realm or friends who share your interests. One of the reasons behind this change of behavior is that the recommendation algorithm provides a quick fix to slake the thirst for discovering new things in the immensely unknown realm of information. This algorithmization of the world speaks to our desires to augment our potential and enrich our knowledge.

Regardless of these ameliorations, a profit-driven recommendation algorithm is largely applied to the marketing sector. Published in February 2019, a book entitled *QAnon: An Invitation to The Great Awakening* written by a group of anonymous writers, became one of the best-selling books on Amazon. According to an NBC reporter Ben Collins, “The book claims without evidence a variety of outlandish claims including that prominent Democrats murder and eat children and that the U.S. government created both AIDS and the movie *Monsters Inc.*” When the news was released in March, the book was ranked No. 9 about politics, and No. 1 about censorship, and rated one position higher than Ray Bradbury’s *Fahrenheit 451* (Collins). The adherents of QAnon’s conspiracy theory tricked the recommendation algorithm to select a book of questionable quality to be top-rated books among

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<sup>1</sup> See Onuma, K., Tong, H., & Faloutsos C. (2009). TANGENT: A Novel, “Surprise-me”, Recommendation Algorithm. *Conference: Proceedings of the 15th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (pp. 657-665). Paris, France. doi: 10.1145/1557019.1557093

<sup>2</sup> See Chen W., Niu, Z., Zhao X., & Li, Y. (2012). A hybrid recommendation algorithm adapted in e-learning environments. *World Wide Web*, 17(2), 271-284. doi: 10.1007/s11280-012-0187-z

<sup>3</sup> See Kong et al. (2019). Personalized recommendation algorithm based on the chance discovery in social network services. *2018 5th IEEE International Conference on Cloud Computing and Intelligence Systems (CCIS)* (pp. 719-723). doi: 10.1109/CCIS.2018.8691275

<sup>4</sup> See Silber J. (2019). *Music Recommendation Algorithms: Discovering Weekly or Discovering Weakly?* (unpublished undergraduate High Honors Thesis). Muhlenberg College, Allentown, PA, USA.

<sup>5</sup> See Li, Y. & Dai, Z. (2019). Design and Implementation of Hardware Accelerator for Recommendation System based on Heterogeneous Computing Platform. *3rd International Conference on Mechatronics Engineering and Information Technology (ICMEIT 2019)* (pp. 950-995). doi: 10.2991/icmeit-19.2019.150

various categories. The QAnon incident implies that numbers do not lie, but they can be crunched and juked to drive peak sales.

Recommendation algorithm markets what is trending at the moment to consumers. The corporations generate revenue by speaking to customer's unconscious desires based on their patterns of consumption, in that the recommendation algorithms orient consumers to what they are likely to buy. As humans have the propensity to like what the community likes, it is easier to pitch users "most liked" by other users. In time, users' taste becomes homogenous since the recommendation algorithm markets the norms to them. It is as if the recommendation algorithm replaced users' preferences, the judgment of values, aesthetic perception, and even their critique of the phenomenal world. As the French philosopher Bernard Stiegler remarks aptly:

"Modernity" is thus no longer critique as *critique caretaking*, the ceaseless submitting of its (dogmatically inherited) basic values to the judgments of a maturity understood evolving from minority, a critically formed attention maturely responsible for the social legacy of the "scholar before the entire literate world" through "the public use of one's reason," but rather critique as the discerning of discrete unities, discrete in the arithmetic or algorithmic sense: as *calculable* unities. Critique becomes "mastery through calculation," which will culminate in the late twentieth century in various cognitivist models" (2010: 46; emphasis original).

Stiegler points out that modernity used to be a socially responsible critique developed to take care of the minority, but it now limits itself to an overarching critique based on calculable unities. It raises concern and anxiety among people who are likely to be ones that are not favorable in the calculation. This paper does not aim to solve the ethical obstruction but to take measures that will help prevent a recurrence. This paper illustrates how remediation and transmediation among four digital poems—Ian Hatcher's "Working Memory," María Mencía's "Connected Memories," Daniel C. Howe's "AdLiPo," and "The Deletionist" created by Amaranth Borsuk, Jesper Juul, and Nick Montfort—respond to anxiety and mobility brought forth among artificial intelligence and recommendation algorithms. They bring awareness to commercially-driven cyberspace and act as a discourse of care to a narrative that is predominately turning netizens into raw materials of profit.

In a moment I will return to analyze each digital poem. An analysis of recommendation algorithms is in place here. This commercially-oriented algorithm has fallen short on funding the promise for the future of our digital well-being in society. The algorithm capitalizes on consumers' data for generating more revenues. As any given recommendation algorithm is a result of a series of calculation using user's big data, the success of a recommendation algorithm requires, to borrow Stiegler's words, "mastery of calculation." The prevalence and proliferation of recommendation algorithms grow on users. Recommendation algorithm ostensibly becomes a just, reliable, and valid reference. Recommendation algorithm became the go-to person of the digital society, instead of experts or friends. One of the reasons behind this change of paradigm is that recommendation algorithm provides a quick fix to slake the thirst for discovering the immensely unknown realm of knowledge. This algorithmization of the world speaks to our desires to augment our potential and

enrich our knowledge. The four digital poems exemplified in this paper respond to netizens' desires manifested in recommendation algorithms.

This ever-constraining operation of the commercial industry echoes a pre-emptive security operation algorithm that is based on associations of variations of user data. The data does not define who we are but infers who we are through probabilities. In his "Data Derivatives: On the Emergence of a Security Risk Calculus for Our Times," Louise Amoore remarks: "Indifferent to the contingent biographies that actually make up the underlying data in fields such as PNR, the data derivative is not centred on who we are, nor even on what our data says about us, but on what can be imagined and inferred about who we might be on our very proclivities and potentialities" (28). The implication of Amoore's research shows that identity is not constructed by our data, but by how our data is being calculated through probabilities. That is to say, this security operation algorithm defines who we might be or *become*, leaving out contingencies that are not included in variations programmed by this algorithm. Electronic literature implements possibilities of a poetic rendition of codes that opens up the closure of both recommendation algorithm and data derivative whereas the recommendation algorithm doctors what we should consider as the priority or importance, with the blatant disregard of users autonomy and violation of user's privacy.

Tech culture permeates various areas of our digital lives and yet there is slight negligence of netizen's well-being. In his *Taking Care of the Youth and the Generations*, Stiegler brings forth a concept called *pharmakon* upon theorizing the grammatization of a programming industry. "And as we will see," he writes, "this supplementarity, which is also a *pharmakon*, both poison and remedy simultaneously, is the condition of *all* system of care" (2010: 6). The concept *pharmakon*, both a poison and a cure at once, aptly describes the current emergence of artificial intelligence. The desire to develop an artificial intelligence machine is derived from our yearning to live our life to the fullest. The future is to be built through a collaboration between artificial intelligence and human beings. Recommendation algorithms elicit this unconscious desire and market product that the community of users would buy. Probability is oriented toward purchasing power instead of their well-being. On the contrary, digital poetry reveals a sinister recommendation algorithm's agenda by provoking users to think.

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others

short-term

Figure 1: "Working Memory"

## Working Memory

Ian Hatcher's "Working Memory", as its name states (see fig. 1), demonstrates the mechanism of working memory. As the program runs, the reader is greeted by words popping up quickly, much like the experience of hyperreading. The information inside the white box represents the retention of memories whereas the information outside it represents the information that has not yet been encoded into the working memory. The reader is able to experience and reflect on what is retained in the working memory. Once the reader accesses the page, the loop of words starts to run, which is parallel to the grasping of overloaded information. The message outside the box—"It is true we are remembering this in at least two different ways"—unfolds this 90-second reading session. Once the page starts loading, readers cannot pause the reading process, so that they are required to take in all messages and try to make sense of them. Only by replaying this page several times can the reader get the overall picture of this two-framed memory. In a society where information is overloaded, the desire to receive and process as much information as possible has rendered our working memory more agile than ever. "Working Memory" bears an analogy of the operational procedures of the corporation where the function of memory is disproportionately distributed to reactionary behaviors and respond to immediate stimuli. The desire to receive and process as much information as possible has rendered our working memory more agile than ever. The poem also addresses one of the reasons why the recommended algorithm was created. It originates from our desire to process an immense amount of information that is associated with our preferences. It is time-consuming to construe preferences and explore new things, so humans delegate the time for discovery to artificial intelligence. There is always a catch to an expedient solution. The recommendation algorithm quenches our thirst for knowledge and discovery but also manipulates consumers into purchasing things that are trending.

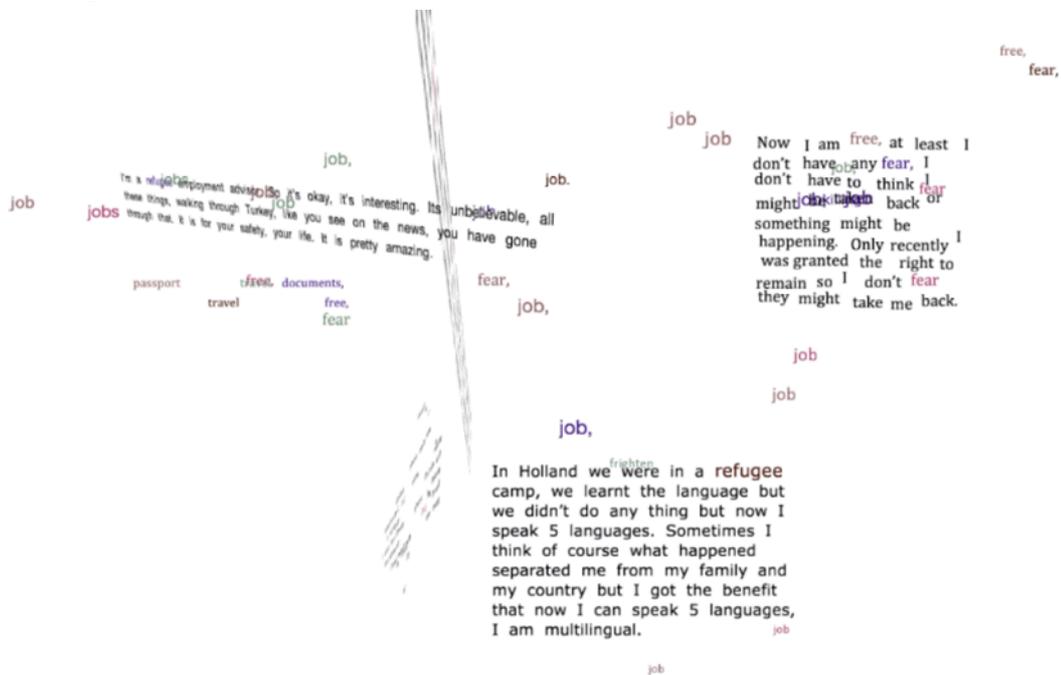


Figure 2: The node "Job" in the network of "Connected Memories."

## Connected Memories

If “Working Memory” speaks to users’ anxiety to grasp the sea of information, Maria Mencia’s “Connected Memories” speaks to users’ desire to connect. One of the parameters of the recommendation algorithm is “what is trending.” The rationale behind this variable implies that if “this is trending,” then “users might be interested in it.” The inclination to like what the community likes stems from a propensity to connect to a community. The fear to be excluded from the community can manipulate users into thinking that the trend is the determinant of our value judgment. In response to this anxiety, Mencia’s “Connected Memories” demonstrates a connection that transgresses beyond the closure of the recommendation algorithm.

“Connected Memories” (see fig. 2) is an interactive poem programmed by Processing. As the title implies, the purpose of this poem is to connect readers with the memories of the refugees living in the United Kingdom. In the process of reading this hypertext, readers are invited to experience with the refugees what they have encountered. These experiences become hyperlinked words that represent nodes of narratives on the screen: “war run away prison money walk university pressure shoot government refugee passport kill papers documents survived help job...”(Mencia). The screenshot is the node of “job” that delineates the memory of a refugee in a refugee camp. His verbal account of his refugee experience is transformed into texts on the screen: “In Holland we were in a refugee camp, we learnt the language but we didn’t do any thing but now I speak 5 languages. Sometimes I think of course what happened separated me from my family and my country but I got the benefit that now I can speak 5 languages, I am multilingual.” The process of reading the poem and clicking on the node manifests a state of being together or a sense of Heideggerian *Mitsein* in which readers interact and share memories and lives of different people together in a digital space. At some point, the path of a different chunk of memories crosses, much like the contingent encounter with refugees on the street. Right next to the memories of “job” sits the node of “fear.” The readers see a string of text flying across the screen. “Now I am free, at least I don’t have any fear, I don’t have to think something might be happening. Only recently I was granted the right to remain so I don’t fear they might take me back.” As readers click on those nodes, the memories of the refugees connect readers and open a portal to the experiences of intercultural adaptation. “Connected Memories” brings readers closer to the intimate and psychological space of the refugees. Their hopes and sorrows become nodes of memories that connect human experiences across different walks of lives. The reading process encodes the experience and understanding of our cultural heritage. Refugees cease to be the Other or a threat that is separated from the community.

## AdLiPo

AdLiPo (see fig. 3) is categorized under Fun in Chrome’s web store. The description of the browser extension notifies users that it contains mature content. It has its way of aestheticizing the in-your-face advertisement. Just as its categorization illustrates, the way to strike awareness does not necessarily need to be stringent. It can be entertaining. If a website uses cookies to track a user’s preferences and unconscious desires, AdLiPo disrupts the commercial interest of that website by displaying poetry written by the algorithm. Figure 3 is a real-time rendition of the algorithm of the website books.com.tw. The original webpage is replete with advertisements to capture

the reader's attention and eyeball. With the advancement of the recommendation algorithm, advertising marries users' unconscious desires. The algorithm deduces what users will like in the future. In other words, the recommendation algorithm has an effect on users in the form of micro-discipline.

This intrusive advertising is no less aggressive than the aesthetic rendition of AdLiPo. Instead of viewing images of products, readers read a poem composed by AdLiPo, an algorithm-poet. This poem can be divided into three parts. The first part is the initiation or the objective of this poem. "This Ad delves into questions that shape our contemporary narrative practices, such as navigational readership and new ways of experiencing the cinematic." Even though this sentence construed by an algorithm-poet may not make much sense, but it does pose questions that pique readers' brain. For instance, what are our contemporary narrative practices? What kind of narrative practices that shape our navigational readership and change ways of experiencing the cinematic? Is the Ad programmed by a recommendation algorithm going to change our narrative practices? Indeed, these questions urge readers to focus and think, as the next line reads: "This Ad is going to open you right up." AdLiPo's Ad-poem speculates the Ad programmed by recommendation algorithms. Upon musing over questions that the poem poses, readers' mind wanders around the poet's textual space, without being doctored by the original Ad's commercial interest. The second part begins with the poet's writing process, which explains how AdLiPo's poem opens readers up by disrupting the original algorithm. "The poet has just begun to write this Ad./The time you spend reading this Ad." As the poem is composed by an algorithm-poet, the poem emerges after the webpage finishes loading. The third part opens with the relationship between unspecialized labor and the Ad-poem. "This Ad quells the revolt of unspecialized labor./Cast away every restraint, spurn every one: never has an Ad by one means or by another." Unspecialized labor is referred to as labor that is not specialized and can easily be replaced. The Ad programmed by recommendation algorithms speaks to readers' false desire and makes them think that as long as they buy those products, they are one step closer to a better life.

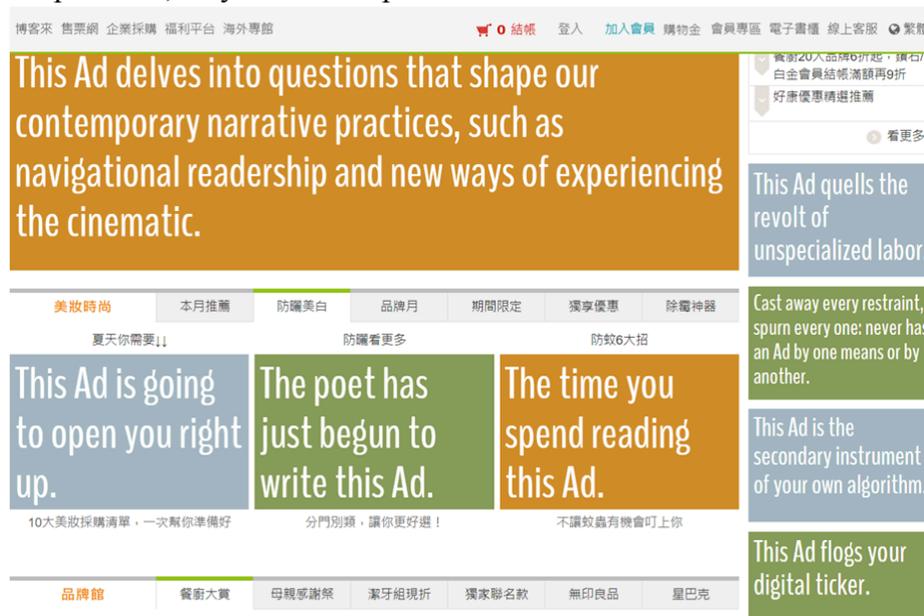


Figure 3: Trans-mediation at work between AdLiPo and Books.com.tw. Retrieved from <https://www.books.com.tw>. ©2014 AdLiPo & ©1995 Books.com.tw. Screenshot by author.

Therefore the Ad programmed by recommendation algorithms pacifies their desires to revolt against the system.

The following lines are harder to decode than other lines. Never has an Ad by one means or by another cast away every restraint, spurn every one. An effective recommendation algorithm requires a thorough collection of users' data without any constraint. In the meanwhile, this act of data collection implies that this Ad disregards every user's rights to protect their own data. The last two lines prompt readers to ponder on the relationship between this Ad-poem and the recommendation algorithm. "This Ad is the secondary instrument of your own algorithm./This Ad flogs your digital ticker." The two lines can be understood in terms of an investment. A digital ticker can refer to a stock market ticker whereas a primary instrument can refer to "a financial investment whose price is based directly on its market value" ("Primary Instrument"). This Ad-poem, as the secondary instrument of a recommendation algorithm, disrupts the market value and sells the stock quickly and cheaply. Ultimately, this Ad-poem transforms a commercially-driven Ad into a thought-provoking piece of artwork. Readers are given time to conduct a critical reading to the webpage.



Figure 4: A screenshot of "The Deletionist" applied over the Anti-G20 website ("Coalition Call to Action"). Retrieved from <http://g20-demo.de/en/call/>. ©2013 Deletionist & ©2019 G20 Demo. Screenshot by author.

### The Deletionist

The last digital poetry in response to the recommendation algorithm is "The Deletionist" (see fig. 4). It is a web application that selectively deletes the content of the webpage to generate a poem. The image is a screenshot of the anti-G20 website

applied with “The Deletionist.” It was originally a call to action against the G20 summit but is translated into a poem replete with the definite article “the”, leaving objects followed by the article unknown. Masked and highlighted by “The Deletionist,” the anti-G20 webpage is transformed into a page of reflection for readers. The issue upon which readers are invited to reflect revolves around the matter of data. Contrary to popular belief that data is something impersonal and unrelated to our identity as humans, I would argue that data is something closely related to our identity and our rights as a human being. Data can be understood as information we store in given electronic devices. The data, in Stiegler’s term, is part of our tertiary memories, which are the memories that can be stored on devices.

Tertiary memories not only serve as a supplement to our being but also as an inalienable part of us that transforms our being, by means of transmediation and remediation between humans and machines. In his *Technics and Time I: The Fault of Epimetheus*, Stiegler argues that tertiary memory is essential to the evolution of humans. Since technics conserves and inscribes with tertiary memory our knowledge of the past—aside from a tool for self-reflection—technics is the collective tertiary memory that can be passed on to the next generation in the form of cultural heritage. It is this epiphylogenetic memory that differentiates humans from animals as they do not have technics to conserve their knowledge, so they cannot pass it on after they die (4). Although we have the means to improve our lives, the recent development of industrial programming renders the issue of tertiary memories problematic. Tertiary memories function less as an extension than a limitation to our existence. Tertiary memories, according to Stiegler, were “e-laboration” (2009; 8) rather than self-conservation before the end of orthographic writing. This yearning to self-conserving renders tertiary memories susceptible to be the portal of privacy infringement. Tertiary memories are flatlined by industrialized programming that often uses our memories for commercial gains or for the service of surveillance in the name of security. The fact that more data is being collected derived from the fear of uncertainty and the yearning for security. Niklas Luhmann points out this internal fallacy:

Practical experience tends to teach us the opposite: the more we know, the better we know what we do not know, and the more elaborate our risk awareness becomes. The more rationally we calculate and the more complex the calculations become, the more aspects come into view involving uncertainty about the future and thus risk. Seen from this point of view, it is no accident that the risk perspective has developed parallel to the growth in scientific specialization. Modern risk-orientated society is a product not only of the perception of the consequences of technological achievement. Its seed is contained in the expansion of research possibilities and of knowledge itself. (28)

The big data is a double-edged sword as on the one hand, it showcases a holistic perspective on humans, whereas on the other hand it makes it easier to monitor and identify individuals vigorously. According to anthropologist Mary Douglas,

the control of rumour is central to risk perception...It is very much in the spirit of cultural theory to treat the institutions themselves as the monitors which determine what is going to count as information. Along these lines cultural theory can say a lot that is useful about the control of knowledge, the emergence

of consensus and the development of expectations. ...Blaming is a way of manning the gates through which all information has to pass. Blaming is a way of manning the gates and at the same time of arming the guard. (18-19)

Tertiary memories are held as evidence in the case of targeting the blame closely related to the politics of blaming as tertiary memories. In the case of controlling the rumor, the surveillance system and the collection of data are used to manipulate the public.

The politics of leaving the traces of tertiary memories thus is closely related to the risk perception. In his "Bernard Stiegler's Pharmacy: A Conversation," Marcel O'Gorman discusses with Stiegler the risk of storing tertiary memories and the need to bring forth a politics of leaving our traces. Instead of preventing the recording of traces, which is rather futile, he calls for actions of actively deleting, and selecting traces so as to develop "a consciousness of the recording of traces, a politics of the recording of trace" (468). "The Deletionist" and "AdLiPo" disrupt and transform industrialized memories with strategies of erasure and culture jamming. The web application and browser add-on provide a critical reading to the original webpages. In this process of trans-mediation, as in transformation and translation of the content on the webpages, the readers are not caught in the trance of the stupefied trance of scrolling webpages. They are offered time to reflect on what they just read. In addition to the trans-mediation, "Working Memory" and "Connected Memories" tell the story distinct from that of the industrialized memory in the form of re-mediation. The Deletionist challenges the logocentrism of the website and poeticizes the information given by selecting and arranging texts on the screen. The process of deleting texts on the webpage does not assimilate the autonomy of "The Deletionist" into the machine culture, rather, it attests to the task of stirring up the machine culture with the algorithm. The erasure does not eliminate the culture of the institution. On the contrary, it adapts to its culture while implementing a new system of understanding the information. The remediation of the Anti-G20 webpage through "The Deletionist" creates a third possibility of understanding the world. Originated from Wikipedia, the deletionism is a trend and a movement emerged from people who delete the less famous or popular entries. The Deletionist challenges the logocentrism of the website and poeticizes the information given by selecting and arranging texts on the screen. This application is used to generate a poem by deleting the contents and leaving poetic traces on the webpage. The image is a screenshot of the anti-G20 website applied with "The Deletionist." It was originally a call to action against the G20 summit but is translated into a poem populated with the prefix "the" instead of words of subversion. Masked and highlighted by "The Deletionist", the anti-G20 webpage is transformed into a page of reflection for readers.

## **Conclusion**

Through a transductive feedback loop demonstrated by these digital poems, this paper weaves a discourse of care into the formation of a profit-driven recommendation algorithm and culture. These digital poems do not aim to lure netizens to consume but to suspend netizen's appetite to consume. These poems reveal the anxiety and the mobility of a digital society. The algorithmization of the world brought forth by the programming industry can be detrimental to the well-being of the individual and society. "The Deletionist," "AdLiPo," "Connected Memories," and "Working

Memory” reconstruct, transform, and translate industrialized memories into a critical rendition of tertiary memories. In the process of reading and interacting with these webpages, readers open up the closure of the recommendation algorithm. Recommendation algorithm embodies our anxiety to know more and to demarcate precisely the unknown. The question is not only whether we can exhaust all possibilities and present the most probable result, but also what to do if that future is coming.

## References

- Amoore, L. (2011). Data Derivatives: On the Emergence of a Security Risk Calculus for Our Times. *Theory, Culture & Society*, 28(6), 24-43. doi: 10.1177/0263276411417430
- Books.com.tw. (n.d.). Retrieved from <https://www.books.com.tw/>
- Borsuk, A., Juul, J., & Montfort, N. (2013). The Deletionist. *The Deletionist*. Retrieved from <http://thedeletionist.com/>
- Coalition Call to Action for the Major demonstration against the G20 summit on Saturday, July 8 in Hamburg! (2017 July 7). Retrieved from <http://g20-demo.de/en/call/>
- Collins, B. (2019, March 5). On Amazon, a Qanon conspiracy book climbs the charts—with an algorithmic push. *NBCnews*. Retrieved from <https://www.nbcnews.com/tech/tech-news/amazon-qanon-conspiracy-book-climbs-charts-algorithmic-push-n979181>
- Douglas, M. (1992). *Risk and Blame: Essays in Cultural Theory*. London: Routledge.
- Hatcher, I. Working Memory. *SpringGun Press, 2011*, 5. Retrieved from <http://www.springgunpress.com/working-memory/>
- Howe, D. C. (2014). AdLiPo. *AdLiPo*. Retrieved from <https://rednoise.org/adlipo/>
- Luhmann, N. (1993). *Risk: A Sociological Theory*. (R. Barrett Trans.). Berlin: Walter de Gruyter. (Original Work published 1991)
- Mencia, M. (n.d.). Connected Memories. *María Mencia*. Retrieved from [www.mariamencia.com/pages/connected\\_memories.html](http://www.mariamencia.com/pages/connected_memories.html)
- O’Gorman, M. (2010). Bernard Stiegler’s Pharmacy: A Conversation. *Configurations* 18(3), 459-476.
- Primary Instrument. (n.d.). *Investopedia*. Retrieved from <https://www.investopedia.com/terms/p/primary-instrument.asp>
- Stiegler, B. (1998). *Technics and Time I: The Fault of Epimetheus*. (R. Beardsworth & G. Collins Trans.). New York: Stanford University Press. (Original Work published 1994)
- . (2010). *Taking Care of Youth and the Generations*. (The Board of Trustees of the Leland Stanford Junior University Trans.). New York: Stanford University Press. (Original Work published 2008)