Unpublishing

Unpublishing in the Digital Era

NADINE ROTEM-STIBBE

Every minute I spend here I am leaving
more traces. I leave traces if I do not
speak with anyone, since I stick out
as a man who won't open his mouth;
I leave traces if I speak with someone
because every word spoken is a word
that remains and can crop up again later,
with quotation marks or without.

Italo Calvino, *If on a winter's night a traveller.*

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Introduction

Preservation of knowledge and culture is something which people have put immense effort into throughout the centuries; creating and maintaining libraries, archives and inventing new ways of classification. Neglecting or destroying the repository of knowledge and culture used to be effortless in comparison. With the digital age, and the inexhaustible growth of the Internet, production is faster, change is constant and deletion is becoming ever harder. The desire to delete or hide in the digital networks is a growing concern, as technologies are being developed into more efficient logging systems. With my interest in publishing, I was curious to investigate quite the opposite; the undoing of publishing. What does it mean, what are the implications on our society and is it even truly possible?

I will address these issues in my thesis as well as the specificity of this point in time: 2018. Beginning with the definition of the term unpublishing as it stands today, with historical references to censorship and a look at the meaning of publishing. I make the distinction between the simple dissemination of raw data and publishing, by which I mean: the intention of giving knowledge to the public. With the help of online references I quickly show that deleting online content is so impractical it is nearly an absurd idea.

I develop my point by describing the software design of various platforms (Facebook, Google, WikiMedia and Git) which make unpublishing unviable, despite each one having very different values of publishing, they end up having the same difficulty to get rid of it. Following the software, I look at algorithms that are creating content and question whether it can be described as publishing in the first place. I reflect on the difference between the ease of publishing by algorithms, to the difficulty of unpublishing and the vast manual and human efforts that have to go into it, along with talking about those who decide on the ethics and power to unpublish. I then bring up the phenomena where if you try to delete something, you bring more attention, which has been dubbed *The Streisand Effect*. Further on, I talk about the newly introduced European law; *The Right To Be Forgotten* (2006), to then show that despite laws and manual efforts, the content can always be found. Concluding with freedom of expression, its limitations and the paradoxes it brings into being.

CHAPTER 1

Data, Information and the Absurdity of Unpublishing

To Unpublish – as I type this word my autocorrect software does not recognise it. It is a new verb that has started appearing on online platforms but has also already been included in several online dictionaries, Oxford Dictionaries (oxforddictionaries.com) defines the following verb:

> Make (content that has previously been published online) unavailable to the public.

Proper use of the word is illustrated in the online Oxford Dictionary with two telling, and relevant, examples to this thesis:

- 'Once the images have been published on the internet it will be practically impossible for any court order to unpublish them.'
- 'After an outcry on Twitter, the magazine unpublished the column, but the editors at the blog Retraction Watch managed to find a cached version, reminding us all that the internet never forgets.'

At the time of writing (in the year 2018 but keep up to date here: www.internetlivestats.com), 51% of the world's population has access to the Internet. This means publishing content is getting easier and faster by the day. Publishing is often an intentional act, applied as a way to express ourselves. However, just as often we unknowingly leave a trail of digital content, that automatically disseminates into the network. We lose track of both where we have been, and what we have told the world about ourselves, but the internet doesn't. To unpublish is to try to retake control. We actively look to remove a specific content from the internet, to limit what others can know about us. The dictionary examples remind us that this is easier said, than done.

The use of the verb *To Unpublish* can only be traced back on the internet, mostly for content management systems (CMS) or software commands lines (such as npm). Historically, items have been removed from circulation for centuries; books naturally going out of print, works put on a censor's list and removed from public libraries, the destruction of the Library of Alexandria or the Nazi

book burning. One early form of censorship worth mentioning is *The Index Librorum Prohibitorium* or List of Prohibited Books (fig. 1). This was a practice in the Roman Catholic church of censoring via a list of books to be banned. The first edition was published in 1559, with 19 other versions published throughout the centuries, and the final version published in 1948, only to be suppressed in 1966. The list included texts that were believed to threaten the morals and faith of the Christian doctrine, notably Galileo's writings were treated as foolish and absurd which lead the Inquisition to be put him under house arrest for the rest of his life. However, as the nature of publishing changed with the popularity of the Gutenberg printing press in the 15th century, books that were rare or deemed unholy, became much harder to control as they could be mass-produced. Putting the author under house arrest wouldn't help to stop the text from spreading. In the 21st century, the authorities of the digital networks are still doing their best to censor what seems to be unholy in their terms, but controlling the flow is becoming ever harder.


INDEX LIBRORVM
PROHIBITORVM,
CVM REGVLIS CONFECTIS
per Patres a Tridentina Synodo delectos,
auctoritate Sanctiſs. D.N. Pij IIII,
Pont. Max. comprobatus.
VENETIIS, M. D. LXIIII.

Fig. 1 – Index Librorum Prohibitorum (1559)

Before proceeding with the notion of unpublishing, I'd like to make a distinction between publishing and disseminating data. Data is something given, it is raw, a symbol. The dissemination of data is not intended to spread, it might be published then propagated or it might never have been published but leaked. This is to say not all data is published. Our private letters or messages should not be public in the manner of our Facebook posts. The data that we produce only becomes publishing once it has been analysed and dissipated through the network into the public sphere. Publishing, thus, is about making knowledge intentionally public (to the people). It can vary from writing a novel, which is published in a book form under an author's name, or writing your love for someone anonymously on a wall of a public toilet.†

As digital memory storage expands, the trail of data that we produce, and ultimately publish, is inexhaustibly growing. Once it reaches the people and comes out as knowledge, it becomes more meaningful, and much harder to forget, let alone to destroy. Taking the example of the public toilet; if I were to write something on the wall of a public toilet I could not unpublish it, if the public has already seen it, even if I erase the ink from the tiles, it is part of a specific public memory, if the message is interesting enough it will be propagated through oral transmission or documented in a photograph. If not interesting however, the author remains anonymous, and the message will either be distorted or forgotten. Comparing to the online world, where writing this same interesting or uninteresting message on a Facebook wall, *can* be 'unpublished' (which is literally the term used for retracting a publication). Though, erasing the traces of who, when, where and what was published would be a much harder task.

† The act of deliberately inscribing markings on lavatory walls is called; 'Latrinalia' coined by Alan Dundes in 1966.

Typically, knowledge is defined in terms of information, and information in terms of data (first specified in detail by R. L. Ackoff in 1988 'DIKW'). Data, from 'Datum' in Latin means 'something given'. Data constantly gives itself, disseminates itself, but how do you get data back? David Thorne, an Australian Satirist with a website named 27bslash6; in reference to George Orwell's London address, publishes his correspondences with people. Thorne's email

Fig. 2 – Overdue Account →

From: Jane Gilles
Date: Wednesday 8 Oct 2008 12.19pm
To: David Thorne
Subject: Overdue account

Dear David,

Our records indicate that your account is overdue by the amount of $233.95. If you have already made this payment please contact us within the next 7 days to confirm payment has been applied to your account and is no longer outstanding.

Yours sincerely, Jane Gilles

From: David Thorne
Date: Wednesday 8 Oct 2008 12.37pm
To: Jane Gilles
Subject: Re: Overdue account

Dear Jane,

I do not have any money so am sending you this drawing I did of a spider instead. I value the drawing at $233.95 so trust that this settles the matter.

Regards, David.

From: Jane Gilles
Date: Thursday 9 Oct 2008 10.07am
To: David Thorne
Subject: Overdue account

Dear David,

Thank you for contacting us. Unfortunately we are unable to accept drawings as payment and your account remains in arrears of $233.95. Please contact us within the next 7 days to confirm payment has been applied to your account and is no longer outstanding.

Yours sincerely, Jane Gilles

From: David Thorne
Date: Thursday 9 Oct 2008 10.32am
To: Jane Gilles
Subject: Re: Overdue account

Dear Jane,

Can I have my drawing of a spider back then please.

Regards, David.

From: Jane Gilles
Date: Thursday 9 Oct 2008 11.42am
To: David Thorne
Subject: Re: Re: Overdue account

Dear David,

You emailed the drawing to me. Do you want me to email it back to you?

Yours sincerely, Jane Gilles

From: David Thorne
Date: Thursday 9 Oct 2008 11.56am
To: Jane Gilles
Subject: Re: Re: Re: Overdue account

Dear Jane,

Yes please.

Regards, David.

From: Jane Gilles
Date: Thursday 9 Oct 2008 12.14pm
To: David Thorne
Subject: Re: Re: Re: Re: Overdue account

Attached <spider.gif>

thread with Jane illustrates the essence of digital information (fig. 2). The dialogue continues, with Jane insisting that she has returned the original spider:

> I copied and pasted it from the email you sent me.

But of course, there is no original spider in the way that there would be an original paper drawing. And with every new email in the chain, the spider is replicated again. This is how data is. Once data is created it can only disseminate, the very idea of receiving your data back is absurd. The very nature of data in the network makes it impossible to delete. To try to retrieve it is to work against the force of nature; or worse, the forces of the internet.

The intention to unpublish, is not the same as deleting or destroying anything, the purpose is to limit the access to which public can view the information. An individual wishing to remove a previously published content might do so to protect their privacy and identity. Or a large corporation might want to remove content as censorship, in order to protect its reputation, or its commercial success. There are many reasons why someone might want to unpublish. Nonetheless, the very nature of data can make unpublishing unviable. Once knowledge is public, then even if its destruction is in principle possible, the process of unpublishing becomes harder. If 'knowledge' has already spread through the network, limiting its access won't stop it from spreading.

CHAPTER 2

Dissecting the Impossibility of Unpublishing in Software

There are many reasons why deleting data is, in practice, impossible. For data to be truly deleted, you must physically destroy the hardware because recoveries can always be made. For data that is on the internet, that is, on someone else's server, finding and destroying the hardware with the specific unwanted content would likely be impossible. A plot that has become a common part of the present day dystopia narrative, first introduced through the story 'Fight Club', a novel by Chuck Palahniuk (1996), later adapted to film by David Fincher (1999). The main character plots to erase the credit history of society through the physical destruction of records housed in the buildings of major banks and credit companies. This idea has become imbued in popular culture as means to escape or confront the dark reality of 'Technocapitalism'; the rapid technological innovation at the core of the capitalist market evolution.

This concept is updated in the recent TV series Mr. Robot (2015) – in which the lead character, Elliot Alderson, a cybersecurity engineer and hacker, is recruited by 'Mr. Robot', to join a group of hacktivists called 'fsociety'. The group aims to destroy all debt records by encrypting the financial data of the largest conglomerate in the world, E Corp. Elliott plots to physically destroy their hardware by hacking the batteries so that they heat up and blow up their data centres. While not physically impossible, Elliot's plan is so complex, even to those with more extensive resources, that more unsophisticated methods tend to be the first recourse when there is data to destroy.

When the British spy agency GCHQ made *The Guardian* editors physically destroy the hardware containing top-secret documents leaked by Edward Snowden, they used 'angle-grinders, dremels – a drill with a revolving bit – and masks' (Harding, 2014). To help, the agency additionally provided one piece of hi-tech equipment, a 'degausser', which destroys magnetic fields, and erases data. Nevertheless, for all this effort and hi-tech equipment, the destruction of the Snowden files did not stop the flow of intelligence-related stories. Copies of the documents existed in several jurisdictions, and *The Guardian* editors confirmed they would continue to have access to them. The destruction was at best a symbolic act of intimidation.

Even where contents are successfully deleted, metadata often will live on. Metadata can keep a record of when, where, and by whom a specific piece of content was deleted. Metadata is sometimes as telling as the content itself, since it allows interactions to be reconstructed in great detail – even where their precise nature remains unknown. In fact Snowden's revelations about the NSA archiving bulk telephone metadata, was one of the agency's most useful tools, they gathered all the numbers called, IP adresses and call durations. (Szoldra, 2017).

Across a range of social networks and media platforms, delete buttons are an interface to a promise emerging from a social desire. But the promise is illusory, and the desire can rarely be fulfilled. I will dissect specific examples on how hard it is to truly delete published content on the following platforms; Facebook, Google, Git and Media Wiki.

Facebook & Google

Facebook is an opaque social media platform that has also evolved into a publisher – as is nicely explained in an article from *Wired* magazine: 'Inside the Two Years That Shook Facebook—and the World'. This is important to mention because being a publisher comes with a lot more responsibility than a mere platform.

> It appears that Facebook did not, however, carefully think through the implications of becoming the dominant force in the news industry. What is fair? What is a fact? How do you signal the difference between news, analysis, satire, and opinion? Facebook has long seemed to think it has immunity from those debates because it is just a technology company—one that has built a 'platform for all ideas.' (Thompson and Vogelstein, 2018)

Facebook was slow to recognise that it had become a publisher and assume the new responsibilities this entailed. Every Facebook scandal on the news makes them slightly modify their terms, but their core business is to explore personal data of their users, so

true change can never happen without changing its very essence. Concerning deletion; here's an example of an attempted change: Until recently the platform didn't even have a delete button for existing accounts. The only option was to 'deactivate' an account. Today (as of 2018) there is the 'delete' option, meaning that at least, in principle you can remove your account – not just suspend it. However if you want to find out how to permanently delete your account, in the Frequently Asked Questions (FAQs) Facebook explains that:

> Copies of some material (example: log records) may remain in our database [...]. Some of the things you do on Facebook aren't stored in your account. For example, a friend may still have messages from you even after you delete your account.

So even the 'deletion' option is not a complete deletion. Your information will be kept on their database – and the distinction between deactivation or deletion becomes at best blurred, and at worst, irrelevant.

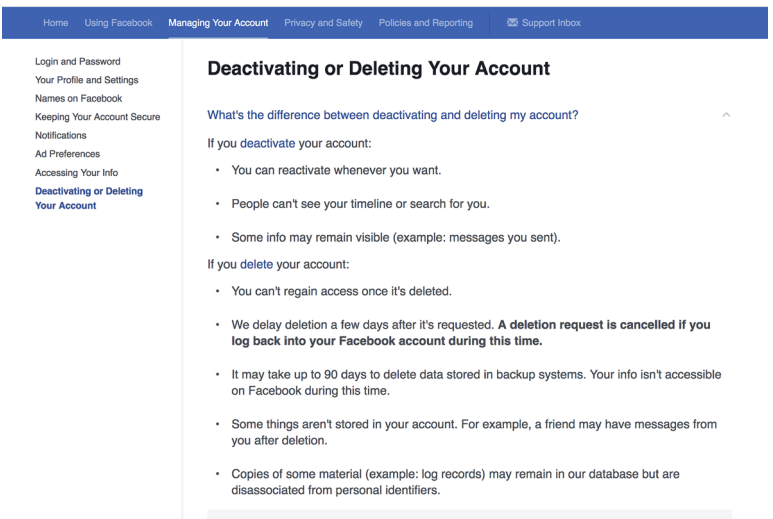
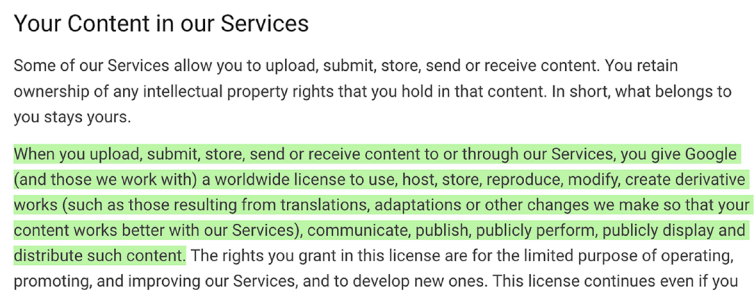


Fig. 3 – Deactivating or Deleting Your Account

Google has similarly unsettling terms of use:

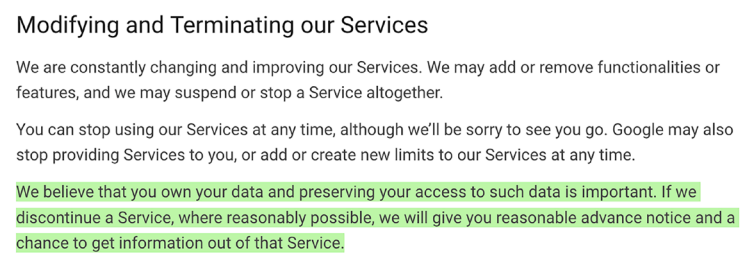


Your Content in our Services

Some of our Services allow you to upload, submit, store, send or receive content. You retain ownership of any intellectual property rights that you hold in that content. In short, what belongs to you stays yours.

When you upload, submit, store, send or receive content to or through our Services, you give Google (and those we work with) a worldwide license to use, host, store, reproduce, modify, create derivative works (such as those resulting from translations, adaptations or other changes we make so that your content works better with our Services), communicate, publish, publicly perform, publicly display and distribute such content. The rights you grant in this license are for the limited purpose of operating, promoting, and improving our Services, and to develop new ones. This license continues even if you

Fig. 4 – Google Terms of Service



Modifying and Terminating our Services

We are constantly changing and improving our Services. We may add or remove functionalities or features, and we may suspend or stop a Service altogether.

You can stop using our Services at any time, although we'll be sorry to see you go. Google may also stop providing Services to you, or add or create new limits to our Services at any time.

We believe that you own your data and preserving your access to such data is important. If we discontinue a Service, where reasonably possible, we will give you reasonable advance notice and a chance to get information out of that Service.

Fig. 5 – Google Terms of Service

> When you upload, submit, store, send or receive content to or through our Services, you give Google (and those we work with) a worldwide license to use, host, store, reproduce, modify, create derivative works (such as those resulting from translations, adaptations or other changes we make so that your content works better with our Services), communicate, publish, publicly perform, publicly display and distribute such content.

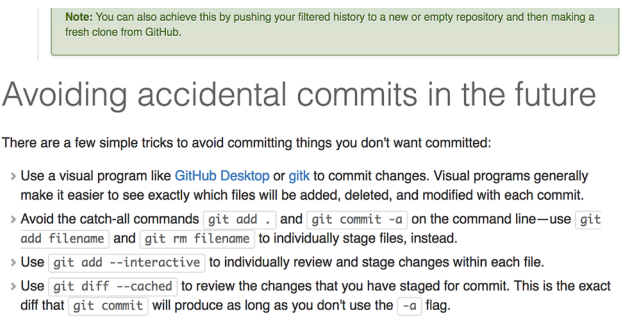
On the very same page only a few paragraphs away, they continue:

> We believe that you own your data and preserving your access to such data is important. If we discontinue a Service, where reasonably possible, we will give you reasonable advance notice and a chance to get information out of that Service.

A rather contradictory stand, one could say. For all that they 'believe that you own your data' in the second paragraph, they don't actually delete or dispose of it when you want to terminate your relationship with them.

Git (& GitHub)

If we look deeper into unpublishing with Git, a tool for developers with a system for tracking changes in files, we can see here just how many layers there are in order to really remove something from this tracking tool. On their help page, they give a 9-step process in order to remove data, they even offer another tool that might help in the beginning. Git is self contained and is offline, but GitHub is a social network; it is online and a proprietary system in which users don't have access to all layers. The final precaution on Git's editing FAQ is interesting:


Note: You can also achieve this by pushing your filtered history to a new or empty repository and then making a fresh clone from GitHub.

Avoiding accidental commits in the future

There are a few simple tricks to avoid committing things you don't want committed:

- Use a visual program like GitHub Desktop or gitk to commit changes. Visual programs generally make it easier to see exactly which files will be added, deleted, and modified with each commit.
- Avoid the catch-all commands `git add .` and `git commit -a` on the command line—use `git add filename` and `git rm filename` to individually stage files, instead.
- Use `git add --interactive` to individually review and stage changes within each file.
- Use `git diff --cached` to review the changes that you have staged for commit. This is the exact diff that `git commit` will produce as long as you don't use the `-a` flag.

Fig. 6 – GitHub Help

'Avoiding accidental commits in the future.' For those unfamiliar with git, a 'commit', is an individual change to a file. It's like when you save a file, except with Git, every time you save it creates a unique ID, that allows you to keep record of what changes were made when and by whom. In other words, it's a form of metadata – and it can be tracked. If you don't want your edit to be tracked, the only route is not to commit to a change.

This brings back a conspicuous memory from back at secondary school in a Sex Education class. Every week the whole class was

made to repeat out loud what became a saying:

> The safest sex, is no sex.

There is not much space for interpretation. If you're going to regret it, don't do it in the first place. Sexual Abstinence. Just don't do anything, quite contrary to Nike's slogan *Just do it*. The message is pretty clear, the institutions are trying to discourage teenage pregnancy and STDs, by saying don't take risks of transmitting diseases, or data. The safest way to unpublish is not to publish, not to commit, or let alone push. †

Fig. 7 – Safe Sex? Save Sex

† A *push* refers to sending your committed changes to a remote repository, such as a repository hosted on GitHub. If you change something locally, for instance, you'd want to then *push* those changes so that others may access them.

MediaWiki

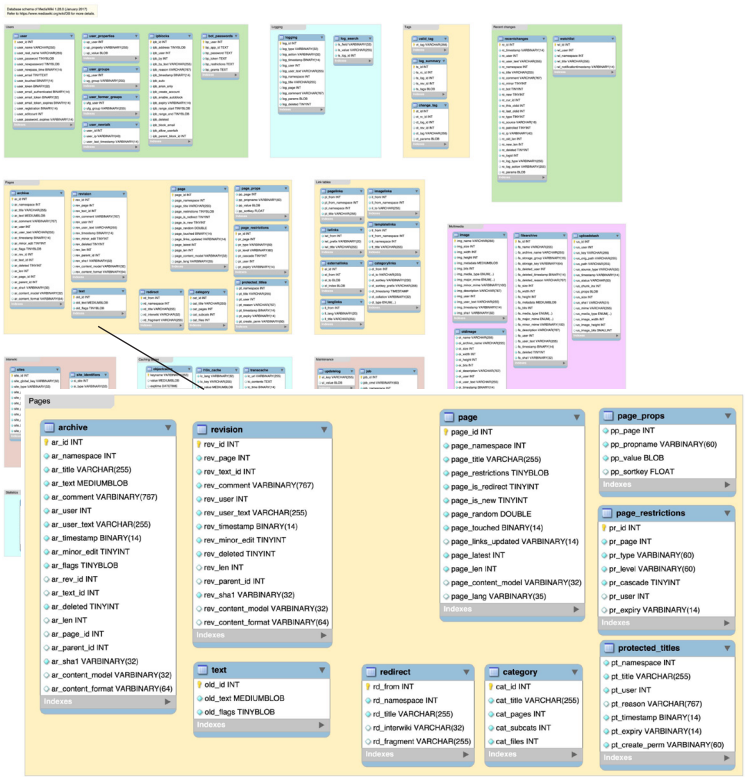
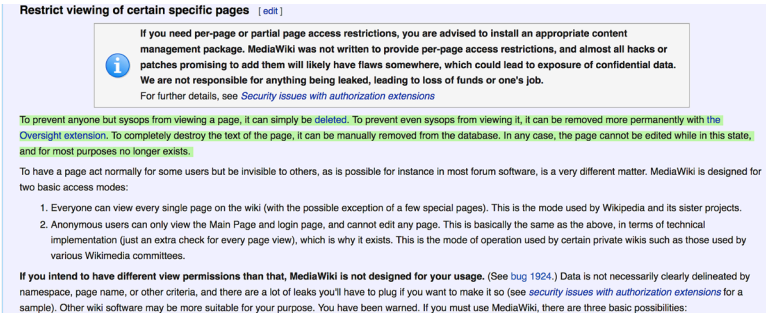


Fig. 8 – MediaWiki Database Schema

MediaWiki is a free and open-source software released in 2002, its first version served to create the Wikipedia encyclopedia website, one of the largest websites to exist. When looking at the database schema for MediaWiki (see fig. 8) we can see there are 46 tables, nine of which relate to 'pages' and the content of the page is spread between tables named; revision, archive, text, among others. This shows the level of complexity of a single page creation. MediaWiki's manual explains how to restrict who gets to see any changes an editor has made. Notice the language used:

> To prevent anyone but sysops (system operators) from viewing a page, it can simply be deleted. To prevent even sysops from viewing it, it can be removed more permanently

with the Oversight extension. To completely destroy the text of the page, it can be manually removed from the database. In any case, the page cannot be edited while in this state, and for most purposes no longer exists.



Restrict viewing of certain specific pages [edit]

If you need per-page or partial page access restrictions, you are advised to install an appropriate content management package. MediaWiki was not written to provide per-page access restrictions, and almost all hacks or patches promising to add them will likely have flaws somewhere, which could lead to exposure of confidential data. We are not responsible for anything being leaked, leading to loss of funds or one's job.
For further details, see *Security issues with authorization extensions*

To prevent anyone but sysops from viewing a page, it can simply be deleted. To prevent even sysops from viewing it, it can be removed more permanently with the Oversight extension. To completely destroy the text of the page, it can be manually removed from the database. In any case, the page cannot be edited while in this state, and for most purposes no longer exists.

To have a page act normally for some users but be invisible to others, as is possible for instance in most forum software, is a very different matter. MediaWiki is designed for two basic access modes:

1. Everyone can view every single page on the wiki (with the possible exception of a few special pages). This is the mode used by Wikipedia and its sister projects.
2. Anonymous users can only view the Main Page and login page, and cannot edit any page. This is basically the same as the above, in terms of technical implementation (just an extra check for every page view), which is why it exists. This is the mode of operation used by certain private wikis such as those used by various Wikimedia committees.

If you intend to have different view permissions than that, MediaWiki is not designed for your usage. (See bug 1924.) Data is not necessarily clearly delineated by namespace, page name, or other criteria, and there are a lot of leaks you'll have to plug if you want to make it so (see *security issues with authorization extensions* for a sample). Other wiki software may be more suitable for your purpose. You have been warned. If you must use MediaWiki, there are three basic possibilities:

Fig. 9 – MediaWiki Manual: Preventing Access

Several points are worth noting here. First, while the user is offered the possibility to *delete* content, what in fact occurs is a change of access. Users classified as editors (sysops) still have access to the content. So talk of deleting masks a technical workaround, that doesn't actually result in the deletion of any material. Second, in order to stop sysops from seeing the content, an extension program is recommended. Third, to *completely destroy* the page, manual removal is needed. Here the need for *manual* intervention is significant, because it marks a shift to the sorts of technical competence one needs to remove content – for example, use of a specialised tool such as php myadmin or a command line. Finally, even following manual deletion the pages will no longer exist only *for most purposes*. That is, one can assume that for some purposes, they will exist just fine.

Given this, deleting seems to be very nearly impossible. This problem is exacerbated because each layer requires increasing technical knowledge that most users may lack. An extra risk is implicit: editing different levels of the pages brings extra responsibility because pages are a shared subject. If you remove one row from a table and do it wrong, you might take down the

entire system. Additionally, removing data will have a social impact: others may disapprove. So actual deletion is hidden behind both a complicated multi-layered structure and a potential oppositional social response. This friction between the social and the technical elements of removing content makes even partial deletion a foreboding task. We can also see the layers of power involved, the more one has access to the deep technical layer, the more power they have.

The above discussion is part of the *restrict viewing* of certain pages suggestion in a MediaWiki FAQ about how to restrict viewing access to a page. One could interpret the fact that a promise of deletion results only in an access change as specific to the media wiki software itself. However this approach is very representative of the complexities of many digital systems and the ambiguities of the term *to delete*. Notably the blockchain technology used for Bitcoin is emerging, which is by design a secure way to record transactions that cannot be altered or deleted due to the decentralised consensus. It is managed by a peer-to-peer network that must collectively validate new blocks. No block can be altered, without the alteration of all subsequent blocks. This technology could have the potential to create new foundations for social systems by eliminating the middleman, and with data security being robust. In principle, any action taken using blockchain is additive, it can only carry on growing.

CHAPTER 3

Human or Machine

The difference between disseminating data and publishing is that publishing requires a human audience; a public. While it used also to require a human publisher, disturbingly this is also no longer the case. For data to sustain and propagate, it no longer necessitates human creation, consumption or involvement. But the results may nonetheless be damaging to human viewers. For example, in a recent article on Medium; *Something is wrong on the Internet*, (2017) James Bridle describes the relatively recent phenomenon of bot-generated children's cartoons published on YouTube in order to earn advertising revenues, but featuring contents that are likely unsuitable for the young children expected to watch them. As Bridle explains, many of these videos turn out to be incredibly creepy, even for adults. Two cases mentioned by the author are; *The Finger Family videos*, a computer illustrated cartoon of a small girl who wakes up to find moving illustrated heads on her fingers, as if she's dreaming or even hallucinating. There is strange country music in the background which then turns into a techno beat, as the young girl suddenly runs to a huge white hand in a park and dances on it singing 'Daddy finger. Daddy finger. Where are you?' to then find 'a dad' on a finger singing back to her 'Here I am. Here I am. How do you do?' and on it goes to count all the fingers. Fairly educational, one could say.

Fig. 10 – The Finger Family Song

The following video Bridle mentions entitled: *Wrong Heads Disney Wrong Ears Wrong Legs Kids Learn Colors Finger Family 2017 Nursery Rhymes*. The title sounds suspiciously automated, and the video looks as automated as it sounds. The video consists of a body belonging to a character from Disney's Aladdin, and four other Aladdin characters floating in circles around it, while the original Family Finger song plays in the background. When a wrong head tries to fit the body, Agnes, the little girl from the *Despicable Me* films, suddenly makes an appearance with a horrific baby cry. When a head does fit the body, Agnes cheers with celebratory confetti cascading.

Fig. 11 – Wrong Heads Disney Wrong Ears Wrong Legs Kids Learn Colors Finger Family 2017 Nursery Rhymes

Commenting on the latter video, Bridle writes:

> I have no idea where the 'Wrong Heads' trope originates, but I can imagine, as with the Finger Family Song, that somewhere there is a totally original and harmless version that made enough kids laugh that it started to climb the algorithmic rankings until it made it onto the word salad lists, combining with Learn Colors, Finger Family, and Nursery Rhymes, and all of these tropes—not merely as words but as images, processes, and actions—to be mixed into what we see here. (Bridle, 2017)

Many of the videos he describes in his article have been removed, and as a result Bridle modifies his article to mention these videos removal. Interestingly they carry on living in his descriptions and screenshots.

This is not to say humans can't create disturbing content, they can do so equally well, there are countless examples I won't show here for the sake of brevity and relevance. However, the main difference is that publisher's aim, as humans, is to reach an audience of humans when they publish. So if the creation and dissemination of these videos becomes autonomous, and the audience is no longer human, the use of the word *published* no longer makes sense. It becomes impossible to determine the degree of automation. Does it even matter if the creator is a human or a machine? Circulation of content and the speed at which it proliferates, has become the most important factor and the purpose for its being.

Another pertinent story that shouldn't go unmentioned is what has been dubbed the *Fake News* scandal. While the content is utterly irrelevant, what is interesting is in the targeting, the more the content circulates the happier Facebook and its advertising customers are. For the content to reach *you* the *human product* it is not in their interest to deliver quality truth-telling stories, the creator of the content being a bot or a human is of little significance, as long as the shock factor is there to arouse the viewer's passion, hatred, anger or satisfaction.

In the article 'You Are the Product' published in the *London Review of Books*, John Lancaster puts forth and interesting point;

> Facebook works hard at avoiding responsibility for the content on its site – except for sexual content, about which it is super-stringent. Nary a nipple on show. It's a bizarre set of priorities, which only makes sense in an American context, where any whiff of explicit sexuality would immediately give the site a reputation for unwholesomeness. Photos of breastfeeding women are banned and rapidly get taken down. Lies and propaganda are fine. (Lancaster, 2017)

Facebook seem to work really hard at unpublishing any kind of sexual content, alongside actual disturbing content such as child pornography, which seems to be put at the front of every argument, perhaps in an attempt to seem more morally secure. So much effort and secrecy goes into it, that content moderators have to hide out, or sometimes don't even know for which company they are working for, in order to remove content form a set of rigid guidelines. These guidelines are a reminder of the Roman Catholic Church's list of banned books (mentioned in chapter 1), where the authorities decide on the morals, and anything contrary to chastity be it pornography, masturbation or homosexual practices, is a sin and should be banned from public knowledge.

Eva and Franco Mattes, an Italian artist duo, investigated internet content moderators, resulting in an installation using the leaked moderation guidelines and a series of videos interviewing one hundred moderators with 3D avatars and computer generated voices to keep anonymity. They explain that:

> Contrary to popular belief, the removal of offensive material from the Internet is not carried out by sophisticated algorithms. It is the nerve-wracking, demanding job of thousands of anonymous human beings: people disguised as algorithms. (Mattes, 2015)

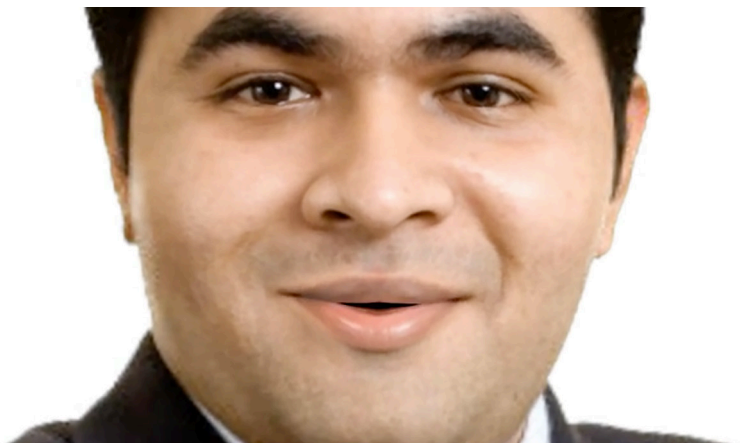


Fig. 12 – Dark Content, Episode 3

Fig. 13 – Dark Content, Episode 2

There has been a reversal of roles it seems, between human and automated jobs. Comparing the ease of publishing to the human labour put into unpublishing, is something that would have been unimaginable a few decades back. There are, however, automation tools being developed in order to control and moderate images before publication, one example is the PhotoDNA program, developed by Microsoft. The software uses hash-based technologies to identify and remove existing illegal images online. It is done by converting these images into a grayscale format, overlaying them onto a grid and assigning each square a numerical value.
The designation of a numerical value converts the square into a hash, or a digital signature, which remains tied to the image and can be used to identify other reproductions of the image online.
The technology seems to be very efficient against the propagation of an already recognised image, but there will still be many new images

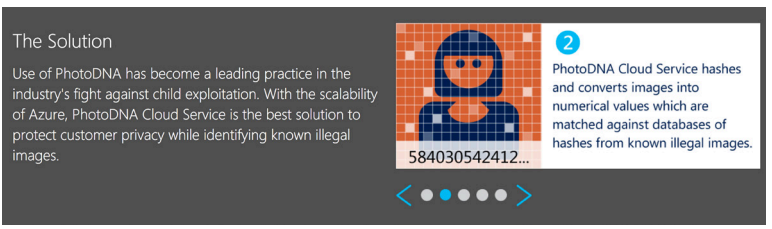


Fig. 16 – PhotoDNA

to come which humans will have to carry on moderating. Child exploitation seems to be the moral ground they're standing on for the development of this software. However, this tool also clearly raises concerns on freedom of speech, and the power that could be wielded by companies possessing this tool for purposes other than the ones they proclaim. The visual grayscale in the description of the technology reflects on the grey areas of the subject, one of the interviewees in Matte's videos describes this as:

> A combination between feeling good about what I'm doing, being in a powerful place to prevent other people from seeing terrible things and having mixed feelings about the power, making decisions about someone else's photos or art or whatever it is must be removed or hidden from view.†

Lots of the content these people confront is deeply disturbing, ranging from suicides, to abuse, murder and hardcore pornography. Some content is less disturbing visually but the ideas are worrying; another interviewee explains:

> Osama bin laden video removal was done as a PR move and a show of respect to the individuals who had been affected by events like 9/11. It was also done to show a patriotic symbolism that the United States has accomplished what

Fig. 14 – Dark Content, Episode 3

> we had set out to do and not only is this person dead, but there is no point continuing to talk about him, or even look at him, because his reign stops here. It was a social move to depict having the upper hand or the ultimate say. †

This becomes idealogical content moderation. Furthermore, more often than not we think people will simply use their power because they can. Here's an innocent example from another moderator:

> A buddy of mine worked for another company and was asked to remove all videos of Sponge Bob laughing, apparently it made the CEO's dog freak out. †

Finally one moderator summarises the job as:

> Yeah, I can remove the content but that shit is still in my head. †

Fig. 15 – Dark Content, Episode 2

† The above four quotes are the voices of anonymous people interviewed by Eva and Franco Mattes.

CHAPTER 3

Social Phenomena, Attacks, Laws and Human Rights

If you attempt to remove, hide, censor or unpublish a significant piece of content, you will in fact being more attention and consequently publicise more widely what you are trying to delete with the friendly help of the internet. This phenomena is called the Streisand effect.

> The term alluded to Barbra Streisand, who had sued photograph er Kenneth Adelman and Pictopia.com for violation of privacy. The $50 million lawsuit endeavoured to remove an aerial photograph of Streisand's mansion from the publicly available collection of 12,000 California coastline photographs. Adelman photographed the beachfront property to document coastal erosion as part of the California Coastal Records Project, which was intended to influence government policymakers. (Wikipedia)

Fig. 17 – Barbra Streisand's Malibu house

The image had been downloaded from Adelman's website only six times before filing the lawsuit. After the case, more than 420,000 people visited the site over the following month and public knowledge was surging. As a result the lawsuit was dismissed and Streisand was ordered to pay Adelman's legal fees. If only Streisand had known that once it's online, there was no way for her image to be unseen.

Given these challenges to unpublishing, if you'd like something to be unpublished, deleting it is rarely an option. Sometimes the only way to divert attention from it, is to carry on producing and disseminating new content. In *Homo Deus*, Yuval Noah Harari points out that;

> 'In the past, censorship worked by blocking the flow of information. In the twenty-first century censorship works by flooding people with irrelevant information.'

This is a phenomena that happens often in the media, an approach not to talk about a certain topic is to shift the focus onto another topic, but this can also slip into a dangerous zone of conspiracy theories which I will not enter in this text. This method is also relevant to Google search results, if by adding new content the old unwanted or irrelevant stories will find themselves far down the list where the chances of being clicked are slim, this can be done on purpose or it can happen naturally. But one strategy to disturb the viewing of content with an intent is the Distributed Denial of Service (DDoS) attack, this is where a site is brought offline, or creating disturbance in the network by flooding the system with traffic from multiple services. It is a way to silence websites the attackers might disagree with or disrupt an organization's online operations. In fact in a recent Wired article it is described that GitHub survived the biggest DDoS attack ever recorded.

In chapter 2 I mention it is impossible to retract a commit, well, this is an extreme method to try to disrupt GitHub and even that did not seems feasible for more than 20 minutes, the duration of the attack with 1.35 terabits per second of traffic being hit. The reasons behind this attack is suspected to be simply because it is a high-profile service that would be impressive to take down.

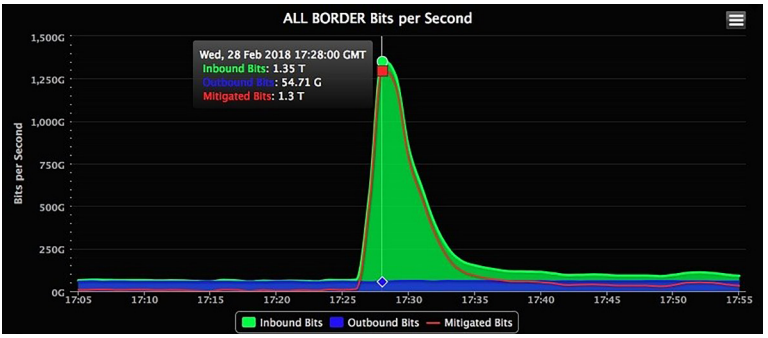


Fig. 18 – Real-time traffic from the DDoS attack

Furthermore, newspapers regularly report on failed attempts by some individuals to have sensitive information redacted. An example of this from *The New Yorker*, where an American girl named Nikki was decapitated in a car accident. A couple of employees working on the scene admitted to have taken and shared images of the moment. Because of the scale of horror of the accident, the images were successfully circulating the internet, for pure shock value. When Nikki's father inevitably desired to have these photos removed from the internet not only was he told 'Don't worry, it'll blow over', he didn't even have a law to protect his *Right To Be Forgotten*: a concept implemented solely in the EU (and Argentina) since 2006. This law creates a lot of controversy, on the one hand it is a human right to be in control of one's access to their own information, the right to privacy. On the other hand some people believe it might endanger their freedom of expression. This creates a paradox between European values and American values, both claiming to be the most morally correct. The truth is, neither cases will ever be truly moral, viewing it case by case would be ideal but also unrealistic, and within these cases there are so many levels of complexity. It is interesting to observe the choice of words for this law *The Right to be Forgotten*. *To forget* can imply that if you look far back and dig deep enough you might still remember. Despite the lack of *The Right to be Forgotten* law in the US, Nikki's family managed to have the photos removed from two thousand websites, but they are still very easy to find. And even though Google now removes or *delists* some search results from its listings, it tells you that it is has done so. To a determined bloodhound, this can function like a trail of blood.

Some results may have been removed under data protection law in Europe. Learn more

Fig. 19 – Google Search Results

All of these obstacles to unpublishing are exacerbated by the growing army of trolls who, in the name of free speech, are willing to effortfully disrupt others' attempts to control their data trail. This can be done with good intent (perhaps as in the early days of WikiLeaks. But often it is not. One of the greatest obstacles to countering revenge porn attacks is the willingness of others, found lurking on 4chan or in Reddit forums, to replicate and re-upload images of the innocent victims whom they have never met.

3.2 billion people can express themselves *freely* on the Internet today. Freedom of expression has been a core value from the early usage of the Internet. Today governments and corporations are trying to control the flows of expression, because the freedom of it will not meet their values or be advantageous to them. That is why Net Neutrality is being fought for; the right to communicate freely online, using open networks and no data discrimination. To quote Borris Beaude from his essay *The Ends of the Internet*:

> In our present age, no matter which principles are upheld or which rights are enshrined in law, no society in the world grants an absolute freedom of expression… In Europe, besides security and copyright, respect for human dignity is also usually considered to take precedence over freedom of expression. Even though the EU and the United Nations defend freedom of expression worldwide as a precondition for democracy, they also have set limits to this freedom. (Beaude, 2016)

Freedom of expression is a regulative ideal. It is necessary to have it as a principle to work towards. It is also the case that we will never have 100% equality, but it is a good idea to pursue it. Freedom of expression is an abstract concept (like justice, liberty,

freedom, equality) but it is not only an abstract concept– it is always something more. One could say it is virtual because it is a potential that is always coming into being – people, for good or ill, are always expressing themselves freely. One does not have to abandon an ideal because it will not be fully realised, this is a one dimensional view of idealism. The ideal of freedom of expression protects against its opposite (no expression at all). And here we get to the usefulness of freedom of expression as a regulative ideal: Freedom of expression is not a permanent condition or state, it is an expression of freedom's potential. It is real and it is ideal – and it is always expressed in a context which is not totally free. There will never be one way to go about it, for example 'radical transparency' can be an honest and open way to deal with information, or a tyrannical control system which limits free expression. On the one hand we will have nothing to hide and we might rid ourselves of the moral mess in our lives. On the other hand knowing the threat that our information is broadcast, it will change our behaviour to fit the system in an Orwellian fashion.

The paradox continues; there are different layers and situations which can determine the most ethical action to be taken, lets take this recent example from The Guardian; can we resolve the conflicting ethics in the story of a businessman who wants to remove search results about his criminal conviction? The article describes one Google representative claiming the *Right To Be Forgotten* ruling was 'not a right to rewrite history or … tailor your past if that's what this claimant would like to use it for'.

This man has committed a crime according to the Court of Justice, most probably related to money. But this man believes he has the right for this story to be delisted by Google (he is not even asking for deletion). Google claims this information remaining online is the *ethical* choice. Some may agree with Google on this case, because they would not want anyone to be fooled by this man in a future case. However, why should Google be the ones deciding, and holding onto such power. This is of course why this case is going to court. The irony about this story is, like Streisand, that more attention is brought to the case, via the news, and even in this very piece of

writing. Google has won long before the crime was committed, as long as it holds the power, you can fight with law cases all you want, the information will remain and propagate the more you fight it.

Conclusion

This thesis began by making the distinction between data and information. I surmised that data is raw material which is unformed. The data becomes information when it is given form. Publishing is information given to the people. To delete data is very difficult; but to delete information (the act that is eventually dubbed 'to unpublish') is substantially more difficult.

On the internet, as soon as data is in the network it is potentially already available to the public (even if not published), someone could grab that data, give form to it and then give access to the public (this is the moment of publication); to undo this action it is near-impossible; the software is constructed in such a way that the conditions for its further dissemination is already established. It is structured in such a way that to remove it you would need high technical knowledge; and even if you had this rare technical know-how, it does not ensure success in deletion, the content may have been duplicated elsewhere, and will therefore live on.

Through a multi faceted investigation of the issue, I came to the conclusion that unpublishing was impossible. I have attempted to delineate the different layers of unpublishing and the ambiguity of the interface and use of words in software. Through researching unpublishing, I have inevitably been confronted with what the meaning of publishing is, where I have come to hold the distinctions between, data, information and knowledge as clearer, and more important. If indeed there is no way to truly unpublish, and the only way is not to publish in the first place, which offers a rather bleak outcome. We should not have to stop publishing, however, having some security, for example, that a conversation deemed by its participants as private is not defined as 'publishing' and is not public. Similarly, I do not endorse gratuitous publishing – one can and should publish in the knowledge of the consequences, given the context. The key is an awareness and the user's intent. This allows the act of publishing to remain an intention and thereby, more controllable. Publishing comes with an intention and it is directed to the public. It should however be known that undoing this, is impossible.

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† I feel it is worthwhile to note that of the 18 authors cited in this thesis, only two are women. I did not intentionally look for women authors, unfortunately, but this natural sample size is indicative of the critical underrepresentation of women in technology, to the detriment of the whole field.

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