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ERASURE, AN ATTEMPT TO SURPASS DATAFICATION

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Selfies, email archives, twitter posts, likes, places, late night chat logs, health insurance records, bank transfers, search histories… all those bits of identity, involuntarily immortalised as personality profiles in corporate server farms. Could erasure offer some respite from endless datafication? This "undead media" (Chun 134) not only facilitates the surveillance apparatus, the persistence of data also affects how we remember. Digital death (post-mortem digital data ownership concerns) exemplifies how the structure and inner workings of network technologies and software platforms affect our experience in a tangible way. The following research is concerned with what kind of role the materiality of Internet technologies plays in post-mortem digital legacy, and how it bleeds into our mourning practices. It explores these questions by examining how Facebook and Google deal with digital death, and what kind of consequences the materiality of the network entails. The notions of materiality are understood here as a space of interaction between code and hardware (Hayles) and perceived materialization of phenomena iteratively configured by dynamics of "intra-actions" (Barad 140). In the examples considered I look at how terms of agreement apply to memory in the form of externalised tertiary retention in the process of "grammatization" (Stiegler 3). The research also looks at the biological human memory's materiality and its need to forget (Kirschenbaum). I discuss the *ne.me.quittes.pas* project as a means to propose digital data funerals as an artistic strategy to make data tangible and to explore how these layers of stockpiled data constantly re-configure our identities. I argue that digital data funerals offer a symbolic ritualised gesture that draws attention to the materiality of data through tangible and physical degradation, in an attempt to surpass post-mortem datafication, and surveillance.

Digital death is a growing concern as personal data and archives are increasingly digitised and stored in networked servers. It refers to the issues surrounding data ownership after a person's death. In recent years numerous start ups are addressing the issue as well as corporations like Facebook, Google and Twitter. Social networking sites like Facebook and Twitter have a rising number of deceased users.[1] These companies have consequently developed policies for what happens after their constituents die.[2] Facebook has a profile memorialisation option while Twitter will discontinue the account. *Ik R.I.P.* was a platform developed in 2009 as a reflection upon this then *new problem*.[3] It enabled users of the Mediamatic site to draft a digital will of their Mediamatic profile. More recently, companies like the Hong Kong based Perpetu, are concerned with handling your digital legacy after you die, a sort of digital executor of your social networking life.[4] LIVESON is a platform that proposes to continue your Twitter presence after you die based on your previous behaviour (with AI).[5] Eterni.me goes a step further and anticipates to collect "almost everything that you create during your lifetime",[6] to then generate an avatar that emulates the deceased and acts as an interface for loved ones to gain access to this database of a lifetime. A host of companies offer services to safeguard passwords to digital data and distribute them to the appointed person after death (Legacy Locker, Entrustnet, Digizeker). Some services include the passing on of messages to pre-assigned individuals upon death (Deathswitch). There are also a plethora of memorial platforms (Life.Vu, Forever Missed.com, Legacy.com, Tributes.com, Remembered.com, iLasting.com, Last Memories.com). Mostly, efforts are being made to think of ways to keep access to data alive after a person dies, in some cases even a simulation of the deceased.

There is very little said however about the erasure of digital data. Viktor Mayer-Schönberger addresses the issues of data privacy that arise with digital archiving in *Delete: The Virtue of Forgetting in the Digital Age*. The lack of context inherent to digital information for example can come back to haunt people later. They may lose a job over an unsavory picture posted 10 years earlier, or be denied access to a country. Many of the initiatives that are thinking about digital death are concerned with data privacy issues, the political and social implications of lingering data.[7] Who should have rights over a person's data after they die, for example? There is another aspect to digital death that Mayer-Schönberger points to, that forgetting is paramount. It is a built-in function of the brain, not a defect, that enables it to function properly. It would appear that a recent study at the University of Basel shows that the brain actively erases information and that mental illness could arise should that process be disrupted (Hadziselimovic et al.). Though we might perceive our memory as failing, it would seem that selective retention is how it is meant to work. The question then becomes, with the advent of digital technology, and cheap, plentiful storage devices, how is this nearly limitless archiving affecting our need to forget?

Wendy Chun tells us that "computers have conflated memory with storage" (134). She explains that the way of putting information into computer storage (called random access memory) has replaced storing memories. The materiality of storage devices such as hard disks enables forensic retrieval of data even after it has been erased. As such, it is enduring. However the contextual information surrounding the data is lost, the experience of using it is ephemeral. Therefore data is "undead" (Chun 135), somewhere in limbo between life and death, present and absent. Furthermore, software promises eternity through constant reading or regeneration. Software is constantly executing: read-write. Though the idea of its permanence is paradoxical because of rapid deprecation, the illusion is sustained. Perhaps this is partially why online mourning is so widespread, digital data's promise of preservation appeals to the desire to sublimate death.

Archived data is a form of legacy. That said, as Jacques Derrida reminds us in *Archive Fever*, the archive is also the seat of power.[8] Bernard Stiegler believes that retention is determined by the technical. Using Husserl's notion of temporality, he posits that tertiary retention has been externalised through what he calls "grammatization" (Stiegler 3). Contemporary forms of grammatization are *writing* to digital and numeric media. In this respect, online mourning is not only alluring by its promise of *forever* but it is also bound by the post-mortem conditions of datafication. That is to say that our externalised retention, stored in the databases of Facebook, Google, and Twitter, for example, are bound by the terms and conditions of these platforms. Digital death made issues related to data ownership and surveillance clear long before Edward Snowden. In the early days of MySpace and Yahoo Mail, loved ones wanting to claim or access the deceased's profile or email account were confronted by the lack of rights to do so.[9] Once data is uploaded to the network, control and ownership is relinquished (unless you upload to your own server and you have access to its physical location, but arguably even then). The recent actress nude photo phone hack scandal (through iCloud) shows how easily digital data can be accessed in the cloud without the owner's knowledge.[10]

To illustrate post-mortem conditions of datafication I consider Facebook and Google as examples. In the case of Facebook two options are possible when a person dies: memorialisation or deletion. The person

wishing to act upon the dead person's profile must show Facebook a death certificate. A memorialised page can no longer be modified and should no longer appear in suggestions such as *People You May Know* or birthday reminders.[11] Depending upon the privacy settings set upon memorialisation, posts may be made by friends on the Timeline. Interestingly, anyone can send private messages to the deceased person, however Facebook does not allow anyone to log into a memorialised account to read those messages. Where are these private messages going?

The other option is to request to have the profile deleted. Though it is not specifically offered in the case of death, a 3rd party may request an account deletion if the condition of the profile owner is irreversible. This service is normally offered if a "friend or family member (that) is mentally or physically unable to maintain their Facebook account".[12] Facebook reviews the request depending on the situation and decides whether it will grant the request or not. That said, it is important to note that the deletion is largely symbolic because it is impossible to erase all data for a range of reasons. Facebook does not completely erase a person's traces. They state that the most personally identifiable information associated with the account, like email addresses, are removed from the database, while some personally identifiable information may remain, such as the account holder's name if a message was sent to someone else. The materiality of the network also determines the persistence of the data. Facebook states that: "copies of some material (ex: photos, notes) may remain in our servers for technical reasons".[13] These technical reasons are based on the nature of the network and the social networking platform. Traces remain in the servers. In other words, as soon as a digital object (for example an image) has been linked to or shared, those instances are eternal, in the words of Chun, through their constant propagation. Both cases offer different conditions of datafication and affect the mourning experience differently. However in both cases the data *lives on*.

Google catalogues and archives many aspects of our existence: in Gmail, Drive, Calendar, Search History, Google+, Wallet, Talk, Location History, for instance. The Search History, like other Google services, can theoretically be deleted after a determined period of inactivity if the account owner signed up for the Inactive Account Manager service, Google's answer to digital death. This Google service offers the option to notify contacts and share data, specify the length of time that determines whether the account is inactive (i.e. 12 months), and the option to delete the account. Noticeably, the data can be shared with contacts, but not handed over. If the delete option is chosen, there are nonetheless some bits that can not be deleted, such as server logs.[14] When a webpage is visited, the request sent from the user's browser to the server is automatically recorded. The request contains such information as the user's Internet Protocol address (IP), the date and time of query, the words that were entered in the search query box, and a unique cookie ID. The cookie can be erased but every time a specific device is used, a cookie is reassigned. Also, the IP shows the geographic location where the query was made from. Therefore the server logs can show a relatively comprehensible image of a user's search history. Google specifically states that it "may store searches in a separate logs system to prevent spam and abuse and to improve (our) services."[15] While it is true that system administrators use server logs to detect issues with the network it is unclear how long these records are saved. Furthermore, though Google uses anonymous identifiers, the effectivity of the

anonymization is contestable. Recently, certain online surveys have shown how easy it is to identify a person by asking a few simple questions.[16] The question of anonymity is a valid one.

The data and its traces that remain regarding the Search History after a person's death are therefore subjected to whether the person signed up for the Inactive Account Manager and what options were chosen. If the account was not linked to this service the data continues to exist in the databases. Even if the account was linked, and the delete account option was chosen, the server logs that are kept can reflect a person's search history and consequently their behaviour and interests. Arguably, we are being studied and marketed even after death — a sort of necro-financialisation of data.[17] As in the case of Facebook, total deletion is not possible, both because of Google's terms and conditions as well as the materiality of the network, which is such that data propagates itself in a quasi non-reversible fashion. Therefore *our data* (emphasised because it is no longer *ours*), is not only stored in server farms long after we die but it is bound to precise terms upon which we have no influence or agency. This determines not only the surveillance possibilities that have been subject of so much recent concern but it also frames the mourning process whether in the form of memorialisation and inactivity managers, or in the form of undead media.

As Matthew Kirschembaum shows us in *Mechanisms: New Media and the Forensic Imagination*, the forensic materiality of data has an influence on how the data is *read* and therefore experienced. He gives the example of the game *Mystery House* stored on a floppy disk using a disk image viewing utility. He explicates how the data is physically parted and stored in magnetic tracks on the floppy has bearing on the textuality of the story. Not only is the physical geometry of Mystery_House.dsk vulnerable to volumetric storage logic but Kirschenbaum also suggests that "a floppy disk image can also reveal the hand of the reader or user" (127). His model of critical practice cultivates a thick textuality that takes into account the specificities of the individual storage device, much like the forensic analysis of a crime scene. Kirschenbaum's approach reminds us of the tangible aspect of digital data. Though data might be thought of as immaterial when metaphors such as *the ether* and *the cloud* are so widely used, the affordances of data materiality impact conditions of datafication. As big data sets are constantly amassed, the materiality of data and the question of its erasure is no longer an issue solely related to digital death and mourning but also to privacy, data ownership, surveillance, cyber-bullying, and so on. The right to erase and/or forget, recently brought up in an EU court ruling against Google,[18] shows how this reality is emerging, and the consequences of data materiality. The court's decision can be seen as a political gesture that attempts to surpass quantification.

Heidegger warns us of the danger of not considering what he calls the essence of technology, a mode of (human) existence as *enframed* by technology. Woman herself becomes "standing-reserve" (Heidegger 8), a mode in which everything is considered through calculation and orderable as a system of information. Quantification resulting from big data analysis could be equated with Heidegger's notion of the standing-reserve, in which (wo)man becomes themselves datafied. As this happens, it appears as if technology's enframing is destiny, linking to Luciana Parisi's notion of big data's pre-emption of situations (creating its predicted future). The threat becomes "pushing forward nothing but what is revealed in ordering" (Heidegger 13), and therefore deriving all standards on the basis of quantification, a

perilous self-fulfiling profecy. How might we escape the quantification loop? Perhaps we might look to Heidegger again, in his view that art (*techné*) has the paramount role (and capacity) to reflect upon the essence of technology, and insodoing, to surpass the coming-to-pass of truth through technology. We cannot erase our social media traces nor escape necro-financialisation, though conceivably, an artistic gesture of erasure that points to the crisis of datafication might engender critical reflection outside of this self-fulfilling prophecy cycle.

ne.me.quittes.pas is an art project that proposes such a gesture in the form of a digital data funeral.[19] It begins to adress a relatively underconsidered and important part of digital archiving ubiquity: the erasure of digital data. The starting point of the project is a public installation that offers USB keys and a set of instructions in a pre-addressed envelope (see fig. 1). The keys can be picked up by anyone who wishes to participate. The instructions read:

> *1. Take a USB key home with you.*
> *2. Think about what data you would like to ritually erase.*
> *3. Transfer the data to the USB key (delete original).*
> *4. Send the USB key in the pre-addressed envelope and remember to include your return address.*
> *5. You will receive your data remains in the post.*

In practice many people simply take the object home, and keep it, which is a small irony that might point to the difficulty of parting with data. The audience that engages with the piece sends their data in the post, following the literal metaphor of sending packets over the internet. The envelopes are addressed to the City University of Hong Kong, where they are then taken to the biochemistry lab to perform the digital data funeral. The keys are immersed in a mix of concentrated hydrochloric (>37%) and nitric acid (>65%) (called Aqua Regia, used to dissolve noble metals). The liquid is extremely corrosive and will dissolve all metal on the USB key through a process called *digestion*. The procedure lasts around 90 minutes, during which time the acid slowly turns from translucent yellow to opaque brown as all metal corrodes in the liquid, also causing spatters. The process is visceral, the fragility of the USB key and its data are exposed in the bubbling liquid. Once the digestion is complete, the liquid must be diluted many times over to reach a neutral PH (to be able to empty it in the sink without dissolving the metal pipes). After dilution, the results consist of the printed circuit board (PCB) devoid of components, a few non metalic components like resistors and capacitors, the plastic part of the USB connector, and two chips, the chip that housed the memory and the chip that controlled the USB. The chip pins have melted away, it is therefore difficult to imagine retrieving their data (though arguably possible), and it is very likely that acid entered through the pin holes and irremediably corrupted the data. The memory chip still conserves the text *ne.me.quittes.pas* that was silkscreened onto it at the manufacture in Shenzhen (see fig. 2).

Figure 1: ***ne.me.quittes.pas*** **installation.**

These remains are then soaked in water for several hours to rinse any remains of acid. They are then placed on a piece of

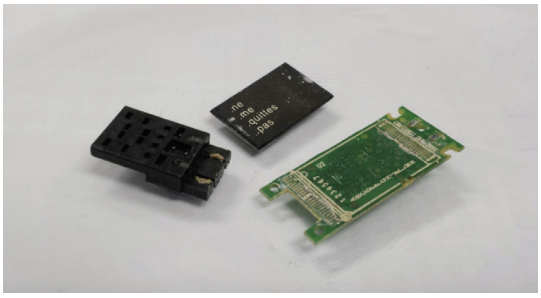

Figure 2: *ne.me.quittes.pas* digital data funeral remains (after corrosion in Acqua Regia).

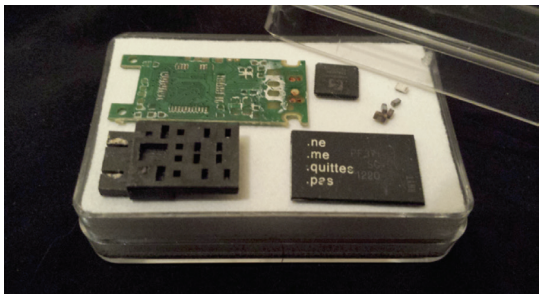

Figure 3: Digital data remains shown as they are packaged to be sent back to the participant.

velvet foam pressed into a small transparent jewellery box and sent back to the owner by post (see fig. 3). The envelope itself is designed with the specifications of the Hong Kong post in mind for machine reading. It is the smallest size that can be machine sorted and adheres to specific requirements of font, font-style, color, weight and thickness. The design emphasises the relationship between the content, the vessel and the communication system. The envelope also bears a text in three languages, a translation of the chorus from the famous song *Ne Me Quitte Pas* by Jacques Brel:

> *Ne me quitte pas* (Don't leave me)
> *Il faut oublier* (We must forget)
> *Tout peut s'oublier* (All can be forgotten)

This is a melodramatic love song in which Brel begs and pleeds with a woman not to leave him. There are various documented versions of concerts in which he is crying profusely while singing. In French speaking countries, this song is a well known ode to love lost and the pain of letting go. The lyrics simulataneously ask the woman to forget all the difficulties in the relationship, but not to forget or leave the man. It reflects the tenous relationship we have with memory. One the one hand we don't want to forget, but we would like to forget certain things, and as mentioned before, it is even necessary for the brain to forget in order to function well. In *Journal de Deuil*, Roland Barthes, talks about mourning the loss of his mother. He documents his consternation at the loss of her memory, her face and her voice, slowly blurring in his mind as time passes. Simultaneously, he bemoans the crippling nostalgia, as forgetting is an essential part of mourning. The envelope was therefore designed with this tension in mind, the desire to remember and the necessity to forget.

Interestingly, recent cognitive neuroscience has shown that memory is perhaps not a one off inscribing process (called *consolidation*), in fact even recalling a memory will change its nature (and therefore content). Synapses, responsible for neurotransmission between neurons, are highly mutable. Synaptic networks grow based on the chemical exchange that forms and recalls memories. For example, memories associated with fear, when reactivated, are easily altered to a state that requires a protein synthesis to reconsolidate it (Nader et al.). It would seem that when a memory is reactivated through retrieval it becomes labile, and thus changes. This process of read/write which memory undergoes could place memory at the site of execution, rather than storage, in computer science terms. When bits are re-written (read/write) electrical pulses are sent which modify the 0 to 1 or 1 to 0. The execution could also be understood as transmission, or more precisely that the site of execution

is the transmission itself. Human memory is formed in the transmission of chemicals between neurons that never touch each other. The chemically induced mutation occuring at the synapse, itself a 'space in-between', is the locus of genesis, where new and modified memories are born. Thus transmission is becoming.

If time can be/is effectively effaced (and politics) through systematic re-writing of *history*, where does this leave us? The site of execution becomes politicised. When this occurs within the terms of agreement of Facebook or Google for example we are without recourse and our memory is labile under the corporate scalpel. The archive fever is growing strong, between grammatization in corporate servers, systematic surveillance and data persistence; the materiality of data is trapping us by eluding us, as Heidegger warns. By looking at how Facebook and Google deal with digital death, the materiality of the network and some of its consequences come to the fore. The undead data, phenomenon created by the platform code (software) and network infrastructure, haunts us and our need to forget. Mayer-Schönberger reminds us of the social implications of these digital archives. In light of the developments in cognitive neuro-science we might consider erasure as an important part of archiving, and think of memory as a dynamic process of constant execution, *happening* in transmission. The word execution itself stems from *exécuteur* (12th century French), the person that is responsible for carrying out the will. *ne.me.quittes.pas*, adigital data undertaker service of sorts, is a gesture that plays with this site of execution. Through the visceral procedure of physically degrading data, the 'undead media' is symbolically exorcised. The project is purposefully naïve in its apprehension of digital data, yet it opens up questions pertaining to the crisis of datafication, through a mourning ritual. Mourning is the most visceral of human emotions, it deeply confronts the mourner with the materiality of human life.

Bring us your data, we will put it to rest.

Notes

[1] By the end of 2012 Entrustnet calculated that number to be 3 million on Facebook. See http://www.huffingtonpost.com/2012/12/07/death-facebook-dead-profiles_n_2245397.html. See XKCD for a projection of future numbers: https://what-if.xkcd.com/69/.

[2] See Twitter's policy adopted in 2010: http://www.thedigitalbeyond.com/2010/08/twitter-adopts-policy-for-deceased-users/, and Facebook: http://www.thedigitalbeyond.com/2012/02/what-happens-to-your-facebook-account-when-you-die/.

[3] Ik R.I.P.: http://www.mediamatic.net/73602/en/www-ikrip-nl.

[4] Perpetu: https://perpetu.co/.

[5] LIVESON: http://liveson.org/connect.php.

[6] See http://eterni.me/.

[7] See The Digital Beyond blog (http://www.thedigitalbeyond.com/), Passare (http://www.passare.com/how-manage-your-digital-assets-0), Digital Death (http://www.digitaldeath.eu/), My Digital FootPrint (http://www.mydigitalfootprint.com/), Digital Dust blog (http://digital-era-death-eng.blogspot.co.il/), for digital data issues or, *Your Digital Afterlife: When Facebook, Flickr and Twitter Are Your Estate, What's Your Legacy?* (New Riders Press, 2011) by Evan Carroll.

[8] In *De la grammatologie*, Derrida writes about *sous rature*, a way to simultaneously erase and leave a trace that points to the erasure. Interestingly, in Gayatri Chakravorty Spivak's introduction to the English translation, she attributes the difference from Heidegger's use of the term to "an inarticulable presence" which is "the mark of the absence of a presence, an always already absent present" (Derrida, 1967: xvii).

[9] See an example news report from 2006: http://news.cnet.com/Taking+passwords+to+the+grave/2100-1025_3-6118314.html

[10] See http://www.news.com.au/entertainment/celebrity-life/jennifer-lawrence-nude-photos-leaked-hacker-posts-explicit-pics/story-fn907478-1227043406704

[11] See Facebook memorialisation and deletion conditions: https://www.facebook.com/help/359046244166395/

[12] See https://www.facebook.com/help/480409628639043

[13] See https://www.facebook.com/help/125338004213029

[14] See server log terms: http://www.google.com/policies/privacy/key-terms/#toc-terms-server-logs

[15] https://support.google.com/websearch/answer/465?hl=en

[16] See the NYT report on the dialect quiz: http://www.nytimes.com/interactive/2013/12/20/sunday-review/dialect-quiz-map.html?_r=1& and the original blog post detailing the issues, https://brooksreview.net/2014/01/i-see-you/.

[17] See article: http://www.dailytech.com/Prof+Calls+Out+Facebook+et+al+For+Hoarding+Dead+Peoples+Digital+Remains/article27798.htm.

[18] See article in *Spiegel Online*: http://www.spiegel.de/international/business/court-imposes-right-to-be-forgotten-on-google-search-results-a-970419.html

[19] See *ne.me.quittes.pas* website: http://deathimaginationlab.com/.

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