

Forced to erasing memories - the death of data products

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Forced to erasing memories - the death of data products

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ABSTRACT

We are surrounded by electronics, data products, and everything on the internet in modern times. We are well accustomed to and gradually rely on mobile phones or computers to record our lives and thoughts and become our personal friends and way of life. Electronic and data products are tools and carriers for recording our lives and thoughts. As people fragment their lives, they break down the events in their lives step by step into data records. For example, a smartphone health monitoring app that records daily physical activity. Under these conditions, data products are internalized in people's egos. Suppose the memories stored in the human brain can be forgotten or remembered by people's own choices. So, after the personal data and data products as memory carriers are stored on the network, do they still have the user's decision-making power? What should we do if this data is erased? The loss of personal data leads to the loss of stored memories and people's online identities. Moreover, the emotions of that moment, the real emotions and feelings, are all left in the trivial memory; how can we deal with it? This essay is informed by the author's personal stories, real experiences, and accounts of fragmented lives. Explore the attachment relationship between people and deleted Internet data products; under the conditions of accelerated technology and society, why people lose themselves because of the disappearance of data products, and the resulting sense of isolation is still present today in society. And how to fight the forced erasure of memory through the form of film.

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DEATH OF XIAMI

Xiami (Figure 1) is a music software with social functions owned by a large Chinese Internet company (Alibaba¹). It is similar to Spotify² but with more social features. At the same time, it also promotes musicians, so many local Chinese independent bands and musicians also use this platform. As music lovers, users can not only search for released albums or famous musicians but also explore sounds from Chinese underground music and independent music from all over the world. Users can also add others who use this platform as friends and communicate using its messages function. Alternatively, users can leave a comment on the musician's homepage to share with fellow fans or even directly with the artist. I am a big fan of Post-punk³, Shoegaze⁴, Synth-pop⁵, New wave⁶, such niche music.

¹ Alibaba Group Holding Limited, also known as Alibaba (Chinese: 阿里巴巴), is a Chinese multinational technology company specializing in e-commerce, retail, Internet, and technology. Alibaba is one of the world's largest retailers and e-commerce companies. Wikipedia. (2022). *Alibaba Group*. Wikipedia. https://en.wikipedia.org/wiki/Alibaba_Group

² Spotify offers digital copyright restricted recorded music and podcasts, including more than 82 million songs, from record labels and media companies. Wikipedia. (2022). *Spotify*. Wikipedia. <https://en.wikipedia.org/wiki/Spotify>

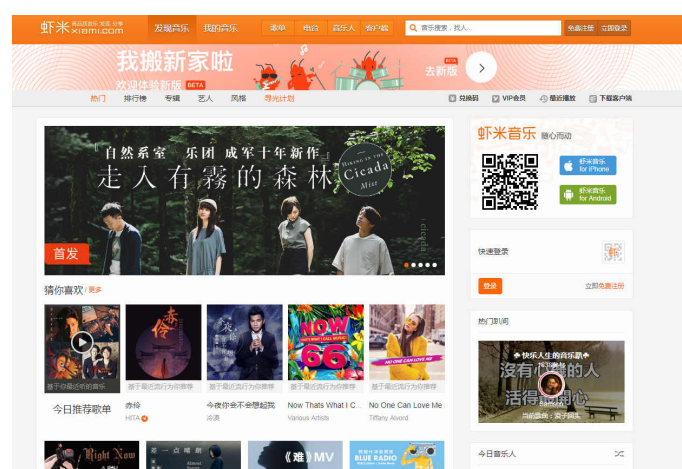
³ Post-punk (originally called new musick) is a broad genre of rock music that emerged in the late 1970s as musicians departed from the raw simplicity and traditionalism of punk rock, instead of adopting a variety of avant-garde sensibilities and non-rock influences. Cateforis 2011, p. 26–27.

⁴ Shoegaze (originally called shoegazing and sometimes conflated with "dream pop") is a subgenre of indie and alternative rock characterized by its ethereal mixture of obscured vocals, guitar distortion and effects feedback, and overwhelming volume. Rothman, Joshua (2021). T.S. *Elliot Would Have Liked Beach House*. The New Yorker.

⁵ Synth-pop (short for synthesizer pop; also called techno-pop) is a subgenre of new wave music that first became prominent in the late 1970s and featured the synthesizer as the dominant musical instrument. Wikipedia. (2022). Synth-Pop. Wikipedia. <https://en.wikipedia.org/wiki/Synth-pop>

⁶ Common characteristics of new wave music include a humorous or quirky pop approach, the use of electronic sounds, and a distinctive visual style in music videos and fashion. Britannica, T. Editors of Encyclopaedia (2015, March 4). *new wave*. Encyclopedia Britannica. <https://www.britannica.com/art/new-wave-music>

For a keen person on underground indie music, Xiami is the best data product I have used for the longest time. Other music apps cannot replace it. Xiami has brought me the satisfaction of my love of music and made me friends that I have been close to so far. I have met and befriended many professional musicians and veteran music lovers in the nine years of using it. Who would have thought that there would be a time when people would rely on a music app to make friends with strangers.



(Figure 1) Xiami(2020). *The screenshot of website* (own photo)

However, in January 2021, Xiami announced its closure. The internal reasons that led to its closure are that, as an app, interacting with users is not profitable. The second is that large Internet companies have lost money in their marketing and operation plans. For external reasons, China's intellectual copyright management has been strictly enforced and adjusted in recent years, resulting in many songs without copyright in its song library. In addition, other music apps have earlier and more budgets to purchase copyright in the competition of peers⁷. And the company did not support Xiami in its copyright budget, causing it to lose the

⁷ Rita liao. (2021, January 5). *Alibaba Shuts down 12-Year-Old Music Streaming App Xiami*. Techcrunch.

<https://techcrunch.com/2021/01/04/alibaba-discontinues-xiami/>

best opportunity to keep its massive library of songs and gradually lose its primary function as a music software. A large number of active and frequent users are lost. In such a doubly unfavorable situation, the company shut it down.

When it announced the closure of the moment, playlists I have collected and stored for over nine years on Xiami. About two hundred musicians and bands. My comments are on the band's homepage and under my favorite songs (Figure 2). Messages I exchanged with unfamiliar music lovers. And after many years, I have formed a tacit understanding of usage habits and search traces with them. These all disappeared with its closure. It has been a little long since Xiami was shut down. My mood was clouded when I learned that it was closed. When I think about it, I feel that I cannot describe it in any words. This state of aphasia persists throughout my work on this project. Grief is delayed by data products that can replace it. Reluctance will be blocked by the reason why it disappears. Maybe under this situation, my anger can be recognized. I do not understand why I have to struggle with this reality. And the profit failure of a data product has to be borne by the loyal users who use it. Most importantly, I was forced to face the loss of my personal data and saved memory.

| | | | | | | | | | |
|----|---------------|--------------|------------|-----|---|-----|---|--|--|
| | A | B | C | 90 | Plants' Muzi NIGHT MIRAF 一風堂 | 170 | Suicide 自來 | | |
| 21 | EX' All Tim | 关淑怡 | 2003/12/29 | 91 | Angel Baby Rock 'n' Roll John Lennon | 177 | The Wake | | |
| 22 | The Comple | The Jesus ar | 2000/2/1 | 92 | 农业漫游201 农业漫游201 传琦SAMA;高嘉 | 178 | Absolute Body Control | | |
| 23 | Icon | Belinda Carl | 2013/3/19 | 93 | Surrender A Way of L Suicide | 179 | TOW | | |
| 24 | 活著要珍惜 | 华语群星 | 1989/1/16 | 94 | 墨绿的夜 空白明信片 邵肇玫 | 180 | TRONICBOX Jerry Shen | | |
| 25 | 67狂热 | 刘鸿 | 1987/1/1 | 95 | Last Christm Last Christm Michael Seyer | 181 | 悲しい ANDROID - APARTMENT | | |
| 26 | 冤離 | 地下嬰兒 | 1999/5/1 | 96 | Chatless Born Astride The Molds | 182 | 高嘉丰 jiafeng | | |
| 27 | 地球最后的 | 林强 | 2018/12/31 | 97 | Sad Honey I Born Astride The Molds | 183 | 蛋堡 杜振熙 / Soft Lipa | | |
| 28 | River of Reti | Agitation Fr | 1999/9/7 | 98 | 雪中情 宝丽金88级 邓丽君 | 184 | Rich Brian | | |
| 29 | 吵鬼巴团 | 柠檬精 | 2014/2/14 | 99 | Take On Me Simply The I A-ha | 185 | PARANMAL / パーランマウム | | |
| 30 | 未来的主人 | 罗大佑 | 1983/9/20 | 100 | Angel Baby Early Girls V Rosie & the Orig | 186 | Sham 69 | | |
| 31 | 牯岭街少年 | 牯岭街少年 | 1991/7/1 | 101 | Angel baby 牯岭街少年 牯岭街少年合唱 | 187 | THE BLUE H ザ・ブルーハーツ | | |
| 32 | Float in the | MGF | 2016/11/16 | 102 | エンジェル 好き好き大 戸川純 | 188 | Frumpies The Frumpies / The Frumpies Fi | | |
| 33 | The Sugarhi | The Sugarhi | 1980/2/14 | 103 | Lonesome T Off the Bon The Cramps | 189 | Bikini Kill | | |
| 34 | 声光回忆 | 王原声带 | 2004/11/23 | 104 | It Can't Be C 回轉線 南正人 | 190 | The Horrors | | |
| 35 | 3 Feet High | De La Soul | 1989/2/14 | 105 | YOUR SUM Add Some M 山下達郎 | 191 | Can 罐頭 | | |
| 36 | ライブ | 長野隆/豊庄 | 1974/7/8 | 106 | スポーツマ フィルハー 細野晴臣 | 192 | Pulp 果敢乐队 | | |
| 37 | ゆらゆら帝 | ゆらゆら帝 | 2003/2/26 | 107 | You Should London We Another Sunny | 193 | The Jesus ar JAMC / 耶穌和瑪麗鏈 | | |
| 38 | 回到范特西 | Babel Recor | 2018/2/18 | 108 | Anenome Their Satani The Brian Jonest | 194 | Gang of Fol 四人帮 | | |
| 39 | MOON | 原声带 | 2015/6/1 | 109 | intro冷板凳 P.E.I Vol.2 马思唯 | 195 | Kraftwerk 发电站乐队 | | |
| 40 | SCV II | Howie Lee | 2018/2/16 | 110 | Amazing Ft P.E.I Mixtap A&T;马思唯 | 196 | Night Beats | | |
| 41 | Retro | New Order | 2002/12/9 | 111 | 高级动物 SCV II Howie Lee | 197 | Asylum Party | | |
| 42 | 屋顶上的猫 | 七八点 | 2008/6/25 | 112 | The Furthes Bells, Boots Spirogyra | 198 | Acid Mothers Temple & the Melting Paraiso | | |
| 43 | 为了脱腹 | 夏金城 | 1990/12/1 | 113 | Common Pe Different Cl Pulp | 199 | Number Gir ナンバーガール | | |
| 44 | The Essenti | Leonard Col | 2002/10/22 | 114 | Disco 2000 Different Cl Pulp | 200 | 一風堂 IPPU-DO / いっぷどうどう | | |
| 45 | Ten New So | Leonard Col | 2001/10/9 | 115 | Baby's Com Jarvis Jarvis Cocker | 201 | 白天不亮 Gavintoo | | |
| 46 | 山陰峻 | Scattered Pt | 2017/10/22 | 116 | Thousand C Expressions Music Go Music | 202 | Howie Lee | | |
| 47 | 等待外賣 | 高嘉丰 | 2017/11/7 | 117 | I Want to Ki Distance Ceremony | 203 | ゆらゆら帝 ゆらゆらていこく / Yura Yura | | |
| 48 | NOMC15 (N | New Order | 2017/6/16 | 118 | Sweet Satun Study Music Dennis Kuo | 204 | Dear Eloise 亲爱的艾洛伊丝 | | |
| 49 | The Queen I | The Smiths | 1986/6/16 | 119 | Be Bop Kid Suicide [Sec Suicide | 205 | The Yours | | |
| 50 | Absolute Bc | Absolute Bc | 1981/1/1 | 120 | Heaven or L Heaven or L Cocteau Twins | 206 | 七八点 | | |
| 51 | we are PAR | PARANMAL | 2005/10/7 | 121 | | 207 | The Vulgar | | |
| 52 | 昭和歌謡 | 日本群星 | 2009/3/18 | | | 208 | LAVA[OX]SE the los / 炎家 公牛 海 | | |
| 53 | 金八先生 | 城之内ミサ | 2000/2/9 | | | 209 | 新裤子 New Pants | | |
| 54 | | | | | | | | | |

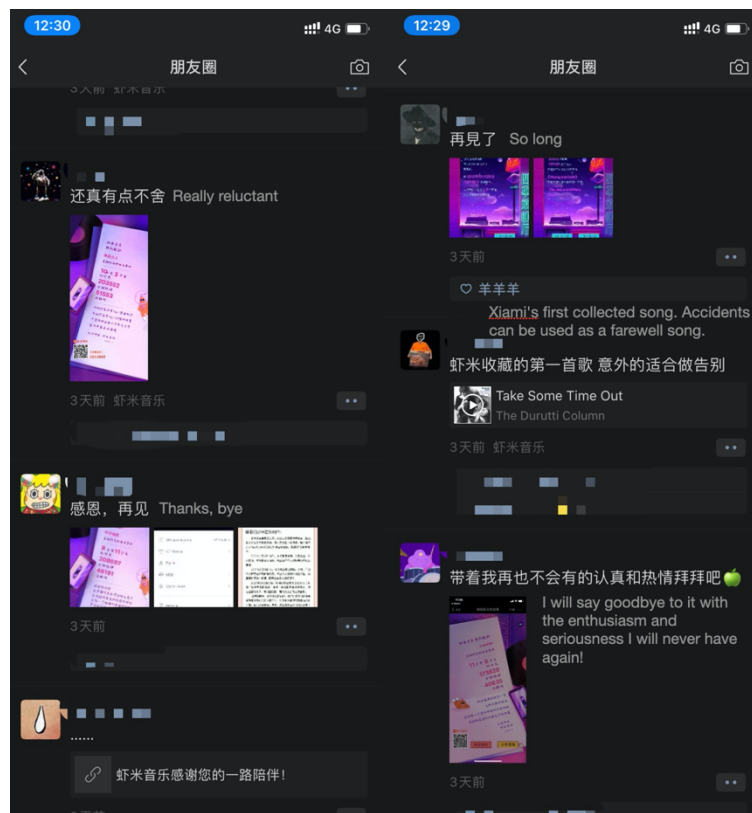
(Figure 2) Xiami(2020). *The screenshot of user-downloadable Excel spreadsheets after*

Xiami is closed. (own photo)

People around me who also use Xiami expressed their dismay and anger on social media. They said goodbye; thank you, Xiami; I was reluctant; I said goodbye with the enthusiasm I will never have again (Figure 3). There are many things like Xiami being shut down. There is a website called Killed by google (Figure 4), which records more than 200 data products shut down by Google. The founder of this website is a loyal user of Google's data products (Inbox by Gmail⁸). I emailed him to ask about the original intention of building the website. He said he was both angry and saddened when Google announced that Inbox by Gmail would be discontinued. He talked to friends about making a graveyard for the data product. In addition to this, he lived near a military cemetery as a child. Inspired by this, he built a

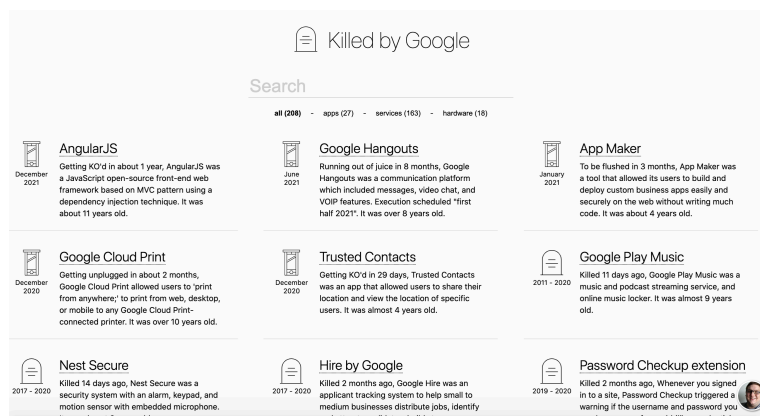
⁸ Inbox by Gmail was an email service developed by Google. Announced in limited invitation-only basis on October 22, 2014, it was officially released to the public on May 28, 2015. Inbox was shut down by Google on April 2, 2019. Wikipedia. (2022). *Inbox by Gmail*. Wikipedia. https://en.wikipedia.org/wiki/Inbox_by_Gmail

cemetery-like collection of Google death data products (Figure 5).



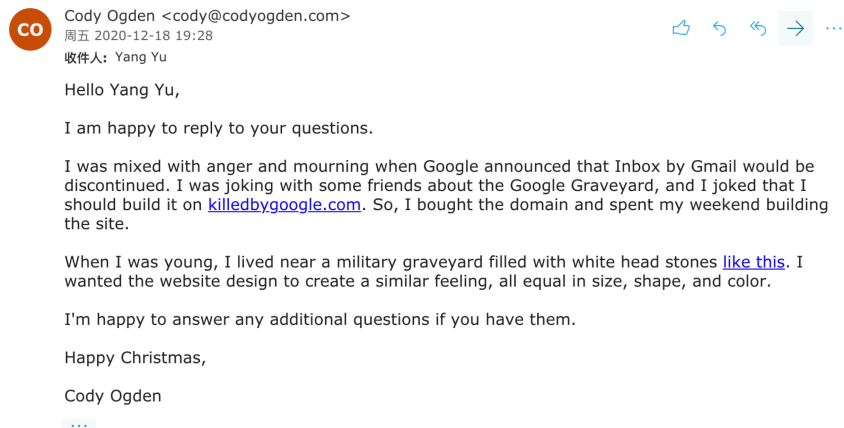
(Figure 3) Wechat (2021). *The screenshot of other Xiami users' reflections on social media.*

(own photo)



(Figure 4) Cody Ogden (2020). *Screencast website Killed by Google [Website]. Retrieved*

November 8, 2020, from <https://killedbygoogle.com/>



(Figure 5) Outlook Email (2020). *The screenshot of Killed by Google builder's reply email.*

(own photo)

Xiami is like a private space where I feel completely safe and relaxed. It accepts emotions that I cannot express in real life and also stores my love and ideals for music. It is part of my routine, like the air you breathe. Although in the current market, I can still use other music software of the same type, such as SoundCloud⁹, Youtube Music¹⁰, and Deezer¹¹. However, compared with Xiami and the different coverage in the song library, the accuracy of preference calculation is also different. Most importantly, I cannot go back to my teenage with the same passion and quest to use an app for almost ten years. At this moment, Xiami

⁹ SoundCloud is a Swedish-founded online audio distribution platform and music sharing website that enables its users to upload, promote, and share audio, as well as a digital signal processor enabling listeners to stream audio. Wikipedia. (2022). *SoundCloud*. Wikipedia. <https://en.wikipedia.org/wiki/SoundCloud>

¹⁰ YouTube Music is a music streaming service developed by YouTube, a subsidiary of Google. It provides a tailored interface for the service, oriented towards music streaming, allowing users to browse through songs and music videos on YouTube based on genres, playlists, and recommendations. Wikipedia. (2022). *YouTube Music*. Wikipedia. https://en.wikipedia.org/wiki/YouTube_Music

¹¹ Deezer is a French online music streaming service. It allows users to listen to music content from record labels, as well as podcasts on various devices online or offline. Wikipedia. (2022). *Deezer*. Wikipedia. <https://en.wikipedia.org/wiki/Deezer>

is not just a data product for me but more like a part of my life.

Also, my attachment to Xiami was deepened by its closure. I cannot face losing it, and I refuse to feel the trauma of losing it. In Sigmund Freud's *Fetishism*¹², it is mentioned that the appearance of fetish is precisely designed to preserve the disappearance of what is usually very important and abandoned. Like the child's comfort object¹³, a transitional object and comfort that the mother gives the child when she stops breastfeeding. After Xiami was shut down, I kept an unusable Xiami player. As if as long as this app is around, I will never lose my life.

Although in this information age, advertisements will target products that may interest people's user preferences¹⁴, and dating software will match people with suitable dates based on their geographic location. The traces people leave on the web have turned into tools that can make money for internet companies. Most discussions on personal data on the Internet revolve around deleting unimportant personal information to prevent excessive privacy consumption and choosing to save important ones. It is also said in the book *Delete*¹⁵ that forgetting is especially important in today's online world. Personal information has been

¹² Freud, S. (1927). *Fetishism*. *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, 21, 147-57.

¹³ Usually, the child realizes that the mother is a separate entity, which tells the child that they have "lost their mother". This realization created a difficult time. So, the child needs an item that provides psychological comfort to transition through this period. Comfort objects can be blankets, stuffed animals, or favorite toys. But now there is a Comfort object among adults too.

¹⁴ User preferences are the user's habit of using the computer or mobile phone operating system and preferences for using web searches. There are also geographic locations that positioning systems often target.

¹⁵ Viktor mayer-schonberger (2009). *Delete: The Virtue of Forgetting in the Digital Age*. Princeton University Press.

overloaded in the online world, and we have to leave important data and delete unimportant information. However, what is essential in the online world? The definition of significant is very subjective. For me, data products like Xiami are crucial. The playlists I collect and the comments I contribute to the music community are essential. The habit and traces I have left from using it for nine years are important. These are non-repeatable and non-reproducible.

GROW IN A DIGITAL ERA

When Xiami is closed, the user can download personal data and save it on the computer. These data are the name of musicians, albums, and playlists collected by the user. Also, the user's recharge balance is refunded. In addition, users contribute album introductions and music comments, and private messages cannot be downloaded. All users can download are names of collected playlists and musicians, which become word by word in an Excel table. However, Xiami did not disclose the reason for its shutdown in a notification to users. They just used a sentence brought up by adjusting the company's business. This sentence is like describes Xiami's death due to a force majeure.

The data products that have been built into Y generation¹⁶ lives. So, it is hard for them to be calm about the shutdown of data products. I also belong to Generation Y as a Digital

¹⁶ Millennials, also known as Generation Y or Gen Y. Generation Y, have been described as the first generation that grew up in the Internet age. The generation is generally marked by elevated usage of and familiarity with the Internet, mobile devices, and social media. Meg murphy. (2018, October 19). *NowUKnow: Millennials Lead the Way in the Digital Future*. Bentley University. <https://www.bentley.edu/news/nowuknow-millennials-lead-way-digital-future>

native¹⁷. Such as when I faced the Xiami shutdown. My emotions could not be conveyed in one sentence like the company described why Xiami was shut down. A simple sentence from Xiami's company cannot convince users. There is a saying in the Revolution of everyday life, profit from the destruction of natural exploitation. At the end of the 20th century, this tendency determines the new eco-capitalism and various new modes of production. The living gains no longer bet on his depletion but his rebuilding¹⁸. In this modern society, we must judge the value of everything around the criteria of efficiency and profit, and the more, the better. Especially in the digital age, efficiency and convenience are a mission for the birth of electronic products. For example, I made the wrong word in the writing software at this moment. As long as I delete it, everything can be deleted and restarted. Xiami has existed for twelve years. I have been using it every day for over nine years and have left untold marks. And this is not just using data to me; it is a trace of my real life. Such as, I found a new band and recommended it to my friends; I played a song in the car today while travelling with my family; I also like a musician who happily shares his insights with strangers. All of this is a vital part of real-life for me. And none of these matters to the digital manufacturers. Cruelly, they also have the power to decide where our data goes.

On September 14, 1987, the first successful e-mail was sent from mainland China. It reads, "Across the Great Wall, we can reach every corner in the world"¹⁹. This sentence seems to

¹⁷ The term digital native describes a person who has grown up in the information age. These individuals can consume digital information and stimuli quickly and comfortably through devices and platforms such as computers, mobile phones, and social media. Prensky, M. (2005). *Digital natives, digital immigrants*. Gifted, (135), 29-31.

¹⁸ Raoul vanneigem. (1983). *Revolution of Everyday Life*. Left Bank Distribution, Preface to the second.

¹⁹ Jaime a. floracruz & lucrezia seu. (2014, April 24). *From Snail Mail to 4G, China Celebrates 20 Years of Internet*

have become a prophecy of the relationship between the Internet and me.

I was born in China in the 1990s and grew up in the millennium. In 1999, I got my first computer at home. At that time, I was still learning Chinese at the elementary level, but I started to try to write a diary on the computer. I can see comics from Japan, TV dramas from Taiwan, and rock music that have influenced me on the Internet. Especially after 2001, with the popularization and upgrading of personal computers and home networks in China, the topics I discussed with my peers almost revolved around what happened on the Internet. We use instant messaging software for daily communication and build our blog online. We would develop a friendship with a stranger because we liked the same band and movie, even if we did not know each other's real life. The digital area or the whole digital life seems like a thread intertwined in my growing world. It is not just the Internet that matters to me. Even when I do not have it, I use my computer to record my thoughts.

The extended mind thesis (EMT) says that the mind does not exclusively reside in the brain or body but extends into the physical world²⁰. The EMT proposes that some objects in the external environment can be part of a cognitive process and, in that way, function as extensions of the mind itself²¹. Examples of such things are written calculations, a diary, or a PC; it generally concerns objects that store information. It is difficult for me to classify the computers, mobile phones, portable hard drives, and cameras that I use in the information

Connectivity. CNN. <https://edition.cnn.com/2014/04/23/world/asia/china-internet-20th-anniversary/index.html>

²⁰ Clark, A., & Chalmers, D. (1998). *The Extended Mind*. Analysis, 58(1), 7–19. <https://doi.org/10.1093/analys/58.1.7>

²¹ Clark, A., & Chalmers, D. (1998). *The Extended Mind*. Analysis, 58(1), 7–19. <https://doi.org/10.1093/analys/58.1.7>

age, whether these are tools for me or a part of my data and thoughts. I mainly use digital devices to record my thoughts and save my memory. It looks like I am putting my life outside of the brain. I cannot see personal data as a code or a command. For example, I saw a hedgehog in the grass downstairs on my way home, and I took a picture of it. It was an unexpected discovery that I do not encounter every day. This surprised and delighted me so much that I wanted to take pictures right away. Then I go home and save the photo in my phone album or post it on social media. I recorded this event by taking photographs rather than drawing or describing it only with words for the first time. I could almost tell this series of behavioral patterns and natural physiological responses like knee-jerk responses. Even though I know clearly that data does not represent memories, it does not equate to how I felt. But I still cannot pull and separate the two of them. The data stored on electronic devices and the Internet are more like a part of my real life and an important part.

I have come to accept that electronics and the Internet are embedded in my life. It is precisely the relationship between digital data and me that is as inseparable as flesh and blood. Internet companies have the power to decide whether a product should be left or not to make profits, which makes such a relationship more fragile and tense. Perhaps it is precisely because of such circumstances and conditions that, as a Xiaomi user, I cannot blame anything. It seemed like there was nothing I could do but face the loss.

DATA LOST, MEMORY ERASED

Italo Calvino said that memory is neither a fleeting cloud nor dry and transparent, but a

scab formed by scorched creatures on the surface of a city, a sponge soaked in life liquid that no longer flows, past and present a jam mixed with the future²². Memory is a human-centered process. Moreover, its more common presentation is an event or a narrative. The modern definition of memory is the brain's ability through which data²³ or information is encoded²⁴, stored and retrieved when needed. It is about retaining information overtime to influence future actions. Language, relationships or personal identities cannot develop if past events cannot be remembered. Based on the current understanding of the mechanisms of memory formation, the widely accepted model divides the memory process into three distinct stages²⁵:

1 Encoding: access to information, processing and combination; 2 Storage: a permanent record of the combined information; 3 Retrieval: retrieve the stored information and respond to some hints and events (Richard Atkinson and Richard Shiffrin, 1968). The three stages of the memory system act as an assembly line, transforming the incoming stream of stimulus information into meaningful patterns that can be stored and recalled.

Memories are not immutable in the brain. The brain is also not a perfect memory. Long-term memory requires repeating the same action over and over again. For example, people can remember a phone number that has been used for many years; a fixed travel route. Another part of long-term memory is episodic memory, "which tries to capture information

²² Calvino, I. (1978). *Invisible cities*. Houghton Mifflin Harcourt.

²³ For example, a flower people see; words people read; voices people hear.

²⁴ For example, people sort the events in a day in chronological order of importance and then convert them into words or pictures to memorise or record.

²⁵ Atkinson, R. C., & Shiffrin, R. M. (1968). *Human memory: A proposed system and its control processes*. In *Psychology of learning and motivation* (Vol. 2, pp. 89-195). Academic Press.

such as 'what', 'when' and 'where'"²⁶. Individuals can recall specific events through episodic memory, such as birthdays, funerals, and wedding scenes. Furthermore, memory can be affected by some factors. For example, pain can disrupt and impair people's memory.

The brain has a natural forgetting mechanism, and forgetting is a natural action. To alleviate this biological limitation, we have developed tools—from books to videos²⁷—to serve as our external memories. These tools have proven helpful because they make it easier for more people than ever to remember.

The process of computers processing information access is similar to the operation of human memory. The method of computing is input²⁸, processing²⁹ and output³⁰. Computers complete these stages by "running" programs. A program is a set of step-by-step instructions that tell a computer exactly how to process the input to produce the desired output³¹. The

²⁶ Clayton, N. S., & Dickinson, A. (1998). *Episodic-like memory during cache recovery by scrub jays*. *Nature*, 395(6699), 272-274.

²⁷ Books and videos are not just for storage. They also have the function of spreading. This article is in context as an example of a storage method.

²⁸ This stage of computing is concerned with getting the data needed by the program into the computer. Input devices are used to do this. The most commonly used input devices are the mouse and the keyboard.

²⁹ The instructions about what to do with the input are contained in a program. During the processing stage the computer follows these instructions using the data which has just been input. What the computer produces at the end of this stage is called output.

³⁰ This stage of computing is concerned with producing the processed data as information in a form that is useful to the user. Output devices are used to do this. The most commonly used output devices are the screen, also called a monitor and the printer.

³¹ Revisionworld. (2022). *Computers, Data and Information*. Revisionworld. <https://revisionworld.com/gcse-revision/ict/computers-data-and-information>

computer transmits and processes, and outputs data and information. Data is any collection of numbers, characters, or other symbols that have been encoded into a format that can be entered into a computer and processed. It has no meaning or context; data has context and becomes information only after being processed by a computer. The main types of data that can be entered into a computer and processed are numbers, text, dates, graphics, and sounds.

In the EU law on personal data protection³², the description of personal data includes: a name and surname; a home address; an email address such as name.surname@company.com; an identification card number; location data (for example, the location data function on a mobile phone); an Internet Protocol (IP) address³³; a cookie ID³⁴; the advertising ID³⁵ of

³² European Commission. (2022). *What Is Personal Data?* European Commission. https://ec.europa.eu/info/law/law-topic/data-protection/reform/what-personal-data_en

³³ When a device (computer, printer) is connected to the network, the device will be assigned an IP address, used as an identifier. Through IP addresses, devices can communicate with each other. If there is no IP address, we will not be able to know which device is the sender and which is the receiver. Andy Patrizio. (2021, December 15). *IPv4 vs. IPv6: What's the Difference?* Avast. <https://www.avast.com/c-ipv4-vs-ipv6-addresses>

³⁴ Cookies serve useful and sometimes essential functions on the web. They enable web servers to store stateful information (such as items added to the shopping cart in an online store) on the user's device or to track the user's browsing activity (including clicking particular buttons, logging in, or recording which pages were visited in the past). They can also be used to save for subsequent use information that the user previously entered into form fields, such as names, addresses, passwords, and payment card numbers. Stephan fiebrandt. (2018, July 17). *What Are Cookies? What Are the Differences between Them (Session vs. Persistent)?* Cisco. <https://www.cisco.com/c/en/us/support/docs/security/web-security-appliance/117925-technote-csc-00.html>

³⁵ An advertising ID is a unique user ID assigned to a mobile device (smartphone, tablet computer), or operating environment, to help advertising services personalizing their offers. It can be sent to advertisers and other third parties which can use this unique ID to track the user's movements, habits, and usage of applications. Thomas Tamblyn. (2017, October 19). *You Can Effectively Track Anyone, Anywhere Just By The Adverts They Receive*. Huffingtonpost. https://www.huffingtonpost.co.uk/entry/using-just-1000-worth-of-mobile-adverts-you-can-effectively-track-anyone_uk_59e87ccbe4b0d0e4fe6d6be5

your phone; data held by a hospital or doctor, which could be a symbol that uniquely identifies a person.

Electronic products to record life have become accustomed to people living in the information age. In the older storage methods, people would engrave the things that needed to be recorded on stone. For example, Sebastien Robert carved the disappearing traditional Cambodian music on the rock in the art project *The Forgotten Melodies of Pleng Arak* (2018-2019) (Figure 6). It is physically preserved the disappearing music. Modern technology enhances storage methods, and changes also change the way people store memories in the brain. People gradually turn their daily life into fragmented data³⁶. Data products on the market now show this phenomenon, Instagram stories³⁷, software that collects users' health information on mobile phones; electronic assistants for schedule reminders; and even AI management systems³⁸ that control home appliances. When people mention a happy moment to others, they often pull out their phones and look for a photo. At this time, memory

³⁶ It comes to the concept of the Quantified Self. The quantified self refers both to the cultural phenomenon of self-tracking with technology and to a community of users and makers of self-tracking tools who share an interest in "self-knowledge through numbers". Quantified self practices overlap with the practice of lifelogging and other trends that incorporate technology and data acquisition into daily life. Tim Ferriss. (2013, April 3). *The First-Ever Quantified Self Notes (Plus: LSD as Cognitive Enhancer?)*. Tim.Blog. <https://tim.blog/2013/04/03/the-first-ever-quantified-self-notes-plus-lsd-as-cognitive-enhancer/>

³⁷ Instagram Stories, people can share photos and videos that disappear from their profile, Feed and messages after 24 hours unless people add them to the profile as story highlights.

³⁸ AI management systems can be defined as a machine or computer that mimics human cognitive functions associated with the human mind, such as learning and problem-solving. Artificial intelligence is a branch of computer science that senses its environment and takes action to maximize its chances of success. In addition, AI can learn from experience, make rational decisions, and respond quickly.

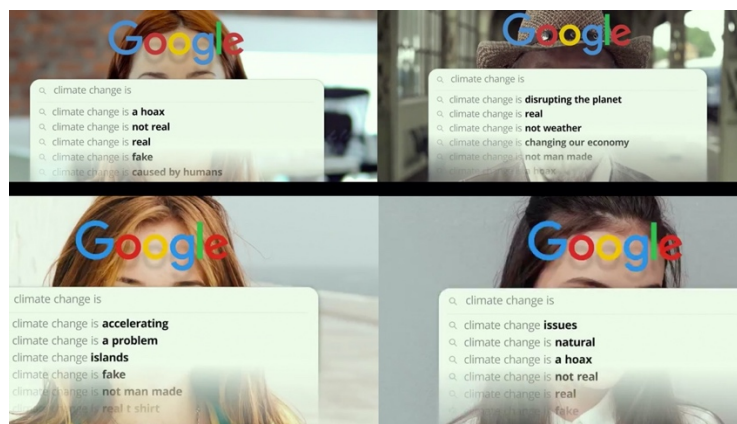
in the brain is already directly linked to the stored data. People referring to a specific event are always trying to find related videos. Moreover, people will be more convinced of the event's truth after seeing the video. Even though videos and photos can be faked through technology, people still believe in such a way of storing memories at the first time.



(Figure 6) Sebastien Robert. (2018-2019). *The Forgotten Melodies of Pleng Arak*. Website official picture [Picture file]. Retrieved May 10, 2021, from <https://sebastienrobert.nl/The-Forgotten-Melodies-of-Pleng-Arak>

The way of storing memory has shifted from physical to digital and online, which on the one hand, helps people to preserve more and better memories, and on the other hand, leads to people's sticky dependence on digital storage. Nevertheless, the decision to keep personal data on digital storage is not the people themselves but the data product companies. What the user's personal data can save is the data determined by the product company, and these are not entirely personal data. Such as, after the shutdown of the Xiami company turned auditory-based songs into a series of words and tables. It also removes history of the interaction and communication between people directly. This is because the data is not important to the company. When they need users to prefer usage habits, the purpose is to

deliver more accurate advertisements or make users more dependent on the data products they produce. For example, Google Search analyze the user's usual search engine habits. People from different regions, age groups, and educational and cultural backgrounds have different results even if they search for the same keyword associations (Figure 7). As a result, they not only can deliver more targeted advertisements to users, but also increase their dependence on the product. At this situation, users will have an illusion and hallucination, thinking they interact with data products based on mutual trust. Modern attachment theory³⁹ has three tenets: bonding is an intrinsic human need; regulating emotions and fears, enhancing vitality; and promoting adaptability and growth. Adaptation is primarily a process, not a physical form or part of the body. Users use data products to rely on them and gradually form a habit.



(Figure 7) Jeff Orlowski. (2020, September 9). *The Social Dilemma*. Screencast website

Netflix [Video file]. Retrieved December 10, 2020, from <https://www.netflix.com/nl-en/title/81254224>

³⁹ Johnson, S. M. (2019). Attachment theory in practice: Emotionally focused therapy (EFT) with individuals, couples, and families. Guilford Publications.

Habits are built through learning and repetition. It is believed that in pursuit of a goal, a person develops a habit. Such as driving to a destination or satisfying an appetite. That begins to associate specific cues with behavioral responses that help achieve the goal—for example, turning on certain streets or stopping because of somewhere a familiar traffic knowledge sign. Over time, these cues may trigger thoughts about the behavior, ultimately the behavior itself. Data products stimulate people behaviorally and psychologically⁴⁰. Habits makes people dependent. When people start to rely on and get used to something, whether it is physical or digital, it is difficult for people to separate from it in a short period.

MEMORY ERASED, IDENTITY LOST

In a modern capitalist society, work, earn money and live. This is the fate that everyone cannot escape. On the one hand, people enjoy the convenience and benefits brought by the development of science and technology; People are caught in the middle of the capitalist society and self-identity under the accelerated technological development. A hidden sense of futility weighs on people's hearts. Rosa⁴¹ said that the progress of science and technology had accelerated the completion of various tasks in society, the timeliness of various things and information in society is getting shorter and shorter, and the speed of multiple activities in people's daily lives is also gaining faster. After the accelerated pace of life, people can only use accelerated technology to deal with many things that need to be solved urgently,

⁴⁰ Wood, W., Quinn, J. M., & Kashy, D. A. (2002). *Habits in everyday life: thought, emotion, and action*. *Journal of personality and social psychology*, 83(6), 1281.

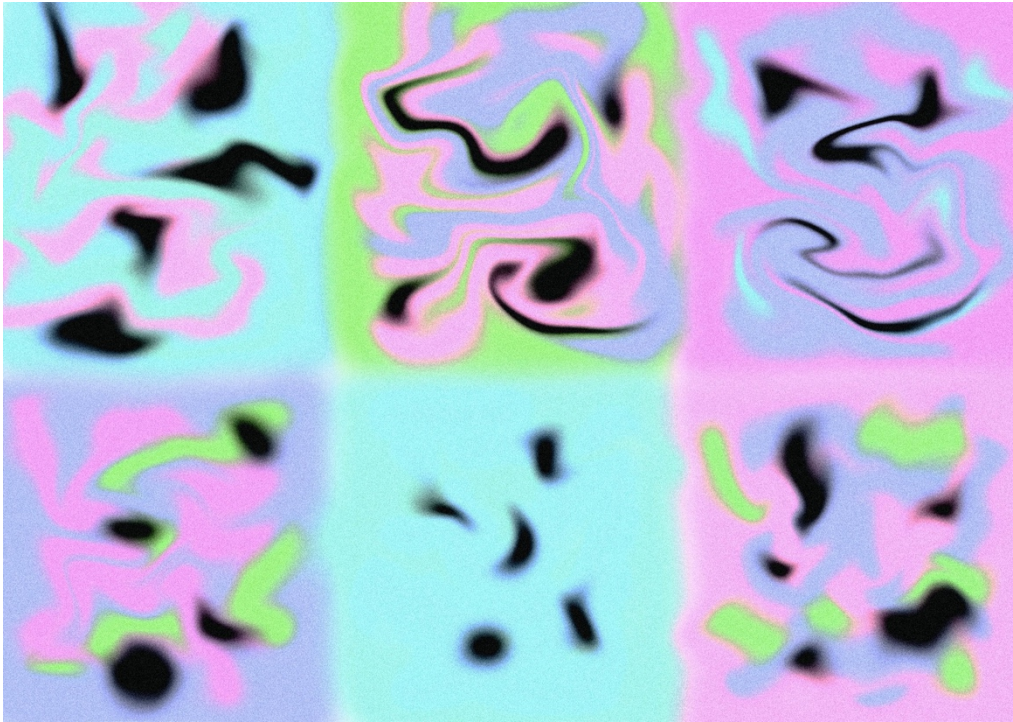
⁴¹ Rosa, H. (2010). *Alienation and acceleration: Towards a critical theory of late-modern temporality* (Vol. 3). Aarhus Universitetsforlag.

thereby accelerating social change. The speed of life will continue to accelerate. The three aspects will continue to repeat in such an accelerating cycle. In this situation, it seems like a waste of time for people to stop and grieve when their data is deleted.

When people recall an event, they cannot emphasize that the photo or video recording of the event is data composed of programming language⁴². For example, the rings exchanged at marriage and the medals in the competition. These physical objects are also not equivalent to people's memories. However, people have a psychological projection⁴³ of objects. Visualizing their feelings is a way for people to express their emotions. For example, I drew some patterns to express the mood after Xiami was shut down (Figure 8).

⁴² A programming language is any set of rules that convert strings, or graphical program elements in the case of visual programming languages, to various kinds of machine code output. Programming languages are one kind of computer language used in computer programming to implement algorithms. Wikipedia. (2022). *Programming Language*. Wikipedia. https://en.wikipedia.org/wiki/Programming_language

⁴³ For example, people leave their personal belongings (clothes, notebooks) when family members die. If people miss a family member who has passed away, take it out and look at it. It is the process of displacing one's feelings onto a different person, animal, or object. It is thought to be an unconscious process that protects the ego from unacceptable thoughts and impulses. McWilliams, N. (2011). *Psychoanalytic diagnosis: Understanding personality structure in the clinical process*. Guilford Press. Wikipedia. (2022). *Psychological Projection*. Wikipedia. https://en.wikipedia.org/wiki/Psychological_projection#cite_note-McWilliams-1



(Figure 8) Yang Yu. (2022). *The image of visualizing mood* (own photo)

Moreover, modern technology has led people's lives to change. Everything from how people record their lives is fragmented and embodied by electronic and data products. Thus it becomes one personal digital archive after another. These personal digital archives⁴⁴ are part of an individual's life history. When a digital file is deleted, personal life history is also deleted. People building their digital archives is a long-term process. Deleting digital files can be done instantly.

On the one hand, people cannot change a habit in a short time, and on the other hand, people's emotions about what they have lost cannot disappear in a short time. The paradox is that when a company making a data product decides to shut down the data product, the notification to users in real-time. Moreover, users' personal data processing is also

⁴⁴ For example, mobile photo albums, social media, and personal websites.

unilaterally screened and decided. However, the user is the creator of personal data whose content is personal to the user. Users put their emotions into using data products, spend time and energy uploading personal data, and leave traces of user usage. However, the user has no control over this. If we say that the memory stored in the brain can be remembered or forgotten by people's own choice, the words written in their notebooks can be erased or left by the individual's choice. Personal data in data products cannot be filtered and processed by users.

Second, in the past, items were only replaced when broken. In modern society, in products dominated by electronics and data, manufacturers will replace objects before they are worn out because of outdated items. Moreover, the manufacturer will push the version of the newest update function. These objects also form a part of people's identity, such as clothes that have been worn for a long time, cars that have been used for many years, and even when people are young, people will give their objects a name. These objects are, to some extent, internalized as part of people's selves. They mark people's personal qualities and become part of their life history. These familiar objects become the habitation of a part of the self. Furthermore, constantly losing or throwing away these items is losing and changing a part of people's self.

When manufacturers continue to introduce new data products, products have not yet become a part of people. At this time, changes in the way people get along with objects will cause a kind of alienation⁴⁵. People worry about not being able to keep pace with this accelerating

⁴⁵ This article refers to feelings of powerlessness. It is called Social alienation in psychology. It is a person's feeling of

society, but at the same time not being able to find a balance with these rapidly changing objects. When the familiar data products are deleted or closed--the personal data that carries a part of people's life history and self is also lost. Nevertheless, people's feelings and emotions about loss continue. However, people cannot stop catching up with this society for caring about themselves. They can only continue to get along with new data products with their broken self and even suppressed emotions. All these make people further isolated in this world.

MY PERSONAL RESOLUTION AGAINST THE LOST

This chapter describes how to use the memories created by oneself to resist the memory deleted by external factors. Begin by finding traces of feelings, translating feelings, and then creating new memories.

Escape from freedom⁴⁶ says that some aspects of modern industrial society (especially its monopoly stage⁴⁷) have contributed to a profoundly powerless, lonely, worried, and uneasy personality. With the rapid economic growth, modern personal loneliness and feelings of powerlessness are also growing. In our society, emotions are frustrating. It has become ideal to think and live without emotion. "Feelings" have become synonymous with unhealthy and

disconnection from a group – whether friends, family, or wider society – to which the individual has an affinity. Wikipedia. (2022). *Social Alienation*. Wikipedia. https://en.wikipedia.org/wiki/Social_alienation#cite_note-robertankony.net-1

⁴⁶ Erich Fromm. (1952). *Escape from Freedom*. Routledge & Kegan Paul.

⁴⁷ It is the term widely used to denote the stage of capitalism. And Its characteristics include profit maximizer, price maker, high barriers to entry, single seller, and price discrimination. Sweezy, P. M. (2004). Monopoly capitalism. *Monthly Review*, 56(5), 78-86.

The feeling and emotion of nowhere to stay are like a trapped beast. In particular, negative emotions are driven by society. However, people are not machines after all. People are people because people have unpredictable emotions. For example, for looking for lost feelings, I used the data table left after Xiami was closed and put the musicians I collected in the table in time units in a data visualization machine called Gephi⁴⁸ (Figure 9). I tried to visualize the names to show the long process of collecting these musicians. This shows that the traces of users using data products can be displayed as visualization, even if the traces are imaginary in the general perception.



⁴⁸ Gephi is open-source network analysis and visualization software that can study word co-occurrence analysis. For example, use it to research words that appear on Twitter about artificial intelligence technology used in the Australian construction industry. Jacomy, M., Venturini, T., Heymann, S., & Bastian, M. (2014). *ForceAtlas2, a continuous graph layout algorithm for handy network visualization designed for the Gephi software*. *PloS one*, 9(6), e98679.

far. The general story of the novel is that a woman is always looking for a man who can only see his back. The text's narrative is mainly about what happened in the process of finding the man and much personal inner monologue⁴⁹. Mainly characters created are transformations of the author's different aspects that originated in real life. The mainline links the fragmented lives together--searching for the invisible man. Magritte's "La Reproduction interdite" (Figure 11) (copy prohibited). It can also express emotions in the novel. The back of a man is looking in the mirror, but what appears in the mirror is a man's back. In this novel, the protagonist is looking for a man who only sees his back. When the protagonist is looking for and chasing him, he can only see the back but not the front. As long as the front is not visible, the protagonist can keep chasing to see him. In this cycle, the story's protagonist regards the man with only his back as a symbol of hope in life. The life described in the novel is fragmented, and the protagonist's emotions are powerless by the fragmented life, but every time the man who only sees his back can give the protagonist hope.

⁴⁹ A novel from a first-person perspective.



(Figure 10) Yang Yu. (2021-2022). *The novel* (own photo)



(Figure 11) René Magritte. (1937). *La reproduction interdite* [Picture file]. from

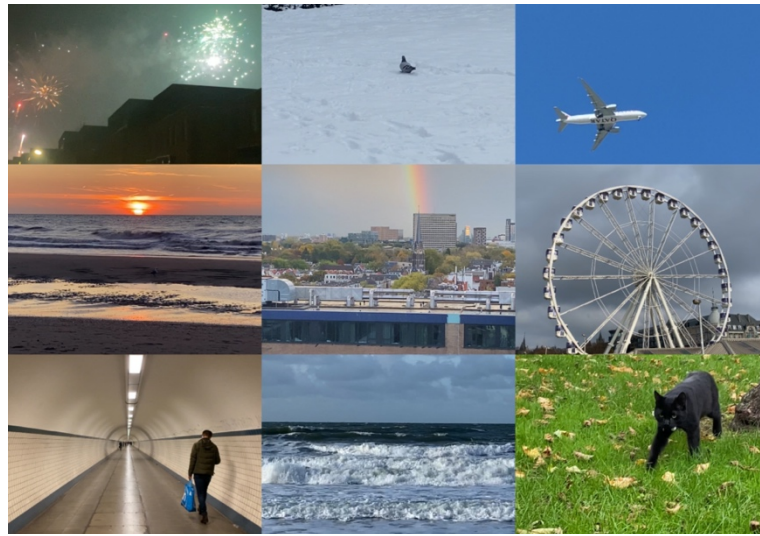
<https://www.boijmans.nl/collectie/kunstwerken/4232/la-reproduction-interdite-verboden-af-te-beelden>

Fiction is not a linear narrative. Because the general human memory is jumping recalls.

Using novels also can find and sort out people's post-positioned emotions. Emotion and

memory can also use videos to record the moments that touch people daily to translate

(Figure 12). For example, I record the moving, lonely and exciting moments every day.



(Figure 12) Yang Yu. (2021-2022). *Daily live* (own photo)

By combing and documenting novels and daily videos, to begin filtering out materials that can translate people's emotions when faced with loss. Starting from the user's experience of Xiami's death. Other users and I feel powerless, sad and lonely after the passing of Xiami. The lonely objects in space's visual form can present closer to these feelings. Moreover, these solitary individual objects resonate strongly with people. For example, I have collected chairs that appear in different places (Figure 13). Some chairs appear in such strange places that no one can use them. I am an Asian living alone in Europe, living in a different environment, and speaking a foreign language. My sense of loneliness resonates in the same way when I see these lonely chairs. As sad as the moment I saw the lonely chair, I wanted to preserve the memory of that moment. By saving photos or videos of similar emotional memories, I can see my emotional files and find traces of my feelings. Every time I see these chair photos, my emotions are mobilized again.



(Figure 13) Yang Yu. (2020-2022). *The lonely chairs* (own photo)

In modern society, we prohibit the expression "the sense of tragedy". In today's accelerated society, the face of "tragedy" is forbidden⁵⁰. For example, yesterday, my friend's father passed away; very sad. However, I have a ton of homework to do, and today is the deadline. So I said to her, give her twenty minutes to comfort her or I will miss the deadline. Even though we clearly understand that the death of a loved one is more important than work. However, in the face of losing a loved one, we still limit the time for grief. Just like, when people face the loss of familiar data products, they also set a deadline for the sadness that follows. Because we clearly understand that these sad emotions are not beneficial to our lives. When people face the deletion of familiar data products, again and again, they limit their sadness again and again. But emotions are uncontrollable, and part of the ego in data is lost in the tug of the accelerated cycle of life and trying to control emotions. By way of non-

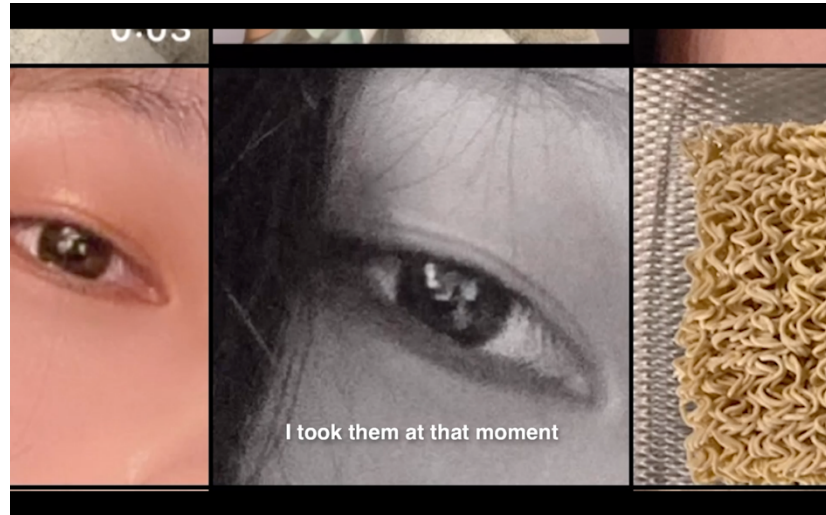
⁵⁰ Erich Fromm. (1952). *Escape from Freedom*. Routledge & Kegan Paul.

stop recording of life against such a pulling whirlpool by collecting and accumulating fragmented life.

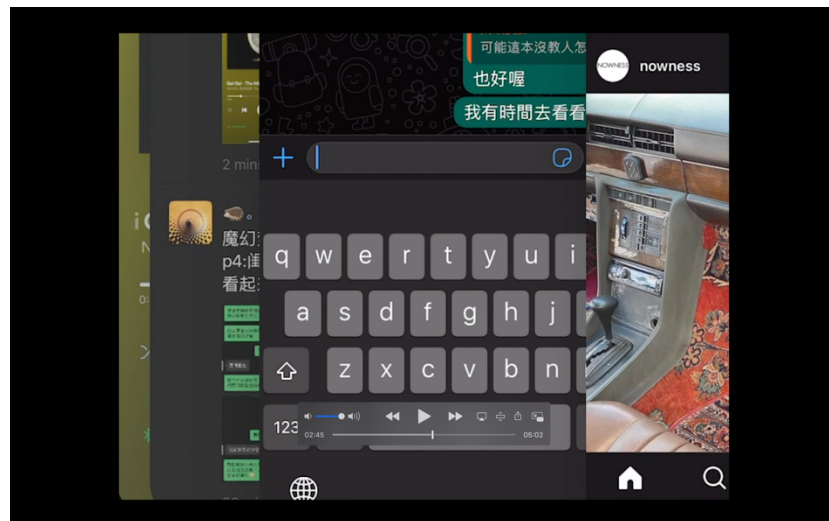
So, I want to use the film (Figure 14, 15) to create my memories to preserve the self of sadness and anger that I was in the face of loss. The Revolution of everyday life⁵¹ mentioned that people could breathe and suffer pain only when things have some significance. Because this habit of taking things seriously has become a human instinct or permanent intuition, modern society has turned people into actors, constantly playing different roles under which people break down life into a series of stereotyped actions. The satisfaction of fulfilling our desired tasks by fulfilling different roles. A thirty-five-year-old man was driving to work every morning, walking into the office, sorting card information, having lunch in town, playing poker, rearranging cards, getting off work, having two glasses of wine, going home, meeting his wife, hugging His kids, watching TV, eating steak, going to bed, having sex, sleeping⁵². The self of this instinctive and intuitive disappears into the stereotypes of fragmented life.

⁵¹ Raoul Vaneigem. (1983). *Revolution of Everyday Life*. Left Bank Distribution.

⁵² Raoul Vaneigem. (1983). *Revolution of Everyday Life*. Left Bank Distribution.



(Figure 14) Yang Yu. (2020-2022). *The screenshot of film (own photo)*



(Figure 15) Yang Yu. (2020-2022). *The screenshot of film (own photo)*

Robert Frank once said:

“Things move on, time passes, people go away, and sometimes they don't come back, only the photographs remain.”⁵³

Perhaps in the development of modern technology, only images can most directly

⁵³ Sean O'hagan. (2019, September 11). *Robert Frank: The Outsider Genius Whose Photographs Laid Bare America's Soul*. The Guardian. <https://www.theguardian.com/artanddesign/2019/sep/11/robert-frank-the-americans-outsider-genius-photography>

remember and present people's memories. Memory can only interfere with the actual present if it is real and potentially exists near the present. However, Emotions are internal rather than external. But film can spatially organize the external world to form regional distributions. The ordering and synthesis of perception give us an external world of various extended objects. Everyday vision takes the form of this externality. People cannot see the color, tone and structure of the world steadily because it changes from moment to moment. People can only see objects separated from each other, stable in time, and often in an independent and unified outer space. For example, I walk into my studio and see those books I will read, that chair I will sit in. The world is a world that has a significant function and continues in time. Since emotion occurs and travels among people, it is imminent, and it is not objectifying and quantifying a thing so that we can perceive or be aware of it. Through the film, emotions work on us in various ways—lights make our eyes shy away, sounds make our hearts race, and violent images make our blood boil.

Furthermore, the movie better synthesizes those images, sounds, and spaces that can trigger people's inner emotions. In this research, the film revolves around real emotional moments beneath the surface of fragmented life. The author uses this method to locate self-feeling⁵⁴ and self-perception⁵⁵. The point of view of a person's narrative is crucial to the defiance and action that is lost.

⁵⁴ For example, the body hurts when a finger is injured; people feel happy when celebrating a festival.

⁵⁵ Self-perception is the conclusions that people create about their attitudes and feelings based on their behaviors. For example, a person can conclude that they really like rice because it's the main starch they always order at dinner.

Use electronic products created by modern technology to record fragmented daily life. Using the products of technology to fight the acceleration of technology is my way of protesting against the lost data self. This article does not want to erase the tremendous progress and achievements that technology has brought to the world and humanity. But the acceleration of technology and society has resulted in a constant loss of familiar data products. It causes people to be partially isolated, and thus their emotions are also displaced. Even feelings are stigmatized. People are afraid to confront their instincts and intuitions. The accelerated cycle of modern technology makes people want to touch the real-life moment but lose it. Data self-isolation, emotional loss and exile. Hermann Hesse has a poem that expresses such feelings and situations:

“The dying of a play of clouds,
Glittering snow, a rainbow,
A butterfly, already flown away,
To whom the sound of laughter
That barely touches us in passing,
Can mean a celebration
Or can give pain. We love
That to which we are similar, and we understand
What the wind has written in the sand.”⁵⁶

People are forced to run forward in such a situation. But we know that society and the

⁵⁶ Sharon krebs. (2009, April 30). *Written in the Sand (English Version)*. *Lieder*.

https://www.lieder.net/lieder/get_text.html?TextId=123554

People are forced to run forward in such a situation. But we know that society and the world will never stop developing. So, this state is a lot like writing everything on the sand. We are desperately catching up with the acceleration of technology and life. But it seems that nothing is stored in this world. This research wants to keep those traces that are not noticed or seen in the form of videos, even though the videos will disappear one day. We still hope that this accelerated world will give people a chance and space for their feelings.

Conclusion

This article begins with the death of Xiami, a Chinese music data product. Based on the author's own experience and user experience, it discusses how to face the disappearance of familiar data products as a member of Gen Y's online natives. The resulting loss of online self and identity affects people's emotional isolation and abandonment. Finally, this study uses the form of film to create a memory to combat memory loss.

Nothing is eternal. It is a more appropriate description of this era. In today's society, technology and life are all accelerating. People are asked to put efficiency first. Ego feelings are temporary. Familiar objects will disappear and be replaced one day. People's ego is removed in such situations, and emotions are put on hold. People gradually feel isolated in society and don't dare to stop.

Human instincts and intuitions are weakened. This leads to a loss of people's ability to feel life. Everything in life is like floating in the air—the instability of the ego brought about by the rapid replacement and deletion of memories. The backside of these

technological accelerations presents a looming question - how do we get along with it.

Recording life with videos and photos and keeping memories are the convenient means brought by modern technology for people. But maybe one day, these videos and photos we recorded will disappear. So what? The more likely it is to disappear, the harder it to record. We need records to face real life and life. And these traces may be the most important things we live in this world as ordinary people.

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