

**THE UNIVERSITY OF HULL**

**THE EXPERIENCE AS A  
DOCUMENT**

**Designing for the future of  
collaborative remembering in digital  
archives**

being a thesis submitted for the Degree of Doctor of  
Philosophy in the University of Hull

by

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“Canto a la vida plena, des de la vida buida”.  
*A la vida, Maria Arnal*

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# Abstract

How does it feel when we remember together on-line? Who gets to say what is worth to be remembered? To understand how the user experience of participation is affecting the formation of collective memories in the context of online environments, first it is important to take into consideration how the notion of memory has been transformed under the influence of the digital revolution. I aim to contribute to the field of User Experience (UX) research by theorizing on the felt experience of users from a memory perspective, taking into consideration aspects linked to both personal and collective memories in the context of connected environments.

Harassment and hate speech in connected conversational environments are especially targeted at women and underprivileged communities, which has become a problem for digital archives of vernacular creativity (Burgess, J. E. 2007) such as YouTube, Twitter, Reddit and Wikipedia. An evaluation of the user experience of underprivileged communities in creative archives such as Wikipedia indicates the urgency for building a feminist space where women and queer folks can focus on knowledge production and learning without being harassed. The theoretical models and designs that I propose are a result of a series of prototype testing and case studies focused on cognitive tools for a mediated human memory operating inside transactive memory systems. With them, I aim to imagine the means by which feminist protocols for UX design and research can assist in the building and maintenance of the archive as a safe/brave space, understood as a place where efforts are directed to confront harassment and address the ways women and underprivileged communities have been systemically silenced.

By working with perspectives from media theory, memory theory and gender studies, and centering the user experience on the participation for women, queer folks, people of colour (POC) and other vulnerable and

underrepresented communities as the main focus of inquiry, my research takes an interdisciplinary approach to question how online misogyny and other forms of abuse are perceived by communities placed outside the center of the hegemonic normativity. Also how the user experience of online abuse is affecting the formation of collective memories in conversational environments, such as social media and Wikipedia, as those environments coexist on the internet ecology showing similar dynamics of collective memory formation.

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# chapter I

## INTRODUCTION

### UX AND IDENTITY POLITICS

#### **1. Say it louder for the people in the back: A sexist and racist society creates a sexist and racist Internet ecology**

In 1996 internet scholar Terri Senft edited a collection of essays on sexuality and cyberspace where the authors follow the line of thought of Donna Haraway's *Manifesto for Cyborgs* (1985) including new perspectives into the research on digital experiences: "first person narrative, queer theories, postcolonial critique, and substantial online experience" (Senft, 2015:1). In the editorial introduction to the special issue, she wrote that the authors were "no longer interested in writing the truth of the body", they were repeating Judith Butler's (1993) question: "Which bodies come to matter - and why?". Their stories were "moving away from the body politics of *l'écriture feminine* and towards a cyborg politics of *l'écriture digital*" embracing J. L. Austin's claims on performativity and materiality: "that all language is performative, and all materiality is linked to the linguistic" (Senft, 1996:2).

Following British philosopher J. L. Austin's (1962) revolutionary idea that speak is an action, and when we say something we are already doing something, the French researcher and professor of the philosophy of language Bruno Ambroise interrogates the Internet as a space where digital forms of communication are reproducing our conventional uses of language, and creating new uses for language. In *Speech Acts and the Internet: Austin to Bourdieu and Fraenkel* (2015) Ambroise claims that the Internet is a new

space where we can perform conventional speech acts and also novel varieties of speech acts. His hypothesis is based on two assumptions. Firstly, that we can use language in “virtual” communications the same way that in “non virtual” communication. For example, in the event of the use of language in the context of promise making. Secondly, that speech acts on the Internet have “felicity conditions” similar to those located by Austin. Those felicity conditions refer to conventions that need to be accepted and recognized by the linguistic community of users. For example, in the event of the use of language to activate a hashtag campaign such as #metoo in online conversational environments.

Speech act theory provides a context for the analysis of language when it is not just a form of expression of information that can be true or false, but performs an action whose intent and outcome depend largely on conventions. Under Austin’s parameters, conventions can fail and be “unhappy”, or “infelicitous”; or come through being then “happy” or “felicitous”. Classical examples of specific conditions and conventions are court rulings, but also the expression of promise making, as it is bound to contextual parameters including the fulfillment of the promise and the intent of the promise maker. I am interested in thinking about other examples of speech acts such as threats or name-calling, that also require very specific conventions and the validation of an entire linguistic community to follow its intent. I am also interested in interrogating the implications of such speech acts in terms of community participation and collaborative memory building in digital environments.

Ambrose acknowledges that felicity conditions require first a definition of the speech act in place, and for the linguistic community to accept and validate the procedure needed to follow the convention through:

In order to offer such analysis, we must give an account of the definition of speech acts and the felicity conditions of the virtual speech acts in order to see what they may be able to do. [...] This is

to suppose that there exist a conventional (explicit or implicit) definition of the act to be performed: it is only if the people of a certain linguistic community accept and recognize the validity of a given procedure to perform a speech act that people of that community are able to perform such speech act invoking the defined procedure (2015:2)

He also proposes that the Internet ecology provides a virtual environment with its own felicity conditions for virtual speech acts, such as conventional definitions and the acceptance of a linguistic community of users. Describing the phenomenon of “poking” on Facebook, Ambrose claims that it is certainly possible to perform the action of “touching” someone with words or other interactions. He observed how the virtual environment provided by Facebook is a result of implicit conventions (felicity conditions) that define this specific procedure, according to which the writing of a certain sign constitutes the performance of a certain act: to “poke”. In agreement with running with the analysis of felicity conditions in the context of digital environments, I propose that the felicity conditions of virtual environments can be also analysed in terms of power dynamics that “touch” someone not as a symbolic gesture, but in harmful ways that contribute to the normalization of the language of violence, prejudices and hate speech. In a large number of name-calling practices we see how, enabled by language and reinforced by citational practices, systems of categorization such as sex, gender or race are reproducing narrative schematic templates of normalcy that create systems of recognition, and therefore, systems of participation and acceptance. In Butler’s words (1993:4), those systems of categorization “do not just arrange context, they both naturalize a certain mediated version of the world and, simultaneously, render anything else unthinkable”.

Building from Butler’s question “Which bodies come to matter - and why?” (1993) I have undertaken a critical approach to establish implications for design of language, with a special focus on Wikipedia’s community participation practices and memory building tools; keeping in mind that “it may be precisely through practices that underscore disidentifications with

those regulatory norms by which sexual [and other categories of] difference is materialized, that both feminist and queer politics are mobilized”, and that “such collective disidentifications can facilitate a reconceptualization of which bodies matter, and which bodies are yet to emerge as critical matters of concern” (Butler, 1993:4). In other words, accepting that such collective disidentifications can in turn create new conventions and citational practices. Those felicity conditions can be established by what Paul B. Preciado (2011) calls *somato-political* protest movements. An example of the new citational practices established by *somato-political* protest movements are name-calling practices around words such as “bitch” “butch” or “crip”, that had been recontextualized in black, queer and disabled spaces, many of them femme centred, precisely to revert the direction and assertion of a power dynamic that, even when exercised through language, lands precisely on the materiality of the body.

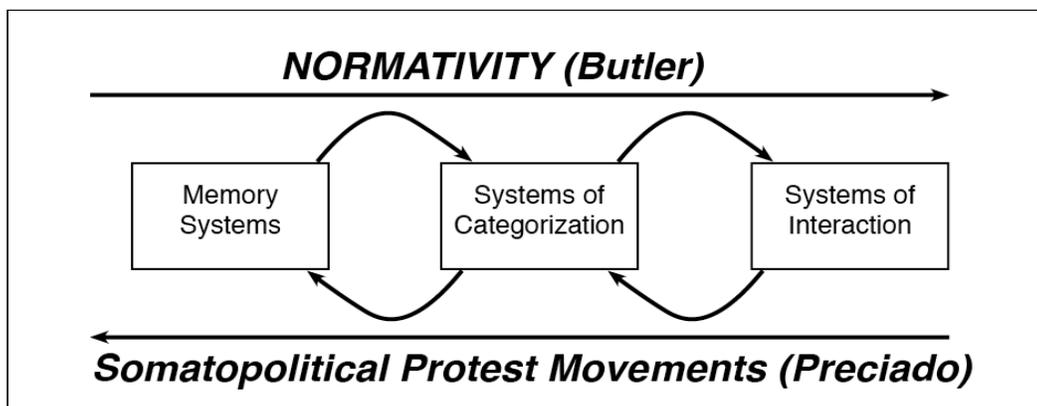
Preciado is a Spanish writer and philosopher whose work provides innovative examinations on applied and theoretical topics relating to queer theory and gender studies. He builds from an intersection of theoretical assumptions to propose the idea of the body as an archive of experiences and help rethink historical modes of oppression and domination and their possible breaking points. He does this by analyzing how the relation between body, power and truth has been transformed through history, and from the assumption that it is urgent to think about underprivileged communities as *somato-political* protest movements. Preciado reviews a new perspective on the political history of the body, pointing out a link between the sovereign power and the historical construction of male identity that, to a large degree, explains the persistence of harmful regulatory practices and power dynamics both in democratic societies and on the Internet ecologies in which Wikipedia coexists.

Those regulatory practices exist and are reinforced offline and online in the extent that they are “cited” as norms and take power through repetition. If we

think about name-calling, it is clear to see that this not only needs the validation of the linguistic community to come through, but also that it can almost be thought about as an Institution, whose practices have historical roots embedded in our collective memories. Memory, both collective memory and the memory of autobiographical events, plays a crucial role in both maintaining and reinforcing those regulatory practices. But memory can also play a crucial role in reversing harmful validations. That can happen when new felicity conditions for the new speech acts, performed and validated by *somato-political* protest movements, are incorporated into mainstream collective memories, whether online or offline, following a movement depicted in Figure 1.1.

**Figure 1.1**

Phenomenological framework of normativity in the context of the present research. Building from Judith Butler and Paul B. Preciado



In that sense, in their paper *Collective memory: Collaborative and individual processes in remembering* Mary Susan Weldon and Krystal D. Bellinger (1997) described several dimensions to collective memory that can inform from a memory theory perspective how normativity is assimilated and reinforced. Although those dimensions were conceptualized before the popularization of digital spaces, they can also be observed both in Wikipedia and in other conversational oriented spaces where collective memory building occurs, such as social media platforms. Digital spaces have similar

dynamics to both conversational and group memory formation, therefore the study of cases in Wikipedia and social media can help us understand interlocking power dynamics that happen across digital spaces. Weldon and Bellinger observed that collective memory has effects in the “manner in which information is represented in a group” (1997:1162) in the event of this information being shared either collectively to the group at the same time and space, or distributively to each user individually. One of the effects is to establish social relations, because by repeating stories and validating perspectives the group “teaches its members to use memory in a particular way” (1997:1162), therefore reinforcing citational practices. That has historically informed what women and girls can and cannot do, and should and should not do, in a way that compromises efforts to challenge systemic biases in spaces where there is a gender gap in participation, such as tech oriented spaces.

An example of how the prevalence of these sexist standards of normalcy exist across digital spaces can be found in James Damore’s response to diversity and inclusion efforts at Google. Damore is a Harvard graduate and former Google engineer responsible for authoring and distributing a 10-page anti-diversity memorandum in August 2017 titled ‘Google’s ideological echo chamber’. In that internal memorandum, that circulated first internally and later on social media and mainstream news media, he accused Google of “left bias” for creating a “politically correct monoculture that maintains its hold by shaming dissenters into silence”. He backed his claims arguing that, at Google, employees were “regularly told that implicit (unconscious) and explicit biases are holding women back in tech and leadership”. In regard to the existence of bias, he acknowledged that “men and women experience bias, tech, and the workplace differently and we should be cognizant of this, but it’s far from the whole story”. He continues to write backing his explanation by unfolding “the whole story” about the gender gap in tech under stereotyped assumptions, such as: that women on average are “more oriented towards people and men are more oriented towards things”, or that

women are “more prone to anxiety” (Damore, 2017). Those assumptions show how resistance to the promotion of diversity in monolithic spaces has the potential to influence the division of knowledge responsibilities among groups of people working at Google, as he was a senior engineer with managerial responsibilities, but most importantly in terms of collective memory building, those assumptions also add to validating and normalizing a very specific sexist standard: that women are not built for tech.

There is a citational chain that we have heard before and that goes from “she’s a girl”, to “she’s a bitch”, and then to “she’s a bitch that cannot and should not use technology”. That citational chain maintains the validation of normative templates of girlhood and womanhood in tech oriented spaces, because the configuration of a collective memory, as suggested by Weldon and Bellinger in her pivotal paper on collaborative and individual processes in remembering, has “social, cultural and political implications that affect people’s perceptions of individuals, groups and events, and therefore has consequences for actions and reactions towards them” (1997:1162).

Citatoriality is also reinforced through representation, in the sense that it often shows the outcomes of the configuration of a collective memory. Understanding this mechanism can help maintain or change the interactions that reinforce citational practices in a group, and therefore the manner in which information is represented, because those stereotypes have been built and validated over time. For example, in 2006 a Microsoft research group launched an experimental interface for Live Search named *Ms. Dewey* represented by a “sexy”, mixed raced, librarian/assistant, this interface has been analyzed by scholar Miriam E. Sweeney. Applying critical cultural frameworks, Sweeney explores how the search engine is gendered and racialized from the perspective and pleasure of the euro American male gaze, and ultimately, how *Ms. Dewey* reveals specific and harmful assumptions about gender, race and technology in the search engine (Sweeney, 2016). The portraying of *Ms. Dewey* as a “*sexy librarian*” shows a specific

configuration of a collective memory that has racist and sexist cultural and political implications, and it affects people's perception of individuals because it reinforces racist and sexist stereotypes about women of color, and sexist assumptions about women and technology.

In her conference on Feminist Standpoint Epistemologies at the University of Hull (2015) the feminist philosopher Sandra Harding was extremely critical about eurocentric racist and sexist citational practices in academia, and gave an account of how sexist and racist societies tend to produce sexist and racist sciences. These, in turn, provide resources for sexism and racism, that in the context of knowledge creation and dissemination, and I shall add, in the context of knowledge creation in Wikipedia, are often passed as neutrality and objectivity. Harding's account acknowledges the fundamental work of authors and scholars in decolonial literature such as Anibal Quijano and Gloria Anzaldua among many others. But we can also approach this framework from the perspective of feminist scholar Sara Ahmed, which considered how whiteness functions as a practice, a "bad habit" that becomes background for social action. In *Phenomenology of whiteness* (2007) she wrote that "Whiteness could be described as an ongoing and unfinished history, which orientates bodies in specific directions, affecting how they "take up" space, and what they "can do" (2007:149).

Under Ahmed and Harding parameters we can see the validation chain that has Microsoft's experimental interface for Live Search as one of the many outcomes of the aforementioned citational practices in technology design, although we can also find a way out of this harmful logic. During her conference Harding also suggested Feminist Stand Point Theory (SPT) and decolonial theory as the most appropriate epistemologies for working with logics other than those from the normative research standards (Harding, 2015) that are validating these harmful conventions. SPT claims that knowledge is socially situated and always based on experiences. As a methodology, it has the potential to map how a social and political

disadvantage can be turned into an epistemological, scientific and political advantage (Harding, 1991). The rationale of feminist standpoint methodologies has its foundation in enabling underprivileged groups to articulate the legitimacy of their own knowledge and needs against the research practices that serve powerful groups (Harding, 2004). Decolonial theory provides insightful critical perspectives to debunk and decenter the myth of modernity, its politics and its epistemology by stating that European colonialism, modernity, capitalism, and its sciences co-produced and co-constituted each other. For decolonial theorists such as Gloria Anzaldua, the historical, political and social construction of state sovereignty and national identity configure wounds in the bodies. As Martha Palacio suggested in *Gloria Anzaldua: Postcolonialidad y feminismo* (2020), her work makes visible the creation of spaces in which transversal forms of justice and inequality are reproduced.

The analysis provided by Miriam E. Sweeney is part of this articulation. In her paper *The Ms. Dewey experience: Technoculture, gender and race* (2016) she gave accounts of how problematic it was that, in 2006, *The Guardian* described the search engine *Ms. Dewey* as “a great-looking female searcher who talks to you, though searching isn't her strong point”. The article had the following headline: “A sexy search engine, sort of”. According to Jack Schofield, the journalist who wrote the piece, *Ms. Dewey* was “good for a bit of a laugh” but had “little or no chance of forming a long term relationship, given that she's amazingly slow at coming up with results, and they are displayed in an extremely poor way”. It is problematic because this description reproduces racist sexualization of women of colour, and sexist conventions about *women not being built for tech*, that were back then accepted by the linguistic community.

Since 2006, Microsoft has moved from the Live Search interface to Artificial Intelligence Bots and other products, and the research group associated with the company is still showing issues involving algorithmic bias and racist and

sexist interface and interaction design. However, context has changed enough over time for people to confront some of those harmful practices, which has resulted in *The Guardian* moving beyond harmful and stereotyping reporting about “sexy [search] engines”, and for Microsoft research groups to find a more active examination of their algorithmic design practices. In a small sample of mainstream media outlets reporting about algorithmic bias in AI projects randomly collected between 2016 and 2017 listed in Figure 1.2, at least three incidences linked to Microsoft AI projects can be counted. The most significant being how their AI chatbot Tay, designed to interact as, and with teenagers, started engaging and initiating racist and sexist conversations with other users after less than 24 hours learning from the conversational environment of Twitter.

It is important to observe if and how mainstream media outlets report those instances, because they are often used to feed Wikipedia articles as sources, serving as a mechanism for the building and ratification of mainstream collective memories. Mainstream media outlets are used in the Wikipedia editing guidelines to establish a criteria for normalcy that is often understood as neutrality and objectivity. It is also important to observe that, although there is a very relevant body of literature offering feminist perspectives on online harassment and algorithmic bias, such as the work of Shoshana Zuboff, Whitney Phillips, or Safiya Noble, to name a few, they can be disregarded as sources if considered original research or not neutral following Wikipedia editing guidelines.

**Figure 1.2**

Algorithmic bias in AI projects as reported in a small sample of mainstream western media outlets (2016-2017)

HEADLINE	SOURCE	ISSUE	DATE
Twitter taught Microsoft’s AI chatbot to be a racist asshole in less than a day	The Verge	Tay (Microsoft)	24/3/2016

AI is a racist with daddy issues	NY Post	Tay (Microsoft)	24/3/2016
Microsoft silences its new A.I. bot Tay, after Twitter users teach it racism	Tech Crunch	Tay (Microsoft)	24/3/2016
Who turned Microsoft's chatbot racist? Surprise, it was 4chan and 8chan	Fusion.net	Tay (Microsoft)	24/3/2016
Microsoft 'deeply sorry' for racist and sexist tweets by AI chatbot	The Guardian	Tay (Microsoft)	26/3/2016
Microsoft Is 'Deeply Sorry' Its Artificial Intelligence Bot Became Horribly Racist	VICE	Tay (Microsoft)	26/3/2016
Microsoft's racist chatbot returns with drug-smoking Twitter meltdown	The Guardian	Tay (Microsoft)	30/3/2016
Why are robots so racist? Another AI is busted for hating the name 'Jamal'	METRO	GloVe (Stanford)	29/8/2016
A beauty contest was judged by AI and the robots didn't like dark skin	The Guardian	BeautyAI (Microsoft)	8/9/2016
Japanese Bot Teen Gets Suicidal	FINANCIAL TRIBUNE	Rinna (Microsoft)	7/10/2016
Microsoft unveils a new (and hopefully not racist) chat bot	CNN	Zo (Microsoft)	13/12/2016
DeepMind AI has learnt to become 'highly aggressive' when it feels like it's going to lose	WIRED	DeepMind (Google)	9/2/2017
Google's New AI Has Learned to Become "Highly Aggressive" in Stressful Situations	Sciencealert	DeepMind (Google)	13/2/2017
How to Keep Your AI From Turning Into a Racist Monster	WIRED	Multiple examples	13/2/2017
Robots are racist and sexist. Just like the people who created them	The Guardian	Multiple examples	20/4/2017
Beauty.AI's 'robot beauty contest' is back – and this time it promises not to be racist	WIRED	BeautyAI (Microsoft)	2/3/2017

From a feminist standpoint, the problem of sexism and racism going unchallenged in most digital spaces urges us to understand the implications of how users from underprivileged communities tend to experience digital environments. To that account, Terri Senft uses the notion of haptic visuality, a condition in which the sensations of seeing and touching are experienced as connected and overlapping. She suggests that it is only when we understand combinations of individual vision and social touch “as both personalized sensation and the result of social, machinic and biological forces, we move from the space of phenomenology to the framework of ethics” (Senft, 2015a:10), in which we find ourselves moving away from the question, “what does this represent?” and towards the question, “What is this doing to us, and how are we responding?” (Senftb, 2015). In that sense, asking “what was said?”, “what was meant?”, and “what happened as a result?”, as suggested by J.L Austin’s framework for the analysis of speech acts summarized in Figure 1.3, and adding the perspective of Standpoint thinking, can give an appropriate set of tools with which to interrogate implications of that move for underprivileged users, in the event of speech acts such as name-calling in online spaces. Running with the analysis of felicity conditions can be an appropriate way to frame Senft's question to understand how the user experience of participation is affecting the formation of collective memories in the context of online conversational environments. Additionally, this set of inquire logics seem to align with Design Justice perspectives, a novel theory and practice in the context of design that emerged in Detroit through network based collaborative practices in 2016, and that stresses the importance of focusing on the outcomes of the design rather than the -albeit well intended- original plans of the designer. If the first set of logics are adequate for understanding and to begin theorizing the implications of online harassment and hate speech for collaborative memory building, Design Justice perspectives are essential to direct the design oriented practice of prototyping that has also informed theorization in the context of this research.

**Figure 1.3**

J.L Austin's framework for the analysis of speech acts in UX research

LOCUTION	What was said/done/designed (phenomenon)
ILLOCUTION	What was meant (user/designer)
PERLOCUTION	What happened as a result (user/practice)

Online harassment and virtual hate speech acts tend to be especially targeted at women and underprivileged communities, and it has become a problem for sites such Wikipedia, but also Twitter, Reddit and other digital conversational environments. It is relevant to focus and theorize around the felt experience of virtual speech acts in the context of user experience design and research. I hypothesize that in the context of collaborative memory and group memory practices, also known as transactive memory management practices, virtual hate speech acts may also disturb and/or disrupt the exploration experience of vulnerable users, causing a disruption and/or inhibition in their knowledge discovery and knowledge building experience as well. This has an impact on participation and memory building, as those users can be dissuaded from taking part in collaborative commemoration if they feel at risk from other hostile users' interpellations. To address this participation disruption, I propose theoretical design models that may lead to building and maintaining safer online spaces for women and POC. In order to engage in these urgent conversations, the theoretical models that I have designed during the course of this research, such as the Wikipedia bias detector or the Ana Mendieta protocols, are a result of a series of prototype testing and case studies focused on cognitive tools for a mediated human memory operating inside transactive memory systems. I have aimed to imagine the means by which feminist protocols for UX design and research can assist in the building and maintenance of the archive as a safe and brave space. Inspired by the Brave Space policy of the Art+Feminism community, here a brave space is understood as a place where efforts are directed to

confront harassment, and address the ways women and underprivileged communities have been systemically silenced. This policy is also used by the community in the context of their practices in Wikipedia, practices that I have participated in both as community organizer and as a contributor. The Brave Space policy, although a community effort, builds from the work of Mckensie Mack, former Executive Director of Art+Feminism, trans activist, and anti-oppression consultant at the intersection of race, gender, class, sexuality, and disability.

## **1.1. Feminist politics for critical design practice: Blending feminist perspective into User Experience (UX) design and research**

### **1.1.1 How to build and maintain safer online spaces for women and POC? Research question iterations in the research path**

In the present research I employ methodological and analytical frameworks of critical user experience (UX) research as an instrumental path to move towards a framework of ethics. An example of critical UX is the theory and practice of Design Justice, which focuses on outcomes of the design rather than the intentions of the designer. There is also a will to acknowledge the multidimensional reach of UX, and for that I am addressing several areas, such as the design and construction of digital archives, the idea of the body as an archive of experiences, and the relationship of all these to the cognition and memory theories in connected environments. In all that reach, I am taking into consideration the implications of bias and harassment in online spaces as participation inhibition triggers. That is summarized in the questions: How does it feel when we remember together on-line? And who gets to say what it is worth to be remembered?

## I. Research questions

In terms of epistemological and ontological foundations for the contribution to knowledge, I have built from feminist standpoint thinking practices to add to the questions of “which bodies come to matter” (Butler, 1993) in the context of Internet ecology, and how *somato-political* protest movements (Preciado, 2011) can articulate conversational networks of solidarity and knowledge building. To that end, there have been many iterations since the beginning of my research path that have been influenced by data collection, but also by both my personal context and the global context, resulting in the framing of the general question of implications for design identified by Australian anthropologist Genevieve Bell (2011), that bounds the methodology and theories proposed in the next chapter.

**Figure 1.4**

Iteration of initial research questions and assumptions

<b>INITIAL QUESTIONS</b>	<b>INITIAL ASSUMPTIONS</b>
What can be done to center and improve the UX of participation for women and underprivileged communities in creative archives?	It is relevant to identify and challenge participation barriers for aforementioned communities
Which are their participation barriers?	They can eventually be dissuaded to participate in spaces where there is a culture of hostility towards non-normative communities, and where they are at risk of being targets of hate speech
How the user experience of online hostility and normalized abuse is affecting the formation of collective memories in the context of online environments	Online hostility and normalised abuse has also social and cognitive implications in terms of collective memory building related to phenomena such as: <ul style="list-style-type: none"><li>● The shaping of episodic knowledge</li><li>● Collaborative inhibition</li><li>● Retrieval Disruption Hypothesis</li><li>● Mirror Neurons + Embodied Cognition</li></ul>

Resulting from initial research questions and assumptions compiled in Figure 1.4, the present research aims to focus on two fundamental inquiries for research design on UX, summarized here:

- 1) **How we should manage triggers and collaborative inhibition in the context of transactive memory management practices**, understanding triggering as what happens when individuals in digital conversational environments “exploit or ignore [the] psychological wounding” of other users “in order to gain a greater cultural capital for themselves” (Senft, 2015).
  
- 2) **Which protocols or theoretical design models may be appropriate to build and maintain *safer and braver* spaces for collaborative remembering in digital archives**, understanding the term brave space as proposed by Mackensie Mack for Art+Feminism, and understanding the term *safe space* as “an area or forum where either: a marginalized group is not supposed to face standard mainstream stereotypes and marginalization; or in which a shared political or social viewpoint is required to participate in said space” as formulated by the Geek Feminism community (Geek Feminism Wiki) and later other feminist tech oriented spaces.

## II. Statement of the research narrative

The primary focus of the thesis is concerned with how the conversational dynamics of memory formation in Wikipedia excludes and silences women and underprivileged communities. Because those dynamics can also be observed in other conversational spaces such as social media platforms, the first half of the thesis lays out a broader picture: the landscape of debates

and theories about memory, knowledge, digital culture, and new approaches to UX design and research that suggest a multidimensional reach.

While exploring new approaches to UX, the process of prototyping has informed and has been informed by my theoretical activity and my autoethnographic practice as a Wikipedia editor and community organizer for Art+Feminism. First as a way to assist in visualizing the manner in which a proposal for the Ana Mendieta protocols for addressing bias and participation disruption can be adapted and used in a variety of contexts of use, for example, a Wikipedia bias detector. Second, in validating the final configuration of my theorisations: the protocols as a proposal for a feminist and user-led inspired upgrade for transactive memory management theories, and the Disrupting Participation Hypothesis as a possibility to further our understanding and implications of the gender participation gap, that has been widely acknowledged, in Wikipedia.

This theorization is initially proposed at the end of the first half of the thesis and developed in the second half of the thesis, where I continue testing the hypothesis in the specific context of Wikipedia. With a series of case studies I have observed how normative structures and the participation cultures that result from it, far from promoting pluralism and diversity, continue validating traditional exclusionary regulatory regimes that are often enforced through normalized violence, making those spaces hostile to and for non-normative communities in dissidence and their collective memories.

### **1.1.2 Episodic UX research and the subjective experience of the user-rememberer**

Informed by the current concerns and practices of feminist Human Computer Interaction (HCI) compiled by Shaowen Bardzell in her paper *Feminist HCI: Taking Stock and Outlining an Agenda for Design*, in the present research I engage with the design of a theoretical model for an interactive system inspired by and sensitive to ongoing commitments of feminist epistemologies

and practice: “agency, fulfillment, identity and the self, equity, empowerment, diversity and social justice” (Bardzell, 2010: 1302). I am also taking into consideration the opportunities for further research suggested by Bardzell, in terms of theory, by “using feminist critique towards core operational concepts, assumptions and epistemologies of HCI”, such as neutrality, objectivity and universality, which are particularly relevant in the context of Wikipedia; and in terms of evaluation, by “indicating ways in which design configures users and gendered/social subjects” (2010:1305). I do that with a series of case studies that focus mainly on the Wikipedia community, but also giving accounts of other conversational oriented spaces where users are building collective memories, such as social media platforms. As I stated before, the study of cases in Wikipedia and social media can help us understand interlocking power dynamics that happen across digital spaces. The theoretical models and designs that I propose in the third and fourth chapters of the thesis, such as the Disrupting Participation Hypothesis and the Ana Mendieta Protocols, are a result of observations, prototype design and case studies, but also my own experiences being part of the feminist geekspace.

In terms of the genealogical accounts of user experience in the foundations of UX design and research, UX as a key concept was placed by the “third wave” of Human-Computer Interaction (HCI), which prompted more holistic and sensitive approaches of human-computer interactions also for UX researchers outside the feminist practice, presenting exciting perspectives and hard challenges (Lallemand, 2015). In her thesis dissertation *Towards consolidated methods for the design and evaluation of user experience* (2015) Carine Lallemand describes how in the 1990s, HCI research was centred on usability, and author Donald Norman was one the first to use the term “User Experience” in order to describe all aspects of a person’s experience with a system (Norman, Miller, & Henderson, 1995 in Lallemand, 2015:4). In that context new literature on UX begins to appear.

The *UX Manifesto* was published in 2007 (Law et al., 2007) to answer the question “What is UX?” inquiring on some of its basic definitions and assumptions. Across the numerous definitions that have been proposed, there is an agreement in considering that UX is the result of the interaction between three elements: the user, the system and the context (Roto, Law, Vermeeren, & Hoonhout, 2011). Following this common vision in the field of HCI, Hassenzahl and Tractinsky (2006:95) define UX as: “a consequence of a user’s internal state, the characteristics of the designed system and the context within which the interaction occurs” (In Lallemand, 2015:4). The *UX White Paper* (2011) describes how UX can be viewed from different perspectives: As a phenomenon, field of study, and practice, following the analogy: health as a phenomenon, medicine as a field of study and a doctor’s work as practice (Roto et al. 2011). I am engaging with UX as a phenomenon and as a practice from a feminist standpoint in order to create a description of the experience. To that end, a phenomenological point of departure has been useful.

Phenomenology and feminist analysis both have in common a commitment to the lived experience, and the will to reveal how our contexts are a result of acts that constitute our subjective experiences. As Butler wrote “not all feminist theory would privilege the point of view of the subject, and yet the feminist claim that “the personal is political” suggests, in part, that subjective experience is not only structured by existing political arrangements, but effects and structures those arrangements in turn” (Butler, 1988:522). For that reason, I am considering the result of the interaction between users, systems and contexts, and centering the subjective experience of remembering in digital environments from a feminist standpoint, as shown summarized in Figure 1.5.

**Figure 1.5**

Users, systems and contexts taken into consideration  
in the present research

<b>USER</b>	Women and underprivileged communities	→ Feminist standpoint thinking (decentering user-centred research) → The theory and practice of Design Justice
<b>SYSTEM(s)</b>	Memory systems Systems of categorization Systems of Interaction	→ Collaborative inhibition → Normativity → Interpellation
<b>CONTEXT</b>	Internet ecology	→ Creative archives and knowledge repositories

Following Senft's advice, I am also focusing on UX as practice and phenomenon in order to be able to move from the space of phenomenology to a framework of ethics in which I could find myself moving away from the question: "What does this represent?" and towards the question: "What is this doing with and to us, and how are we responding?" (Senft, 2015). I do that by acknowledging the multidimensional reach and impact of UX and looking at the subjective experience of remembering across the different systems that give context to the experience: systems of categorization (Butler, 1988:522), memory systems (Tulving, 1983:127), systems of interaction (Lallemand, 2015:6) and systems of affection (Senft: 2015). Those systems, described and compiled in Figure 1.6, are interlocked rather than fragmented, and we must be cognizant about the impact of the subjective experience of users across them.

**Figure 1.6**

The subjective experience across different systems

<b>SYSTEMS OF CATEGORIZATION</b>	<b>MEMORY SYSTEMS</b>	<b>SYSTEMS OF INTERACTION</b>	<b>SYSTEMS OF AFFECTION</b>
<p>“The feminist claim that the personal is political suggests, in part, that subjective experience is not only structured by existing political arrangements, but affects and structures those arrangements in turn. Feminist theory has sought to understand the way in which systemic or pervasive political and cultural structures are enacted and reproduced through individual acts and practices, and how the analysis of ostensibly personal situations is clarified through situating the issues in a broader and shared cultural context”. (Butler, 1988:522)</p>	<p>“Memory theorists have contemplated the advisability of including concepts such as experience of remembering, subjective veridicality, and awareness of pastness of remembered events in theoretical accounts of remembering, but they have concluded that it would not add significantly to our understanding of memory, or would even complicate matters unnecessarily” (Tulving, 1983:127)</p>	<p>“The collection of subjective and emotional data on the felt experience is a necessary step to understand UX” (Lallemand 2015:6)</p>	<p>“When we understand the combination of individual vision and social touch as both personalized sensation and the result of social, machinic and biological forces, we move from the space of phenomenology to a framework of ethics, in which we find ourselves moving away from the question, “What does this represent?” and towards the question, “What is this doing with and to us, and how are we responding?” (Senft, 2015)</p>

In the *UX White Paper* it is acknowledged that “UX may change when the context changes, even if the system does not change” (Roto et al., 2011:10). Because the social and cultural context of the interaction plays an important role by impacting the felt experience, it is established by literature that collecting subjective and emotional data on the felt experience is a crucial move to understand UX. However, as technology evolves, it is also advised

to consider that the ways in which we use technology and we apply technology will open up, blend, and intermix (Bødker, 2006) impacting in the subjective experience and the resulting emotional data. The highly contextual nature of UX, thus, will continue to challenge evaluation, as “it ideally requires a holistic assessment of the interaction and questions the evaluation in artificial settings” (Lallemand, 2015:6). According to UX scholarship, because a user experience is fundamentally linked to temporal aspects, the period of use that is going to be studied is also relevant in terms of evaluation and assessment. For example, studying the experience of engaging with a hashtag before usage, after usage, during usage, or over a period of use. Being a “continuous stream”, UX is dynamic and changes will continue to appear over time (Law et al., 2009; Roto et al., 2011). When assessing UX, it is important to take into account that it is common that each method informs a single time span of UX, and that “choosing which time span fits best the objective of a specific study” is advisable (Lallemand, 2015:8). After usage, users “will reflect on their experience: this is episodic UX” (Lallemand, 2015:8), which is the timespan in which the present research operates departing from the theories of episodic memory proposed by Tulving (1983).

Bearing in mind the two general ways that according to Bardzell “feminism contributes to interaction design” - 1) “design based” and 2) “generative” (2010:1308)-, the dissertation that I am introducing here presents contributions divided into two sections:

1) First the critique-based contributions to neutrality and objectivity in Wikipedia that I have used in the case studies presented in chapter four. Where, as suggested by Bardzell, I have relied on the use of feminist standpoints “to analyze the designs and design process in order to expose their unintended consequences, [...] indirectly benefitting interaction design by raising our sensibilities surrounding issues of concern” (Bardzell, 2010:1308) For example, considering hostility in conversation environments as an inhibition trigger in the context of collaborative remembering.

2) Secondly, the generative contributions for UX design and evaluation that “involve the use of feminist approaches explicitly in decision-making and design processes, to generate new design insights and influence in the design process tangibly” (Bardzell, 2010:1308). Such contributions are materialized at the end of chapter three into a theoretical design model for feminist transactive memory management practices, and aims both to “offer leads toward solutions to design problems, and to suggest evaluation criteria for working prototypes” (Bardzell, 2010:1308). The theoretical design model includes the design of two prototypes: a proposal for a bias detector conceptualized in the context of Wikipedia, and a proposal for a knowledge discoverability tool in creative archives from a feminist standpoint thinking.

## **1.2. Interface and privilege: Issues in dialogue with UX and memory and UX and identity and UX and systemic bias**

To understand how the user experience of online abuse is affecting the formation of collective memories in the context of online environments, it is important to take into consideration the transformations of the notion of memory under the influence of the digital revolution. Memories coexist with mediated memories that are negotiated in interactional and conversational contexts (Hirst and Echterhoff, 2012). Digital technologies are also transforming the nature of our remembering processes, therefore, our notion of memory has to be reconceptualised to take into consideration this new kind of material mediation (Brockmeier, 2010:14).

The memory system of our personal experiences was named episodic memory system by Endel Tulving, who in 1983, before the digital revolution, also gave it a framework and a series of pre-theoretical ideas named the General Abstract Processing System (GAPS). It is important to analyse the relationship between episodic memory and user experience today in the context of digital environments because when in 1983 Endel Tulving wrote

his book describing the elements of episodic memory-which is the memory of events and experiences- in most situations, rememberers had no independent or objective evidence related to the original event (Tulving, 1983). The mental residue of the perception of an event (what is stored about it in memory) “depends not only on the event as such and its characteristics, but also on a large number of permanent and temporary characteristics of the memory system” (Tulving,1984:229). Tulving uses the term ‘cognitive environment’ (Tulving and Thomson, 1971:123) to refer to the factors other than the event that influence its encoding (Tulving, 1983:150).

With the popularization of microblogging tools and online networks, resulting in the production of digital documents that represent our mediated experiences, we have a new environment where we do have evidence of the original event, and therefore, we have elements to evaluate the subjective experience of the rememberer. We can find units of analysis for episodic user experiences all over the Internet. Even if the experience is an episode of violence, this episode is often very public.

In 2020, users are constantly sharing documents (videos, photos, twitter threads etc) across a wide variety of social media platforms, creating an endless stream of data. In order to help make sense of that data, new archival phenomena and practices started to emerge creating a new data ecology. Thanks to the Internet, archives have obtained that “sense of artistry” (Royer, 2010) needed to reach Nietzsche's solution to *The Use and Abuse of History* (Nietzsche, 1957). History is not immutable or impartial, and the sense of artistry is being given by the rebuilding of history by means of new creative practices in online environments. Creative archives are often associated with forms of archiving user-generated content, frequently created by means of tools available from microblogging sites and social media platforms - listicles, hashtags or playlists, etc. But not only does the idea of the creative archive frame how remix and mashup cultures employ social media to produce new meaning, but it also brings new networked

archival practices that by means of conversational remembering can challenge traditional, gendered and colonial assumptions of what constitutes and who validates knowledge.

According to J. Barber, Rajaram and B. Fox in *Learning and remembering with others: The key role of retrieval in shaping group recall and collective memory*, “conversational remembering can also be viewed as a social practice that promotes the formation of collective memory” (2012:4). In that sense, collaborative recall in comparison to individual recall seems to support the building and configuration of collective memory for four key reasons (although there are of course costs and benefits of collaborative remembering and collaborative memory) (Barber et al. 2012:4):

1. During collaborative retrieval individuals are re-exposed to items they had forgotten, but that a group member recalled.
2. Collaborative retrieval allows for error pruning. When an individual makes what is considered a memory error, group members can provide corrective feedback.
3. Because of that, and although collaborative retrieval reduces the overall number of errors, it also has the potential to introduce shared errors. That is, social contagion occurs such that one member’s errors are incorporated into other group member’s memories (e.g., Roediger, Meade, & Bergman, 2001) which has potential implications in validating racist and sexist knowledge assumptions. In this context, an error is considered something that is mistakenly remembered.
4. Both remembering and listening to someone else remembering can cause forgetting of related but not remembered information. Known as socially-shared retrieval-induced forgetting (Cuc, Koppel, & Hirst, 2007) this process leads to overlap in what collaborative group members subsequently remember and forget. This happens because individuals remember mentioned material, and forget unmentioned material, which is often considered as a silence.

### **1.2.1. Who is being left out when hegemonic standards operate?**

Conversational remembering also feeds algorithms that constitute entities of machine learning and AI which is proven to be problematic in terms of UX, as it reproduces and reinforces normativity and systemic bias. Recent research on semantics in the context of artificial intelligence and machine learning suggest that “semantics derived automatically from language contain human-like biases” Caliskan et al. (2017:183). Researchers showed that machines can learn word associations from written texts and that these associations mirror those learned by humans, as measured by the Implicit Association Test (IAT). The IAT was introduced by Greenwald and et al. (1998) as a measure designed to detect the behaviour of a person’s association between different concepts such as “pleasantness and flowers or unpleasantness and insects” and their mental representations in memory. But it can also tease out attitudes and beliefs—for example, associations between female names and family or male names and career” (Caliskan et al. 2017:183) and has predictive value in uncovering the association between concepts. As they wrote, such biases may not be explicit but “can prove influential in behavior as machines learn what people know implicitly in conversational settings” because “algorithmic bias is showing how AI projects reveal the human language and therefore, human communications - virtual and natural - contain human-like biases” (2017:183)

When the results of a process of collaborative remembering result in the ratification of shared knowledge that constitutes some sort of socially validated collective memory, and this validated collective memory is a product of biased assumptions (as is the case of Wikipedia, for example), it is relevant to interrogate the collaborative inhibition process from a feminist standpoint, and also take into consideration the specific context of women from a power/knowledge perspective. In *The History of Sexuality*, French philosopher Michel Foucault argued that “power is not acquired or shared

but relational, and that power is exercised by the virtue of things being known and people being seen” (Foucault 1980:154). The view of power informs the Foucauldian concept of power/knowledge in the context of the political dimensions of archives and archiving: what is preserved and what is left to be forgotten. As described by professor of Women’s Studies, Alexis Lothian, in her paper on archival anarchies “archives and archiving are always political [...], struggles over the archive are struggles over which past pass away; changes in the archive’s content change histories and futures. Yet, it is now enough to say that unarchived materials are lost” (Lothian, 2013:4).

The present research complicates the disruption and inhibition theories on social sharing and reshaping of memories by Hirst and Echterhoff (2001) and Weldon and Bellinger (1997) by hypothesizing how hate speech may also disturb, disrupt and/or inhibit the participation of those targeted -in this case, women and underprivileged communities-, causing in turn a disruption in their knowledge discovery experience. In a series of case studies focusing on the context of the Wikipedia community, the present research also identifies how normativity, by means of schema consistent narratives of sexual difference, may act as a collaborative inhibition enabler in connected environments by means of virtual speech acts. In the specific context of Wikipedia, the power/knowledge relations attached to sexism and transphobia is collaboratively inhibiting women, trans folks and non binary folks to participate as editors. This approach follows the work done by many researchers inquiring about the Wikipedia Gender Gap.

Already in 2011, Sue Gardner collected a series of comments from women explaining the reasons why they quit their activity as Wikipedia editors. In addition to time management restrictions, women stated that the Wikipedia user interface was not sufficiently user friendly, and that they were often intimidated by the tone of the discussions, the editing fights and the gender gap. Some women stated “I am sensitive and the Internet is not generally

linked to sensitive people” or “I am done with Wikipedia, it is not only sexist, but ageist as well” (Gardner, 2011).

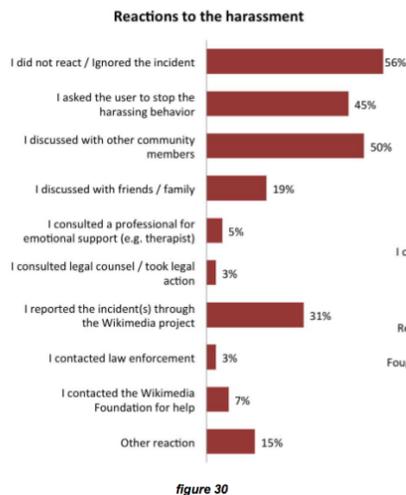
Sarah J. Barber, Suparna Rajaram and Ethan B. Fox (2012) in their paper *Learning and Remembering with Others: The Key Role of Retrieval in Shaping group recall and Collective Memory*, noted that there is a consistent amount of evidence indicating that, during retrieval, collaboration lessens the group’s ability to remember (Weldon, 2001). This is an effect known as collaborative inhibition (Weldon and Bellinger, 1997). In their paper *Remembering in Conversations: The Social Sharing and Reshaping of Memories* (2001), William Hirst and Gerald Echterhoff describe how collaborative inhibition occurs because one group member’s pursuit of an effective retrieval strategy disrupts the use of retrieval strategies that may be more effective for other group members. As a result of this situation, called the retrieval disruption hypothesis, some group members may not be able to perform their most effective retrieval strategy (Basden et al. 1997).

As collaborative inhibition has been identified as a robust phenomenon, based on comments from women editing Wikipedia, it can be argued that the levels of racism and sexism of the cognitive environments may have a negative impact for the underprivileged communities within the group in terms of memory building. Responses on the 2015 *Wikipedia Harassment Survey* shown in Figure 1.7 suggest that online harassment has the potential to act as an inhibition trigger. The list of reactions to harassment compiled in the survey also suggest either a disruption or inhibition of the knowledge discovery and knowledge building experience of the user that has been the target of online harassment.

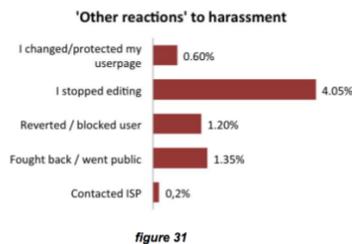
**Figure 1.7**

Reactions to harassment from the Wikipedia Harassment Survey  
(2015)

Reactions to harassment 



Reactions vary drastically, depending on the type of harassment [figure 30]. The vast majority of respondents ignored the incident (56%) or discussed it with other community members (50%). Many also explicitly asked the harasser to cease their harassing behaviour (45%). On the other hand, very few consulted with a legal counsel (3%) or reported the incident to law enforcement (3%).



Following a qualitative breakdown of the free-text responses submitted under 'Other reaction', it is revealed that 4% of the respondents opted for no further contribution either in the topic / articles they experienced harassment in, or in the project overall [figure 31].

\*Note: For definitions or further information on the terms used refer to [Appendix A](#).

### 1.2.2. The experience as a document

In the conference *The fierceness of images* regarding the exhibition *From here on*, Joan Fontcuberta made a wonderful observation comparing images from Piazza San Pietro when Joseph Alos Ratzinger made his first appearance as the new Pope in 2005, and the same event nine years after with Jorge Mario Bergoglio in 2013. In the picture from 2013, shown in Figure 1.8, a large number of raised hands are clearly visible, all of them holding mobile phones with shiny screens taking pictures and videos, documenting the event. According to Fontcuberta, we are no longer interested in documenting the 'Decisive Moments' as described by Henri Cartier Bresson, instead we are focused on the decisive experience that represents to have been present while an event important to me was happening (Fontcuberta, 2013).

## Figure 1.8

Image from Ashley Fell TED Talk “Why storytelling is so powerful in the digital era” (2017) depicting differences during the inauguration of Pope Benedict (2005) and Pope Francis (2013) outside the Sistine Chapel in Rome, where the last one shows many screens recording the event.



The hypothesis of the decisive moment became painfully real in 2016 when a black woman felt compelled to use Facebook live stream services to document the death of her partner Philando Castile. The filming and sharing was a way for this black woman to prove that her partner was being brutally murdered by the police (Isaac, M., & Ember, S. 2016). In the particular case of the livestream death of Philando Castile, people shared the documented experience using the hashtag #BlackLivesMatter to create dialogues around police brutality and black solidarity. There have been other instances where the circulation of the documented deaths of POC went viral, raising valid concerns about the sharing of black trauma. It is urgent to interrogate from a Foucauldian power/knowledge perspective, under what circumstances the same action - “to display”- may lead to user oppression or to user

empowerment as a result of a series of design choices, and the nature of the relations and the interactions in the archive.

In his book, *Understanding Media: The extensions of men* (1964) McLuhan already pointed that mediums are extensions of the self and the medium environments have social effect. Castells (1997; 2011) suggested that, in the digital age, the interaction between users and their extensions of the self is generating copious amounts of data that represents our encapsulated experiences. Manovich argued that the database which is increasingly flourishing is on the Internet, because the computer age brought a new cultural algorithm: “reality->media->data->database” (Manovich, 1999: 7). As a result of the users’ behaviour of constantly encoding and sharing experiences, the common experience has become encapsulated in shared narratives while Innovative Knowledge Communities (IKC) are spreading information to construct a collective memory (Hakkarainen et al., 2004: 73).

In the event of the hashtag #BlackLivesMatter those shared narratives are contributing to the collective memories of black solidarity. In the event of Wikipedia, those shared narratives can be used as sources to establish notability if they had been previously published by mainstream media outlets. This is why, through an appropriation of Marshall McLuhan’s approach to the media interface as an extension of our body, and Paul B. Preciado’s line of thought on the body as an archive of experiences, I propose the concept of *the experience as document*, resulting from the user’s interaction in and with creative archives. Philando Castille’s wife turned the death of her husband into a live shareable document on Facebook, forcing an urgent and honest conversation about police brutality in the US that has been even documented in Wikipedia (Wikipedia:Shooting of Philando Castile) by means of the shared narratives published by different sources, newspapers and media outlets (Boddie, 2017). By practicing the collective display of our experiences, we are making it relevant, and therefore possible, for the creative archive to

become “The body politic” in the feminist sense that the personal is political, and that the body is a place for politics.

But how do we meaningfully retrieve from there? And how do we create spaces for healing and solidarity? Before going back to focus on Wikipedia, in the following section I present as an example the femme centred collaborative archive of online harassment *ByeFelipe* and their archival practices, where I first observed manifestations of digital episodic memory in terms of retrieval and participation.

### **1.2.3. Collaborative archives of online harassment**

*Bye Felipe* ([www.bye-felipe.com](http://www.bye-felipe.com)) is a digital project on online harassment. Created by Alexandra Tweten, the project started in 2013 as a secret Facebook group in Los Angeles and gradually gathered tens of thousands of women globally across different social media platforms to call out men that turn hostile when rejected or ignored online by means of the hashtag #ByeFelipe. In 2016, Tweten received an average of around 20 daily submissions, containing commented probes of online abuse in the form of harassment, hate messages and dickpics (unsolicited pictures of cis male genitalia) targeted at women and coming from all social media platforms. Evidence that she archived and later shared through *ByeFelipe*'s social media channels, often accompanied with the hashtag #ByeFelipe. The project constitutes a collaborative archive of online harassment, but also a place for healing. When in 2016 I asked Tweten if she thought hate speech and online abuse is interfering in the formation of personal and collective memories, she agreed, responding that, in terms of personal memories, the action of screenshotting the abuse and keeping it as a record may facilitate a more vivid remembering process. What's more, not only it is easier to identify harassment in online environments because there is direct evidence of our digital episodic memories, but online practices such as remix culture allow users to create new meanings from existing documents in creative archives.

A considerable amount of literature has been published on remix culture. According to Manovich, another term that is often used to describe this creative user behaviour is “appropriation” (Manovich, 2007). The term was originally used to refer to the work of some New York based postmodern artists like Barbara Kruger. Kruger reworked pre-existing graphic material and her work can be easily related to remix practices that users are adopting in digital environments, where humour is a widely used remix practice genre.

In the context of *ByeFelipe*, humour is also used as a strategy to respond to harmful power dynamics. Tweten’s role consisted in curating each post in an entertaining way in order to get people’s attention while reverting the power dynamic and taking the power away from the abuser. The post with the most engagement published on the *ByeFelipe* Facebook group at the time of the interview displays a hilarious remix/appropriation of one of the dialogues from the iconic movie *The Godfather* (1972) as a response to online harassment. To the question “Can I have sex with you?”, this particular women responded:

I understand. You found paradise in America, you had a good trade, you made a good living. The police protected you and there were courts of law. You didn’t need a friend like me. But now you come to me, and you say: “Don Corleone, can I have sex with you?” But you don’t ask with respect. You don’t offer friendship. You don’t even think to call me Goodfather. Instead, you come into my house on the day my daughter is to be married, and you ask me if you can have sex with me. What have I ever done to make you treat me so disrespectfully?  
(In *Bye Felipe: Disses, Dick Pics, and Other Delights of Modern Dating* Tweten, 2018)

The fact that women are incorporating humour in their interactions with abusers indicates that as a strategy it may be having a positive impact for the community. But other possible reasons explaining the success of the platform is that every woman can choose the extent of her participation and exposure, because even if *ByeFelipe* is an archive of vernacular creativity around online harassment, it is also perceived by women as a safe space.

Another relevant difference is: (as pointed out previously by the creator *ByeFelipe*) the fact that users can regain access to their digital experiences, or other digital experiences and documents shared by other users in the community. This process can occur when users are operating inside digital transactive memory systems. In 2011 Sparrow et al. published a paper in which they described the Internet as an enabler of transactive memory management where information is collectively stored outside the brain in computer memory systems. The paper pointed out the fact that computer memory systems connected to other computer memory systems are what allow any form of digital memory (Sparrow, Liu, and Wegner, 2011).

#### **1.2.4. Systemic bias in Global Memory places**

The existence of a gender gap in content and participation in the context of spaces such as Wikipedia urges us to discuss the emergence of demonstrations of online hostility, systemic bias and power imbalance in archives and its implications for global digital memory places, especially in terms of the woman's user experience. As the researcher Joanne Garde-Hansen wrote in her now influential book *Media and Memory*, Wikipedia informs our cultural heritage in such a way that the German professor of Communication and Media Christian Pentzold defined it back in 2009 as “a global memory place where locally disconnected participants can express and debate divergent points of view” which “leads to the information and ratification of shared knowledge that constitutes collective memory” (in Garde-Hansen, 2011). To sum up: Issues arise when the ratification of this shared knowledge that constitutes some sort of socially validated collective memory is a product of biased assumptions.

Wikipedia itself defines its systemic bias (Wikipedia:Systemic bias) in relation to their most representative user demographic as "favouring certain nationalities, ethnicities or majority religions". It also says that “It may more specifically follow the biases of Internet culture, inclining to being young,

male, English-speaking, educated, technologically aware, and wealthy enough to spare time for editing”. Some surveys have indicated that only about 8.5–16 % of Wikipedia editors identify as women (Glott, Schmidt and Ghosh, 2011), and recently researchers have also found evidence that Wikipedia's bias in biographical coverage is related to the gender bias in positions of social power (Klein and Konieczny, 2015).

As mentioned by representatives of Art+Feminism - an international community that strives to close the information gap about gender, feminism, and the arts on the internet and to encourage people of all gender identities and expressions to edit Wikipedia - the Wikimedia Foundation recognizes the gender gap as a significant problem. Past Executive Director Sue Gardner (2007-2014) made it one of her key missions to understand and address this gap. Art+Feminism also stated one of the challenges the Wikimedia Foundation faces is that “it can not dictate what the community does. The Wikimedia community is an autonomous self-governing online society. Change is slow, as the community continues its own inertial path, producing conflicts like the Arbitration Committee’s controversial Gamergate Controversy decision” (Delatte, 2016)

*Art+Feminism* has representation in multiple countries and languages, and is widely known for organizing Wikipedia edit-a-thons where people gather and share knowledge and resources to improve the presence of women, queer folks, feminisms and their knowledges in Wikipedia. When asked about issues surrounding editing in relation to the Wikipedia “neutrality of point of view” policy, they stated:

In our trainings we encourage all editors to begin their process on Wikipedia by understanding its cultural norms, which include standards for notability, expectations of verifiability through citations to reliable sources, and the aspiration to write in a neutral point of view. At the same time, we engage the participants in a conversation about the theoretical and practical impossibility of neutrality and the ways

that an uncritical adherence to Wikipedia's notability standards, and a belief in neutrality recreates structural inequality (Delatte, 2016)

For example, when editors look for sources to establish notability of information related or relevant to underprivileged communities, it is frequent to find less references than other content validated by institutionalized knowledge structures such as media or the academia. According to Art+Feminism, "Because the standards for notability are pinned to the biases of other institutions, these standards reproduce those biases" and "this is a problem". It can also be argued that reproducing those biases in the most consulted online knowledge repository keeps validating and consolidating abusive and biased forms of History.

It is urgent to focus on these implications and to move away from the design practices full of good intentions that, in the context of Wikipedia, have resulted in a monolithic culture that prevents the project from accomplishing its aim to provide the sum of all knowledge. On that account I am engaged with implementing the agenda of the Design Justice movement, a new perspective that can provide researchers, designers, and users of online communities with tools to interrogate the ways in which design choices can be harmful, and how to prevent and mitigate the distribution of risks of harmful design choices that are already impacting vulnerable communities. I am also taking an interdisciplinary approach to interrogate how this distribution of risks impacts participation, and how those participation gaps in turn create a larger issue in terms of collaborative remembering and collective memory.

# chapter II

## METHODOLOGY

### 2. It is in our hands

“Once upon a time there was an old woman. Blind but wise.” Or was it an old man? A guru, perhaps. Or a griot soothing restless children. I have heard this story, or one exactly like it, in the lore of several cultures.

“Once upon a time there was an old woman. Blind. Wise.”

In the version I know the woman is the daughter of slaves, black, American, and lives alone in a small house outside of town. Her reputation for wisdom is without peer and without question. Among her people she is both the law and its transgression. The honor she is paid and the awe in which she is held reach beyond her neighborhood to places far away; to the city where the intelligence of rural prophets is the source of much amusement.

One day the woman is visited by some young people who seem to be bent on disproving her clairvoyance and showing her up for the fraud they believe she is. Their plan is simple: they enter her house and ask the one question the answer to which rides solely on her difference from them, a difference they regard as a profound disability: her blindness. They stand before her, and one of them says, “Old woman, I hold in my hand a bird. Tell me whether it is living or dead.”

She does not answer, and the question is repeated. “Is the bird I am holding living or dead?”

Still she doesn’t answer. She is blind and cannot see her visitors, let alone what is in their hands. She does not know their color, gender or homeland. She only knows their motive.

The old woman’s silence is so long, the young people have trouble holding their laughter

Finally she speaks and her voice is soft but stern. “I don’t know”, she says. “I don’t know whether the bird you are holding is dead or alive, but what I do know is that it is in your hands. It is in your hands.”

Her answer can be taken to mean: if it is dead, you have either found it that way or you have killed it. If it is alive, you can still kill it. Whether it is to stay alive, it is your decision. Whatever the case, it is your responsibility.

For parading their power and her helplessness, the young visitors are reprimanded, told they are responsible not only for the act of mockery but also for the small bundle of life sacrificed to achieve its aims. The blind woman shifts attention away from assertions of power to the instrument through which that power is exercised.

Toni Morrison Nobel prize acceptance speech (1993)

## **2.1 Philosophical and methodological considerations for research**

“Someone said in a meeting I was at with technology investors: More facts are better; data is truth; more data equals more truth; if we have more data we can understand people better; and data equals humans. [...] I had to pound the table and point out that there was no such thing as Truth. That was not the right thing to say to the Wall Street bankers, it turns out. One of them conceded that, yes, it was probably true that *some* data didn’t equal true, but *more* data absolutely equaled truth.”

Genevieve Bell, “The Secret life of big data” (2015:24)

There are many more stories than can be told about the past, the present and the future of computing, and the Australian anthropologist Genevieve Bell has been learning and retelling compelling and relevant stories for years. Her perspective is especially significant to inform the present research because her work is known for being at the intersection between technology and culture. She started Intel's first User Experience Group in 2005 and worked in Silicon Valley until 2017 when she decided to return home to Australia to

found a new applied science. One centred around “the management of artificial intelligence, data and technology and of their impact on humanity” (3A Institut Website) that would help us navigate contemporary challenges. Today she is the Director of the *Autonomy, Agency and Assurance (3A) Institute* in addition to being a senior fellow at Intel.

In *Divining a Digital Future* (2011) Genevieve Bell writes about the two arguably mythical and increasingly convergent stories - the personal computer story and the information age - that crystallized in the vision of ubiquitous computing (ubicomp). In this context, at the Palo Alto research centre in the late 80's and early 90's, computer scientist Mark Weiser articulated a vision that made sense of the information age while suggesting that personal computing had not gone far enough: “computational devices would be small and powerful enough to be worn, carried or embedded in the world around us” (2011:2). This vision anticipated that “computing technology would be everywhere”, generating copious amounts of data and mythical stories surrounding big data. Those technologies have changed society so drastically that the artist, author and curator Joan Fontcuberta started using the idea of the world after Google (as in AD) to indicate a historical, sociological, economic and aesthetic context (Fontcuberta, 2010). It is a context of smartphones and data overload where human-computer interaction becomes a major focus of attention.

In *Data: Now Bigger and Better!* (2015) editors Tom Boellstorff and Bill Maurer brought together researchers whose work around big data was deeply informed by the conceptual frameworks of anthropology. Genevieve Bell contributed to the volume with a chapter titled *The secret life of Big Data*. In her essay she suggests that some ideas surrounding big data are not a novelty, and that rather more importantly, far from being neutral, they are surrounded by a mythology of western masculinity. She wrote: “The notion that those big sets of data might frame the way we think; how we are identified, how we identify ourselves - these ideas are not new. And finally,

macho talk about how big, fast and multitasking data can be: these ideas are old and still dominant forms of Euro-American masculinity” (2015:11)

To provide context for the idea of big data not being a novel invention of ubicomp, she uses as an example *The Domesday Book*, a searchable compilation of data resulting from a survey commissioned by William the Conqueror in 1085AD that became “an entire way of framing what it meant to be in England under William the Conqueror” (2015:10). But we can find many other examples: archives from hospitals, churches, and governments have held records of deaths, births, marriages, illnesses, and so forth for centuries, as a means to keep a degree of control over the population. Not surprisingly, wrote Bell, big data raises concerns over “privacy and government snooping” in some communities - especially the underprivileged ones - while others seem to be “indifferent about the surrender of vast quantities of information just by turning on one’s phone” (2015:9).

Counterpointing the mythology that considers data as something empirical, disembodied and neutral, she provides insight that can assist us to acquire data literacy, arguing that, while “we know how to read activities, objects and texts and that is part of our critical vocabulary. Much harder part is to interrogate the sense-making tools that sit on top of data” (2015:22) such as algorithms. To that point, she provides a series of claims to frame the data culture that is establishing the current relations between datasets, and between humans and data.

In terms of the material aspects of data, it is important to bear in mind that *not all data is created equal*: The material resources needed to run and maintain the networks (cables and so on) and the political context of the territories that these material resources cross have implications in terms of data flow: “Depending on the physical gateways that data is running through, some governments and private enterprises can have a look inside, creating even more data, and also determining what data does and does not flow on

the network” (2015: 16). For the very same reasons it is important to bear in mind that *data has a country*, and it is produced under certain policy regimes that will help identify its origin and the traces of its movements: “data has things in its proverbial body that will tell you where it came from” (2015:18)

Bell also provides claims of what could debunk the myth of the neutrality of data. Beginning with the claim that *data will be messy* because it refuses tying up (2015:20) and at the same time, *data will lie in order to look good* (2015:21). As she wrote: “We already know that people lie in constructing their data - their online dating profile, their Facebook page. Algorithms that clean data also bend the data toward being better looking than it really is. Does the algorithm lie?” (2015:21) According to Bell, the humans that are creating algorithms determine the relations that will exist between datasets, and between people and datasets, and “the algorithms themselves draw in new data sets when they see them becoming available and have been pre-coded to want to make relations with them (2015:16). That happens because ultimately what data wants is more data: *Big data wants accumulation of more of itself* (2015:14).

However, if we have learnt something about all the different stories about computing, it is that “most technology does not end up in the hands of the people it was anticipated for, doing the work it was anticipated to do” (2015:18). This is what is understood as user-led innovations, with the hashtag being one of the most popular examples of this. The conversational context of hashtag use, with examples such as the #metoo movement around sexual violence, or the #blacklivesmatter movement around racism, provides a framework for understanding another important story about data: the story about how data has the responsibility to “engage in conversations, because it has a story compelled to say” (2015:19). In *The Secret Life of Data*, Bell writes:

“In the community where I grew up, when people tell you a story about their country, about their family, about the things that happened there,

they tell you that story knowing that they make you part of the responsibility of telling that story properly the next time. They are custodians of the responsibility of doing the right thing with those stories. This is data that comes with responsibilities (do not share this piece of information), and some of them, I suspect, will not be about shutting the conversation down, but about opening conversations up” (2015:19).

In Bell’s stories there is also a critique of the new empiricism and the power of numbers to talk about people. Against assertions such as “data equals humans” that represents the erasure of whole bodies of knowledge that “many in the social sciences and humanities have argued for pretty aggressively for more than a century” (2015:24), Bell postulates that: “the theoretical tools that we don’t always think of as needing to be re-rehearsed really need to be re-rehearsed, which is going to mean passionate conversations about all the things that to my mind have always mattered: gender, race, class, sexuality, history, nationality, and oh, by the way, power that runs through all this” (2015:25). That way ubicomp is placed in broader disciplinary conversations with science and technology studies, sociocultural anthropology, and media and cultural studies. She suggests: “Start from arts and humanities, philosophy, phenomenology, anthropology, psychology, postmodernism, sociology of science, feminist criticism”, and, finally “your own experience” (*Building invisible interfaces*, Weiser 1994, slide 10 in *Divining a Digital Future*, Bell, 2011:14).

In her paper *Located Accountabilities in Technology Production*, researcher Lucy Schuman (2002) builds on work in feminist epistemology and connects it to the practices of technological design. According to Bell, Schuman directs us towards the “importance of the contexts within which design engagements take place and the power relations at work in the encounters between those framed as technology providers and those framed as potential consumers” (Bell 2011:18). Bell also urges to make room for the social and the cultural and to approach ubicomp as a “sociocultural object, both in its artifacts and practices” (2011:46). Very broadly, that means the

scales and structures of social life, or “the patterns and functioning of social institutions, the interrelations between social structures and their evolution, and questions on the stratification, segregation, and distribution of social resources, including money, power, influence, and authority” (the social). And also its symbolic forms (the cultural) or “the conditions under which specific kinds of collective value and significance attend to the ritual practices of everyday life, the world as we encounter it, and the ways in which we interact” (2011:46).

Classic accounts of a social perspective in ubicomp include “examinations of the ways in which digital technologies affect power relations” or are used as a resource to revise communication patterns (2011:49). In that regard, Design Justice frameworks can be of assistance in undertaking this examination in a holistic manner that takes into consideration both social and cultural aspects. Those cultural aspects of a semiotic nature are concerned with the “ways in which we find meaning in the world” (2011:51). In their paper *Design Justice: Towards an intersectional feminist framework for design theory and practice* Sasha Constanza-Chock wrote about how Universalist design practices erase certain groups of people, because most design processes today are structured in ways that “make it impossible to see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce” (Costanza, Chock, 2018). To understand the social and cultural dimensions of ubicomp in the context of the unequal distribution of harms and benefits that they reproduce, Design Justice practitioners and researchers use the framework of analysis that Patricia Hill-Collins coined as the matrix of domination.

The matrix of domination is a sociological paradigm developed by black feminist scholar Patricia Hill Collins that provides a framework for understanding oppression as an outcome of privilege. It is also a tool that can be used to examine the role of white supremacy, heteropatriarchy, capitalism, and settler colonialism in enabling hegemonic ideologies and

enforcing hegemonic normativity. With the matrix of domination, Patricia Hill-Collins theorizes power in four domains: structural (law, politics, religion or economics), disciplinary (bureaucratic organizations that organize human behavior), hegemonic (the culture on the ideas and values), and interpersonal (personal relationships we maintain) (Collins 2009, 40-81). In her paper, *The Difference That Power Makes: Intersectionality and Participatory Democracy*, Hill-Collins writes that “The domains-of-power framework provides a set of conceptual tools for diagnosing and strategizing responses within any given matrix of domination. The framework is deliberately non-linear. There is no assumed causal relationship among the domains such that one determines what happens in the others” (Hill-Collins, 2017:23).

If a generative account of culture suggests that we want to concentrate “on how culture instead operates and is enacted in everyday practice” (2011:54) and the study of the social impact urges to ask, “what are the consequences?” (2011:50). Design Justice provides a framework for working in interdisciplinary domains, and, as Genevieve Bell suggests, for finding a role for ethnography in methodology and theory, and to “reconnect the ways we approach research questions (methodologies) with the ways in which such questions might be framed, articulated and addressed (theory)” (2011:62). However, as Bell advises, for a better understanding of the role of ethnography in ubicomp, a combination of methods but also methodologies and larger epistemological concerns is needed, including interrogations around “reflexivity, voice, stance, and standpoint, most of which are largely present in feminist scholarship, and largely absent from ubicomp practice” (2011:64).

### **2.1.1. Ethnography as implications for design**

In *Divining a Digital Future* (2011) Genevieve Bell identified how the questions of implications for design appears to be a pattern emerging from ubicomp literature: “Any canonical paper reporting ethnographic field results in the

ubicomp context will close with a section titled *implications for design*". This section "may be long or short, comprising discursive prose or brief, bulleted items, but it nonetheless figures as a stable feature of ethnographic reports" (2011:65). However, she also detected a misuse of the ethnographic enterprise as a tool to extract data that would eventually provide insights with which to answer the question. From Bell's perspective, what was missing is where ethnographic inquiry can provide major insight and benefit from ubicomp research. As she wrote: "Empirical urge views ethnography as purely methodological and instrumental, and in reducing it to a toolbox of methods for extracting data from settings, the methodological view marginalizes or obscures the theoretical and analytic components of ethnographic study" (2011:66).

Willing to chart a new relationship between ethnography and ubicomp, she suggests that there are four considerations that get lost if we concentrate purely on ethnographic research-generating implications for design (2011: 66-67), all of which have been taken into account in this thesis during the research process and are acknowledged throughout the chapters:

1. We must recognize the theoretical work, not simply collect it
2. There are disciplinary power relations at stake that imply a specific and problematic location for agency
3. The implications-for-design model inappropriately emphasizes technology over practice
4. It is important to pay attention to how ethnography in ubicomp can be used to limit, rather than expand, the engagement of users in design practice, arguably recapitulating some of ethnographers history in colonial state enterprises and so prompting a good deal of resistance from practitioners grounded in anthropology's disciplinary history or concerned with the politics of representation.

Ethnography is particularly relevant for undertaking user experience research in the context of ubicomp because it is concerned with the member's perspective and experience, but, as Bell wrote, it does not simply report what members say they experience, ethnography makes conceptual claims to the degree that ethnography presents not simply observations but also relationships between observations, it is inherently interpretative (2011: 68). In that regard, Bell writes about Xerox Research Centre scholar RJ Anderson contributions to literature (1994) exploring the relationship between ethnography and requirements (2011: 69) all of which have also been taken into account during the research process and are acknowledged throughout the thesis chapters:

1. About ethnography as a form of writing: Ethnography must be seen primarily as a form of reportage, and a way in which a cultural understanding is inscribed as a literary form. Because writing is central we must pay considerable attention to its rhetorical form and construction. Ethnographies are representations of the world that the ethnographer encounters.
2. About the role of particular rhetorical strategies such as the juxtaposition of strategically chosen examples: The ethnographer is far from a passive agent in the production of this organization as a research outcome.
3. About the reflexive character of ethnographic analysis: Ethnography is not only about the culture under study but equally, implicitly or explicitly, about the cultural perspective from which it is written and that of the audience to whom it is presented . In that regard, I am writing as a technofeminist for a technofeminist audience.

From Bell's observations and RJ Anderson's contributions it is important first to frame technology as a site for social and cultural production and to highlight the commitment to inscribe the outcomes of the present research

as a literary form, a form of reportage containing “different perspectives on the creative process by which people put technology into practice and meaning” and to understanding those processes as a result and consequence of everyday action, and “not as a problem to be eliminated” (Bell, 2011:73). However, Bell also recognizes that “sometimes, after all, the most effective outcome of a study might be to recommend what should not be built” (2011:71).

I am in agreement with Bell when she states that “what ethnography problematizes is not the setting of everyday practice but instead the practice of design” (2011:74), for that reason, I have also used prototyping to understand and theorize the relationship between context, technologies, and practices (2011:62) in digital archives of vernacular creativity (Burgess, 2007). The theoretical design models and design prototypes included in the present research were built in dialogue with the idea of a *warm database* introduced by artists Ghani and Ganesh in their installation “How Do You See the Disappeared?”. The concept of warm data is used by the artists to “exist in contradistinction to the ‘cold data’ gathered in official government questioning of immigrants”. That is: “to scale the political back to the personal, the abstract to the specific, and the foreign to the familiar” (Royer, 2010). During 2015 and 2016 I directed the design of two prototypes: an app aimed to assist detecting and reporting bias on Wikipedia pages in order to promote the participation of women and under-represented communities that was presented and tested at the FemTechNet conference that took place at the University of Michigan in April 2016. And the digital project The Body Archive, a statement of which was published in 2017 in a special issue of *Feminist Media Histories on Data* (*Feminist Media Histories* 3.3 (2017): 167-172). The data of The Body Archive originated from 500 manually harvested links to online content (media, resources, tools, news etc) shared on social media platforms by my feminist networks. Both prototypes were built to test the Anna Mendieta protocols, which is a proposal for feminist transactive memory practices.

I am also in agreement with Bell in considering ethnography as lived and embodied practice whose focus is the ways in which aspirations and cultural ideals bring technology into being (2011:73). With that in mind and, in the tradition of phenomenologically-oriented sociology and anthropology (Schutz, 1967; Bourdieu, 1977) I have used my body in, and experienced with, the process of writing about women, queer people and POC in Wikipedia, inquiring on the platform and the movement as the site for analyses of the ways that “patriarchy, white supremacy, colonialism and global capitalism threatened humanity’s well-being” (Denise, 2014). For that, Design Justice has provided an appropriate framework to focus on the ways that design reproduces, is reproduced by, and/or challenges the matrix of domination among other systems of oppression such as standards of disability and normalcy (Lennard J. Davis, 1995).

The use of Design Justice as a field of theory and practice align with one of the ways in which researchers can broaden the scope of ethnographic impact in ubicomp, which is affective computing research. Affective computing researchers place the emotional aspect of interaction alongside the more traditional cognitive and analytical elements (Bell, 2011:75) recognizing that affect is something that lies, both temporally and spatially, between perception and action. Ethnographic studies of emotion can provide an alternative account that is useful in two ways: it can “shift us towards a different way of imagining the relationship between information technology and affect, providing a different set of design strategies” and also “it highlights the cultural specificities of this parallelism between emotion and cognition” (2011: 76).

### **2.1.2. Bringing feminist perspectives into ubicomp research**

In 2010 author Shaowen Bardzell wrote a very influential paper outlining a feminist agenda for design in Human Computer Interaction (HCI) fields. In the paper she recognizes that, infused with feminist scholarship, HCI was

expanding beyond the preoccupations around performance and becoming gradually focused on subjects such as culture, society and the experiential qualities of computing (2010: 1304). She also outlined four specific contributions of feminist theories and methods to HCI and what implications these configurations could bear for future design work. In terms of theory there are critical core operational concepts, assumptions, and epistemologies of HCI. In terms of methodology, it can broaden their repertoire for different contexts and situations. In terms of UX, it can facilitate the process of reflecting on gender in a way that noticeably and directly affects design. It can also make visible ways that designs configure users as gendered/social subjects, which informs evaluation (2010:1305).

An embodied standpoint from feminist theory is also productive in helping us understand the phenomena of social media and the culture of user-generated content that are fundamental in the present research, especially considering that gender identity play, sexism, and above all sexual harassment are well known phenomena of social lives online and deserve further research. Inspired by Bell and Bardzell's paper, the present research acknowledges the importance of reconnecting the ways we approach research questions (methodologies) with the ways in which such questions might be framed, articulated, and addressed (theory) (Bell, 2011: 62).

Acknowledging Judith Butler's contributions to feminist scholarship, with the influential concept of "performativity," that understands gender as a performance in the "stylized repetition of acts", feminist HCI includes questions such as the following:

- 1) How does a culturally constituted body enact community rules, beliefs, rituals, and power dynamics through ubicomp's new spaces? How are places (re)configured as a result of ubicomp to enable such performances? (2010: 1305)

- 2) How do we simultaneously serve real-world computing needs and avoid perpetuating the marginalization of women and indeed any group in technology? (2010: 1304)

Following the agenda outlined in feminist HCI, in the present research I have placed the experience of women and underprivileged communities at the center of my enquiries, for which the use of SPT, coined by feminist scholar Sandra Harding, has been especially appropriate. SPT emerged in the 1970's-80's as a feminist critical theory about relations between the production of knowledge and practices of power.

The fundamental ideas underlying the more recent conversation about standpoint theory begin with its successes as a methodology, particularly in the social sciences. Although, as stated by Sharon Crasnow in *Is standpoint theory a resource for feminist epistemology?* (2009) there are controversies regarding its uses as a logic enquiry. In that regard Harding identifies four sites of controversy. 1) The divergence in standpoints. 2) The difference between histories and concerns across disciplines. 3) That standpoint is anti-disciplinary "in the sense that it challenges disciplinary complicity with the established social power", and at the same time it is also disciplinary because it has the desire to transform disciplines "from within" (2009:190). The result is a plurality that, according to Harding's, represents a resource and not a liability.

Standpoint theories, are of assistance in helping to "produce oppositional and shared consciousness in oppressed groups - to create oppressed peoples as collective "subjects" of research rather than only as objects of others observation" (2004:3) which has been of a special importance for developing the Disrupting Participation Hypothesis, what I define as the event in which hegemonic collective memory oppresses underprivileged communities and enhances the status of hegemonic communities by means of interpellations or speech acts, specifically when the modes of address

take the form of humiliating, patronizing, threatening or hateful speech. As I developed in this research, this hypothesis may inform a new setting for studying how collaborative remembering would operate in connected conversational environments where groups of communities coexist in a shared space to build collective memories. Individuals from groups historically silenced, misrepresented and oppressed encounter more challenges to participation, remembering and memory building in hegemonic spaces.

The same way Genevieve Bell offers a critique to new empiricism in solving the question of implications for design, and a way out of the misuse of ethnography by countering it with our own stories, Harding also stresses the importance of being critical to the conceptual frameworks of both scientific disciplines but also public policy because they have “never achieved the desired political and cultural neutrality that their scientific methods and related administrative procedures had been claimed to promise” (2004: 4). This is clear in the context of Wikipedia, as I develop in chapter four “Wikipedia and the future of Digital Memory”.

In 2004 Harding edited a volume with a collection of articles and essays focusing on the intellectual and political controversies of SPT. In the introduction to that volume she writes about SPT as a site of political, philosophic, and scientific debate about the standards of what constitutes knowledge, objectivity, rationality, and good scientific method. Given that no scientific discipline can be excused from being complicit with sexist and androcentric agendas of public institutions by means of “androcentric, economically advantaged, racist, eurocentric, and heterosexist conceptual frameworks” it is appropriate to inform ubicomp research with feminist standpoint theories. Harding argues that, as a result of those frameworks, “there is a systematic ignorance and error about the lives of the oppressed and their oppressors and thus about how nature and social relations in general worked” (2004:5). At the same time SPT suggests a remedy that

constitutes the basis of this research: that is to start off through research from women's experiences, lives, and activities (or labor) and from the emerging feminist discourses (2004:6).

### **2.1.3. Implications for design on being included**

The misuse of the ethnographic enterprise as a tool to extract data from settings that would eventually provide insights with which to answer the question of implications for design is especially problematic when dealing with issues of diversity and inclusion. In *On being included* feminist scholar Sara Ahmed approaches what can be understood as the question *implications for design* when there is a failure to document and address exclusion. She focuses on the language of diversity in the current context of performance culture that institutions such as Universities are embracing, where "a document that documents the inequality of the university becomes usable as a measure of good performance" (Ahmed, 2012:84). According to Ahmed: "If we merely extract data the measure of good performance will show, masking the fact that when equality and inclusion becomes another performance indicator, it cannot be treated as outside of the disciplinary regimes" (Ahmed, 2012:85). Michael Power (1994) has described this *good performance* shift as "the audit explosion". The arrival of audit systems into higher education involves adopting self-regulatory mechanisms from the private sector, in particular from finance, by the public sector. A performance culture is at once "a disciplinary system of judgments, classifications and targets" (Ball 1998:190).

Michael Power argues that audit culture is about "making things auditable" (1994:18). Literature suggests that under audit culture, institutions create "evidence of systems" for the auditors instead of showing evidence of the systems in place. That way, following Bell's suggestion on the reliability of data ("data lies to look good") exposed at the beginning of this chapter, "when equality is audited, the organizations can create evidence of equality

systems that are not actually the ones in place, but would be fabrications” (Ahmed 2012:100). Ahmed wrote how this is problematic because “the existence of the documentation is taken as evidence that the institutional world it documents (racism, inequality, injustice) has been overcome. The creation of equality systems can thus conceal the inequalities that make such systems necessary in the first place (2012:100)”. But also, that “we must note as well that performance culture *is* institutional culture” (Ahmed, 2012:84), which can inform context both in online and offline environments where diversity and inclusion is failing.

In *Divining the Digital Future*, Bell wrote about how Rosalind Picard (1997) and Don Norman (2004) argued that the traditional focus on task performance has been overly reductive, modeling people in purely computational terms and neglecting other important aspects of experience (Genevieve Bell, 2011: 75). Bardzell also discussed how HCI was expanding beyond the preoccupations around performance and becoming gradually focused on subjects such as culture, society and the experiential qualities of computing (2010: 1304). In that regard, Ahmed reminds us that any system of measurement requires units of measurement, and documents can come to provide such measurements. Documents are not simply objects; they are means of doing or not doing something (Ahmed, 2012, 2006). I have already introduced the British philosopher of language J.L Austin and how in the now iconic book on speech-act theory *How to do things with words* (1962) he defined perlocutionary speech acts as those that produce certain effects as their consequence (what happened as a result of the interaction). J. L. Austin’s idea that when we say something we are already performing speech acts works under specific parameters, a social convention or social ritual that needs to be fulfilled as context for the illocutionary act (what was meant when performing the interaction), as an illocutionary act is defined by these conditions that have been socially validated by the linguistic community.

Many scholars have adapted Austin's speech act theory to an analysis of institutional speech acts centered on diversity. In the article *The non-performativity of anti-racism* Ahmed (2006) defines some acts are non-performative when the failure to do what they say is not a failure of intent, but what the speech act is doing. Being taken up as performatives, these non-performatives produce other effects: for example, institutions claiming to be anti-racist without actually engaging in anti-racism. Ahmed develops a new approach to texts that she called 'an ethnography of texts' to explore the non-performativity of the term *diversity*, by asking "what does diversity do" when it is put into "action" (2006:5). She wrote about Austin's speech act theory in a way that connects with the question of implication for design, proposing the notion of non performativity as an implication for the design and implementation of audit cultures to measure diversity and inclusion:

The non performativity of antiracist speech acts requires a new approach to the relation between texts and social action, which I will be calling "an ethnography of texts." Such an approach still considers texts as actions, which "do things," but it also suggests that "texts" are not "finished" as forms of action, as what they "do" depends on how they are "taken up." To track what texts do, we need to follow them around. My argument will show how the textual and the empirical cannot be separated, but are weaved together in the fabric of the social. Rather than reading texts as for 'what' they say, I suggest that text circulate as documents or objects within public culture, and that our task is to follow them, to see how they move, as well as how they get stuck in specific contexts of utterance (Ahmed, 2006).

That way I have "followed texts around" different tech oriented spaces where there is a diversity problem, and included in this manuscript observations, case studies and literature mostly on Wikipedia, but also on the social media platforms of Facebook and Twitter, as both coexist in the landscape of digital

conversational environments where an ethnography of texts can be performed.

#### **2.1.4. Making room for the social and the cultural: Memory, Language and the Body**

J.L Austin named perlocutionary acts as those that produce a certain effect as their consequence, which I understand can be taken as a sort of implication for design of language as a sociocultural object. Since the publishing of his influential book on speech-act theory (1962), his contributions have been reviewed and given new contexts in feminist epistemologies and methodologies. Feminist scholars acknowledge that he provided revolutionary claims on performativity and materiality such as “that all language is performative, and all materiality is linked to the linguistic” (Senft, 1996:2).

Judith Butler’s take on the Austinian framework has assisted many feminist scholars conceptualize how language “sustains the body”. As she proposed: “it is by being interpellated within the terms of language that a certain social existence of the body becomes possible” (Butler, 1997:5). In *Excitable speech* (1997) Butler reflects on how language *feels* on the body by stressing the importance of the “somatic dimensions of linguistic vulnerability” to understand “linguistic pain”. She wrote: “there is a strong sense in which the body is alternatively sustained and threatened through modes of address”. (Butler, 1997:3) To articulate a framework for understanding the connection between language and the body, she takes a feminist standpoint perspective on the interpellative address of the other. She also wrote:

If language can sustain the body it can also threaten its existence, thus, the question of the specific ways that language threatens violence seems bound up with the primary dependency that any speaking being has by virtue of the interpellative or constitutive address of the other. (Butler, 1997:5-6)

In 2004, Harding edited a volume with a collection of articles and essays focusing on the intellectual and political controversies of Feminist SPT which included an essay by black feminist scholar bell hooks that reflects on her relationship with language, and the relationship of language with memory. The piece "Choosing the margin as a space of radical openness", that was first published in the late eighties (1989:15-23) departs from a lived and embodied experience to claim that language is a place of struggle. She expressed:

To me, the effort to speak about issues of "space and location" evoked pain. The questions raised compelled difficult explorations of "silences" - unaddressed places within my personal political and artistic evolution. Before I could consider answers, I had to face ways these issues were intimately connected to intense personal emotional upheaval regarding place, identity, desire (2004:153).

hook's is an embodied experience intimately connected to personal and autobiographical memories that urges individuals to reclaim safe spaces for personal and collaborative remembering, as hook words it: "spaces where one is able to redeem and reclaim the past, legacies of pain, suffering, and triumph in ways that transform present reality" (2004:155). Butler wrote about being injured by language and the violence of representation in her book *Excitable Speech*, where she focused on the subject of oppressive language and linguistic survival. She also noted that the physical metaphors that we often use to describe linguistic injury may be speaking about the somatic dimensions of linguistic pain. Quoting Toni Morrison in her 1993 Nobel lecture in literature, she asserted that: "Oppressive language is not a substitutive for the experience of violence. It enacts its own kind of violence" (Butler, 1997:20). Whereas the threat and violence take place in language, the threatened act as an experience takes place in the materiality of the body, being that experience enabled by online or offline environments.

Building from Butler's work, a critical approach to establish implications for design has been undertaken through the entire research, having in mind that "it may be precisely through practices that underscore disidentifications with those regulatory norms by which sexual [and other categories of] difference is materialized, that both feminist and queer politics are mobilized", and that "such collective disidentifications can facilitate a reconceptualization of which bodies matter, and which bodies are yet to emerge as critical matters of concern" (Butler, 1993:4). In other words: such collective disidentifications can in turn create new felicity conditions for citational practices, conditions that need to be established by what the Spanish author, scholar and curator Paul B. Preciado calls *somato-political* protest movements (2011). We have seen this happen to many words such as butch, queer, or crip whose history has a legacy of degradation that was reverted once *somato-political* movements such as the LGTB movement and the disability justice movement started transforming the meaning by means of changing the practices and context of use.

Preciado addresses the question of the body from a Foucaultian biopolitical perspective (Foucault, 2007), and considers the body as an archive or experiences or *Somatheque* (2011). His story is an approach to the body as a cultural and political archive while performing a change on biopolitical data. At the time of writing (2020) it is my understanding that Paul. B Preciado presents himself with masculine pronouns, for this reason this is how he is being addressed throughout the present research. In 2008 the author published *Testo Junkie*, a very influential work and a sort of personal and philosophical diary that documented his life while he was experimenting with testosterone without being in a medicalized and pathologizing female-male transgender transition, but rather from a biopolitical perspective (Preciado, 2008). In 2014, I had the opportunity to interview him about the performative approach of testosterone practices as an act of biopolitical disobedience, where he defined the body-archive as follows:

We think in a completely absurd way, that the body ends where the skin ends, and this always happens to us. And then, instead of talking about the body, I use the term “body archive”. To me the body is a cultural and a political archive. It is an archive that contains images, narratives and practices in it. [...] At the end of the 19th century, ¿what did Freud do? He said: the consciousness and the psychic apparatus do not match. The psychic apparatus is bigger than the consciousness. There is something called unconscious that I still do not know very well what it is, but it does not coincide. Then, what I call somatic apparatus does not coincide with the body. The body is small but the somatic apparatus is gigantic. The somatic apparatus is cybernetics, for example, one of the technologies that is transforming the somatic apparatus but which is not the body as we imagine it (Preciado in an conversation with Delatte, 2014)

In 2011 Preciado led a seminar at the International University of Andalucia, in Spain, whose focus was to learn about this new framework for understanding the body-archive that was named *The Improper Body: Guide to somato-political models and their possible deviant uses*. There are both transcripts and audio recordings of the sessions that can be retrieved and accessed by anyone from the University’s website and that I have consulted to inform the present research. During the sessions Preciado explained how the conceptual apparatus for the body archive was built from an intersection of theoretical assumptions to help rethink the different historical modes of oppression and dominations and its possible breaking points.

To that end, he analyzes how the relation between body, power and truth has been transformed throughout history, while suggesting that it is urgent to think about underprivileged communities as “*somato-political* protest movements”. Preciado departs from the concepts proposed by Foucault in *Discipline and Punish* (1978) and *History of sexuality* (1990) adding on a feminist and queer critique - that is, arguing that Foucault did not take into consideration the specific context of women, as suggested by Feminist Stanpoint Theory. He also offers a new perspective on the political history of

the body and points out, for instance, how there is a link between the sovereign power and the historical construction of male identity that to a large degree explains the persistence of violence in democratic societies - and arguably also in their Internet Ecologies. To understand this link, he suggests that it is essential to create a “genealogy of the body” that would allow us to identify and understand how the processes of construction of "political fictions" that shape and constitute us, such as sexual identity, gender, social class or race, took place. He does that by providing a political history of the body divided in three periods or regimes (Preciado, 2011).

- 1) *The Sovereign regime* where the body is inhabited by theocratic powers (what he calls a body for death). Taking as reference the history of Western civilization, the sovereign regime could be associated with the period between the beginnings of Christianity and the 17th century.
- 2) *The Disciplinary or biopolitical regime*, where organs begin to be identified and the body is thought of as an organic machine of national reproduction. This is a dominant thinking during the central period of modernity between the 17th century and the middle of the 20th century.
- 3) *The Pharmaco-pornographic or neoliberal regime*, that is characterized by the emergence of the medical-psychiatric notion of "gender", the emergence of the cyborg body, the chemical separation between heterosexuality and reproduction and the conversion of pornography into popular culture. This period begins to take shape at the beginning of the 20th century and, according to Preciado, has played a fundamental role in the production and management of the body after the Second World War and its two great “thanatopolitical” apotheosis (Hiroshima / Nagasaki and Auschwitz)

Preciado’s proposal of the emergence and expansion of a new *somato-political* regime does not imply the disappearance of the previous

ones, but rather an overlap, or a juxtaposition, and the establishment of different types of relationships amongst them. That way, the body as archive of experiences or *somatheque* could be described as the effect of a multiplicity of power and representation techniques that maintain different types of relationships, both conflictive and symbiotic, promoting the creation of a political fiction that has a "curious double quality": that of being alive and that of being a place of subjectivation (2011). Preciado uses as an example the political process that leads to a proliferation of bodily organs in the somatic field. It is the first time in medical history that some of these organs are identified and named, which fosters within the social body a proliferation of new identities: "so that the homosexual ceases to be the man who practices sodomy (or the lesbian that woman who practice tribadism), to become a kind of specific biological subspecies" (Preciado, 2011). At that time there was a constant search for "psychosomatic signs of difference", of anatomical, biological and / or psychological features that make a homosexual (or a woman, or an indigenous, or a Jew), be. According to Preciado, that implies identity is naturalized. A naturalization that is still very present in the disabled body, where "the degree of disciplinary oppression has been so strong that it is still very difficult for us to see and understand that disability is also a cultural construction" (Preciado, 2011).

In that regard, Lennard J. Davis in his work *Enforcing normalcy: Disability, deafness and the body* (1995) describes how the social process of disabling arrived with industrialization via normalization (J. Davis, 1995:30). Davis argues that the idea of normalcy and the "normal body" was constructed in colonial Europe over the period of 1840-1860, following a movement that started with the use of medical statistics in the UK and France. He also wrote that almost all early statisticians were eugenicists in favour of enforcing normalcy by means of selective breeding. What started in the 19th century as selective breeding, continued throughout the 20th century; following a path of identity degradation, erasure, and participation disruption of all bodies and identities that were considered abnormal. This path of identity degradation,

enforced by colonial and hegemonic power structures, is profoundly embedded in European and western cultures of privilege, normalcy and value. Regulatory practices of normativity exist and are reinforced offline and online to the extent that they are “cited” as norms and take power through repetition. Memory (both collective memory and the memory of our personal experiences) plays a crucial role both in maintaining and reinforcing those regulatory practices, but also in creating certain new felicity conditions for speech acts performed by the *somato-political* protest movements to reclaim and build safer spaces for participation and collaborative memory building.

### **2.1.5. Emotion and Cognition**

In *Divining a Digital Future* Bell already suggested how ethnographic studies of emotion can provide an alternative account that is useful because “It highlights the cultural specificities of this parallelism between emotion and cognition” (2011: 76). I am especially interested to explore the cultural specificities that shape emotion and cognition from a feminist standpoint in the context of ubicomp.

The proposal for a Feminist Standpoint Thinking stresses the importance of problematizing the conceptual frameworks of both scientific disciplines but also of public policy. For the specific context of the present research, it is especially relevant to consider feminist critiques towards the classical understandings of cognition. Elizabeth Wilson, whose work has focused on how biological and neurological data can be used in feminist theory, in 1998 described the neurological body in classical understandings of cognition as “decapitated” because it has been conceptualized in isolation from everything below the head (in Victoria Pitts-Taylor, 2013:857). Professor of Philosophy Anne Jaap Jacobson sees a coincidence of interests in feminist epistemology and embodied cognition, particularly in work on perception (Jacobson 2012). Following Solomon and Jacobson, feminist scholar Victoria Pitts-Taylor, whose work has focused at the intersection of neuroscience and

body politics, also suggests “that embodied mind theories open neurocognitive processes to feminist theorizing” (Pitts-Taylor, 2013:858).

My research contributions can inform a new setting for studying how collaborative inhibition and the retrieval disruption hypothesis would operate in connected conversational environments where groups of communities co-exist in a shared space to build collective memories. The retrieval disruption hypothesis is the event in which the strategy pursued by one individual, in order to remember (to retrieve), is disrupting the use of other retrieval strategies that may be more effective for other group members (Barber et al. 2012: 60). The larger the group, the larger the chances for inhibition to occur (Basden et.al 2000). Considering participation in the context of inhibition theories, we can add another layer for questioning how disruptions in participation may lower the memory performance of the group. Individuals from groups historically silenced, misrepresented and oppressed encounter more challenges to participation in hegemonic spaces. An individual may have recalled an item of information, but eventually failed to share it with the rest of the group, for many reasons involved with collaborative remembering and the ethics of forgetting.

In the context of digital episodic memories (the documented digital memory of our personal experiences), it is possible that participation is disrupted before usage without the need for an unpleasant, frustrating interaction to be experienced by the user just by mirroring the experiences of others. Disrupting participation triggers are the instances in which episodic memories about a particular environment, person or event lead to the disruption or inhibition of user participation. When those instances are targeted at communities outside normative schematic templates, they can lead to exclusionary practices, often legitimated by violence exercised through language.

What could explain the event in which Disrupting Participation happens before usage is mirroring. Mirroring is “the fundamental mechanism at the basis of the experiential understanding of others’ actions and emotions” (Gallese, Keysers, and Rizzolatti 2004: 396 in Pitts-Taylor, 2013:857). According to Pitts-Taylor, mirror neurons are relevant for critical theorizing because they help establish that there is a profound relation between social grounds and the body. As she wrote: “Along with other models of “embodied cognition,” mirror neuron theories reject views of mind as disembodied and abstract and point toward the situatedness of knowledge” (Pitts-Taylor, 2013:853).

Mirror neuron activity has not been specially taken into consideration in the context of digital environments because it is found in the sensorimotor cortex, covering actions such as movement and vision often associated with experiences that have not been mediated by digital technologies. However, writing about political organizing in media space, Jodi Dean (1996) speaks of “reflective solidarity”: a commitment to share the struggle of another, based on an imagination of their pain, or their shame (in Senft, 2013) in a way that resonates with how mirror neuron activity works. Also because mirroring is the “fundamental mechanism at the basis of the experiential understanding of the others’ actions and emotions” (Pitts-Taylor, 2013: 857), episodic memory - the memory of our experiences - may play a more relevant role for our understanding or the affordances of mirroring in the context of digital conversational environments. An embodied and experiential understanding of linguistic vulnerability and linguistic pain (being those experiences mediated by digital technologies or not) could be facilitating the experience of other’s pain through their experiences as document, which in turn can lead to a disruption of a users participation just by mirroring the pain of others.

In her article *I feel your pain: Embodied Knowledges and Situated Neurons* Victoria Pitts-Taylor critiques the dominant neuroscientific account of mirror

neurons, called embodied simulation theory, and describes alternative interpretations of mirror neurons in cognitive science and philosophy of mind that takes into account that mirroring needs to be essentially conceptualized as a situated experience of embodied perception because context is saturated with information, including highly cultural variables: “This context includes the unique biographical/physiological context of the brain—its own past experiences of action and feeling—as well as the social context of any event of perception, which includes the subject’s relation to the other” (Pitts-Taylor, 2013:862). Drawing from a range of findings and hypotheses in cognitive science and philosophy, she explores how mirroring can be considered situated in the sense that scholar Miriam Solomon suggests (Pitts-Taylor, 2013:861). Pitts-Taylor’s review of Miriam Solomon’s literature places situated cognition as strongly resonant with feminist epistemologies, including Donna Haraway’s notion of situated knowledges (Haraway 1991), the standpoint theories of Sandra Harding, and feminist critiques of objectivity (in Pitts-Taylor, 2013:858). She wrote:

“[...] in my view it follows that mirror neurons do not register an objective percept, as embodied simulation theory seems to suggest, but rather register ineluctably situated perception. They cannot objectively represent the other’s body in pain, but they may involve my own body in perceiving the other in pain. Such a situated neural experience could draw upon my prior experiences or memories of pain. Damasio and Meyer postulate, for example, that action understanding “is not created just by mirror-neuron sites, but also by the nearly simultaneous triggering of widespread memories throughout the brain” (Damasio and Meyer 2008, 168). The same might be true for empathic understanding at the level of “basic empathy” (Stueber 2012). My perception is an embodied experience whose meaning is partly constituted by my own neural and embodied history” (Victoria Pitts-Taylor, 2013:861-62).

Given that, a situated understanding of mirroring suggests a “dynamic relation between the microarchitecture of brains, bodily processes, and the social world” influenced by memory (2013:864) that I understand highly relevant for the question of implications for design, as it reinforces the importance of acknowledging its multidimensional reach when considering

consequences and implications of different design choices especially in terms of the memory building of communities that have been systematically silenced, mistreated and underrepresented.

## 2.2. Methodological issues: researcher positionality

“Researchers are not separate, neutral academics theorising about others, but co-researchers or collaborators with people working towards social equality”

(Bev Gatenby and Maria Humphries 2000:90)

In a YouTube video about feminist research methods, the Canadian researcher Cannie Stark described women as a “messy variable” in the context of academic research<sup>1</sup>. She was speaking about women as research subjects. Like it or not, the world now is full of messy variables, and the messy variables will increase in the following years as more diverse voices enter the conversation, urging us to incorporate into the HCI research agenda the social context of data. That leads to considering the appropriateness of qualitative research methods in order to gain a detailed understanding of both people, data and their context, especially if the researcher is aiming to conduct a study related to digital archiving and the human memory from a feminist standpoint thinking. Which is one of the aims that has prevailed through my entire research journey.

In his book *Archive Fever* (1996), Jack Derrida addresses, among other things, the questions of memory, violence and forgetting. Alexis Lothian in the paper *Archival Anarchies: Online fandom, subcultural conservation, and the transformative work of the ephemera* (2013) writes about the relevance of Derrida’s thoughts on contemporary archiving in terms of identity politics and conservation, that give context to the practice of collective memory building.

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<sup>1</sup> Cannie Stark made that description during a recorded interview that can be accessed via YouTube at the following link (<https://www.YouTube.com/watch?v=Fm14F3vabhww>)

The present study questions these issues, which were also addressed from a gender perspective by the feminist artist Judy Chicago in her work *The Dinner Party*. Chicago's piece is a symbolic representation of women's history that was once omitted by the authoritative forms of archives through history (Chicago and Woodman, 2007) The project, although directed by Chicago was worked on collaboratively through the years operating as a group memory in a feminist space. Its exhibition was also discussed in a televised debate at the US Congress and temporarily banned under the misogynist argument that the plates that symbolically represented each woman were pornographic because they looked like vaginas. Paul B. Preciado addresses the question of archive from a biopolitical perspective, considering the body as an archive or experiences (2008). Following Preciado's work, it is appropriate to also consider both feminist and queer approaches to qualitative research on archives, memory and the embodied experience.

Shulamit Reinharz in her book *Feminist methods in social research* comments: "Feminism is a perspective, not a method" (1992:240), but as pointed out by Bev Gatenby and Maria Humphries in her paper *Feminist Participatory Action Research: Methodological and ethical issues*, feminism is a perspective which requires that we re-think the validity of research as process and knowledge-creator (2000). Also it is a perspective that is immensely helpful to take into consideration while conducting research from a user-centred approach. In 1993, Liz Stanley and Sue Wise listed seven key principles for performing qualitative research based upon feminist models of knowing that are aligned with the Design Justice principles and the implications for design question in the context of research. These principles are interesting because of their potential contribution towards keeping a holistic perspective about research subjects, but they can also help researchers to deal with the issues of perspective, positionality, bias and reflexivity. The principles as reported by Gary D. Shank in the book

*Qualitative Research. A Personal Skills Approach* (2002:135) had been incorporated into the writing of my thesis and are the following:

1. The researcher/research relationship should not be a hierarchical relationship.
2. Emotion should be seen as a valuable aspect of the research process.
3. The conceptualizations of “objectivity” and “subjectivity” as binaries or dichotomies must not occur in research.
4. The researcher’s intellectual autobiography must be taken into consideration when viewing their conclusions.
5. The researcher must consider the existence and management of different “realities” or versions held by the researchers and the researched.
6. The researcher must be aware of issues surrounding authority and power in research.
7. The researcher must recognize that there is an authority and power in the written representation of research.

Olsen (2011) also contributes to the discussion from a feminist research approach, a perspective that shares most of the spirit of the Design Justice Movement. Summarizing Olsen’s contributions, Creswell wrote that “the goals are to establish collaborative and non-exploitative relations, to place the researcher within the study so as to avoid objectification and to conduct research that is transformative” adding on that there are “recent critical trends [that] address the intersectionality of feminist research (e.g., the intersection of race, class, gender, sexuality, able-bodied-ness, and age) (Creswell, 2013:29). Intersectionality is what links feminist research approaches and Design Justice theory and practice in the present study.

J.W. Creswell states that the research process for a qualitative researcher is emergent, meaning that the “initial plan for research cannot be tightly prescribed, and that all phases of the process may change or shift after the

researchers enter the field and begin to collect data” (Creswell, 2012:39). Indeed there have been many iterations since the beginning of my research path, some of them described in the introduction to this manuscript. Those have been influenced by data collection, but also by both my personal context and the global context. I started the present research in 2014 under a series of assumptions: The Internet was full of interesting information that I was not able to find because of the complexity of data retrieval and knowledge discovery in the context of big data. I wanted to imagine a better searching experience, one that was not so frustrating, full of noise and dead ends. I eventually understood that a large portion of the information that was interesting to me because of my personal context and interests as a white bisexual woman from Barcelona with an interdisciplinary practice in journalism, cultural production, feminist activism and research in digital media, was not considered important enough to be searched according to standards of normalcy set by a monolithic group of white men.

It took some time to access the feminist tech oriented spaces that have fundamentally transformed and informed my research: the geek feminism blog and wiki, now in archival mode; the many groups and people that contribute to addressing the gender gap in Wikipedia and its multiple resources, such as the Gendergap Digest, a public mailing list that I monitored and coded for some time in order to gain a deeper understanding of the barriers that women and gender nonconforming people face while editing Wikipedia, and while probmatizing the gender gap in the site; other young communities that I followed, such as Los perros románticos - a community of millennial indie poets whose work was highly informed by internet cultures, named after Chilean author Roberto Bolaño’s 1995 work *The romantic dogs* recently disappeared following sexual abuse and misconduct accusations from one of its most popular members.

The results of the 2016 election in the USA also changed the behaviour of many online communities of underprivileged users, adding on a sense of risk

and worrisome that would refocus the problem or issue of online harassment as a relevant phenomenon to understand in the context of digital conversational environments where collaborative memory building happens. For that, after engaging in participant observation for a couple of years, I went into full autoethnographic mode with Wikipedia. However, even though I have presented those ethnographic experiences in the context of feminist safe spaces where I have been invited to speak, such as at conferences, I have not been able to include in the present text most of the experiences of harassment that I have experienced both on social media platforms such as Facebook or YouTube, and in digital projects for memory building such as Wikipedia.

In that sense, Creswell also focuses his discourse on the holistic account of qualitative research, in the sense that qualitative researchers try to develop a complex picture of the problem or issue under study, in that case one that includes online harassment and hate speech as an inseparable part of the Internet Ecology. For that reason in the research project I have searched for what Morse and Richards described as “methodological congruence” (2004) which means that “the purposes, questions, and methods of research are all interconnected and interrelated so that the study appears as a cohesive whole rather than as fragmented isolated parts” (Creswell, 2012: 39). Keeping a feminist standpoint thinking has enabled both to maintain methodological congruence and to ensure the user-centred focus.

### **2.3. Methods of data gathering**

According to Stanley and Wise’s principles of doing qualitative research based upon feminist models of knowing, a series of qualitative research methods (observations, ethnography, and case studies) that may effectively facilitate the gathering of relevant data for the research has been selected.

## **Ethnography and Case Study**

In an ethnographic study, the investigator collects descriptions of behaviour through observations, interviewing, documents, and artefacts (Hammersley & Atkinson, 1995; Spradley, 1980), although observations and interviews are popular forms of ethnographic data collection, and have been used in the present study. Like ethnography, case study data collection involves a wide array of procedures as the researcher builds an in-depth picture of the case.

According to Creswell, “a holistic view of how a culture-sharing group works results in ethnography. An in-depth study of a bounded system or a case (or several cases) becomes a case study” (Creswell, 2012:77). The present study does not rely solely on one or the other, but makes use of different techniques that may be useful in the different stages of the research: an ethnography of texts (Ahmed, 2006) to see what diversity does when it's put into action; autoethnography to fully understand the multidimensional reach of UX, specially while dealing with remembering, participation and violence in digital environments; and case studies to problematize issues around participation.

The “entire culture-sharing group in ethnography may be considered a case, but the intent in ethnography is to determine how the culture works rather than to understand an issue or problem using the case as a specific illustration” (Creswell, 2012:73). I have engaged with ethnographic practices to have a greater understanding of the cultures of participation of Wikipedia, which are deemed to be quite lawyeristic and policy focused. In that regard, I have also engaged in study of cases to specifically examine some of the issues that have arisen while determining how the culture works - issues around policy making, but also problematic consensus practices - as those issues are explored through several cases within the bounded systems of

digital conversational environments, with a special focus on both Wikipedia and the social media platforms in which the platform coexist.

## 2.4. Validation

To establish validity and trustworthiness in a study, Lincoln and Guba (1985) use unique terms such as “credibility, authenticity, transferability, dependability, and confirmability (quoted in Creswell, 2013: 246). According to Creswell, to “operationalize these new terms” techniques such as triangulation of data sources, methods and investigators to establish credibility are proposed by the authors. (Creswell, 2013)

Validation is also being reconceptualised by qualitative researchers. In *Getting Smart: Feminist Research and Pedagogy With/in the Postmodern* (1991), educator and scholar Patricia Lather identifies four types of validation including triangulation (multiple data sources, methods, and theoretical schemes), construct validation (recognizing the constructs that exist rather than imposing theories/constructs on informants or the context) face validation (Kidder, 1982:56) and catalytic validation (which energizes participants toward knowing reality to transform it) (Creswell, 2013:247).

In *Four frames of validation* (Lather, 1993) the terms used by the author became more closely related to feminist research. Creswell describes the four frames of validation as follows:

“The first, *ironic* validation, is when the researcher presents truth as a problem. The second, *paralogic* validation, is concerned with undecidability, limits, paradoxes, and complexities, a movement away from theorizing things and toward providing a direct exposure to other voices in an almost unmediated way. The third, *rhizomatic* validation, pertains to questioning proliferations, crossings, and overlaps without underlying structures or deeply rooted connections. The researcher also questions taxonomies, constructs, and interconnected networks whereby the reader jumps from one assemblage to another and consequently moves from judgment to understanding. The fourth type

is situated, embodied or *voluptuous* validation, which means that the researcher sets out to understand more than one can know and to write toward what does not understand. (Creswell, 2013:247)

The study follows how Patricia Lather's guidelines on validation have gravitated especially towards *rhizomatic* and *voluptuous* approaches. When appropriate the study has also followed recommendations of the UK Data Service regarding the quality assurance process for data management, which are the following:

1. Data collection: Taking multiple measurements, observations or samples; checking the truth of the record with an expert; using standardised methods and protocols for capturing observations, alongside recording forms with clear instructions.
2. Data Entry: Using controlled vocabularies, code lists and choice lists to minimise manual data entry; detailed labelling of variables and record names to avoid confusion; designing a purpose-built database structure to organise data and data files; accompanying the data with notes and documentation relevant to it.
3. Data checking: Double-checking coding of observations or responses and out-of-range values; checking data completeness, adding variable and value labels where appropriate; double entry of data; correcting errors made during transcription.
4. Adding Value: Geo-referencing data; sharing field notes.
5. Qualitative Data (recorded interviews): Checking the level of sound or picture quality needed and whether consent is in place to allow fullest use of recordings.

(Source: UK Data Archive)

In recent publications, Lincoln, Lynham and Guba (2011) reviewed their focus on establishing authenticity reframing it with a perspective of “balance of views, raising the level of awareness among participants and other stakeholders, and advancing the ability of inquire to lead the action on the part of research participants and training those participants to take action” (Creswell, 2013:249). According to Creswell, for the authors, “validity is an ethical relationship with research participants through such standards as positioning themselves, having discourses, encouraging voices, and being self-reflective”(2013:249). An ethical relationship that embraces the main principles of the Design Justice movement and the feminist approach to qualitative research methods that this study embraces.

## **2.5. Ethical considerations**

Ethical clearance is an important element in any research design that has been approached by many authors (Creswell, 2013, Hammersley and Atkinson, 2007). This study also follows the recommendations from the UK Data Service and the Arts & Humanities Research Council regarding ethical aspects of data storage and the subsequent access. These recommendations are: treating participants as intelligent beings, able to make their own decisions on how the information they provide can be used, shared and made public through informed consent, making available resources produced by researchers with public funds, protecting participants from harm by not disclosing sensitive information and ensuring that services are delivered efficiently within available resources.

Especially because researchers can find units of analysis for episodic user experiences all over the Internet. In terms of the use of traces of user’s experiences as documents, I have followed the suggestions of linguistic professor Gretchen McChullock, that advises Internet researchers to consider “the ethics of working with linguistic data that is functionally public

but would embarrass or harm the people that made it if distributed out of context” (2019:5). But I have also considered the harm done by the linguistic data in their initial context of use following Bell’s approach to how data has the responsibility to “engage in conversations, because it has a story compelled to say” (2015:19). Following these parameters, some of the citations of this study that come from digital platforms, social media, or blogs are presented in aggregate and not linked to individual users, even in the context of open platforms such as Wikipedia, while others are fully referenced.

# chapter III

## UX AND MEMORY

### 3. Remembering together in connected environments

We understand an experience as “an episode, a chunk of time that one went through—with sights and sounds, feelings and thoughts, motives and actions [...] closely knitted together, stored in memory, labeled, relieved, and communicated to others. An experience is a story, emerging from the dialogue of a person with her or his world through action” (Hassenzahl, 2010: 8). After going through an episode, people engage in meaning-making. They literally tell stories to themselves (and others; Baumeister & Newman, 1994). These stories contain the When, Where, and What, detailing a temporal-spatial structure and the content of the experience. In addition, people can tell whether their experience had been positive or negative (i.e., affectivity). Affectivity is a crucial ingredient of experience—any experience has an “emotional thread” (McCarthy & Wright, 2004), and it is this affectivity which relates experiences to happiness.

Marc Hassenzahl, et al.

*Designing moments of meaning and pleasure: Experience design and happiness* (2013:22)

This pervasive exchange of memories may be becoming both broader and quicker as social media supplies yet other means of communicating about the past. Whatever the format, the constant chatter can be about jointly experienced events, individually experienced events, or facts. That is, people share with each other both their episodic and semantic memories.

William Hirst and Gerald Echterhoff,

*Remembering in Conversations: The Social Sharing and Reshaping of Memories* (2011:56)

### 3.1. Remembering and The Net

I remember the first time I went online. It was after going to the movies to see Sandra Bullock in *The Net*, a 1995 film where she played the role of Angela Bennett, a computer analyst from the U.S at risk of learning a dark government secret, that wakes up in a hospital to find out that her identity has been erased and all her personal documentation -SS number, ID card- has been hacked. In the cyber action thriller directed by Irwin Winkler, Angela Bennett is stereotypically portrayed as a “nerd”, an outsider with barely any human interaction that is not mediated through a computer screen. She has a set of online friends, and when needed, she reaches out for one of them to help her. Her friend is nicknamed ‘Cyberbob’<sup>2</sup>.

To interact with each other, they chat online. In the 90’s, the graphic interface of the chatrooms was not particularly user friendly, but I was so intrigued by the conversational possibilities of the environment in the chat rooms depicted in the film, that the same day I decided to enter an Internet Relay Chat (IRC) room for the first time. The movie helped configure a cognitive map in my mind that gave a sense of familiarity. That sense of familiarity helped me navigate a new language and a new environment that was not particularly user friendly, where the computer would only perform according to specific written commands. */join* and a hash symbol (#) followed by the channel name to join a channel of your choice and enter a chat room. */whois* followed by the nickname of a fellow user to learn information about them, such as different channels that the other person was in. */ignore* followed by the

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<sup>2</sup> According to the Internet Movie Database, Cyberbob “was a fellow hacker that Angela talked to regularly online. At the beginning of the movie, Angela is seen talking in a chatroom with "Cyberbob", "Iceman" and "Gandalf361" about her upcoming vacation. Later in the hotel room, she looks up the identities of her companions for help. She discovers his real name is Robert Fox and he lives nearby in West Hollywood. He is the only one that can help her, since Iceman was 12 years old and Gandalf361 lived in India” (see <http://www.imdb.com/title/tt0113957/faq#.2.1.4>)

nickname of a fellow user to stop receiving messages from that person. Later on, I identified the idiosyncrasies of digital communities in the IRC: writing in capital letters was read as screaming, and using coloured fonts was considered not just very intrusive to the eyesight, but also very disrupting for the conversational dynamic of the community. The text-based language was, and still is, a central component of the Internet Ecology. The letters and symbols of the computer keyboard were all that we had and everything that we needed to speak and to give force to our speech: To move around the online space, entering and leaving chat rooms and conversations, to command actions to the computer, to laugh, to scream, to draw. I also became familiar with the concept of peer-to-peer (P2P) networking; a file-centred application that was widely popularized as a file sharing system in the early 2000's by the music sharing application *Napster*, now offline. P2P applications basically allowed any community to easily carry the practice of sharing large volumes of files. Titanic archives and libraries of music, video games, software and literature were shared, until eventually, copyright issues emerged making the practice of free sharing illegal under copyright infringement laws. The seed for a solid file-sharing ecology was already there, the community kept the practice alive, new file-sharing centred sites emerged after *Napster*, and copyright infringement in 2020 - at the time of writing - remains a problematic issue in the context of the practices of community file-sharing.

In 2007 smartphones appeared, mobile connectivity bloomed, the context changed, and with the context, the usage changed as well. We moved beyond the desktop. Mobile applications and social media networks were amplifying the tendency for sharing documents rooted from the practices of earlier online communities such as *Napster*, but this new context appeared to be user centred and experience centred, rather than file centred, with a strong focus for interaction, that is, sharing and reacting to experiences in the form of documents. User Experience (UX) research emerged as an academic

practice devoted to understanding and theorizing on the experiences amplified and facilitated by digital technologies.

One of the three pillars of the *User Experience (UX) Manifesto* published in 2007 (Law et al. 2007) consisted in answering the question “What is user experience (UX)?” by reviewing and discussing the basic concepts and assumptions related to UX research. Researchers and practitioners agreed that UX is the result of the interaction between three elements: the user, the system and the context (Roto et al., 2011). Following this common vision in the field of Human Computer Interaction (HCI), Hassenzahl and Tractinsky (2006) define UX as: “a consequence of a user’s internal state, the characteristics of the designed system, and the context within which the interaction occurs” (Lallemand, 2015:4). In her thesis dissertation *Towards consolidated methods for the design and evaluation of user experience* (2015) Carine Lallemand describes how in the 1990s, while HCI research was mainly focused on the topic of usability, Donald Norman was amongst the first authors to use the term “User Experience” in order to describe all aspects of a person’s experience with a system (Norman et al. 1995; cited by Lallemand, 2015:4). As Roto, et al. wrote in their *UX White Paper* “UX may change when the context changes, even if the system does not change.” (2011:10).

However, as technology evolves, contexts of use and application types are “broadened and intermixed” (Bødker, 2006). An example of how the contexts of use are “broadened and intermixed” is the use of hashtags (#). Hashtags are a type of metadata tag popularized within the Twitter community, that can be found as common cross-platform practice (that is, on every social network: Twitter, Facebook, Instagram, Snapchat, etcétera). Axel Bruns and Jean E. Burgess, in their paper *The use of hashtags in the formation of ad hoc publics* (2011a), indicate how the pervasive use of hashtags since 2007 has proven to have a great capacity for “cultural generativity” (Burgess, 2011b). Context of use has also broadened in terms of practice. At the time of writing (2020) we are not just texting each other, or sharing our libraries

and datasets. We are also globally sharing documents of our experiences in multiple formats, often combining sound, graphics, images, video, and text-based elements. The experiences that we narrate, record or even broadcast live with our mobile devices are still shareable files. Documents that when shared and consumed online, enable different experiences to be lived by other users on social media networks. If the seed of the P2P culture was document-centred file-sharing, the focus of the network dynamics resulting from the context of mobile technologies is experienced-centred, with a strong focus on facilitating, amplifying and building interactions - often based on subjective and emotional data - within the user community.

Carine Lallemand questions the evaluation in artificial settings, and suggests that the collection of subjective and emotional data on the felt experience is a necessary step to understand UX. She argues that, by collecting this type of data, UX researchers can map how “the social and cultural context of the interaction plays an important role by impacting the felt experience” (2015:6). In agreement with Lallemand, I argue that social media platforms and other digital creative archives and knowledge repositories already contain digital traces of subjective and emotional data on the felt experience of users, because users are sharing experiences as documents both on social media platforms and digital creative archives. In her exercise on consolidating methods for researching UX, Carine Lallemand concluded that the highly contextual nature of UX challenges evaluation and ideally requires a holistic assessment of the interaction. Because UX evolves with the interaction between systems and context, a holistic assessment of interaction would take into consideration how UX evolves over time.

I propose that, in addition to the holistic assessment, researchers should also consider the materiality of UX beyond the screen- what is often referred to as IRL (In real life) experiences- in the vernacular language of digital communities. The materiality of UX beyond the screen is especially relevant when a user is the subject of online harassment, because often the feeling of

being threatened does not stop when the digital interaction ends. Furthermore, if there is a threat of physical attack and this threat is carried out, the digital materiality of harassment that started in digital environments would have transferred into a physical materiality IRL. Also, it can happen that IRL events of violence and threats that happened in the past are discussed in present hashtag threads in digital conversational environments, as happened with the hashtag campaigns #miprimeracoso (#myfirstharassment).

### **3.1.1. Networked abuse and solidarity**

I was 13 years old when I became an Internet user. My first nickname, the chosen name by which you want to be known by your community or users, was Koré, the name of a type of ancient Greek sculpture that always depicts young women. *The Net* (1995) was the gateway of what has become one of my research obsessions: the phenomenon and effects of networked abuse and solidarity, and how they affect the felt experience online and offline, both in terms of collective memory and personal identity. In the nearly 25 years that separates my first online connection from now, I have never experienced the level of networked abuse that Angela experienced in the film, but as many other young women, I have experienced different forms of online harassment such as being called names, stalked or threatened. In a survey investigating the experiences of online harassment conducted in 2014 by the Pew Research Centre, results depicted in Figure 3.1 show that young Internet users experience a number of forms of online harassment, and that these forms of harassment are particularly severe for young women. 27% of users aged 18-24, regardless of their gender expression, have experienced being called names, and 40% of all Internet users, regardless of their age or gender expression, have experienced some form of online harassment.

For the past three years I have carefully observed and researched the behaviours of the different digital communities that I am a part of, that I have

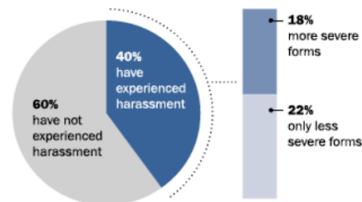
interacted with, or that I have come across for different reasons (work, activism, research etc). Online communities or digital communities, are communities of users that interact with each other primarily via online communications. Digital communities are not monolithic entities, they are constituted and shaped by the activities, common interests, experiences, behaviours and sense of belonging of its users. Digital communities may even appear around a specific hashtag<sup>3</sup>.

**Figure 3.1**

Results from a survey investigating the experiences of online harassment conducted in 2014 by the Pew Research Centre

**Four-in-ten internet users are victims of online harassment, varying degrees of severity**

*Among all internet users, the % who have experienced harassment or not and the % who have experienced more vs. less severe forms of harassment ...*

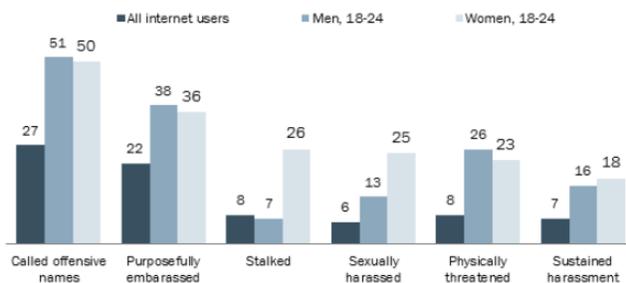


Source: American Trends Panel (wave 4). Survey conducted May 30-June 30, 2014. n=2,839.

PEW RESEARCH CENTER

**Young women experience particularly severe forms of online harassment**

*Among all internet users, the % who have personally experienced the following types of online harassment, by gender and age...*



Source: American Trends Panel (wave 4). Survey conducted May 30-June 30, 2014. n=2,839.

PEW RESEARCH CENTER

<sup>3</sup> A short keyword, prefixed with the hash symbol '#' used on social media networks and microblogging sites that allows users to find and share messages with a specific topic of content.

In April 2016 a young Mexican woman shared her first IRL experience of harassment on Twitter followed by the hashtag #miprimeracoso (#myfirstharassment). The hashtag rapidly became a trending topic, first on Twitter shortly after on the rest of the mainstream social networks and digital conversational environments. More than 100,000 hashtags #miprimeracoso<sup>4</sup> were shared in the aftermath of the first tweet, enabling an episode of conversational remembering around harassment that still remains active today (2020), and I shall add, relevant. As a result of this episode, an ongoing corpus of digital memories of online harassment has derived from the thread of hashtags, and those memories can be accessed, retrieved and reshared by anyone at any given moment. To understand how the user experience of online abuse is affecting the formation of collective memories, it is important to take into consideration how the notion of memory has been transformed under the influence of the digital revolution. In that regard, my contributions to the field of UX research focus on theorizing on the felt experience of users from a memory perspective, taking into consideration aspects linked to both personal and collective memories in the context of connected environments.

### **3.1.2 Digital episodic memories**

The memory system that transforms experiences into memories and that allows any person to re-experience a lived experience was named episodic memory system by the influential memory theorist Endel Tulving in 1983. Episodic memory differs from semantic memory, which refers to the memory of the knowledge and facts that we have accumulated. For instance, I may know that the capital of Burkina Faso is Ouagadougou because I remember what I memorized in my geography class, or I may have experience travelling to Ouagadougou, crossing the borders, being aware of the geo-political

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<sup>4</sup> see #MiPrimerAcoso, la creadora del hashtag que sacudió internet y la importancia de que las mujeres no callen (#MyFirstHarassment, the creator of the hashtag that broke the internet and the importance of women not being silent) published in BBC Mundo on April 25th 2016 [http://www.bbc.com/mundo/noticias/2016/04/160425\\_mexico\\_hashtag\\_mi\\_primer\\_acoso\\_violencia\\_mujeres\\_jp](http://www.bbc.com/mundo/noticias/2016/04/160425_mexico_hashtag_mi_primer_acoso_violencia_mujeres_jp)

divisions of the territory that I traverse, and know that the capital of Burkina Faso is Ouagadougou because I remember my travel experiences. When we are using a hashtag such as #miprimeracoso (#myfirstharassment), we are using what I call an episodic hashtag. Episodic hashtags act as a call for collaborative retrieval of episodic memories in conversational environments. When activated, the community of users remembering online are helping to build some sort of collective memory. In May 2016, three weeks after the hashtag #miprimeracoso was used for the first time, Adrián Santuario, a Mexican physicist and professor of philosophy of science at the National Autonomous University of Mexico, used their social media accounts on Twitter and Facebook to share some conclusions after analysing the corpus of data of 78,000 filtered and validated tweets (183,000 tweets before filtering for fake accounts and bots) containing the hashtag and shared between April 23rd and May 15th 2016. Santuario pointed out that the majority of experiences shared in that event had occurred in the past, when the survivor was aged between 6 and 10 years old (Santuario, 2016 in Facebook). They were remembering together and sharing their experiences of harassment in an act of collaborative retrieval. Data also revealed that the majority of incidents were experienced by women (93%) (Mulato, 2016). The data is revealing how IRL sexual harassment for women starts at a very early age, but also how the hashtag has activated and amplified the shared memories of a community of survivors, creating some sort of a digital knowledge repository of experiences of harassment, and a corpus of data that can be analyzed, but also shared<sup>5</sup> and discussed in conversational environments to find comfort and healing. I am arguing that when shared memories that have been activated and discussed from a hashtag campaign (collaborative retrieval) result in a corpus of data, we can identify these practices as building digital collective memories.

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<sup>5</sup> At the time of writing (24th February 2018) Santuario's original post has been shared 2,8k times on Facebook

### 3.1.3. Remembering together in conversational environments

Researchers in many different disciplines have been interested in capturing the social influences on memory with a variety of terms. That includes, collective memory, shared or collected memories, collaborative memory, cultural memory, group mind, joint remembering, and transactive memory (Rajaram and Pereira-Pasarin, 2010: 649). In their paper, *Collaborative Memory: Cognitive Research and Theory* (2010) Suparna Rajaram and Luciane P. Pereira-Pasarin observed impressive disagreements in the actual usage of the term, however, they also noted how reviews by Hirst and Manier (2008) and Wertsch (2008) have clarified that central to the definition of collective memory is the notion of group identity. The notion of collective memory has also been implicated in shaping autobiographical memories at historic, cultural, and familial levels (2010: 650).

In their paper, *Learning and Remembering with Others: The Key Role of Retrieval in Shaping Group Recall and Collective Memory* J. Barber, Rajaram and B. Fox (2012:4) expose some of the benefits and costs of collaborative remembering. According to the authors, remembering collaboratively (collaborative recall) has the capability to promote the formation of collective memories, but also the potential to induce the collaborative inhibition effect, that is, when the recall performance of the groups is lower than the sum of individual performances (Hirst and Echterhoff, 2012:59). What explains collaborative inhibition is the retrieval disruption hypothesis, the event in which the strategy pursued by one individual in order to remember (to retrieve), is disrupting the use of other "retrieval strategies that may be more effective for other group members" (Barber et al. 2012: 60). The larger the group, the larger the chances for inhibition to occur (Basden et al 2000). I argue that that same principle may apply when referring to groups of communities co-inhabiting digital environments, and that strategies pursued by one community in order to remember and build collective memory, may be disrupting the use of other retrieval strategies that may be more effective for

other communities (for example LGTB and Christian communities on issues such as family or marriage).

In this chapter I reframe episodic memory theories into digital episodic memories. In doing so, I am moving from remembering by ourselves to remembering together. I do so by rethinking episodic memories in the context of transactive memory practices, a mechanism that allows groups to collectively perform as a memory, that is, to encode, store and retrieve knowledge (Wegner, 1995). In considering episodic memory performance in the context of transactive memory practices, I am focusing on the costs of collaborative remembering, and adding on the disruption and inhibition theories on the social sharing and reshaping of memories in conversational remembering that were first introduced in 1997 by Barbara H. Basden, David R. Basden, Robert L. Thomas and Steven Souphasith in their paper *Memory distortion in group recall* (1997).

Due to the conversational nature of social media environments and digital knowledge repositories, I am also particularly interested in Hirst and Echterhoff's (2012) approach on the disruption and inhibition theories in the context of remembering in conversations. For a comprehensive account of the theories of collective memory, including the costs of collaborative remembering, Pereira-Pasarin L.P., Rajaram S. (2010) offers a cognitive research perspective to the phenomenon and situates the analysis of collaborative inhibition within a broader interdisciplinary perspective.

My hypothesis, informed by feminist standpoint thinking, is that hostile interactions and hate speech can act as an inhibition trigger in the context of digital conversational environments. They do so by triggering a disruption or inhibition of the participation experience of those targeted, in a large number of situations, women and underprivileged communities. I argue that this is causing a disruption in their memory experience which also results in a lack

of representation of their communities in terms of collective memory building, as it has been observed in knowledge repositories such as Wikipedia.

The gender gap in Wikipedia is a widely reported problematic. A comprehensive survey conducted in 2008 revealed that only a small percentage of Wikipedia contributors are women - 13% worldwide (Glott and Ghosh, 2010). In a survey based on a US sample, results showed that there is a greater frequency of articles on topics of interest to men compared to articles on topics of interest to women (Cohen 2011; Reagle and Rhue 2011). In their paper, *Where are the Women in Wikipedia? Understanding the Different Psychological Experiences of Men and Women in Wikipedia* (2016), authors Julia B. Bear and Benjamin Collier also revealed that confidence in expertise and discomfort with editing partially mediated the gender difference in the number of articles edited. In terms of memory building, only 16.8% (*Gender Gap on Wikipedia*, accessed february 24th 2018) of biographies in Wikipedia, one of the most popular and frequently accessed knowledge repositories, are focused on the lives and achievements of women.

#### **3.1.4. Normativity and the “default design”**

In their paper *Gender stereotypes and assumptions about expertise in transactive memory* (2003) Andrea B. Hollingshead and Samuel N. Fraidin investigated how people use gender stereotypes to infer the relative knowledge of others, and how those assumptions have the potential to influence the division of knowledge responsibilities in transactive memory systems. Their findings suggest that transactive memory systems do have a role in perpetuating gender stereotypes in mixed gender situations.

In 1990, the influential feminist theorist and philosopher Judith Butler wrote *Gender Trouble*, a book that kickstarted the deconstruction of assumptions and stereotypes about gender and sexuality. In 1993, continuing her will to reflect on the idea that gender is culturally constructed through the repetition

of conventions, she wrote that systems of categorization such as sex, gender or race, “do not just arrange context, they both naturalize a certain mediate version of the world ” as a default design, and “simultaneously, renders anything else unthinkable” (Butler, 1993:4). This default design of gender is, according to Butler, part of the hegemonic standards that links normativity and power. Returning to Andrea B. Hollingshead and Samuel N. Fraidin’s investigation on *Gender stereotypes and assumptions about expertise in transactive memory* (2003), the authors used the term “mixed-sex” as a social system of categorization to describe the situation where in a group there is more than one gender represented, an example of how systems of categorization create standards of hegemonic normativity that, even when doing research on gender stereotypes, creates very specific dynamics of visibilization and invisibilization, and therefore dynamics of validation, acceptance, and power.

Normativity establishes a default design and in doing so, allows us to form assumptions. But, what happens as a result of this default design? The binary assumption of sexual difference has the potential to influence the division of knowledge responsibilities in transactive memory systems, and therefore impact the end result of the content of digital memories, but more importantly, it also renders gender dissidences and transgender communities as something unthinkable. Here, design strategies implemented for the experience of users aligned with the standards of hegemonic normativity are inhibiting the entire transgender community.

In this sense, and from a perspective addressed from the field of philosophy of science, the "feminist epistemology of point of view" proposed by Harding (2004) confronts an "androcentric ideology" based on binary oppositions and the assumed neutrality on the scientific and hegemonic production of knowledge. According to this theory, knowledge can never be objective, that is, it is inevitably partial. To give an example: where the scientist sees a commonly accepted demographic categorization in research practice, the

transgender community sees invisibilization. Harding's approach in no case wants to appeal to an equivalent positioning of all visions, claiming that there is always some reality to be seen and validated (Torres, 2018). The SPT is concerned with questions that involve the creation of knowledge, such as where knowledge is produced, who benefits from it, and who will pay the costs of certain interrogations.

The proposal of feminist standpoint epistemology supports the politics of present research. It refers to a specific point made by Harding (2004) around the direction that the production of knowledge must take. The postulate is characterized by the need to generate, from the perspective of the subjects affected by the constructions imposed by the dominant groups, a bottom-to-top or bottom view, instead of the prevailing omniscient look of the dominant subjects. What Harding calls a *top-to-bottom* or *top-down look*. Harding argues that a reversal and revulsion of the direction of this gaze allows us to see oppressions that would otherwise be invisible or normalized, as well as being able to analyze the dominant social groups from below. That will ultimately allow us to map practices that remain less visible in certain social relations.

Otherwise, Butler (2003) argued that normalization is a facilitator for abjection. The non-recognition of a minority (an individual or a community), automatically entails the dissolution of the minority's discourse, in the sense of becoming abject bodies in the eyes of power, and therefore impossible to receive equal and just treatment. On the other hand, when these groups do not have recognition, they also lack legitimacy and power to receive and exercise it. What indian scholar Spivak (1998: 220) calls the "subjects of subaltern status", that is, all those silenced, agrammatical, who have not been given a voice. If we can not know their agency they remain invisible, silent, unrecognized, without speech. For communities of subjects of subaltern status, normativity acts as inhibition trigger in terms of collective memory.

### **3.1.5. Normativity and collective memory:**

In their paper *Collective memory: Collaborative and individual processes in remembering* Mary Susan Weldon and Krystal D. Bellinger (1997) described several dimensions to collective memory that can inform from a memory theory perspective how normativity is assimilated and reinforced. I am particularly interested in interrogating the extent to which hostile attitudes towards women, underprivileged and underrepresented communities go beyond a simple inconvenience, annoyance or distraction.

There are certain standards of normativity and alterity that already inform power dynamics such as institutional and organizational sexism, racism, transphobia etc. I am arguing that those standards have also the potential to act as implicit collaborative inhibition enablers in connected conversational environments. Collaborative inhibition can be also explicit when inhibition triggers such as hostile virtual speech acts activate it by means of interpellations. I argue that name-calling, public humiliation, threats and sexual harassment, among other practices observed in the behaviour of online communities, also have the potential to become inhibition triggers for communities placed outside the centre of hegemonic normativity.

I also theorize that collaborative inhibition in global memory places has an impact in terms of lack of representation of vulnerable communities. The lack of representation of vulnerable communities, largely reported in paradigmatic cases such as the Wikimedia project, is leading to the formation of under-represented and biased collective memories. Similar dynamics can be expected in other knowledge repositories because of the “default” hegemonic standards. For that reason, it is relevant to evaluate from a UX perspective how interaction design can be used to reinforce and facilitate standards aimed to mitigate collaborative inhibition and provide better experiences to underprivileged communities.

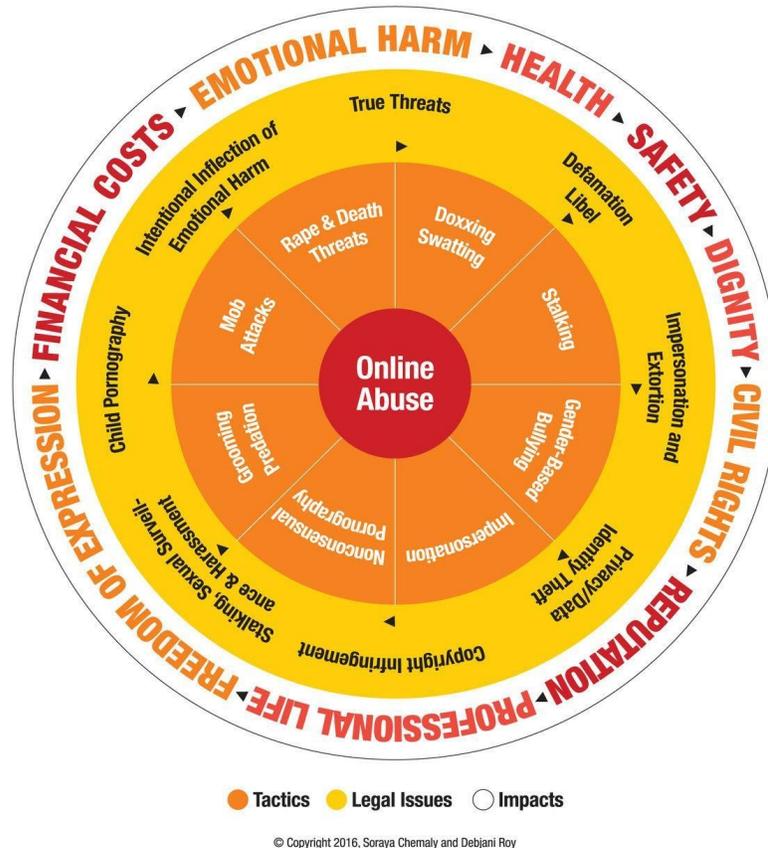
### **3.1.6 Implications on the felt experience of harassment**

Harassment in digital environments or cyber harassment was defined by law professor Danielle Citron as “something that involves the intentional infliction of substantial emotional distress accomplished by online speech that is persistent enough to amount to a “course of conduct” rather than an “isolated incident” (Citron, 2014:3).

In the 18th Gender and Technology Institute Workshop that took place in Malaysia in 2017, the topic of the lived experience of harassment in digital environments was largely discussed and they identified the many levels and factors that help constitute and mediate the experience of harassment (as represented in Figure 3.2). The workshop gathered a group of cyberfeminists from different territories. Some of them are particularly exposed to online and offline violence for their politics, which include fighting for women’s rights such as access to safe and free abortion in countries where abortion is banned. Reflecting on the experience of online harassment they concluded that it is multidimensional and it spreads at least through four different paths: the subjective and corporeal (what you feel while being subject to harassment), the social (the impact that it has on your social relations), the political (the existence, or lack thereof, of policies and laws to protect you from harassment), and the narrative (how stories about harassment are portrayed in media and other spaces). In terms of bodily experience, online and offline harassment are continuums; the feeling of being harassed is not necessarily interrupted when the user is offline (Gender and Technology Institute Workshop, 2017)

**Figure 3.2**

Tactics, legal issues and impacts of online abuse violence experienced and survived in online environments

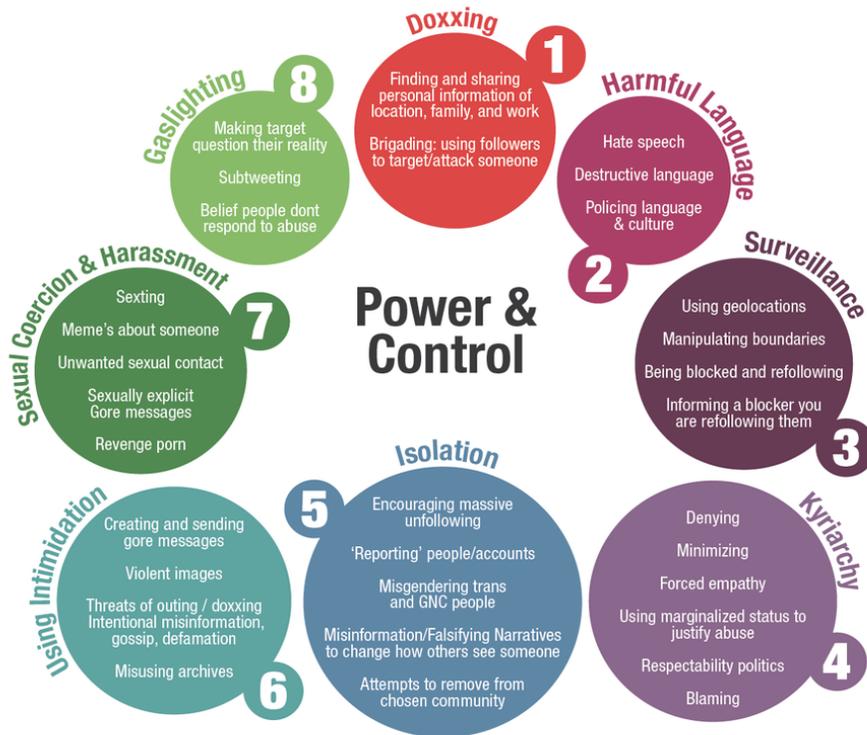


The experience of harassment in digital (and IRL environments) is also shaped by the social and cultural framework of the harassed, for instance, if you have a support network or not. In terms of the legal and political dimensions of harassment, it is often something that enables the normalization of violence, rather than to serve as a firewall, as users learn to know their way around legal frameworks that are still very precarious in the majority of regions. For instance, in the US, hate speech is often protected as free speech, whereas in Europe the framework is different. I have already introduced Butler's take on being injured by language. In *Excitable Speech* she wrote about oppressive language and linguistic survival suggesting that when threats and violence take place in language, the threatened act as an experience takes place in the materiality of the body. This experience can be

enabled by online or offline environments for many reasons: the feeling of being harassed - the fear, the anxiety, the disruption- is still felt and experienced in the materiality of the body, and as stated in the *Gender and Technology Institute Workshop (2017)*, is not necessarily interrupted when the user is offline.

**Figure 3.3**

Power and Control Wheel. Modeled from the Power and Control Wheel created for discussing domestic and intimate partner violence, extended to the violence experienced and survived online.



Created by **The Alchemists:** Bianca Lauren, I'Nasah Crockett, Maegan Ortiz, Jessica Marie Johnson, Sydette Harry, Izetta Mobley, and Danielle Cole for the Center for Solutions to Online Violence. | **Design by:** Liz Andrade

Standardized and institutionalized narratives around harassment, instead of pointing out the root of the problem or providing tools to equip the most vulnerable communities, are often triggering or antagonizing. In terms of factors mediating harassment, experiences are linked to consent, power, control and privilege, as shown in the *Power and Control Wheel* in Figure 3.3.

*The Power and Control Wheel* is a visual representation of topics informing the violence that can be experienced online (Alex Haché from DonesTech, in a public discussion on cyberfeminism and typologies of violence against women using ICT LaT BCN, June 2017).

The effects of online harassment in terms of the formation of personal and collective memories are still unclear. However, in terms of the by-products of digital conversational remembering, such as AI and machine learning, this kind of accumulation technology feeds algorithms that constitute those entities. These by-products are proven to be problematic in terms of UX, as they seem to enable, amplify and reinforce templates of normalcy “boys wear blue and girls wear pink” and systemic bias “girls can’t do tech”. As stated earlier, recent research on semantics in the context of artificial intelligence and machine learning suggest that semantics derived automatically from language corpora contain human-like biases (Caliskan et al. 2017).

Consequences of these biases can be observed in the collection of mainstream media outlets reporting about algorithmic bias in AI projects (compiled earlier in Figure 2 and presented in the introduction of this study) such as reports about Tay, the Microsoft AI chatbot, designed in 2016 to interact as and with teenagers, that started engaging and initiating racist and sexist conversations with other users after less than 24h of learning from the conversational environment of Twitter.

Regulatory practices exist and are reinforced offline and online to the extent that, as Butler proposed in *Gender Trouble* (1990), these are “cited” as norms and take power when they are unquestioned and validated through repetition. The process of collaborative remembering results in the ratification of shared knowledge that constitutes some sort of socially validated collective memory. Memory (both collective memory and the memory of autobiographical events) plays a crucial role in maintaining and reinforcing those regulatory practices. For example, the social media application Snapchat, popularized for allowing users to take and share pictures of

themselves and afterwards apply virtual stickers and augmented reality objects, faced an episode of backlash after introducing a “yellowface” sticker. In that episode many users confronted the company on social media for their lack of awareness, as shown in Figure 3.4, arguing that they were passing cultural appropriation as humour. What was possibly considered a joke, a bad joke even from the perspective of colonial western standards of normalcy, resulted in an offensive experience for some of the community of asian and asian-descendent users.

**Figure 3.4**

A user confronting Snapchat for a racist filter



I am particularly interested in interrogating the extent to which hostile attitudes towards women, underprivileged and underrepresented communities goes beyond a simple distraction or annoyance adding a new layer to the acknowledged costs of collaborative remembering, which also clearly falls in the scope of interest of UX researchers and designers. In terms of the implications of my claims in the formation of collective memories, I argue that standards of normativity and alterity may act as implicit collaborative inhibition enablers when operating in connected environments. These standards inform gender stereotypes and power dynamics such as the assumptions of expertise (Hollingshead and Fraidin, 2003) and the division of knowledge and responsibilities in transactive memory systems. I propose

that both designers and community have an instrumental role in enabling, facilitating and amplifying inhibition triggers that may result in highly disruptive material for users from underprivileged communities - women, LGTB, racialized folks etc.

There are multiple case studies indicating that online harassment and virtual hate speech acts are specially targeted to women and underprivileged communities. In 2016 *The Guardian* published a series of articles where they share results of research into the comment threads recorded on their website between January 1999 and March 2016. Results after analysing 70k comments concluded that articles written by women attract more abuse and dismissive behaviour than those written by men, regardless of the topic of the article (Gardiner et al., 2016). In another context, an article published in January 2017 revealed that an overwhelming majority of women MPs have received online and verbal abuse from the public and a third have considered quitting as a result (Snees, 2017) As reported in *The Guardian*, a Labour MP also said she may leave Twitter after trolls sent her more than 600 messages in one night about raping her (Rawlinson, 2018).

The effects of this validated collective memory being a product of biased assumptions is still unclear, but the implications in terms of UX are clearly problematic and even traumatic for subaltern users. If designers aim to improve the UX of communities placed outside the centre of hegemonic standards, it is relevant to interrogate collaborative inhibition processes from the perspective of the felt experience of subaltern users and vulnerable communities. In the following section I am reflecting on the digital traces of the online experience in conversational environments in order to propose a new framework for understanding episodic memories in the context of transactive memory practices.

### **3.2. Rethinking episodic memories in the context of transactive memory practices**

Practices derived from connected environments are changing the traditional notion of autobiographical remembering, because information is collectively stored outside the brain, and because of the new technologies of the self that are emerging and proving their creative and effective potential (Van Dijck, 2007:162).

José Van Dijck, one of the most influential researchers in memory and social media theory (2007), proposes to pay attention to the performative nature of machines in the acts of remembering (2005). Professor Jens Brockmeier wrote about how Van Dijck identifies the “emergence of new genres connecting private memories to reflections and memories of others and the true potential of digital memory machines” (Brockmeier, 2010:16). In his paper, *After the Archive: Remapping Memory* (2010), Brockmeier explained that those new connections while “blurring the established borderlines (between) the personal and the collective, (...) redefine the relations between the private and the public” (Brockmeier, 2010:15). In this context I am in agreement with Brockmeier and Van Dijck in relation to the future of digital memory. And I believe his thoughts apply to creative archives of user generated content such as those archives derived from, or born within, social media platforms.

The creation and development of technological cognitive tools enable users to process autobiographical memories under the practices of remix culture. In agreement with professor of computer science Lev Manovich, I understand remix culture as “any reworking of already existing cultural work(s)” (Manovich, 2007:2). In the social media practices of the 21st century's Internet ecology, creative users are operating under principles of the remix culture to create new meanings from existing documents in creative archives. But the meaning of remix culture, as described by Lev Manovich in his article

*What comes after remix* (2007) has largely changed over the last decades with the emergence of ubiquitous computing technologies until becoming gradually unclear. A considerable amount of literature has been published on remix culture. Several studies indicate that the earliest precedents on remix culture occurred in music. The production of multi-track mixers established a standard practice among music producers. According to Manovich, another term that is often used to describe this creative user behaviour in areas other than music is “appropriation”. Manovich pointed out the fact that “if remix implies systematically rearranging the whole text, quoting refers to inserting some fragments from old text(s) into a new one” (Manovich, 2007:3). Both quoting and appropriation can be found as creative behaviours in online communities. Innovative practices that I describe in detail in the following section: *Transactive memory user innovations/variations/aggregations and the networked life*.

Information technology tools are also changing the nature of human memory and remembering. In a study by Wegner, Sparrow and Liu about Google effects on memory in 2011, results show that human memory is adapting to new technologies to the point that we are becoming symbiotic with our digital devices and growing into interconnected systems, what they described as transactive memory.

People are sharing information easily because they rapidly think of the computer when they find they need knowledge. The social form of information storage is also reflected in the findings that people forget items they think will be available externally, and remember items they think will not be available. Transactive memory is also evident when people seem better able to remember where an item has been stored, rather than the identity of the item itself. These results suggest that processes of human memory are adapting to the event of new computing and communication technology. Just as we learn through transactive memory ‘who knows what’ in our families and offices, we are learning what the computer “knows” and when we should attend to where we have stored information in our computer-based memories. We are becoming symbiotic with our computer tools

growing into interconnected systems that remember less by knowing information than by knowing where an information can be found (Sparrow et al., 2011).

Professor Jens Brockmeier in his paper *After the archive, remapping memory* (2010) also argued that digitalized mementos - digitalized memories, such as screenshots- are affecting people's remembrance of the past. Nevertheless, this notion of digitalized memories, which are digital traces, rather than being considered less 'memories' due to the fact that they aren't placed inside our brains, are gaining more 'documented' authenticity. (Brockmeier, 2010:15) Brockmeier places the archive as the most used metaphor to describe memory from antiquity. He affirms that the countless variations on the archive metaphor are firm and solid structures such as a warehouse, storage space, library, hard disk etc. But in recent years, researchers have investigated a variety of approaches to both memory and the archive, which are both broader in framework and practices, and subject to historical change. According to Brockmeier:

New perspectives take form that reach beyond the archive idea of memory and offer more open, fleeting, and culturally embedded visions of what people do when they are remembering and forgetting. A main feature of these visions is that they transcend the isolated human brain as the single site of these activities, localizing them instead within a broader framework of social and cultural practices and artefacts, which are themselves subject to historical change. (Brockmeier, 2010: 9).

I understand that digitalized memories can play a crucial role in activating memories of the past, as they can operate as retrieval cues. In the following section, I am adapting the conceptual framework for the study of episodic memory in digital connected environments, where we went from remembering by ourselves to the possibility of remembering together. I do so by considering the process by which "retrieval information provided by a cue is correlated with the information stored in an episodic memory trace" (Tulving, 1983:361). In connected environments, the relation between this

process, that is called ephoric information, and recollective experience, which is the episodic memory trace recollected in the act of remembering, implies a scenario where retrieval cues can activate episodic memories for an entire community of users, resulting in the formation of collective memories, as I have described before in the event of episodic hashtags such as #miprimeracoso.

### **3.2.1.Digital Episodic memories and user experience (UX)**

The memory system of our personal experiences was named the episodic memory system by Endel Tulving in his 1984 influential book *Elements of Episodic Memory*. Tulving named the conceptual framework for the study of episodic memory: General Abstract Processing System (GAPS), but proposed said framework not as a theory but rather as a collection of pre-theoretical ideas that, at some level of abstraction, match the phenomena of remembering (Tulving, 1984:189). Later on, in *Episodic memory: From mind to brain* Tulving wrote that episodic memory is about happenings in particular places at particular times, or about “what,” “where,” and “when” (Tulving, 2002:3). However, Tulving noticed that traditional laboratory experiments were almost invariably concerned with “what.” Subjects were asked, “What do you remember of the presented material?” (Tulving, 2002: 3). According to Tulving, a relevant missing feature was the felt experience or the subjective experience of remembering, what he referred to in *Elements* (1983) as “recollective experience” or conscious awareness of what had happened in the past (Tulving, 2002:4). In the 80s Tulving suggested that it may turn out that we should define episodic memory solely in terms of recollective experience (Tulving, 1984:185) that is, in terms of the felt experience. He also suggested that the only way to find out what the rememberers remember, or what their recollective experience is like, is through the rememberers’ description of the recollective experience or its use in ongoing activity away from artificial settings. For example: in their interaction with the physical or social environment, in solving problems, or in

other kinds of transfer (Tulving, 1984:189). Lallemand, from the perspective of UX research, also suggested by collecting this type of data - away from artificial settings - , UX researchers can map “how the social and cultural context of the interaction plays an important role by impacting the felt experience” (Lallemand, 2015:6). In agreement with Lallemand, I argue that social media platforms and other digital creative archives and knowledge repositories such as Wikipedia already contain digital traces of subjective and emotional data on the felt experience of users, because users are sharing experiences as documents both on social media platforms and digital creative archives. When such interactions are mediated by information technologies and at the same time happen to occur in conversational settings such as social media platforms, where we remember together, it is not sufficient to evaluate the felt experience from the standpoint of episodic memory theories, it is also necessary to add the perspective given by transactive memory theorists such as Daniel Wegner (1985) and to root all of them into UX research practice, that is, to inquire on the felt experience of the users that are remembering together.

The field of user experience (UX) research is precisely concerned with the design, evaluation and study of the experiences that people encounter while using a specific product, service, system, or device. *The UX white paper* edited by Virpi Roto, Effie Law, Arnold Vermeeren and Jettie Hoonhout in 2007, differentiates the UX: before usage, during usage, after usage, and over time, as shown in Figure 3.5, and suggests that when assessing UX, it is necessary to be aware that UX methods generally assess only a single time span. Therefore, researchers are advised to choose a single time span of UX when performing evaluations. I believe that when users reflect on their online and offline experiences using social media platforms, they are leaving in their digital traces a stream of units of analysis for both UX and memory researchers and theorists. That also explains why big data raises concerns over “privacy and government snooping” in some communities - especially the underprivileged ones - while others seem to be “indifferent about the

surrender of vast quantities of information just by turning on one’s phone” (Genevieve Bell, 2015:9).

In the 21st century we are not just texting each other or sharing our libraries and datasets, we are also globally sharing documents of our experiences in multiple formats, often combining sound, graphics, images, video, and text-based elements. The experiences that we narrate, record or even broadcast live are still shareable files. Documents that, in turn, enable different experiences to be lived by other users on social media networks. I argue that when users reflect on their experiences, they often engage in the practice of conversational remembering. Conversational remembering is a social practice that promotes the formation of collective memory. I understand it to be characterised by collaborative retrieval resulting in a corpus of data. I investigate this first through online traces in non artificial settings, informing about the time span of the experience, description of the experience, the source of the felt experience, and the effects of UX, being the possible effects of the UX that I am interested in analyzing: Participatory inhibition, disruption in UX, and solidarity.

**Figure 3.5**

Time spans of UX  
Adapted From The UX whitepaper (2007)

<b>WHEN</b>	<b>Before usage</b>	<b>During Usage</b>	<b>After Usage</b>	<b>Over Time</b>
<b>WHAT</b>	Anticipated UX	Momentary UX	Episodic UX	Cumulative UX
<b>HOW</b>	Imaging experience	Experiencing	Reflecting on an experience	Recollecting multiple periods of use
<b>WHERE</b>	digital conversational environment	digital conversational environment	digital conversational environment	digital conversational environment

Carine Lallemand (2015) also questions evaluation in artificial settings (2015:6) and suggests that the collection of subjective and emotional data on the felt experience is a necessary step to understand UX. Subjective and emotional data is relevant to inform UX researchers that aim to map how the social and cultural context of the interaction plays an important role by impacting the felt experience. For example, in the specific case of the user generated social media campaign #AirbnbWhileBlack that started in the US in 2015, Airbnb users began sharing discrimination stories on social media. Following a single thread of conversational remembering we can encounter units of analysis for multiple time spans of user experiences. In a Twitter search for the hashtag #airbnbwhileblack followed by the word “fear” shown in Figure 3.6, the documents retrieved showed two instances of what I call *disrupting participation trigger*, the instance in which memories about a particular episode, environment, person or event triggers the disruption of user participation.

Following another quick query we can also find evidence of episodic UX. In another tweet shown in Figure 3.7-3.8 retrieved following the hashtag #AirbnbWhileBlack a user shares an extensive report on their felt experience, an experience that they describe as racist trauma. The felt experience as reported shows signs of failing to provide with certainty the need of security, and challenges the rest of the set of needs suitable for Experience Design as compiled by Hassenzahl et al. in their paper *Designing moments of meaning and pleasure: Experience design and happiness* (2013) summarized in Figure 19. Women, queer folks and people of colour feel the need to use a hashtag such as in this case the #airbnbwhileblack campaign, that emerged to let Airbnb UX designers know they are still enabling sexist and racist user experiences.

Hashtag initiatives such as #miprimeracoso (#mifirstharrassment) or #AirbnbWhileBlack may help explain to reluctant managers and UX designers

that the sum of underprivileged collectives doesn't constitute a minority at all, on the contrary, they constitute an undersampled majority of users, and therefore they must be placed at the centre of our inquiries. But what is possibly one of the most important insights to this disruptive shift in UX research, is that it has enabled us to open the question of who we are designing for and what kind of experiences will result from our design choices. This is a central question to discuss the future of interaction design.

### Figure 3.6

Sample of results searching for the hashtag #AirbnbWhileBlack followed by the word "fear" on Twitter containing units of analysis for UX from non-artificial settings (subjective emotional data on the felt experience)



**Figure 3.7**

Detail of results searching for the hashtag #AirbnbWhileBlack followed by the word “fear” on Twitter containing units of analysis for UX from non-artificial settings (subjective emotional data on the felt experience)

Description of the felt experience	Times Spans of UX	Source of the felt experience	Effects of UX
The first instance of <a href="#">#AirbnbWhileBlack</a> I saw a couple years ago is the reason I've never chosen to use them. I can't. Why travel in fear??	Cumulative UX	Hashtag campaign	Participatory Inhibition
Being denied 5 times before being accepted; fear of who they would get with a guest named Fátima <a href="#">#AirbnbWhileBlack</a>	Momentary UX	Airbnb booking	Disruption in UX
I have wanted numerous times to use Airbnb but failed to do so for fear that the experience would not be welcoming <a href="#">#AirbnbWhileBlack</a>	Anticipated UX	Hashtag campaign	Disrupting Participation Hypothesis
It's a shame that bias and discrimination still exists. <a href="#">#AirbnbWhileBlack</a> <a href="#">#diversity</a> <a href="#">#fear</a>	Momentary UX	Hashtag campaign	Solidarity

**Figure 3.8**

Screenshots of Tweets from the hashtag campaign #AirbnbWhileBlack describing racist encounters

Notified @Airbnb 24+ hours ago of #racist trauma my friends & I encountered in a rental this week, no response whatsoever. #AirbnbWhileBlack

Tradueix del anglès

REST ROOM  
WHITE COLOR  
L&N

Hi Sophie,

Here are the images I mentioned. The first we encountered between two guest rooms, which the sign is pointing towards to recreate pre-Civil Rights segregation. As people of color but humans first and foremost this was traumatic, as anyone would understand.

The second image is one we might not have noticed without the first. But Poplar trees are what Billie Holiday references in "Strange Fruit" as the type of tree Black bodies were hung from throughout American history. This could just be coincidence, but understandably by the point we were traumatized by the first sign. We came to vacation and encountered racism as a romanticized motif in our rental.

I have not received any link from you RE: Airbnb's policies on this type of matter and am awaiting that. As I mentioned during the call, I also expect a representative with authority from Airbnb to follow up with me after reviewing these materials. I don't need to know all specifics but am rightfully entitled to reasonable explanation or I will move to escalate the matter. I don't want to cause any more problems than the one we encountered. Naturally the review I leave on this rental will be very different based on Airbnb's and the landlord's responses to me.

I hope Airbnb takes this matter seriously because the way you spoke to me on the call felt like you're interested in protecting Airbnb was in conflict with responding thoroughly and understandingly.

Thanks, Rany

15:56 - 28 jul. 2017

19 retuits 18 agradaments

2 19 18



me <ren [REDACTED]> : Jul 26, 2017, 1:48 PM

to: "response@airbnb.com" <response@airbnb.com>

bcc: [REDACTED]

Hi Sophie,

Here are the images I mentioned. The first we encountered between two guest rooms, which the sign is pointing towards to recreate pre-Civil Rights segregation. As people of color but humans first and foremost this was traumatic, as anyone would understand.

The second image is one we might not have noticed without the first. But Poplar trees are what Billie Holiday references in "Strange Fruit" as the type of tree Black bodies were hung from throughout American history. This could just be coincidence, but understandably by this point we were traumatized by the first sign. We came to vacation and encountered racism as a romanticized motif in our rental.

I have not received any link from you RE: AirBNB's policies on this type of matter and am awaiting that. As I mentioned during the call, I also expect a representative with authority from AirBNB to follow up with me after reviewing these materials. I don't need to know all specifics but am rightfully entitled to reasonable explanation or I will move to escalate the matter. I don't want to cause any more problems than the one we encountered. Naturally the review I leave on this rental will be very different based on AirBNB's and the landlord's responses to me.

I hope AirBNB takes this matter seriously because the way you spoke to me on the call felt like you're interest in protecting AirBNB was in conflict with responding thoroughly and understandingly.

Thanks, Reny

**Figure 3.9**

Overview of a set of needs suitable for Experience Design  
(Hassenzahl et al, 2010; Sheldon et al, 2001)

<b>Need</b>	<b>Description</b>
<i>Autonomy</i>	Feeling that you are the cause of your own actions rather than feeling that external forces or pressure are the cause of your action
<i>Competence</i>	Feeling that you are very capable and effective in your actions rather than feeling incompetent or ineffective
<i>Relatedness</i>	Feeling that you have regular intimate contact with people who care about you rather than feeling lonely and uncared for
<i>Popularity</i>	Feeling that you are liked respected and have influence over others rather than feeling like a person whose advice or opinion nobody is interested in
<i>Stimulation</i>	Feeling that you get plenty of enjoyment and pleasure rather than feeling bored and understimulated by life
<i>Security</i>	Feeling safe and in control of your life rather than feeling uncertain and threatened by your circumstances

It is relevant to reframe the relation between user experience (UX) and episodic memory in the context of digital environments because when Tulving wrote about the elements of episodic memory, in most situations, rememberers had no evidence related to the original event (Tulving, 1984). In the 80s, documented experiences were a media luxury. Wedding photo albums, audio recordings, letters and postcards, home video recordings and other media artefacts were reserved for special occasions and shared among close family and friends. Even when referring to flashbulb memories (Brown & Kulik, 1977) the memories of personal experiences from events of global reach, such as 9/11 or Princess Diana's funeral (Kvavilashvili, Lia, et al., 2003) where everyone was watching and discussing the same images at the same time; the discussion before the popularization of social media networks remained among friends and family, and the focus of the discussion was

directly linked with the content broadcasted by mainstream media outlets. After the popularization of smart mobile devices, such as smartphones or tablets, recording and documenting experiences is no longer a luxury and with the popularization of mobile applications, microblogging tools and social media networks, resulting in the existence of digital documents that represent our mediated experiences, we have a new environment where we do have evidence of the original event, and therefore, elements to evaluate the subjective experience of the remembered in connected environments. We can find units of analysis for all UX time spans all over the Internet, with all its research possibilities and its ethical implications.

The existence of social networks in digital environments where users are recording and sharing their experiences about personal events has generated new and creative forms of archives and archiving digital memories. It has also generated a new setting for the study of episodic memory of users that, in order to enable research on digital episodic memory requires an adaptation of the General Abstract Processing System. The existence of an adapted framework is also appropriate from a user experience researcher perspective serving those interested in improving the digital tools that enable the connection between computer memory systems; which allows any form of digital memory (Sparrow et al. 2011:776).

### **3.2.2. Adaptation of the GAPS of Episodic Memory in digital environments.**

When adapting the GAPS to digital environments the first thing one must take into account is precisely how digital traces of personal experiences interact with the human memory system. Accumulation technologies generate digital traces, which have the potential to become not just evidence of personal experiences, but also facilitators of reminiscence and retrieval. According to the GAPS, for retrieval to occur two necessary conditions must be met: The system must be in 'retrieval mode' and an appropriate retrieval

cue must be present that sets off the process. For example, the hashtag campaign #miprimeracoso (#myfirstharassment) acted as a retrieval cue that activated memories of harassment on social media platforms. The main two observable differences between episodic memory and digital episodic memory pictured in Figure 3.10 describe how the user behaviour of constantly recording and encoding experiences into documents can give the researcher evidence related to the initial engrams (experiences) converted into digital engrams (documents) and access to the recollective experience (that which is being remembered) and the felt experience (how the user felt while remembering the experience). Another relevant difference is that users can access their digital engrams, or other digital engrams shared by other users in the community, as they are all operating inside digital transactive memory systems.

**Figure 3.10**

Adaptation of the GAPS of Episodic Memory to digital environments.

Delatte 2020

	<b>HUMAN MEMORY SYSTEM</b>	<b>DIGITAL MEMORY SYSTEM</b>
<b>ENCODING</b>	ENGRAM (experience) ↓ <b>NO EVIDENCE</b>	DIGITAL ENGRAM (document) ↓ <b>EVIDENCE</b> (document)
<b>RETRIEVING</b>	RETRIEVAL CUE ECPHORIC INFORMATION ↓ RECOLLECTIVE EXPERIENCE <b>NO ACCESS</b> to the Rememberers experience	RETRIEVAL CUE TRANSACTIONAL MEMORY SYSTEM ECPHORIC INFORMATION INFORMATION RETRIEVAL (IR) ↓ RECOLLECTIVE EXPERIENCE <b>ACCESS</b> to the Rememberers experience (document)

In 2011 Sparrow et al. published a paper in which they described the Internet as an enabler of transactive memory management where information is collectively stored outside the brain in computer memory systems. The paper pointed out the fact that computer memory systems connected to other computer memory systems are what allow any form of digital memory (Sparrow et al., 2011:776). A considerable amount of literature on transactive memory has been published to date. Daniel M. Wegner's contributions on transactive memory have revealed that people also may interact with one another in some ways in which computers interact with one another. In this context every social group can operate as a computer network (Wegner, 1995:319 ). He wrote that: "several of the design factors that must be considered in linking computers together into networks are also relevant to the ways in which individual human memory systems are linked into group memory systems" (Wegner, 1995:324). These factors according to Wegner include: "directory updating, or learning who knows what in the group; information allocation, or assigning memory items to group members; and retrieval coordination, or planning how to find items in a way that takes advantage of who knows what" (Wegner, 1995:325). In terms of interaction design, enabling transactive memory practices among communities of users can be a powerful mechanism in order to allow digital communities to collectively perform as a memory, that is, to encode, store and retrieve knowledge (Wegner, 1995).

Tulving pointed out that conversion of ephoric information outside the laboratory is "shaped by situational demands" after observing how people tell each other about their experiences in the form of narratives, or they respond to questions asked by others about remembered episodes (Tulving, 1984:189). This behaviour described by Tulving also occurs in digital environments. We, as "the rememberers", cannot detect, perceive or feel the difference between the retrieval mode and the encoding mode of the memory system, but as "digital rememberers" we can perceive this difference in

digital memory systems. Digital engrams are in fact documents, data and metadata that may act as an experience enabler in a way that was already described by McLuhan in the late 1970 when he said: “the user is the content”. The user is the content of experiences that will eventually become digital engrams. Digital engrams that, having their data lifecycle inside creative archives, enable the possibility for any user operating under transactive memory practices to retrieve not just their own digital engrams, but any other user’s digital engram.

Encoding and recording the process is what converts an event into an engram and a digital engram. To experience online harassment is an event that leaves digital traces, proof of the violence received. When users screenshot and capture such experiences they are creating some sort of digital engram, the experience of harassment and the experience of reminiscing the event by means of digital technologies every time that digital trace of online harassment is accessed. The characteristics of engrams of experienced events are determined not only by the characteristics of the events, but also by how the events are encoded. Most of the time, argued Tulving (Tulving, 1984:150), the rememberer is not aware of the encoding process. Now it can be said that users are aware of the recording process that converts a particular event into a digital engram. Yet encoding and recording is still a necessary condition for remembering in both digital and non-digital environments, and that always occurs when information about a perceived event is stored in any form of memory (Tulving, 1984:151). Both engram and digital engrams are the product of encoding and recording, one of the necessary conditions for recollection of the experienced event (Tulving, 1984:158). The elements of GAPS that make up the encoding process ‘end’ with the formation of an engram or, optionally, its modification through recording. A recorded engram may exist in its latent form in the system for a long time before it participates in the second main process that constitutes an act of remembering, that of retrieval. According to Tulving, we all carry with us a myriad of latent engrams most of which will never be updated, but

instead, forgotten. There are things that we experience that we may never recall. Many others, however, we will. This happens as we start remembering, when the right retrieval cue 'happens to come along'. In the event of the hashtag campaign #miprimeracoso (#myfirstharassment), the hashtag alone had the power to be the right retrieval cue and activate a series of episodes of harassment that were collectively shared by survivors. This proves the possibilities of hashtags as retrieval cues in the context of digital conversational environments.

### **3.2.3. Evaluating the possibilities of hashtags as retrieval cues**

Users are creating, editing, reusing and remixing documents on microblogging sites and social networks and creating not just an environment where they can share their recorded experiences (digital engrams) but also a space that mediates access to multiple sources and types of information. The popularity of user-generated content in the context of social media has created new forms of information retrieval, because large and complex databases are challenging in terms of data processing, data management and data analysis.

Miles Efron, a scholar from the field of Information Sciences with knowledge in computing and several published papers on the topic of information retrieval, indicates that an important aspect of microblog ecology is the author's use of informal metadata. Efron points out the fact that in the course of their interactions, user communities have invented and adopted a variety of metadata conventions aimed at extending their texts' expressiveness, for example, the convention of using hashtags, that has become pervasive in the Twitter community (Efron, 2011) and extended to other social media platforms such as Instagram or Facebook. Hashtags are often used to engage in global conversations about particular topics, but there are other practices associated with the use of hashtags, such as hashtag retrieval. The goal of hashtag retrieval is to allow the retrieval of a ranked list of hashtags

for a topical query. In his paper, *Information search and retrieval in microblogs (2011)*, Efron described one of the many possibilities of hashtag retrieving as a tool. This tool can be used to arrange results of searches for tweets (or other entities) “providing a de facto clustering mechanism for organizing returned documents” (Efron, 2011:1002).

More than 30 years ago, in the context of human memory theory, Tulving stated that in relation to the retrieval there are few things that may activate the retrieval mode and trigger remembering when we are surrounded by data and information:

We know next to nothing about the retrieval mode, other than it constitutes a necessary condition for retrieval. [...] We look around us at objects and events in our environment, we participate in conversations, read books and newspapers, see a great variety of things on television, and in general, we are bombarded with information almost continually. Nevertheless, few things that we perceive make us think of previous happenings in our own lives (Tulving, 1983:169).

I believe there has been a disruptive shift in that regard, as the hashtags today have the potential to become powerful retrieval cues. A good example is the hashtag strategy used by *Bye Felipe* ([www.bye-felipe.com](http://www.bye-felipe.com)) as a means to gather proof in the form of digital episodic memories of online harassment. As described in a series of audio notes sent by Tweten to my email on June 5th 2016:

Other women can look at the page and realize that they are not the only ones who receive this abuse. [...] Also, when women send screenshots they take a lot of encouragement from the community through comments, in a way that, according to Tweten, it is also empowering because “they back each other up and make each other feel better and in that way it can be healing.

When I asked Tweten if she thought hate speech and online abuse is interfering in the formation of personal and collective memories, she agreed, responding that, in terms of personal memories, the action of screenshotting the abuse and keeping it as a record facilitates a more vivid remembering process, as opposed to public harassment “in real life”, because you don’t have that permanent record “to go back to”. In terms of collective memories, she argued that it’s hard to point at evidence of harassment and abuse in real life, “since you don’t have anyone following you with a camera all day every day”. As described by Tweten, to remember harassment outside online environments is up to the individual’s ability to recall and share information, which from Tweten’s perception may facilitate forgetting.

It is easier to identify harassment in online environments because there is direct evidence. But furthermore, when shared in hashtag conversations, they potentially become retrieval cues that keep the conversation alive. In other words, what keeps the hashtag conversation alive, is precisely the capacity of hashtags to become retrieval cues. According to Tulving, all you need to do to convert a stimulus into effective retrieval cues, is, for example, to tell a person a phrase or show them a picture, and ask them to think of a particular event in their life of which the phrase or picture reminds them (Tulving, 1984: 169-170). The cue is a conversation. In the specific case of #ByeFelipe, it is a conversation on online harassment. In the event of #miprimeracoso, it is about sexual violence, in the event of #AirbnbWhileBlack, it is about racism.

We can see this relation between stimuli and effective retrieval cues on social media networks through the use of hashtags and other user innovations that have become common practice in connected environments. In the following section I describe a set of user innovations, not with the intention to provide a comprehensive account, but to frame them in the context of transactive memory practices found in the networked life of connected conversational environments, their archives of vernacular creativity, and their creative

archiving practices. Those user-led innovations have informed the prototyping of two applications that I have designed to test an adaptation of transactive memory systems in the context of feminist practices, which is my proposal for building and maintaining safe/brave spaces for collaborative knowledge and memory building.

### **3.3. Transactive memory user innovations/variations/aggregations**

As I have introduced in the previous section, Daniel M. Wegner's contributions (1995) on transactive memory have revealed the relevant design factors for computer network building that can be taken into account in the context of group memory systems. The design factors that Wegner suggested include: "learning *who knows what* in the group, assigning memory items to group members; and planning how to find items in a way that takes advantage of *who knows what*" (Wegner, 1995:324-325). In terms of interaction design, facilitating transactive memory practices among communities of users is advisable in order to allow digital communities to collectively perform as a memory, that is, to encode, store and retrieve knowledge (Wegner, 1995). I believe that UX designers and researchers, and information system designers and researchers with a strong research focus on information retrieval, may benefit from having those factors in mind if they wish to improve the user experience of retrieval and knowledge discovery in spaces such as databases, creative archives and digital repositories of knowledge.

Wegner observed that the computer mode operates on three levels: getting organized (directory updating), channelling information to the right places (information allocation) and having a strategy for getting it back (retrieval coordination) (Wegner, 1995:324-325). The individual in a group, when looking for any memory item, has also several directories to consider. Retrieval coordination deals with the issue of how to organize the search

process during retrieval “so as to maximize both the speed of the search and its likelihood of finding the needed information” (Wegner, 1995:33). In addition, Wegner also considers it relevant to have a directory or directories, or at least the functional equivalent “if the most efficient searches are to be made” (Wegner, 1995:33). When used within a community of users with shared knowledge, relations and interests, hashtags can operate as retrieval coordination devices for transactive memory management in digital environments.

From the field of social media theory, Axel Bruns and Jean E. Burgess in their paper *The use of hashtags in the formation of ad hoc publics* (2011) suggested that hashtags, among other large technical affordances, were actually user-led innovations, what in these sections I am referring to as transactive memory user innovations, variations and aggregations from an original use or purpose conceptualized by the designer:

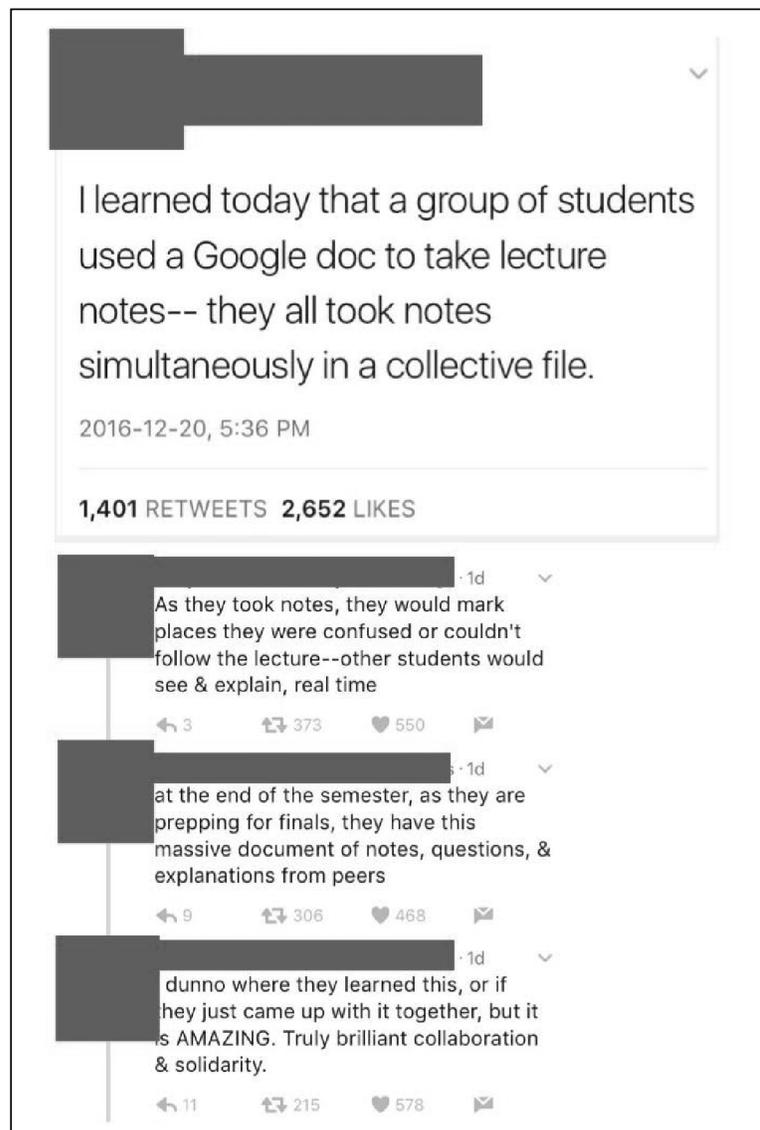
Many of the technical affordances and cultural applications of Twitter that make its role in public communication so significant were originally user-led innovations, only later being integrated into the architecture of the Twitter system by Twitter, Inc. Such innovations include the cross-referencing functionality of the @reply format for addressing or mentioning other users, the integration of multimedia upload into Twitter clients and the idea of the hashtag as a means to coordinate Twitter conversations. (Bruns & Burges, 2011:2)

In December 2016 an educator posted a tweet shown in Figure 3.11 that was shared more than 1,400 times. In the tweet they explained how they just learned how their students were using Google Docs, an online word processor software property of Google that allows for collaborative work. Performing as a transactive memory system, the class was “taking notes simultaneously in a collective file”. They also wrote: “as they took notes, they would mark places where confused or couldn’t follow the lecture - other students would see & explain, real time”. That can happen because Google Docs allows users to select and comment on any part of the written text, and

also to interpellate or to mention other users via tagging. Any person with access to the document can be tagged in a comment, a direct interpellation that is often followed by a notification, and all of those digital traces are eventually contained in metadata files attached to the original document.

**Figure 3.11**

Example of real time transactive memory management in networked or connected environments shared by an educator on their Twitter account.



Today mainstream social media platforms and information systems such as Facebook, Twitter or Instagram, are centred in encoding practices, that is for us to record and share documents as a primary activity, not to retrieve them. It is easy to produce content, but it's considerably more difficult to find a specific item in the archive. The storage of our endless stream of experiences remains in their servers, and at the present time, there are not enough relevant or sophisticated free and accessible features designed to allow users to rapidly retrieve documents, or to explore data libraries. At the present time (2020), scrolling down with the mouse and performing a simple search in an engine to retrieve data is all that users get from most social media platforms and digital knowledge repositories. Old digital memories have become a luxury as well. Even though after my observations I have not found a single mainstream platform or system that centres their interaction design in covering all the essential factors for an optimum transactive memory management (because retrieval is still poorly executed on platforms such as Facebook, Twitter or Instagram among others), I argue that there are several user-led innovations, such as hashtag retrieval and mentions, that are currently enabling digital communities to perform as transactive memories, facilitating directory updating and information allocation across different social networks and platforms.

I have also observed how users are operating as transactive memories in digital environments adding on a significant user innovation and brilliant feature for feedback and content warning. And I suggest that this feature is interesting as a design factor for UX designers and theorists to incorporate into Wegner's theoretical account. The use of reaction buttons in the form of emojis or other visual references and the use of tags and trigger warnings marking sensitive content are an information allocation device that enables users to assign reactions and warnings to memory items. I have incorporated those user innovations, as shown in Figure 3.13, in the context of transactive memory practices as described by Wegner (1995). Those are summarized in

Figure 3.12. From that I acknowledge what I have identified to be a relevant contribution for UX designers and researchers to foresee the nature of the interactions that they may be enabling with their designs. Adding a reaction button and content warning for information allocation will consider not just what users know, but also what users feel, therefore reinforcing and facilitating standards aimed to mitigate collaborative inhibition and provide better experiences to underprivileged communities.

**Figure 3.12**

Transactive memory management practices proposed by Wegner (1995)

<b>DIRECTORY UPDATING</b>	Learning <i>who knows what</i> in the group
<b>INFORMATION ALLOCATION</b>	Assigning memory items to group members
<b>RETRIEVAL COORDINATION</b>	Planning how to find items in a way that takes advantage of <i>who knows what</i>

**Figure 3.13**

Transactive memory user-led innovations adapted from Wegner (1995)  
 This figure shows how user-led innovations act as transactive memory practices in connected environments (Delatte, 2020)

<b>USER-LED INNOVATIONS</b>	<b>TRANSACTIVE MEMORY PRACTICES</b>
<i>Hashtags</i>	Directory updating (Learning <i>who knows what</i> in the group) + Retrieval coordination (Planning how to find items in a way that takes advantage of <i>who knows what</i> )
<i>Mentions</i>	Directory updating (Learning <i>who knows what in the group</i> ) + Information allocation (Assigning memory items to group members)
<i>Mentions + Hashtags</i>	Retrieval coordination (Planning how to find items in a way that takes advantage of <i>who knows what</i> )
<i>Reaction button &amp; TW</i>	Feedback & content warning for Information Allocation (Assigning reactions/warnings to memory items)

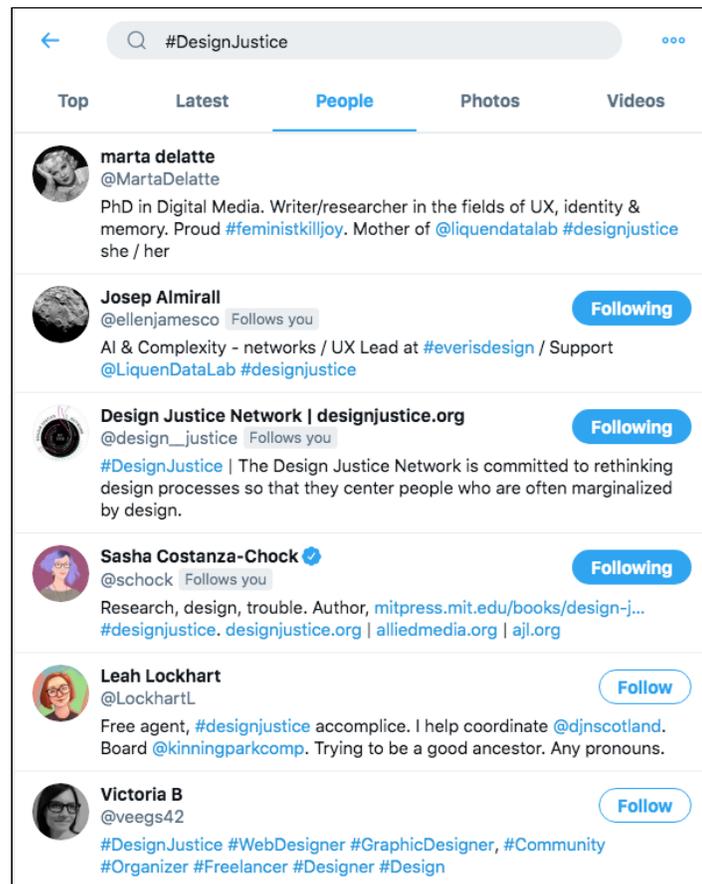
### 3.3.1.Hashtags

Hashtags are a type of metadata tag popularized within the Twitter community, that today can be found as a common cross platform practice (that is, on every social network: Twitter, Facebook, Instagram, Snapchat, etcetera). In the context of Twitter, hashtags were originally a user-led contribution from the San Francisco based technologist Chris Messina. In his blog post “Groups for Twitter; or A Proposal for Twitter Tag Channels” published August 25th 2007, Messina described how his proposal, mainly focused on “improving contextualization, content filtering and exploratory serendipity within Twitter”, was inspired by tagging systems rooted in IRC channels and other user-generated folksonomies or public tags to online items (Isabella Peters, 2009), “as in, there are no “pre-established groups”. In Folksonomy systems users apply tags to online items as a retrieval strategy. This system allows to re-conceptualize and democratize classification practices. If taxonomic classification is set by the owners of the context, folksonomies are open to collaborative tagging. Messina built a system of “channel tags” using the pound or hash # symbol that made possible for users of the Twitter community to participate in conversational environments, following or contributing to discussions and on topics of their interest (Messina, 2007).

Axel Bruns and Jean E. Burgess, in their paper *The use of hashtags in the formation of ad hoc publics* (2011a), indicate how the pervasive use of hashtags since 2007 has proven to have a great capacity for “cultural generativity” (Burgess, 2011b). As example of this capacity for “cultural generativity”, the authors mention several uses of this metadata tag, including the topic of their paper but also “ranging from the coordination of emergency relief, to the most playful or expressive applications (as in Twitter “memes”) or jokes, to the co-watching of and commentary of popular television programs ” (Burges, 2011a:3).

**Figure 3.14**

Screenshot of the results for the query #DesignJustice on Twitter following the search options for “people” and “top searches”



My claim is that in the context of transactive memory practices hashtags also act as an exploratory tool for learning *who knows what* in the group (directory updating) and for planning how to find items in a way that takes advantage of *who knows what* (retrieval coordination). If you wish to start exploring a particular subject or community, for example, the Design Justice Network, following the Tweets tagged with #DesignJustice will give you a selection of people to follow, tweets to read, broadcasts to live-watch, news, videos, photos and other searches related to the hashtag #DesignJustice, as shown in Figure 3.14. This is how personal and collective knowledge networks can grow in the context of connected conversational environments. This labour of indexing user-generated content embedded in hashtag practices is a collaborative effort of the community, and has the potential to improve the user-experience of retrieval and knowledge discoverability at an even larger account if cross-platform retrieval were allowed. Despite not having the possibility of performing cross-platform retrieval, retrieval coordination of previously encountered content is a challenging task that in many platforms can be mitigated with a combination of user mentions (@mentions) and network informed hashtag practices. Those practices are used to let other members of the community know the specific semantic or episodic hashtag to search for in order to retrieve desirable results.

### **3.3.2. Mention**

@Mentions and @replies are also user-led innovations. In November of 2006 an unrelated group of users started tweeting about the possibility of having a “pseudo-syntax” to interpellate followers on Twitter and letting them know “you’re directing a comment at them”. For details on this conversation see details in Figure 3.15. In a post published on the official Twitter blog in March 2009, it is acknowledged that “The @Replies feature was introduced because we noticed lots of folks putting the @ symbol in front of Twitter usernames as a way of addressing one another”, as shown in the excerpts from the Twitter official blog documented in Figure 3.16. The feature does not only serve as

an interpellation tool, in the event of @users being associated to specific topics through the use of hashtag tagging, it also can be used as directory updating (learning *who knows what*). The post also describes how “@username mentions” were beginning to be used as interpellation devices by the Twitter community, a practice that enables information allocation (assigning memory items to group members):

“Folks started getting more inventive as they often do. Now people include @username mentions in the middle of tweets as a way to simply reference another account. For example: I’m flying @jetblue to Boston. Also, folks reference multiple accounts in a single tweet like this: I’m flying @jetblue to Boston with @ev @crystal and @goldman”. For details on the implementation on mentions see details in Figure 3.16

**Figure 3.15**

Screenshots of one of the earliest conversations on the use of @replies on Twitter November 23rd, 2006



Sources: <https://twitter.com/kapowaz/status/139453> &  
<https://twitter.com/NeilCrosby/status/139513>

### Figure 3.16

Statement from the Twitter official blog regarding the introduction of @mentions

#### Update Tuesday, 31 March 2009

The @Replies feature was introduced because we noticed lots of folks putting the @ symbol in front of Twitter usernames as a way of addressing one another. For example: @biz what are you drinking in your avatar? (It's a soy latte.) So, we started linking the @username references and collecting any tweets that began with @username on one page to make them easier to track.

However, folks started getting more inventive as they often do. Now people include @username mentions in the middle of tweets as a way to simply reference another account. For example: I'm flying @jetblue to Boston. Also, folks reference multiple accounts in a single tweet like this: I'm flying @jetblue to Boston with @ev @crystal and @goldman.

Today's update better reflects how folks are using Twitter now.

From the Twitter official blog accessed July 10th 2017

**Figure 3.17**

Selected fragments of the statement from the Facebook official blog regarding the introduction of status tagging (@mentions)

**UPDATE on Monday, September 14th, 2009**

**Status tagging is now available to everyone on Facebook.**

One of the most popular features on Facebook is **tagging, which gives you the ability to identify and reference people in photos, videos and notes**. Today, we are adding a new way to tag people and other things you're connected to on Facebook — in status updates and other posts from the Publisher. It's another way to let people know who and what you're talking about.

People often update their status to reflect their thoughts and feelings, or to mention things they feel like sharing. Sometimes that includes **referencing friends, groups or even events they are attending** — for instance, posting "Grabbing lunch with Meredith Chin" or "I'm heading to Starbucks Coffee Company — anyone want some coffee?".

**Now, when you are writing a status update and want to add a friend's name to something you are posting, just include the "@" symbol beforehand. As you type the name of what you would like to reference, a drop-down menu will appear that allows you to choose from your list of friends and other connections, including groups, events, applications and Pages**. Soon, you'll be able to tag friends from applications as well. The "@" symbol will not be displayed in the published status update or post after you've added your tags.

From the Facebook official blog, retrieved from Facebook App feed accessed

July 10th, 2017

## Figure 3.18

Selected fragments of a review on the use of Facebook's @Mentions Status Tagging

### HOW TO: Use Facebook's @Mentions Status Tagging

Mashable, SEP 14, 2009

The scope of Facebook's status tagging feature goes beyond just being able to tag your friends. You can also tag pretty much anything you're connected to in the Facebook universe: companies, brands, artists and shows — anything that has a Facebook Page. You can also tag events and groups you're a part of.

Unlike Twitter, the @ symbol won't actually remain as a part of your update; it's merely the syntax that invokes the tagging feature itself. Instead, the full name of the person, page, event or group you tagged is now contained in your status update, contextually linked to its actual page. When your friends see your status update, they'll be able to click on any of those links to find out more and possibly friend, fan, join or attend whatever you linked to:

You can't tag anyone inside of comments, which to us — and probably most other folks who are used to Twitter's implementation of this feature — seems like a "missing" feature. It doesn't really matter where the conversation is happening, and I may have occasion to want to tag something inside a discussion thread just as frequently as I might in a status update.

From Mashable, accessed July 10th, 2017

Because the practice of mentioning rapidly grew into a common user behaviour, it also rapidly transferred to other social media platforms such as Facebook. In September 2009, a Facebook update documented in Figure 3.17 announced that status tagging was available to everyone on the social media platform. Facebook tagging added the possibility to interpellate not just other users, but also to reference “people, photos, videos and notes”. Shortly after the new Facebook update was released, the tech-centered media outlet Mashable, published a *how-to* report about using Facebook mention status tagging where they noticed and were vocal about a missing feature, the possibility of tagging inside comments. As shown in the excerpt documented in Figure 3.18, the author argued that “It doesn't really matter where the conversation is happening, and I may have the occasion to want to tag something inside a discussion thread just as frequently as I might in a status update”. As Facebook UX designers regularly continue improving the experience of their community, the missing feature that Mashable report in their review has been incorporated, and today users tag each other to let others know about a content that may be relevant to them, acting as a de facto information allocation device in comments, but also in private messages. For those reasons, I argue that it can be expected that information allocation devices by means of user interpellation will continue to be a relevant factor for transactive memory user practices in connected environments. I also warn about the potential for interpellations to become inhibition triggers in the event of resulting in a harming emotional response, for example, if interpellation is being used in hostile spaces to inflict any form of online harassment. In the context of safe spaces, reaction buttons can also be used for feedback and warning management.

### 3.3.3. Reaction buttons

A fundamental design factor that could be added to Wegner's theoretical account (1995) and what I believe is a cross-platform brilliant user innovation to take into consideration in terms of feedback, is the use of ideograms and other artefacts such as emoji icons to assign reactions and to enable critical thinking within the community. I have observed communities presently doing so by assigning reactions and warnings to memory items, a variation on information allocation practices that, if taken into account, can give a new variable to consider for retrieval coordination (for details see Figure 3.19). If @mentions can operate today as a tool for assigning memory items to group members (information allocation) ideograms and other artefacts such as Facebook reactions, trigger warnings and content warnings may also enable communities to assign reactions to memory items (Critical feedback).

**Figure 3.19**

A feminist approach to retrieval coordination  
considering information allocation and critical feedback

<b>A FEMINIST APPROACH TO RETRIEVAL COORDINATION</b>
1) Information allocation Assigning memory items to group members
2) Critical Feedback: Assigning reactions to memory items
3) Retrieval Coordination: Planning how to find items in a way that takes advantage of information allocation and critical feedback

In February 2016 Facebook launched Reactions, six animated visual emoji-style icons available for the community to express emotions such as love, sadness, anger, surprise, laughter or appreciation by means of pictograms. Reactions, as described in Figure 3.20, were an extension of the Facebook “Like button”, a white and blue thumbs-up button first tested in 2009, and globally available in the social media platform in 2010, that in 2018 became one of the core features of Facebook’s identity. The Facebook Like button enabled the company to generate data about users’ behaviour and engagement by tracking content that users report to like. With a global community of over 2.01 billion monthly active Facebook users (Facebook MAUs Updated August 1, 2017) one year after the launch of Facebook reactions in 2016, the feature had generated 300 billion interactions (David Cohen, 2017).

It is possible that reactions were meant to provide the community a way to react to discomforting content without utilizing a “dislike” button, even though, as shown in the selected fragments shown in Figure 3.21, the Facebook community had been significantly vocal in the past about their desire to have it as an option in the platform. That desire has been reported and discussed by western media (for more details see *AdWeek’s* “You want a dislike button? Here’s why Facebook isn’t giving you one” (Lafferty, 2016); *Business Insider’s* “Why Facebook didn’t make a “dislike” button” (Heath, 2016). The desire to express discomfort by means of a dislike button is also present in a video recorded public session of questions and answers at the Facebook headquarters that took place in December 2014 (a decade after the company was launched in 2004). The first question directed to Mark Zuckerberg was whether “he’d ever consider adding a “dislike” button” . As reported by Will Oremus in his article “Facebook’s inability to handle criticism is bad for democracy” documented in Figure 3.22, the key lines of Zuckerberg's response were: “Some people have asked for a dislike button because they want to say: “That thing isn’t good.” And that’s not something that we think is good for the world. So we’re not going to build that”. Oremus

was among the journalists offering a critical perspective on Facebook stance on the expression of conflict and disagreement in a free society, pointing honesty, exchange of ideas and critical thinking “among the metric Facebook does not optimize for” (Goel, 2017)

### Figure 3.20

Selected fragments of the statement from the Facebook official blog regarding the introduction of reactions

**February 24, 2016**

#### **Reactions Now Available Globally**

Reactions, an extension of the Like button, to give you more ways to share your reaction to a post in a quick and easy way. For more than a year we have been conducting global research including focus groups and surveys to determine what types of reactions people would want to use most. We also looked at how people are already commenting on posts and the top stickers and emoticons as signals for the types of reactions people are already using to determine which reactions to offer.

Sammi Krug, Facebook Newsroom

## Figure 3.21

Selected fragments of an article from the New York Times on Facebook testing Emoji as reactions

**October 8, 2015**

### **Facebook to Test Emoji as Reaction Icons**

On Thursday, Facebook announced it will begin testing six new emotional reactions that you can convey with a simple emoji, similar to the thumbs-up “like” icon that the social networking service has made so famous.

Almost since the arrival of the like button, Facebook users have been asking for a dislike button or another quick way to express an opinion about a post beyond simply liking it. As more and more Facebook usage shifted to mobile phones, where typing comments is more difficult, it increased pressure on the company to introduce other reaction buttons.

While none of the new buttons are labeled that way, the angry and sad faces are designed to express negative emotions in a sympathetic way.

Mark E. Zuckerberg, Facebook’s co-founder and chief executive, said last month that the company planned to test a way to “dislike” a post.

Vindu Goel, The New York Times

## Loading...Figure 3.22

Selected fragments of an article from Slate on how Facebook's inability to handle criticism through the use of an artifact such as the dislike button is bad for democracy

December 15, 2014

### **You Can't Dislike This Article: Facebook's inability to handle criticism is bad for democracy.**

The first question Facebook's Mark Zuckerberg was asked at a company Q-and-A last week was whether he'd ever consider adding a "dislike" button. He didn't say no.

The key lines (of the response) are these:

*Some people have asked for a dislike button because they want to say, "That thing isn't good." And that's not something that we think is good for the world. So we're not going to build that.*

A "dislike" button on Facebook would dissuade people from posting, liking, and sharing as freely as they might otherwise. For a company that trades in data about users' behavior, more behavior is almost always better. Its algorithms optimize for "engagement," which includes posts, likes, clicks, shares, and comments. **Among the metrics Facebook does not optimize for: honesty, exchange of ideas, critical thinking, or objective truth.**

Seeing dislikes on other people's posts might dissuade you from mindlessly liking them yourself. **Seeing dislikes on your own posts might make you think harder about what you're sharing. Either way, it's a barrier to engagement and, as such, an impediment to Facebook's growth.**

"just imagine how the brands that pay Facebook's bills would feel about seeing dozens, hundreds, tens of thousands of dislikes on their own posts. Zuckerberg would have a lot to answer for on his next earnings call with investors.

**Zuckerberg fails to appreciate the critical roles of conflict and disagreement in a free society—that he believes we'd all be better off if we were impeded from expressing negative sentiments.**

Will Oremus, *Slate*

When Facebook reactions were first tested in 2015 and later globally implemented in 2016, the community was already reacting to discomfoting content with emojis. In turn, global emoji ideograms (shown in Figure 3.24) are the result of a series of iterations from the first design authored by Shigetaka Kurita. The original set shown in Figure 3.23 was meant to be used by Japanese mobile operators in the late 90's (Negishi, 2014) and popularized among western users after Apple made it first globally available with the Iphone iOS 5 in 2011 (Blagdon, 2013). Emoji was introduced as a standard international keyboard, therefore, as a writing system, although some researchers are encouraged to think about them as gestures (Gretchen McCulloch, 2019). Just four years later, in 2015, "Tears of Joy emoji" was made word of the year by the Oxford Dictionary (Parkinson, 2015) due to the popularization of its use in digital conversational environments; I believe, as a result of emojis' capacity to give force to speech in text interactions mediated through technologies. On October 8th 2015, Mark Zuckerberg, CEO of Facebook, announced the launching of the first public tests for Reactions on his Facebook profile. Zuckerberg defined the new feature as "a more expressive Like button". In August 2017, the post had a remarkable exposure and engagement: 17 million views and more than 36,000 comments. I have chosen a selection of user comments on the post in Figure 3.25 that I believe informs not just the specific context of Facebook reactions, but also a larger cross platform context of interactions where these particular emoji-style visual tools are used (Facebook, Twitter, Snapchat, Instagram etcetera). For details of a selection of the original public comments to Zuckerberg's post see Figure 3.26.



**Figure 3.25**

Assumptions regarding transactive memory practices for expressing emotions and critical feedback

From some of the user feedback in the form of comments shown in Figure 3.26 I inferred the following assumptions regarding transactive memory practices for expressing emotions and critical feedback:

1. Users may not perceive any variation of emoji style-design features as something necessarily new.

- As a validated cultural practice emotions can be also expressed without a reaction menu, by using emojis in the comment section

2. Users could be open to participate in a more collaborative approach to reaction-making or even personalize reaction-making according to specific community characteristics/needs.

- Ideas for new reactions, include dislike, variations of dislike or alternatives to the iconic Facebook like button
  - as a tool for critique or rejection: “Keep it to yourself” button, “no-no” button, “Reject” button, “Please stop that” button
  - as a tool for solidarity or call for action: “Wish you well” button, “Hug” button, “Very important” button

3. Some users may feel overwhelmed if there is a large range of emotions given as an option to react from.

- Many emotions would make reactions too vague

4. Some users may feel unsafe as a result of a misuse of a reaction button. The reaction button may end up being an enabler of cyberbullying, even if the initial design purpose was not meant for interactions of such nature

- A dislike button could be abused and become a weapon for cyberbullying

**Figure 3.26**

Selections of comments found as a response to Mark Zuckerberg's post announcing the testing of Reactions

**Mark Zuckerberg** ✓  
October 8, 2015 · 🌐

Today we're launching a test of Reactions -- a more expressive Like button.

The Like button has been a part of Facebook for a long time. Billions of Likes are made every day, and Liking things is a simple way to express yourself.

For many years though, people have asked us to add a "dislike" button. Not every moment is a good moment, and sometimes you just want a way to express empathy. These are important moments where you need the power to share more than ever, and a Like might not be the best way to express yourself.

At a recent Townhall Q&A, I shared with our community that we've spent a lot of time thinking about the best way to give you better options for expressing yourself, while keeping the experience simple and respectful. Today we're starting to test this.

Reactions gives you new ways to express love, awe, humor and sadness. It's not a dislike button, but it does give you the power to easily express sorrow and empathy -- in addition to delight and warmth. You'll be able to express these reactions by long pressing or hovering over the Like button.

We're starting to test Reactions in Ireland and Spain and will learn from this before we bring the experience to everyone. We hope you like this -- or can better express how you're feeling!

17M Views

👍 Like    💬 Comment    ➦ Share

👍❤️😄 Marc Salinas Pujol, Carlos SP and 760K others    Top Comments

**Ryan Pursley** 🙄😄😏😂😂😂😂 look at all the emotions i can express and i don't need a reactions menu! We already have emojis what is new about this? 👍👏  
Like · Reply · 1 · October 9, 2015 at 3:33am

**Mihaela Netsch Ursu** I hope there will never be a "dislike" button! Immagine what that would do to the confidence of selfcentered people? Maybe a "keep it to yourself" button should be added...  
Like · Reply · 23 · October 8, 2015 at 7:54pm

**Estrella Alan-Stephens** How about a disagree or a no-no button?  
Like · Reply · October 14, 2015 at 5:15am

**Kjetil Torgrim Homme** I would prefer that the poster was allowed to choose an alternative to "Like". when I'm feeling down, I could replace "Like" with "Hug", when I post that my mom is sick, I could replace "Like" with "Wish well". the list of alternatives would have to be pre-defined (if nothing else, to enable translations.)  
Like · Reply · 2 · October 9, 2015 at 12:34am



**Vaibhav Rath** We like facebook because its simple yet a powerful online social tool. We can use similar emoticons to share our feelings. If this can be kept simple with just a dislike button. This will serve well to react to things as black and white. Will give the users a better simple visualisation of posts. So many emotions will only make reactions too vague.

Like · Reply · 1 · October 8, 2015 at 7:03pm



**Nelly Sambra** Right, sometimes there is a post talking about something sad, violent, etc and some people choose "like"to these events, perhaps because there isn't any other option. It is not logical. We could have a "dislike" button as well as a "reject" button, a "please stop that" button, a "very important" button and some additional ones you could invent dear Mark. Thank you. \*\*\*

Like · Reply · 11 · October 8, 2015 at 7:03pm · Edited



**Trevi Wyngard** An actual dislike button could be totally abused, and could become a big weapon for cyber bullying. \*\*\*

Not everyone who posts things will interpret a 'dislike' as disagreement with the post. There are fragile, sensitive individuals who would interpret it as rejection of them, dislike of them and that they had no right to express their own thoughts and opinions.

In face to face situations we are taught to walk away from things we dislike.... We can do the same here.

Well done Mark and FB - I knew the 'dislike' button was beneath you.

Like · Reply · 5 · October 8, 2015 at 8:53pm



**Robyn Spitz** Boiling our true feelings down to a series of moronic animations is the beginning of the end of real communication.

Like · Reply · October 9, 2015 at 8:43am



**Zasha Diaz** You are trying to be to politically correct in offering politically correct options of epressions. Why are you afraid putting in dislike? So than just put other: \_\_\_\_\_. I know that I love to express my self and elitists options won't stop me from expressing my thoughts. Other users do not like the notlike option because they are who they are.ps. the culture in Spain is not the same for testing in USA or Ireland? Come on senor ZUCKER get some help to assist you with fb format. You are not fit to deal with human emotion. No matter how hard you try to pretend you really care. Somehow you lack that quality.Delegate, delegate.nough said. 🙄💚🍋 \*\*\*

Like · Reply · 1 · October 8, 2015 at 10:36pm

Source: Mark Zuckerberg's Facebook profile  
<https://www.Facebook.com/zuck/videos/10102412343501081/>

In this chapter I am building a theoretical and conceptual framework based on feminist approaches to transactive memory management theories that can be used as a user evaluation toolkit aimed at helping designers, including myself, to articulate design proposals focusing on the user experience of underprivileged communities in creative archives (such as social media platforms) and knowledge repositories (such as Wikipedia). The proposal for a new framework takes into consideration that users do not operate isolated in connected environments and therefore the network/transactive memory component is fundamental in a large number of user interactions.

First, I am particularly interested in how reaction-style buttons designed for critical feedback purposes may be utilized by a community to detect and eventually mitigate structural inequalities. Those structural inequalities have been identified by feminist scholars as forms of discrimination, objectification, oppression, and stereotyping such as classism, racism, colonialism, homophobia, transphobia etcétera, acknowledging that those structural inequalities can intersect with sexism and disproportionately affect women with marginalized identities. This particular chapter aims to give a framework for UX design from a memory perspective.

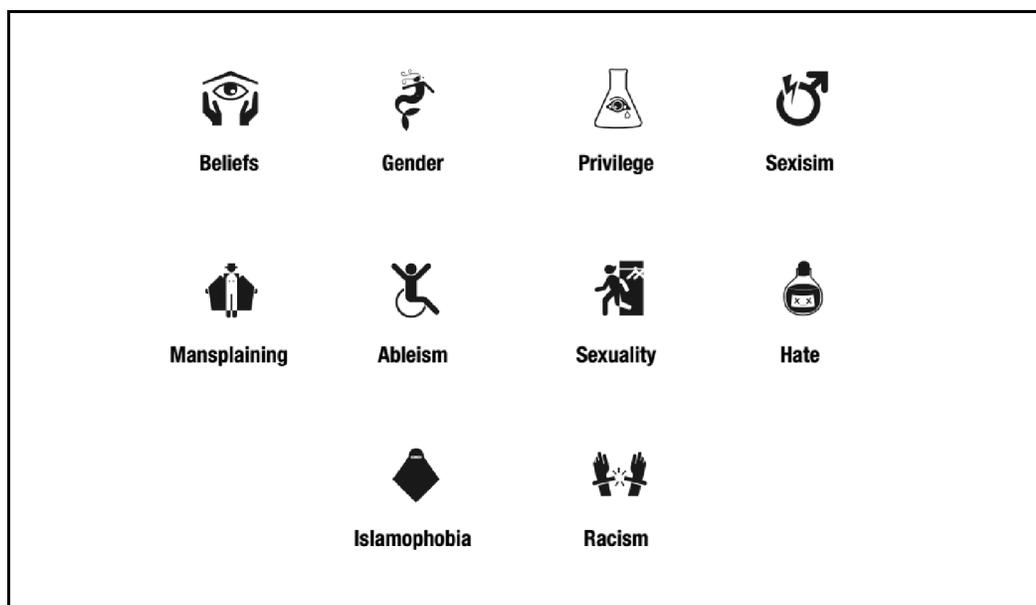
I am also particularly focused on interrogating the extent to which hostile attitudes towards women, underprivileged and underrepresented communities goes beyond a simple distraction or annoyance adding a new layer to the acknowledged costs of collaborative remembering. In terms of the implications of my claims in the formation of collective memories, I am arguing that standards of normativity and alterity that informs power dynamics may act as an implicit collaborative inhibition enabler in connected environments. For that reason I have been experimenting with the possibility of using reaction-style buttons as a bias detection tool to be used by feminist-centred spaces first within the Wikipedia community. If the set of Facebook reactions aims to enable users to respond to how they feel, in my

design proposal I am interested in asking users why they feel that way by giving an initial set of reactions for bias shown in Figure 3.27, that can be adapted to the specific needs of the community at any given time.

The feedback on usage provided by the app prototype can be collected by keeping track of the users' reactions on the documents shared through specific feedback buttons. This track record (critical feedback) can reveal the type of bias (e.g. gender bias, race bias, social level bias etc) that characterizes the content explored and evaluated by each user, providing both qualitative and quantitative evidence to assist the Wikimedia community in identifying responses to harassment and other toxic behavior and to drive gender diversity and gender equality in the tech industry.

**Figure 3.27**

Set of ideograms given to users to react for bias in the working prototype of the Wikipedia Bias detector developed as a experimentation device



### **3.3.4. Trigger Warnings (TW) and content warning (CW)**

Geek Feminism Wiki, a digital project of resources for and about women in geek communities, has a specific page describing trigger warnings that is particularly interesting because it frames trigger warnings as user-led product of UX design proposed to improve the experience of vulnerable communities by means of preventing “unaware encountering of certain materials or subjects for the benefit of people who have an extremely strong and damaging emotional response to such topics, for example, post-traumatic flashbacks or urges to harm themselves. Having such responses is called “being triggered” (Trigger Warning, Geek Feminism Wiki, 2009-19). I believe that inhibition triggers may operate in critical cases of damaging response, but also on a more quotidian level of normalized violence (such as name-calling) and that collaborative inhibition can also be explicit when inhibition triggers activate it. Personal stories shared by other users, but also hostile virtual speech acts - such as name-calling, public humiliation, threats or sexual harassment, among other practices observed in the behaviour of online communities- have the potential to become inhibition triggers for users from communities placed outside the center of hegemonic standards (considering here the hegemonic default-user as white, cis-heterosexual male, abled, educated and from the global north). Which leads to the last transactive memory user-led innovation of this section, via reappropriation of the term “trigger” that evolved from clinical psychiatry, circulated from social media to mainstream media and eventually ended up in college syllabuses (Vingiano, 2014). I have already discussed the logic under which, if @mentions can operate today as a tool for assigning memory items to group members (information allocation), ideograms and other artefacts such as Facebook reactions, trigger warnings and content warnings may also enable communities to assign reactions to memory items (Critical feedback).

The trigger warning guide [<https://trigger-warning-guide.tumblr.com/>]- a collaborative project to define and catalogue triggers, now on hiatus but still online - defines a trigger or content warning (TW and CW) as “a practice used to warn people of content that might elicit a strong or potentially harmful emotional response”. According to the statement on the site it can be noted that the community consider content warnings as potentially “less harmful or threatening (or more broad) than trigger warnings, but the severity of response varies” (Shannon Frey and Nicole Stark’s, Trigger Warning Guide on Tumblr, 2012-ongoing). TW and CW started as a customary practice in feminist online communities and in other digital “safe spaces”. The cyberfeminist project Geek Feminism Wiki defines safe space as a place where underprivileged and marginalized communities “are not supposed to face standard mainstream stereotypes and marginalization, or in which a shared political or social viewpoint is required to participate” and also indicates that “safe spaces may require trigger warnings and restrict content that might hurt people who have strong reactions to depictions of abuse or harm or mental illness triggers” (Safe Space, Geek Feminism Wiki, n/d).

To implement those warnings and build safe spaces around participation, communities of people at risk are using technology in a way it was not “anticipated for”, nor “doing the work it was anticipated to do” (Bell, 2015:18). Trigger warnings and content warnings in the context of digital communities are not just a transactive memory user innovation/aggregation/variation but also a user-led product of UX design. Digital trigger warning practices include the shortcut CW or TW followed by tags that inform the topic that can hurt people (for example: eating disorders, rape, self-harm, etcetera). As I illustrate in Figure 3.28, by means of utilizing spaces and dots users hide potentially harmful messages from vulnerable users, that at their own informed choice can decide to access the content or not, depending on the context. In the specific example that I have chosen to illustrate the technique to hide potentially harmful content, the user is

discussing periods and free bleeding. In another example a user is asking for the community to start using trigger warning tags when discussing food related content. Here, the transactive memory is not only taking into consideration what users know, it is also taking into consideration the distributions of harms and benefits by giving users the option to state what they feel and need. That is used in feminist spaces but also by mainstream media as shown in Figure 3.29.

**Figure 3.28**

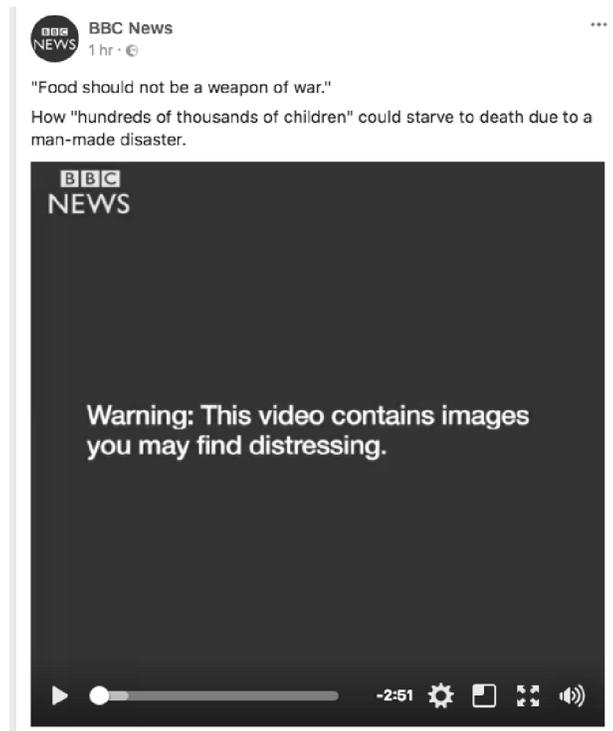
Examples of trigger warning practice usage in safe spaces



There are also other interesting transactive memory user innovations involving strategies to maintain safe spaces, for example, to silence hostile users, not studied in the present research but shown in Figure 3.30. The set of standards presented here, aimed to mitigate collaborative inhibition and provide better experiences to underprivileged communities, can be utilized as a user evaluation tool for designers to interrogate on the distributions of harms and benefits to learn about the kind of experiences that their design choices are enabling.

**Figure 3.29**

Examples of trigger warning practice usage in mainstream media



**Figure 3.30**

Example of transactive memory user innovations involving strategies to silence hostile users not listed in the present research



### **3. 4. Feminist transactive memory practices and the Ana Mendieta protocols**

The present research employs methodological and analytical frameworks of critical UX research, such as Design Justice, as an instrumental path to move towards a framework of ethics. It also acknowledges the multidimensional reach of UX by addressing several areas, such as the design and construction of digital archives, the idea of the body as an archive of experiences, and the relationship of all these to the theories of episodic and transactive memory systems, taking into consideration the implications of bias and harassment in online spaces as participation inhibition triggers for women and underprivileged communities.

In terms of epistemological and ontological foundations for the contribution to knowledge, this research builds from feminist standpoint thinking practices to answer: 1) which bodies come to matter in the context of the Internet ecology, and 2) how somatopolitical protest movements can articulate conversational networks of solidarity and knowledge building in creative archives by operating under protocols for safe space management and maintenance. As a result I suggest the Ana Mendieta Protocols as a tool to address collaborative inhibition and promote participation in the context of digital communities and Free/Libre Open Source Software (FLOSS) cultures.

**Figure 3.31**

The Ana Mendieta Protocols for feminist transactive memory management

<b>FEMINIST TMS</b>	<b>TRANSACTIVE MEMORY PRACTICES</b>	<b>Ana Mendieta Protocols for TMS</b>
<b>DIRECTORY UPDATING</b>	Learning <i>who knows what</i> in the group	Learning <i>who knows &amp; feels what</i> in the group
<b>INFORMATION ALLOCATION + BIAS EVALUATION &amp; CONTENT WARNING</b>	Assigning memory items to group members	Assigning reactions/warnings to memory items & memory items to group members
<b>RETRIEVAL COORDINATION</b>	Planning how to find items in a way that takes advantage of <i>who knows what</i>	Planning how to find items in a way that takes advantage of information allocation, bias evaluation & content warning to consider users' specific emotions and knowledges

In that context, the legacy and death of Cuban artist Ana Mendieta constitutes a silenced representative voice from a somapolitical protest movement, and at the same time serves to remind us that feminist communities are also subject to triggering collaborative inhibition even when they are operating within the boundaries of a feminist space. The American artist Lynn Hershman Leason in her documentary *Women Art Revolution* follows the lives of some of her friends—which are the main representatives of the women arts movement in the United States—throughout the decades. Multiple artists recalled their learnings and failures, and how after the murder of the artist Ana Mendieta in 1985, white feminist communities in the US were incapable of coming together in order to articulate a message of solidarity or a statement requesting accountability towards Mendieta's husband and abuser, minimalist artist Carl Andre. The protocols that I proposed in Figure 3.31 take her name in an attempt to pay tribute to her legacy, but also as an attempt to prevent another voiceless response from a *somato-political* protest movement incapable of working through their own privileges, oppressions and differences.

This issue continues to be relevant in present times as violence and harassment within feminist spaces increases. It is an issue that I have observed both on social media and Wikipedia, but also in feminist political and institutional spaces where I have worked. Facing the problem is the first step to addressing it, but as the violence increases so does my understanding that this is an issue to be managed using reimagined dynamics. In that regard, Design Justice practices can help transform those dynamics so that they don't continue to reinforce interlocking systems of structural inequality. Design justice practices have also informed the design of the two prototypes that I present in the following subsections. I designed these prototypes to test how the individual components of the Ana Mendieta protocols could operate in different contexts, and see how the protocols translate into actions.

### **3.4.1. Designing and prototyping a systemic bias detector for feminist knowledge communities**

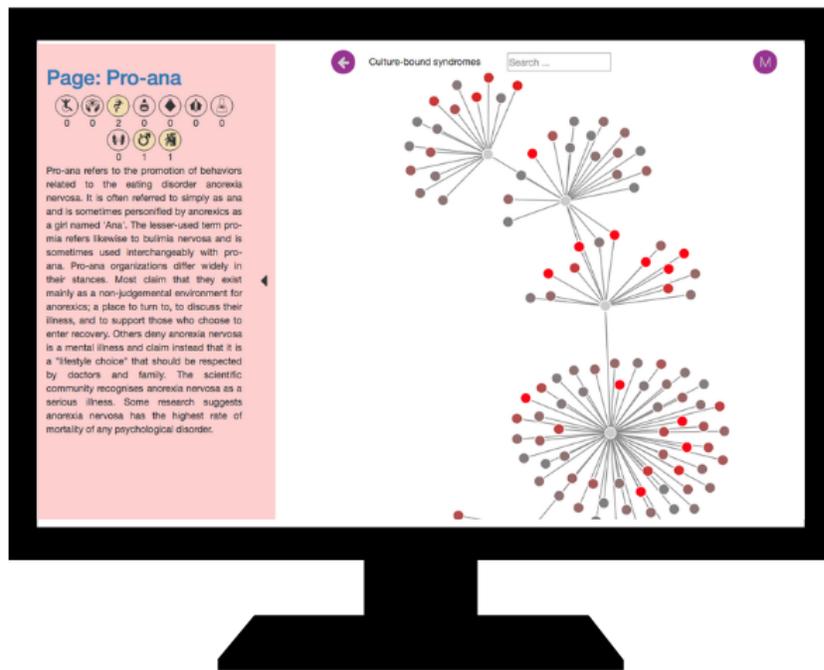
Wikipedia itself defines its systemic bias as “favouring certain nationalities, ethnicities or majority religions”. It also says that “It may more specifically follow the biases of Internet culture, inclining to being young, male, English-speaking, educated, technologically aware, and wealthy enough to spare time for editing’. Some surveys have indicated that only about 8.5–16% of Wikipedia editors identify as women (Glott, Schmidt and Ghosh 2011), and recently researchers have also found evidence that Wikipedia's bias in biographical coverage is related to the gender bias in positions of social power (Klein, Konieczny, 2015). Taking into consideration issues of oppressed group identities within the Wikipedia community, the following prototype has been designed in order to allow women, POC, and queer folks react to biased content without exposing themselves to online abuse.

When accessing the prototype shown in Figure 3.32, users can explore 7 Wikipedia categories and react with the feedback buttons when they think that there is any biased information. After registering, the app offers a series of maps (vector graphs) to explore Wikipedia categories. The maps are built with vector graphs where nodes represent pages and subcategories. Red nodes indicate controversy on the page (controversy is calculated by counting the number of comments on the discussion page of each Wikipedia entry). When clicking the node, a module appears on the left side of the screen showing the article abstract and the article link to access the Wikipedia page. Users can then check the information on Wikipedia and, if they think that the information is biased, they can react with the feedback buttons. The feedback on usage provided by the app can be collected by keeping track of the users' reactions on the documents shared through specific feedback buttons. This track record (feedback) reveals the type of bias (e.g. gender bias, race bias, social level bias etc) that characterizes the

content explored and evaluated by each user. For details on the resulting data that the app can provide see Figure 3.33.

**Figure 3.32**

Detail of the app prototype design for bias detection



**Figure 3.33**

Detail of the data collection targeting reactions to the label “Mansplaining”

ID	Source/	Label	mansplaining
1	Admin	Mansplaining	Israeli Elite Force
2	Marta Delatte	Mansplaining	Tor (anonymity network)
3	Marta Delatte	Mansplaining	Alejandro Jodorowsky
4	Maya Wagoner	Mansplaining	TokBox
5	Neus	Mansplaining	OkCupid

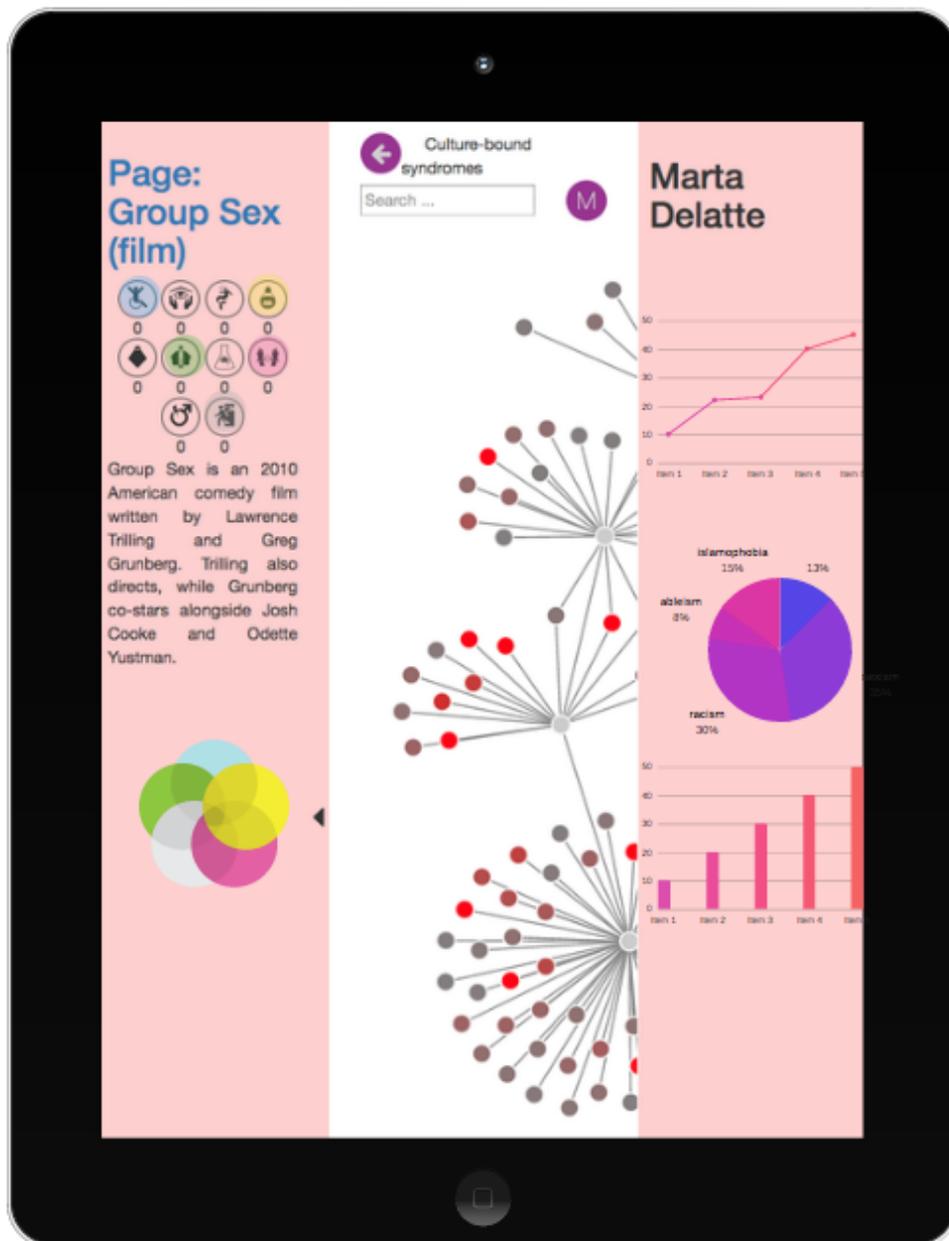
The bias button aims specifically to tackle the time-consuming process of locating biased content. The feedback button works in a similar way to the Facebook like button, but instead of implying 'I like this content' with their reaction, users can imply: 'I think this content is biased' because it is islamophobic, or sexist, or ageist, or ableist, or homophobic etc. This particular feature may prove useful, first, to gather quantitative evidence regarding biased content in Wikipedia, because they - the community- are pointing out where we have issues, and second, what those issues are. Also it is expected that this information, and other features for collaborative working still to be designed and tested, will be of assistance to the community of editors, especially for online collaboration during the edit-a-thons that Wikimedia organize yearly around March 8th for Women's Day. The long term goal of the application is to give non-hegemonic communities a safe environment in which to focus on knowledge production and collective memory building.

The first test with users was performed in April 2016 during a workshop at the Femtechnet conference that was held at the University of Michigan. An instructional video (<https://youtu.be/6mgYvTuUphE>) explaining how to use the web app was also sent for feedback to the GenderGap Digest mailing list -a user community of Wikipedians that focuses specifically on the gender gap issue -, where one user noticed that some of the most 'controversial' articles "are actually very well worded to avoid sexism, racism, mansplaining and other phobias. And that is somehow either 1) by virtue of their controversiality or 2) because it was viewed after having been cleaned up, leaving not much bias to report". The same user suggested that it might be nice to have a "free of these biases" button available as well as the canonical bias buttons: "With this click the controversial measurement might be decreased. This feedback loop might keep the many articles getting attention fresh". (Gender Gap Digest, Vol 69, Issue 2 October 2016). At the moment, there are three main issues to figure out for the prototype to be operable: the

project needs a secure server, a back end + front end redesign focusing on usability, and a follow up on the Improvement of functionalities adding text selector and charts. Details of a preliminary design proposal for functionalities is shown in Figure 3.34 and 3.35.

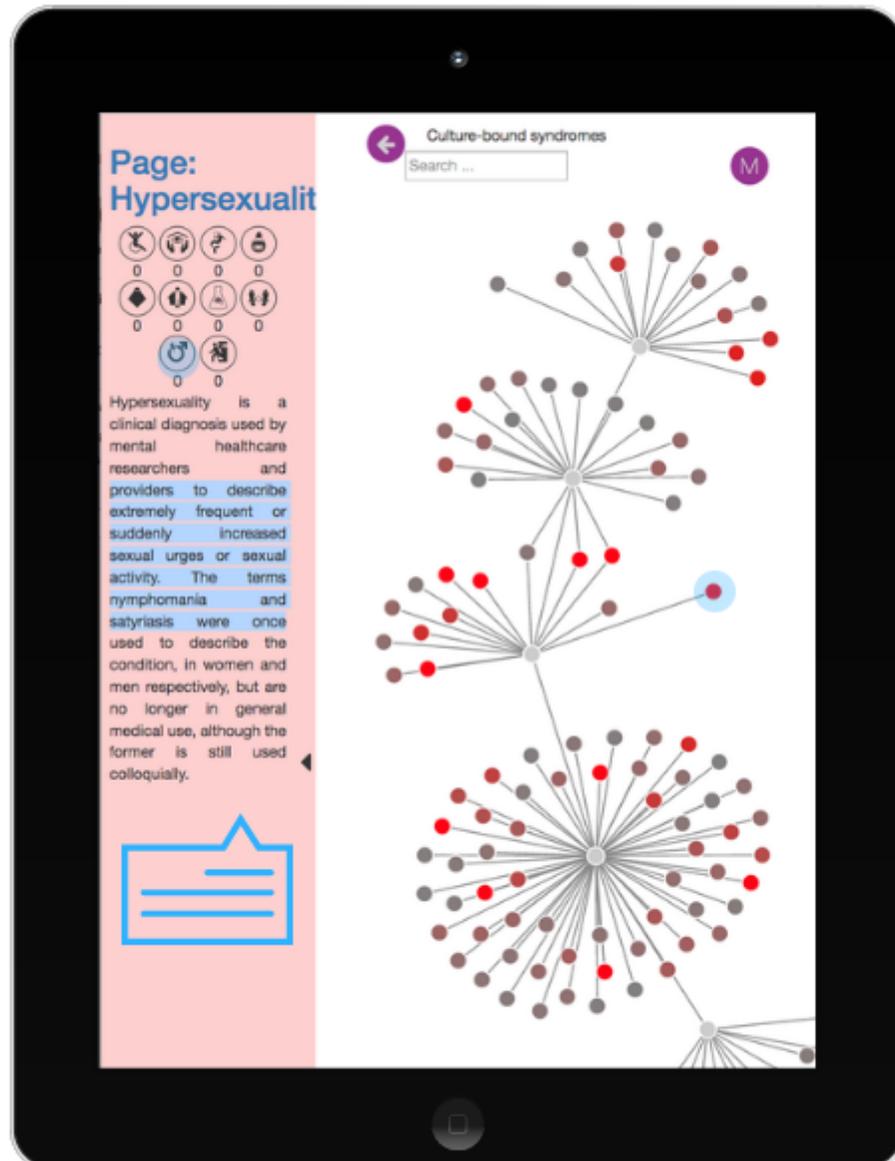
**Figure 3.34**

Detail of charts. Charts will allow users access to the track record (feedback) revealing the type of bias (e.g. gender bias, race bias, social level bias etc) that characterizes the content explored and evaluated by the community.



**Figure 3.35**

Detail of text selector. Text selector will help locate multiple biases within the text allowing the possibility to add comments and gather information relevant for future editions such as references or corrections.



### **3.4.2. The archive as a safe space: Designing empowering forms of collaborative archiving and memory building**

#### **The body archive**

A project statement of the theoretical design prototype presented in this section was first published in the Feminist Media Histories special issue on Data, edited by Miriam Posner and Lauren F. Klein the summer of 2017. The statement for the digital project summarized here, and titled "Retrieving from My Digital Body: A Map of Abuse and Solidarity" (2017: 167-172) was built in dialogue with the idea of a *warm database* introduced by artists Ghani and Ganesh in their installation "How Do You See the Disappeared?". The concept of warm data is used by the artists to "exist in contradistinction to the 'cold data' gathered in official government questioning of immigrants". That is: "to scale the political back to the personal, the abstract to the specific, and the foreign to the familiar" (Royer, 2010).

In *The Body Archive*, my priority has been to give the data specificity and humanity, and to explore the possibilities of the personal archive by reflecting and giving importance to the "data" that helps constitute my personal social network. Here *the network* performs as a highly functional recommendation *algorithm* that allows me to find, read and save data that is relevant to my activism and my research. The archive has several purposes: on the one hand, to give access to women-centred knowledge and experiences and problematise around the current sexist and racist data crisis, and on the other hand, to explore new tools for knowledge discoverability in creative archives from a feminist standpoint thinking.

Drawing from auto-ethnographic practices in online environments, I have coded - tagged, made lists of - manually harvested data mainly from media coverage, and also from some user initiatives shared by my feminist networks on Facebook between 2015 and 2016, following Sandra Harding's

standpoint thinking (Harding, 2004), that is, focusing on the user experiences of women and underprivileged communities. The creative archive contains links and Facebook statuses previously shared within my network, informing and reflecting on how feminist communities respond to abuse online and offline, which have been their concerns, and what are their strategies to fight abuse and to build spaces for healing and solidarity.

In terms of issues surrounding “control creep” and “anticipatory governance” (Rankin, 2016 ), in the event of harvesting direct links from personal Facebook profiles instead of media coverage, I have asked for consent from the people involved. The digital project presented here is hosted on my own personal server provided by the company Dreamhost. The database does not contain documents, but paths - links - to original sources, so display of ownership remains at users’ will and autonomy.

The database is hosted in Airtable (a user-friendly online tool for creating DIY databases) and was previously coded into “themes” and “communities” - exploring the relations between abuse, solidarity and digital memory as well as focusing on the experience of the underprivileged. The visual components of the network have been created with Gephi (a free software tool for network analysis) and imported into a web file with the plugin Sigma.js Exporter, with the collaboration of Edu Martín Borregon from *Data in Press* and *MéxicoLeaks* to create the database. To identify neighbourhoods within the data, I have selected Force Atlas and ForceAtlas2 as the layout for the network visualization, after applying modularity calculations for the entire network. The final network visualization shows labels for communities and themes, and identifies by colour seven clusters or neighbourhoods emerging from my coding. This process depends only on the connections between nodes (Mathieu Jacomy et al., 2014), that is, the shared codes assigned to each individual online resource (like a tag or a hashtag). That way, I am also exploring the ForceAtlas algorithm and the resulting data neighborhoods as a

way to encounter new meaningful relations between connected themes and communities.

It will be interesting to follow the discussion on knowledge discoverability tools for creative archives (Fayyad et al., 1996) and share the technical and ethical challenges and practices behind the creation of the archive with the rest of the community. In the future, the project can be adapted as a workshop to explore ideas of community empowerment and self-archiving practices in dialogue with feminist standpoint thinking.

I am especially interested in using my research to assist in decolonizing the concept of knowledge production and new models of history, removing it from a fabled "elsewhere," and inserting it into digital environments. Building on work from Paulo Freire, Antonio Gramsci and Sandra Harding, I posit that women and girls bring histories of critical feminist subjectivities and innovative subaltern strategies to screen online cultures. I see the standpoints of girls and women as being owed respect, engagement and reparations.

### **3.4.3. A theoretical design model for transactive memory management practices in creative archives considering hostility issues in the Internet Ecology**

Resulting from all the observations and experiences, I propose a theoretical design model to develop woman and girl-centred cognitive tools for collaborative learning, that can be adapted to fit the needs of different feminist knowledge communities. Taking into consideration some of the reasons why there are fewer women editors in Wikipedia, the theoretical design model has been developed to assist in the design of cognitive tools to facilitate feminist engagements with archives, the model also follows the Ana Mendieta protocols for transactive memory management practices (Figure 8a) and works towards ensuring that: the community will be able to organize

their work collaboratively and inform gently about bias-related issues to others, and structural issues of sexism, racism and other stereotyped biases will be identified and challenged.

In addition to the feedback button, tested with the Wikipedia bias detector, the theoretical model has three other components tested in *The Body Archive* to explore and compile content of a topic of users' choice by means of collaborative tagging: knowledge lists (Knowledge Playlist) related to the knowledge topic, which will provide an organization/compilation of the content of the topic; visual maps (Hashtag Map) created on the basis of the items provided in each knowledge list; visual maps (Users Map) created by the app on the basis of the knowledge maps and lists created by each user. These three components are related to the three design factors of a transactive memory system (1995) after applying Ana Mendieta protocols. The Users Map will act as a directory updating process, (learning *who knows and needs what* in the group); The Knowledge Playlist acts as an information allocation process (assigning reactions and warnings to memory items and memory items to group members); The Hashtag Maps act as a retrieval coordination process (planning how to find items in a way that takes advantage of information allocation, bias evaluation & content warning to consider users' specific emotions and knowledges as detailed in Figure 3.36.

The resulting Hashtag Maps and Knowledge Playlists (which will be different for each individual) will represent the individuals' way of visually organizing the content, and I hypothesize that it will facilitate the exploration of the topic on the Web. The rationale for this hypothesis is that information organized visually can be explored more easily, as a visual organization of information facilitates parallel processing (Franconeri et al., 2013). On the contrary, a list of items presented verbally necessarily can only be explored sequentially, and it is well known that sequential processing of information is much slower than parallel processing (Fischer and Plessow, 2015). Not only is it slower,

but in the case of a very long list of items, it might lead to interrupting the exploration prematurely.

**Figure 3.36**

A theoretical design model for feminist transactive memory management practices in creative archives following the Ana Mendieta Protocols

<b>FUNCTIONALITIES</b>	<b>TRANSACTIVE MEMORY USER INNOVATIONS</b>	<b>Feminist TMS</b>
<b>User Map</b>	Mentions	Directory updating + Retrieval coordination
<b>Knowledge Map</b>	Hashtags	Directory updating + Retrieval coordination
<b>Knowledge Playlist</b>	Listicles & Hashtags	Information allocation
<b>Feedback Button</b>	Reaction button & TW	Bias evaluation & content warning

The digital project of *The Body Archive* represents a network of data shown in Figure 3.37a that originates from 500 manually harvested links to media, resources, tools and news shared in social media platforms by my feminist networks during 2015 and 2016. Raw data has been archived and coded into themes (Abuse, Solidarity, Wikipedia, Design, Maps, Remix Culture, Girl Culture, Hashtags, BodyArchive, Learning, Digital Memory, Standpoint, Bias, Bye Felipe) and communities (LGBTIQ+, POC (People of Colour), Women, PWD (People with Disabilities), Neuroatypical people, Muslim, Underprivileged, Age minorities, Global South, Public Figures, Trolls, Hard Internet Users, Researchers/Makers and Learners).

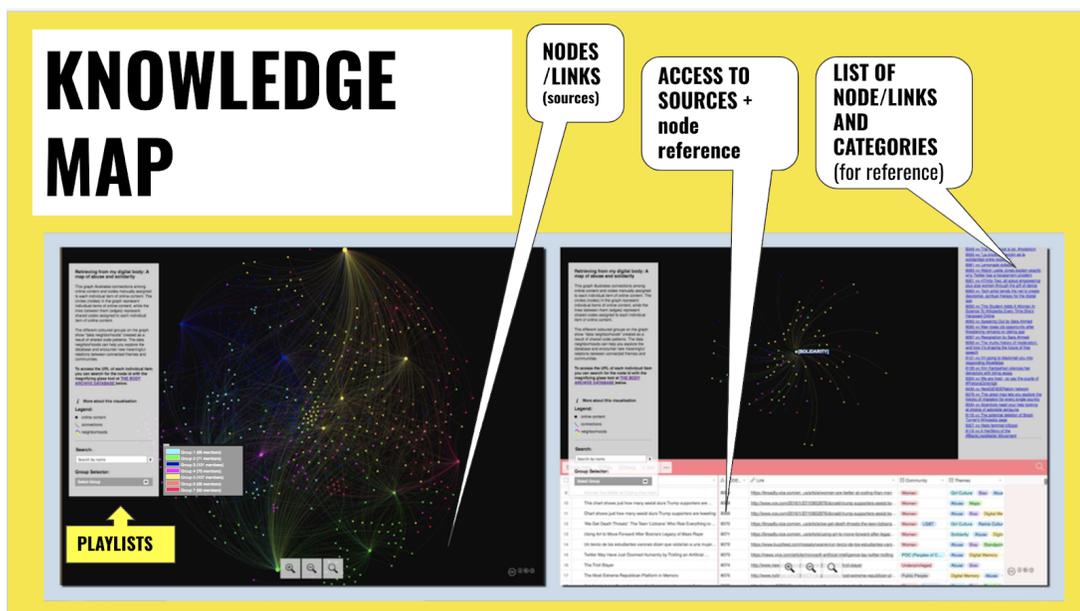
The visual components of this network have been created with Gephi (a free software tool for network analysis) and imported into a web file with the Sigmajs Exporter plugin. In order to identify neighbourhoods within the data, ForceAtlas and ForceAtlas2 has been selected as layout visualization after

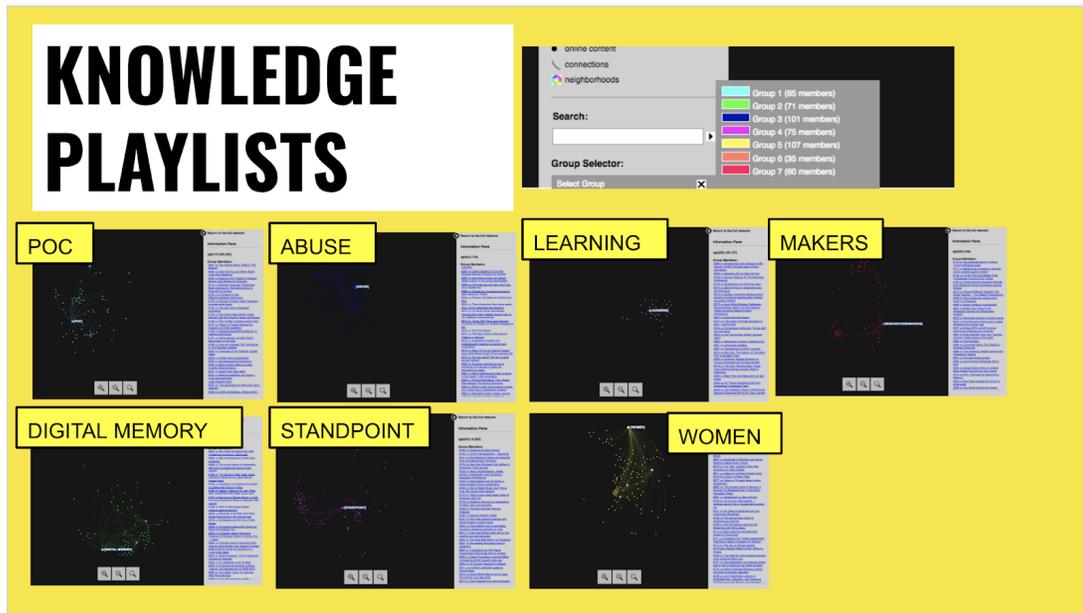
applying modularity calculations for the entire network. The final network visualization shows the labels for communities and themes, and identifies by colour seven clusters or neighbourhoods emerging from my data selections.

Using network analysis as a self-reflective practice the network also reflects and gives account on my researcher's positionality while selecting evidence and case studies to inform my thesis. In that sense, results show how LGBTIQ+ communities are central to my network, surrounded by the themes of Abuse, Solidarity, and Body Archive. Results also show the cardinal points informing the larger research, that is, the community of *Women* and the theme of *Digital Memory* on the vertical end; and on the horizontal end, *Underprivileged communities* - as a generic mention in the selected media resources - and the community of *Researchers/Makers*.

**Figure 3.37a**

Details of the theoretical design model for feminist transactive memory management practices following the Ana Mendieta Protocols from different prototype examples. Designs were presented at the International Symposium “Accumulation Technologies: Databases and ‘other’ archives” (Barcelona, 2017)





### 3.5. Learning through movement: Discussion of the UX prototypes and the process of their iterative development

As often happens, my proposal for a feminist transactive memory system has had some transformations as I learned new findings and perspectives. Attending workshops and presenting my preliminary findings and proposals in conferences has been a fundamental resource. For the first years, my focus was very oriented towards building tech, and even though my background or my contacts were not the most adequate, I successfully designed two prototypes, but I failed to give both projects a secure server to exist after the first testings and iterations. At the same time, as I later became more involved with the community fighting the gender gap of content and participation in Wikipedia, the level of harassment that I was subject to also grew. With that I also understood that tech might not be the only, nor the most adequate solution to address issues that were originated by language and culture.

In 2017, coinciding with my return home after three years living in the UK, my involvement as a wikipedia editor grew. I also started participating as a

community organizer by creating the local node of Art + Feminism Barcelona. With this node, over the last three years I have organized virtual and face-to-face meetings to edit Wikipedia with a gender perspective, as well as other activities designed to collectively problematize systemic bias and gender gap of participation in Wikipedia. One of the most productive meetings took place in the context of the Science Biennale in Barcelona in 2019, where a group of 12 editors met collectively to discuss and propose a list of diagnosis and recommendations with potential to be applied across Wikipedia chapters.

### **3.5.1. How feedback informed the iterative process**

In 2015 I presented my first conference proposal as a PhD student. The University of Sheffield organized a conference about *Feminist research methodologies, challenges and negotiations*, and my presentation focused on the appropriateness of doing qualitative research in user-computer interaction in order to gain a detailed understanding of both the subject and the context, especially when conducting a study related to digital archiving and the human memory from a feminist standpoint.

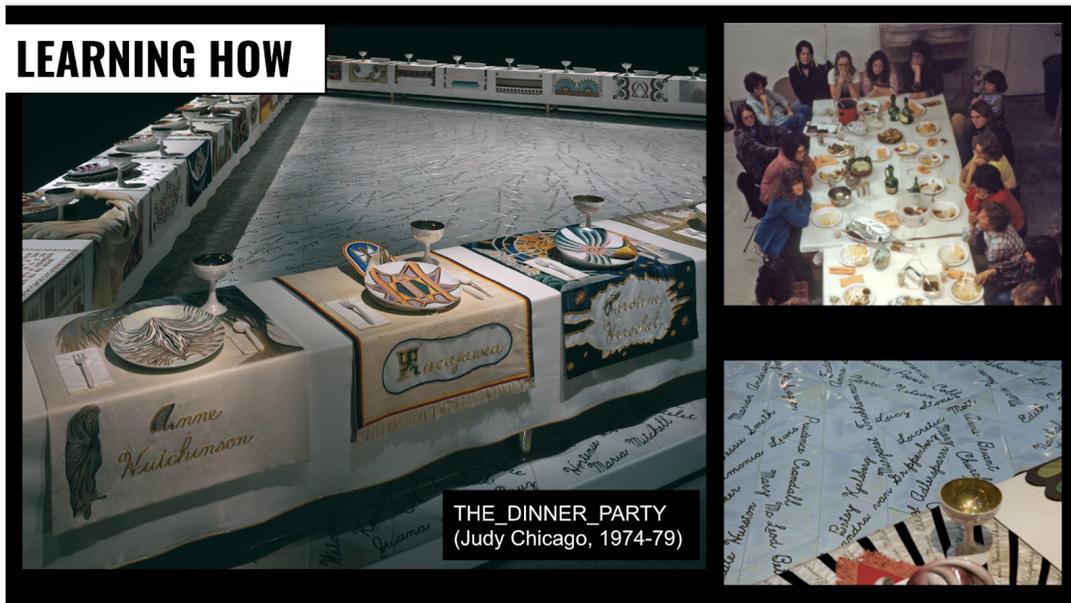
My presentation (appendix 1) included the first proposal for an app that was still not specifically focused on Wikipedia, but would explore ways to help individuals explore a topic of their choice on the web and provide them with information (a feedback) on their usage. That feedback would highlight the type of stereotypical biases (memory transgressions towards stereotypes such as gender, race, economic background etc.) that characterize their exploration. I argued that previous psychological studies have shown that, although stereotypes are pervasive and have an important impact on how information is interpreted and memorized, people are usually unaware of their stereotypes, and how these stereotypes shape their knowledge, the interpretation of the information they access, and the content of their memory.

In 2016 I presented (appendix 2) and tested the prototype for a bias detector in the specific context of Wikipedia at *Signal/noise: A FemTechNet conference on Feminist Pedagogy, Technology, Transdisciplinarity* in Ann Arbor. At that time, the app prototype was operative, and participants were given the app to interact with, and an instructional video indicating the basic functionalities of the proposal for the bias detector. After the first tests, participants agreed that the node maps were contributing to visualize the complexity within Wikipedia categories, and to look for items where controversy was detected. They also found it interesting to be able to see the connection between the nodes that represent pages, and see which nodes were performing in isolation and which ones were performing as a network. Since 2016 I have presented the prototype at several tech oriented events and conferences such as the Smart City Expo Barcelona 2018.

Interested in continuing the exploration of the possibilities for managing complex knowledge networks by means of node connections, also in 2016 I attended the *Chinese University of Hong Kong Summit on digital methods and social development*, where I acquired the skills to build myself *The Body Archive*. At that time, the social media application Facebook was going through a honeymoon period of engagement and user participation. There were very significant amounts of experiences and sources shared and I was having issues with keeping track of it. As a solution, I began converting the links that I had saved on Facebook into a database, to later code and categorize the experiences and projects that my personal network of friends and colleagues were sharing online. The result was a network of connections that somehow reminded me of the heritage floor of the Dinner Party, as shown in Figure 3.37b, where rivers of references showed profound connections between people and moments that otherwise would remain unseen.

**Figure 3.37b**

Details of the inspiration for the theoretical design model. Designs were presented at the International Symposium “Accumulation Technologies: Databases and ‘other’ archives” (Barcelona, 2017)



As I mentioned earlier, a statement of *The Body Archive* was first published in the Feminist Media Histories special issue on Data, edited by Miriam Posner and Lauren F. Klein the summer of 2017. Also in 2017 I presented the project (appendix 3) at the *International Symposium Accumulation Technologies: Databases and 'other' archives* in Barcelona, where I discussed how the symbolic representation of maps and the collaborative effort in *The Dinner Party* had been a major influence in prototyping and developing the project.

Later on, as I started incorporating Design Justice perspectives into my research and design practice, my conference presentations turned focus into the preliminary results of performing Design Justice analysis to understand the participation cultures of Wikipedia, including my own auto-ethnographic explorations. In 2018 I was invited as a keynote speaker at the symposium *Where are the women in Wikipedia?* (appendix 4), organized by the Open University of Catalonia. In that symposium I stressed the importance of shifting focus away from tech-building and into problematizing how language in the context of technology devices and platforms shape our experiences, by means of both user interpellations, but also platform policy, and content guidelines.

In 2019, still presenting preliminary results of a Design Justice analysis on Wikipedia participation and editing culture, I presented some issues encountered doing auto-ethnographic work in Madrid at the first conference on Feminist Ontologies (appendix 5). The issues were both with hostile users within feminist spaces focusing on addressing the gender gap in Wikipedia, and with hostile users in mainstream public spaces of the platform. Those issues will be explored in depth in the following chapter, where I focus on how the normative structures of Wikipedia and other FLOSS cultures act as a participation barrier for women and underprivileged users.

### 3.5.2. Potential for further development

Besides my participation in different conferences and workshops, over the last few years I also had the opportunity to organize collaborative events where participants could learn how to edit, problematize some of the major issues regarding participation and systemic bias in Wikipedia, and brainstorm for the proposal of solutions and diagnosis. In the context of the Science Biennale of Barcelona in 2019, a group of 12 editors met to collectively put together a list of recommendations that I consider to indicate potential for further development of the prototypes presented here. Those recommendations were published in the zine *Acción Política y Design Justice* (2019), a publication that is available at the Design Justice site.

The first diagnosis identified by participants was that binarism in the definitions of participation in Wikipedia only recognizes as participation the number of editions in a specific time, unable to see other forms of participation such as organizing editing marathons, teaching how to edit, providing resources to improve existing content, and so forth. Participants also recognized that the systemic bias manifested in the over-representation of the global north, having repercussions on the aspiration of neutrality and on the admissibility criteria of sources and contributions in Wikipedia, which informs participation.

The second diagnosis is that there is a real issue implementing a Neutral Point of View policy (WP:NPV). As a recommendation, there is a proposal for activating a policy that replaces neutrality with accuracy and that implements bias labels on the pages and discussion pages. That could be done by means of implementing the Wikipedia bias detector in both pages and discussion pages. In that regard my proposal for reaction buttons could also serve as a way to explore alternative ways of visualizing consensus. It is true that reaction buttons can be boycotted if used by hostile users, which is always an issue to be considered, but it's a new proposal worth exploring as

it breaks the lawyerist dynamics of Wikipedia editing culture that makes it difficult for newcomers to participate. There is also an alternative for implementing bias detectors under the current logics of tagging in Wikipedia, where the labels in Wikipedia pages and discussion pages appear at the top of the page or at the end of a sentence. Wikipedia labels are often used to warn for issues with Wikipedia content guidelines and policies such as lack of neutral point of view (WP:NPV), notability (WP: N), references (WP:REF) and others. That way bias templates could be easily implemented as a new Wikipedia Policy, for example WP: BIAS/transphobia.

Participants also recognize the possibility of harassment through edition tracking, and to mitigate the harms of this toxic dynamic they recommend activating the possibility of being able to edit anonymously without losing the count of their edits, and that specifically designed protection templates be activated according to the needs of users at risk. Those templates would recognize and provide context to the knowledge building labor of somatopolitical protest movements, but also, if needed, limit the potential from harmful interactions. New information on what users need provided by the implementation of the Ana Mendieta protocols can help activate and configure the protection template at a larger scale.

In addition to that, the role of users that act as patrollers monitoring new contributions has also been diagnosed as problematic given the systemic bias that is being reproduced in the platform. Because of that, participants recommend that the quota of users that act as patrollers of new contributions be reviewed according to logics of knowledge production and reproduction, in opposition to the logics of meritocracy linked to the number of total editions in Wikipedia. An example of this recommendation is that a person that isn't knowledgeable with regards to anti-racism cannot decide on the relevance of anti-racist content. It is possible that, if implemented, knowledge maps could be a way to evaluate the specific knowledge of a user, by observing their knowledge map and the feedback for bias that is given to

their editing activity. Assuming the bias inherited from the logics of knowledge production linked to encyclopedic culture, which have resulted in the exclusion of non-hegemonic forms of knowledge, participants also recommend the creation of experimental areas which would accept articles in discussion and construction without references or with primary or secondary sources - that is, a space to work through primary sources or secondary sources before there are tertiary sources to write about the phenomenon. Patrolling activities should be limited only by request in those designated spaces for experimentation, as a way of mentoring the page, rather than fiscalizing another user's efforts and contributions.

In order to learn about the practices and dynamics of the Wikipedia community and to be able to generate specific evaluation criteria, participants also recommend a demographic analysis to be carried out according to the perspectives of Design Justice. In that regard, data collected from both users' map and knowledge playlist, plus the bias detected either by the user or in the user edits and contributions can be analysed using Design Justice parameters of intersectionality. Participants also recommend to invest financial resources and time to promote the programming of feminist, anti-racist bots to help us close the gender gap and address the problem of systemic bias. Bots will know what to address following indications from the bias detector, and If the text box were to be implemented, it would also be of assistance to develop machine learning algorithms based on feminist practices.

Continuing to develop research, training and communication around the platform and its communities is also a recommendation. Exploring this recommendation, in the next chapter I present an analysis of the normative structures that inform participation in the context of Wikipedia editing cultures.

# CHAPTER IV

## UX, IDENTITY POLITICS, MEMORY and DESIGN JUSTICE

### 4. How does it feel remembering together in connected environments?

Design justice is a field of theory and practice that is concerned with how the design of objects and systems influences the distribution of risks, harms, and benefits among various groups of people. Design justice focuses on the ways that design reproduces, is reproduced by, and/or challenges the matrix of domination (white supremacy, heteropatriarchy, capitalism, and settler colonialism).

Sasha Costanza-Chock

Design Justice: Towards an Intersectional Feminist Framework for Design Theory and Practice (2018)

#### 4.1 Wikipedia and the future of collective memory

In the summer of 2019, as I was struggling to finish this manuscript, secluded in an artistic residence isolated in the mountains near my hometown in Barcelona, a beautiful little book came to my hands almost by magic. The little book, named *Thirteen steps forward* is a local memory project by Sara Lorite dedicated to the stories of women of Cal Rosal's industrial colony, a place considered one of the most important and unique in the industrialization of Catalonia. Lorite's project takes a fictional approach informed on the lives of the women that inhabited the colony, with the aim to

translate how fundamental they were for the space. Women, together with the history of the river "were the energy that the machinery of this colony operated" (Lorite, 2017:14). With the industrialization of the Llobregat river in the s. XIX century, and the progress of industrial taking over and replacing the traditional agrarian-manufacturing culture, the people of the territory experienced a very important cultural shock in their lives. The project, which was part of the exhibition *Espai de llocs* (Space of places) consists of an audio-guide, written text, and illustrations by Joan Manel Pérez, and also speaks about the transformation of the place that hosted me. Konvent, is a space that first was used as a nun's convent and textile colony and that today is home of a self-managed experimental laboratory on arts and culture, where projects which have no place in the frame of institutional culture converge (Konvent website, 2019). In the epilogue of the memory project, named "A truth that is not linked to reality", Lorite reflects on memory (as opposed to history) as a malleable cultural artifact in a way that is very relevant to the present research. She writes:

"History is the truth that is not linked to reality, but rather, belongs to the ones who narrate it. It is bound to the reality of each individual. This reality is independent of the profile of whomever explains it: winners, losers, survivors, secondary characters or someone who has nothing to do with it.

History is the work of the historian. We know it as a product: a forceful, controlled and manipulated story. That presumably has a start, developments and an ending. It is the reality we are aware of.

On the other hand, memory is a construction linked to reality, [...] since collective memory is the task of each individual. It is the task of sharing and listening. [...] It is not possible to choose which memory will last forever and which will not. Nor will we describe something with the same words ever again, it is uncontrollable. It is the reality of what cannot fall into oblivion" (Lorite, 2017:42).

In the field of collaborative remembering research, there is a reasonable agreement in considering that what a person recalls is often reflective of personal identity, national identity, or cultural identity (Meade et al. 9:2018). If the colony and the river were relevant context for understanding the impact of social transformations that took place locally during the industrialization process; from a global perspective, approaches to collaborative memory in the context of digital connected environments, such as Wiki-style projects and especially Wikipedia, represent a new setting to broaden our understanding of the cognitive and cultural influences of collaborative remembering in the context of ubiquitous computing technologies<sup>6</sup>.

In previous chapters I have interrogated issues in dialogue with UX, identity politics, and memory theory in the context of connected environments. Now I want to explore those issues in action in a series of case studies and observations to analyze the phenomenons of collective memory and collaborative remembering in FLOSS<sup>7</sup> projects such as Wikipedia. I do so in order to understand and problematize implications for design and barriers to participation in Wikipedia in the context of collaborative memory building. Centering the collaborative remembering experience of vulnerable, non-hegemonic communities of users has been a priority for my research and design practice, for that reason I have used the principles and tools provided by the *Design Justice Network* (2016) to propose a theoretical model. This particular model is aimed to address collaborative inhibition and promote participation in the context of digital communities and FLOSS cultures.

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<sup>6</sup> Technologies beyond desktop computing

<sup>7</sup> FLOSS stands for Free Libre Open Source Software

**Figure 4.1**

Characterization of collective memory and collaborative remembering

'Collective Memory: How groups remember their past' Abel et al. (2018: 282)

<b>Characterization of Collective memory:</b>	<b>Characterization of Collaborative remembering:</b>
<ul style="list-style-type: none"><li>- Refers to remembrance of events that transcend the individual and are important to broader social identities</li> <li>- Interdisciplinary field. Can be conceptualized in various ways and may be seen as an umbrella term that comprises different approaches and research agendas fall in different areas of interest. May be defined as a body of knowledge, the attribute of a people, or an ongoing dispute or discussion over how the past should be remembered.</li></ul>	<ul style="list-style-type: none"><li>- Is a rather well-defined term, usually used to refer to a specific type of research that frequently applies the collaborative recall paradigm described to compare group recall to individual recall</li> <li>- Enlarges our basic understanding of the dynamics at work when small groups of people engage in shared remember.</li></ul>

**Figure 4.2**

Core definition, concepts and differences on the two types of remembering  
'Collective Memory: How groups remember their past' Abel et al. (2018: 281)

<b>Concepts of Collective memory</b>	<b>Concepts of Collective remembering</b>
Collective memory: Relatively static body of knowledge about important facts or events shared by individuals of a group	Collective remembering: Active, often contentious process of reconstructing the past while making meaning of it
History: Professional academic discipline directed at providing accurate, objective accounts of the past.	Collective remembering: Simplified and schematic narratives of the past that are part of the identity project of a group on the basis of a group's past. Considered to involve simplified, biased and emotional perspectives on how certain events unfolded
Individual remembering: How individuals remember past events that are unique to them	Collective remembering: How individuals as a member of a group remembers the past and how that remembrance shapes individual identity in a socially situated context

#### **4.1.1. Implications for design in Wikipedia Policy and Structure**

Collective remembering has been defined as “an active and often contentious process of reconstructing the past while making meaning of it” (Abel et al, 2018: 281). Wikipedia, in that sense, and because of its always active and sometimes contentious wiki-editing style<sup>8</sup>, sets a perfect environment for the study of collective remembering from an identity perspective. For details on concepts of collective memory and collective remembering see Figure 4.1 and 4.2. The English chapter of Wikipedia is the largest community in the project, and informs us about what western cultures

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<sup>8</sup> Editable by anyone directly from the web browser.

in the global north<sup>9</sup> remember in terms of a socially validated collective memory. Wikipedia tells us that we remember more about men than about women, and that we barely remember anything about gender non-conforming folks as we see in Figure 4.3. It tells us that when we happen to be remembering the life and achievements of women we consider their marital status or family relations appropriate to the schema, but we fail to add such details when remembering events about the life and achievements of men, as described in literature compiled in Figure 4.4.

**Figure 4.3**

Statistics about the global gender gap in the content of Wikidata and Wikimedia projects showing the gender gap in biographical content. Biographies about women represent 18.2% of the total. Gender identities fall into the category ‘others’ represent 0.0% of the total. Data only represents biographical content from years of birth 1800 to present times<sup>10</sup>.

Retrieved 4th June 2018

Total	Total with gender	Females	% Females	Gap	Males	% Males	Others	% Others
4,310,706	3,742,916	681,697	18.2 %		3,060,702	81.8 %	517	0.0 %

Source: <https://denelezh.dicare.org/gender-gap.php>

<sup>9</sup> The north-south divide is socio-economic, political and geographical. Past editor surveys show that Russia, US and Germany and other countries from the global north are leading the list of the highest percentage of editors. Also, the english language is by and large the Wikipedia chapter with most contributions and readers.

<sup>10</sup> Available data only represents biographical content from years of birth 100 to present times, but there is biographical coverage of women prior to 1800 in Wikipedia, for instance, Hypatia of Alexandria (born c. 350–370; died 415 AD) <https://en.Wikipedia.org/wiki/Hypatia>.

**Figure 4.4**

Selection of the Wikimedia documentation page for the project “Research on gender gap on Wikipedia, a compilation of researches about Wikipedia's gender gap until June 2017” lead by Netha Hussain, showing a compilation of research findings on Lexical Bias and the gender gap

[https://meta.wikimedia.org/wiki/Research:Gender\\_gap\\_in\\_Wikipedia%27s\\_content](https://meta.wikimedia.org/wiki/Research:Gender_gap_in_Wikipedia%27s_content)

- **Lexical bias** : Lexical bias refers to the inequalities in the terms used to describe men and women on Wikipedia. For example, the articles about women are more likely to have details about their family life.

Research	Data	Methods	Findings
Wagner <i>et al</i> <sup>[1]</sup>	Wikipedia in 6 language editions	Open vocabulary approach where classifier determines which words are most effective in distinguishing the gender of the person an article is about. Log likelihood ratios are used for comparing different feature-outcome relationships.	There is lower salience of male-related words in articles about men, which can be related to the idea of male as the null gender (there is a social bias to assume male as the standard gender in certain social situations). Words like "married", "divorced", "children" or "family" are much more frequently used in articles about women. This study confirms that men and women are presented differently on Wikipedia and that those differences go beyond what we would expect due to the history of gender inequalities.
Graells-Garrido <i>et al</i> <sup>[2]</sup>	The DBPedia 2014 dataset, The Wikipedia English Dump of October 2014, Linguistic Inquiry and Word count (LIWC) dictionary	To explore which words are more strongly associated with each gender, Pointwise Mutual Information is measured over the set of vocabulary in both genders. Also considered burstiness, a measure of word importance in a single document according to the number of times it appears within the document, under the assumption that important words appear more than once (they appear in bursts) when they are relevant in a given document.	Marriage and sex-related content are more frequent in women's biographies and cognition related content is highlighted in men's biographies. Words most associated with men are mostly about sports, while the words most associated with women are to arts, gender and family. Of particular interest are two concepts strongly associated with women: <i>her husband</i> and <i>first woman</i> .
Wagner <i>et al</i> <sup>[4]</sup>	Overview of English Wikipedia biographies, inferred gender for Wikipedia bios	Analysed gender topic, relationship topic and family topic in Wikipedia's biographies. Quantified the tendency of expressing positive and negative aspects of biographies with adjectives, as a measure of the degree of abstraction of positive and negative content.	Family-, Gender-, and relationship-related topics are more present in biographies about women, linguistic bias manifests in Wikipedia since abstract terms tend to be used to describe positive aspects in the biographies of men and negative aspects in the biographies of women.

When Wikipedia was born in 2001 as an experiment on collaborative knowledge building, nobody could have expected that it would eventually turn into the gigantic community of projects and users that it has become nearly two decades later: a global knowledge site read by more than 350 million people and available in nearly 300 languages; the largest encyclopaedia ever made to date. The design choices that made Wikipedia the knowledge infrastructure that it is today were drawn from the modern encyclopaedic culture and the free software culture (Ford & Hajman, 2017). The culture of modern encyclopaedic projects was considered to be of assistance in determining and validating objectivity and neutrality; that is to

say what was considered “knowledge”, and what was considered “something else”. The culture of free software projects was expected to bring all this knowledge to the table by opening the process of contribution and discussion to anyone, and by giving all Internet users the power to edit. In terms of the implications for those design choices, researchers Heather Ford and Judy Wajcman have identified relevant issues to take into consideration. In their paper *Anyone can edit', not everyone does: Wikipedia and the gender gap*, Ford and Wajcman (2017:1) noted that “Wikipedia’s origins and the infrastructures that it relies on are based on foundational epistemologies that exclude women, in addition to other groups of knowers whose knowledge does not accord with the standards and models”. I interrogate to what extent those standards and models, which I understand to be a product of hegemonic normativity and systemic bias, contribute to inhibit non-hegemonic communities from participation, remembering, and collective memory building.

Wikipedia has a diversity gap in terms of content and participation that has been consistently identified in literature since Sue Gardner, former executive director of the Wikimedia Foundation between 2007 and 2014, made it a priority. In 2011, Gardner listed in her blog nine reasons why women don't edit Wikipedia, the list was a summary of the themes culled from comments by women that shared their experiences of participation in the project. Some of them stopped participating due to conflict aversion; and conflict often started when they were consistently questioned about the reliability of the sources they used to reference their contributions to the project. Gardner attributed this behaviour to “Wikipedia’s sometimes-fighty culture”, although there are statements that in addition to that, also mentions issues with sexism and ageism in the community:

I used to contribute to Wikipedia, but finally quit because I grew tired of the “king of the mountain” attitude they have. You work your tail off on an entry for several YEARS only to have some pimply faced college kid knock it off by putting all manner of crazy stuff on there such as

need for “reliable” sources when if they’d taken a moment to actually look at the reference they’d see they were perfectly reliable! I’m done with Wikipedia. It’s not only sexist but agist as well. (Nine Reasons Women Don’t Edit Wikipedia, 2011)

Other users shared experiences of gender discrimination and an enforced hegemonic viewpoint that attempted to erase their gender identity when editing:

Even if I don’t explicitly identify as female in my Wikipedia handle (and I don’t), I still find myself facing attitudes of sexism and gender discrimination, attempts at silencing, “tone” arguments, and an enforced, hegemonic viewpoint that attempts to erase my gender when editing. (Nine Reasons Women Don’t Edit Wikipedia, 2011).

A number of studies have concluded that the culture of open online communities of which Wikipedia participates, and is part of, has yet to succeed in recognizing the phenomena of cyberspace harassment and addressing its consequences. This is seen particularly in regards to women, people of colour, LGBTIQ+ folks and other non-hegemonic communities and subaltern users<sup>11</sup>. In their paper *Gender Biases in Cyberspace: A Two-Stage Model, the New Arena of Wikipedia and Other Websites*, authors Yanisky-Ravid and Mittelman (2016) argue that the same features of the virtual spheres that promote individual liberty - for example Free Libre Open Source Software (FLOSS) cultures and projects such as Wikipedia, Linux, Ubuntu etcétera - also amplify the potential for gender harassment and discrimination (2016: 405). Other researchers such as Joseph Reagle have argued that the gender gap “is, in part, a consequence of the culture, dynamics, and values” of FLOSS communities (2013:1). In their paper *Free as*

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<sup>11</sup> The term subaltern was coined by Italian Marxist political theorist Antonio Gramsci in his work on cultural hegemony and later reframed by Indian scholar and feminist critic Gayatri Chakravorty Spivak in her essay ‘Can the Subaltern Speak?’ (1988). Currently, in the fields of South-Asian Subaltern Studies and Latin American Subaltern Studies the term is used to designate populations placed outside the hegemonic power structures of settler colonialism. Spivak urges European researchers that are engaging with this term to practice critical work on subaltern studies acknowledging that the idea of “giving the subaltern voice” is problematic in its conception. They already have a voice that European researchers can center and amplify in hegemonic spaces.

*in sexist? Free Culture and the gender gap* Reagle explains that even the claim may seem “nonsensical” due to the unrestricted nature of free culture movement, “implicit structures and dynamics still exist in the absence of formal ones” (2013:10). When there are no rules, the implicit rules of hegemonic normativity apply. Reagan was following the work of the American feminist, political scientist, writer, attorney and an early organizer of the women's liberation movement Jo Freeman's (1996) *The tyranny of structurelessness: why organizations need some structure to ensure they are democratic*.

In a recent research on gender diversity mapping led by the well-known American wikipediaian Rosie Stephenson-Goodknight during 2016 and 2017, seven themes emerged: 1) gender is highly culturally contextualized and can only be understood through a person's cultural context; 2) The Wikimedia community is not as inclusive as it could be, although issues of inclusion and gender fluidity are complex; 3) implicit biases “permeates everything” and create a false sense of neutrality; 4) it is important to acknowledge various degrees of participation and to not create a hierarchy; 5) it is also important for vulnerable communities to narrate their own stories and engage in countering bias; 6) among vulnerable communities there is a feeling of isolation, and also a feeling of solidarity, 7) women and other users from vulnerable communities are still learning how to tell their story (Wikipedia Diversity Conference 2017 via YouTube)

Stephenson-Goodknight presented the first research findings in the Wikipedia Diversity Conference 2017, along with different participant contributions who inspired the themes she was presenting. Participant contributions indicate that they recalled complex experiences of implicit bias and a will to problematize current Wikipedia policies that demand for western-centric standards of notability and reliability as a means to validate knowledge.

There is no such thing as voiceless, you are just denied hearing [our voices], [their voices], amplifying them. (Gender Diversity Mapping Project - Diversity Conference 2017, accessed from YouTube)

Knowledge was not written down in my country. It was largely passed down by word of mouth, there is a lack of references. There is no chance that something was quoted in a journal. That is a very Western sense of knowledge. So different language wikis have adapted their policies on WP:N [notability] and WP:RS [reliable sources]. If editors don't know about this, there should be conversations. (Gender Diversity Mapping Project - Diversity Conference 2017, accessed from YouTube)

Writing your own history is another tool of empowerment; it has a transformative impact. And for others, [they] can now access the history of people that have previously been invisible (Gender Diversity Mapping Project - Diversity Conference 2017, accessed from YouTube)

Since Gardner started the conversation around the gender gap in Wikipedia, many researchers have followed her lead, adding layers of clarity to a complex phenomenon that operates on multiple dimensions. However, Anwesha Chakraborty and Netha Hussain in their paper *Mapping and bridging the gender gap: an ethnographic study of Indian Wikipedians and their motivations to contribute* (2018) pointed out that a major issue still arising from the literature is the gaps and barriers to participation.

#### **4.1.2. Experiences of Participation as a measure to assess collaborative remembering**

In the previous chapters I have reframed episodic memory, that is, the memory of our personal experiences, in digital connected environments. I have also introduced the costs and benefits of remembering collaboratively (Barber, Rajaram & Fox, 2012:4), and described how the Internet is an enabler of transactive memory management practices, a mechanism that

facilitates groups to collectively perform as a memory, that is, to encode, store and retrieve knowledge (Wegner, 1995). J. Barber, Rajaram and B. Fox (2012:4) expose some of the benefits and costs of group remembering in collaboration. According to the authors, remembering in group has benefits such as the capability to promote the formation of collective memories, but also has costs, such as the potential to induce the collaborative inhibition effect, that is, when remembering collaboratively this does not improve the memory performance of the group because the recall performance of the group is lower than the sum of individual performances (Hirst and Echterhoff, 2011:59).

I have also previously introduced the disruption and inhibition theories on the social sharing and reshaping of memories by Hirst and Echterhoff (1997 and 2001) that the present research aims to build on by adding on a hypothesis on participation and exclusion. By questioning collaborative inhibition in terms of implications for design in ubiquitous computing, I am interrogating the extent to which hostile settings, attitudes, and interactions towards vulnerable and underrepresented communities goes beyond a simple distraction or annoyance. I do so by proposing participation and content as a measure to assess collaborative remembering. The result of such deterrents is an added layer to the acknowledged costs of collaborative remembering (Hirst and Echterhoff, 2012). This particular type of inhibition is a robust phenomenon, although usually studied in controlled settings that occurs when a group of people remembering together recall less than what its individual members are capable of remembering by themselves.

In the following sections I consider the phenomenon of collaborative inhibition as robust enough to inform content and participation gaps in naturalistic online conversational environments -such as Wikipedia- in the event of users building collective memory. I also explore how hegemonic normativity may act as a collaborative inhibition enabler in online conversational environments by means of interpellations or virtual speech

acts. In that regard, in the introduction and methodology sections of this manuscript, I have also established how in speech-act theory, the British philosopher of language J.L Austin (1962) defined perlocutionary speech acts as those that produce certain effects as their consequence, and how this analysis can assist answering the question of implications for design proposed by Genevieve Bell (2011). Asking the question of implications for design from a feminist standpoint, I want to situate myself in a framework of ethics. To that end, I follow the question proposed by Terri Senft (2015): What is this doing to us, and how are we responding?.

In March 2018 I was asked to explain on camera the phenomenon of systemic bias in Wikipedia for a mainstream audience. The video was recorded and produced by *PlayGround*, a media outlet with a following of 15 million Facebook users in Spain and Latin America. In June 2018 the video was published, a few weeks later it was accumulating around 400k views and hundreds of comments. Those comments often said that I'm too ugly, too fat, or too disgusting to look at, and questioned my authority on the subject which I was called to comment on as an expert. The users that were challenging or problematizing those comments turned themselves into new targets of online hate, and the comment section became a hate playground. The type of comments followed a very specific pattern: they either expressed that because of my feminist politics, my work is ideological and therefore irrelevant; that because I am a woman, I am irrelevant, or they commented on my physical appearance. It is expected that I continue to make public contributions, share and exchange knowledge, being an expert in my field. However, in doing so I know that I will have to deal with the task of maintaining the security protocols of my personal accounts and the accounts of the organizations that I am part of meticulously. Not to mention the emotional labour of the anxiety that entails being the target of hundreds of hate speech messages. As a feminist activist, journalist and researcher, every time I am exposed to large audiences in a public and connected conversational environment, I anticipate attempts to hack my personal

accounts, and hateful comments - virtual speech acts- to my online contributions. As a result now I associate participation in such spaces as something painful. Hate comments are perlocutionary speech acts that produce a very specific short-term effect on me: anxiety. In terms of long-term effects, hate comments exhaust me, and inhibit my participation in spaces where I am afraid to burn out or where I do not feel safe.

Finding the balance between refusing to be silenced and taking care of your mental health is something that many women, POC, LGBTQI+ folks and other vulnerable communities have to endure while being vocal and critical to hegemonic normativity. This is especially the case when they are visible in online spaces that were not designed to be safe spaces for their collaborative remembering. Judith Butler reflects on perlocutionary acts in the context on linguistic vulnerability in her book *Excitable Speech: A politics of the performative* (1997) adding on from the perspective of identity politics, speech, and conduct. To be addressed injuriously, wrote Butler, is to “suffer disorientation of one’s situation as the effect of such speech”, “exposed at the moment of such a shattering is precisely the volatility of one’s ‘place’ within the community of speakers. One can be ‘put in one’s place’, but such place may be no place” (1997:4). No place within the community of speakers, no place to participate.

When interpellations take the form of humiliating, patronizing, threatening or hateful speech, they can disturb, disrupt and/or inhibit the participation of those targeted -in this case, women and subaltern communities- what I define as the Disrupting Participation Hypothesis. This hypothesis may inform a new setting for studying how collaborative inhibition and the Retrieval Disruption Hypothesis would operate in connected conversational environments where groups of communities co-exist in a shared space to build collective memories. The Retrieval Disruption Hypothesis is the event in which the strategy pursued by one individual, in order to remember (to retrieve), is disrupting the use of other retrieval strategies that may be more

effective for other group members (Barber et al. 2012: 60). The larger the group, the larger the chances for inhibition to occur (Basden et al. 2000). Considering participation in the context of inhibition theories, we can add another layer for questioning how disruptions in participation may lower the memory performance of the group. Individuals from groups historically silenced, misrepresented and oppressed encounter more challenges to participation in hegemonic spaces. An individual may have recalled an item of information, but eventually failed to share it with the rest of the group. That can happen for many of the reasons involved with collaborative remembering and the ethics of forgetting that researcher Robert A. Wilson (2018) proposed in his paper *Group-level cognizing, Collaborative Remembering and Individuals*.

Robert A. Wilson describes his experience with the creation of the project *Living Archives on Eugenics in Western Canada* (2014), a 10 year community-university research in collaboration with eugenic survivors in Alberta, Canada. Alberta had sexual sterilization legislation in place and actively enforced to classify, institutionalize and sterilize people deemed to be “feeble minded” from 1928 until 1972. Wilson explains how while creating the living archive, collaborative remembering was not incidental, but core to it from the outset, and how providing the community with a safe space for remembering was essential to the project. Enabling a safe space for collaborative remembering started with “recognizing that someone cares about what happened to them, that they can tell a story and that the story provides a valuable insight into much broader issues” (2018:256).

Because remembering collectively requires being allowed to tell a story, the principle of disruption may apply when referring to groups of vulnerable communities cohabiting with hegemonic communities in digital environments. The characteristics of the spaces used and strategies pursued by hegemonic communities in order to remember and build collective memory, may be not allowing, and therefore disrupting the use of other

retrieval and participation strategies. These alternative strategies may be more effective for vulnerable communities that require safer spaces for collaborative remembering where they are allowed to tell their story and are told that their story provides “a valuable insight”. Because in the present research I am primarily interested in collaborative remembering in cultural contexts, available secondary data from the Wikipedia project and other FLOSS communities have been used to assess the UX of collaborative remembering and inform the disrupting participation hypothesis. I also propose taking into consideration participation as part of the set of measurements and metrics to assess collaborative remembering in cultural settings as detailed in Figure 4.5.

#### Figure 4.5

Metrics to assess collaborative remembering proposed in collaborative remembering research, adding of metrics on participation

From ‘Collaborative Remembering. Theories, research and applications’.  
Meade et al. 2018: 9-10

On productivity: How much is remembered  
On content: What is remembered  
On accuracy: What is remembered  
On process: How information is remembered  
On functions: Functions of remembering  
**On participation: Who is remembering? Whose memories/experiences are being amplified and whose memories/experiences are being censored or denied inclusion**

Remembering occurs within a cultural context. Individuals and groups remember as part of a culture with shared goals and an understood structure for remembering culturally important events (2019:8). Furthermore, the specific knowledge of a community's past may influence the process of collective remembering. That process of collective remembering in turn

influences the assimilation or contestation of the body of knowledge that feeds the formation of hegemonic collective memories. By identifying who is participating and who is not participating, and therefore who is remembering and who is not remembering, we can foresee the need to implement safer spaces for collaborative remembering in order to address barriers to participation.

To that end, there are some questions that can assist, such as: What can be remembered?. Which collective memories can be built, maintained etc?. Which collective memories can exist?. What is happening to the collective memories of women, of black cultures, of lesbian cultures, of transgender cultures, of indigenous cultures, of disability cultures?. Answering those questions will broaden our understanding of collective memories at national, cultural and identity levels. To inform those interrogations, for the past five years I have lived online following threads of data on user participation available on discussion pages, posts, social media platforms and list servers, all of which contain digital episodic memories of users describing their experiences in Wikipedia and other open source projects. Eventually, after studying the Wikipedia community for two years I started participating myself as event coordinator of *Art+Feminism* in Barcelona, as well as in editing content in campaigns to address systemic bias in Wikipedia. Both as Wikipedia editor and event coordinator, I have observed and experienced how standards of normativity and alterity may act as implicit collaborative inhibition enablers when operating in connected environments. Those standards inform gender stereotypes and power dynamics such as the assumptions of expertise (Hollingshead and Fraidin, 2003) and the division of knowledge and responsibilities in transactive memory systems. I have also explored how feminist projects in FLOSS communities have created an ongoing culture of safe space design that we can learn from to provide a better experience of collaborative remembering. Doing so is a joint effort of both designers and digital communities to enable, facilitate, amplify or address the inhibition triggers that may in result be highly disruptive for

vulnerable users - women, LGBTQI+, racialized folks etc. Communities and designers can address inhibition triggers when safer spaces for collaborating remembering are designed and maintained. Safer spaces for collaborative remembering have a component of reparation by means of Design Justice practices. In the specific context of Wikipedia the design and maintenance of safer spaces for collaborative remembering requires challenging hegemonic standards that inform western assumptions of neutrality, objectivity, and what constitutes knowledge.

#### **4.1.3. Challenging neutrality**

Wikipedia is one of the most solid online communities that exists in the Internet ecology - with an estimated of 70,313,387 users and 469,324 unique users distributed among the 288 active Wikipedia sites of different languages. For this reason, it becomes an appropriate community to observe in order to understand how transactive memory management practices in digital environments are reproducing stereotypes and systemic bias in several forms. One of which being how the aspiration of neutrality fails to represent women, people of colour, and perspectives from the global south among other relevant knowledge sources and systems. Wikipedia has a specific page (Wikipedia:Systemic\_bias) that documents research and projects centered in countering systemic bias in the online encyclopaedia. Reports of the user survey conducted in 2005 already link systemic bias, including gender and racial bias, to hegemonic user demographics. Since this report, Wikipedia has acknowledged that white men from Anglophone countries dominate the space, and that an American or European perspective “may exist” over the dominated space. The aspiration of neutrality is one of the five pillars found in the Wikipedia policy. Quite paradoxically, Wikipedia’s aspiration of neutrality enforced by hegemonic communities, is enabling a monolithic coverage of western perspectives, instead of enabling the sum of all knowledge.

From the perspectives of memory theory, Christian Pentzold defined Wikipedia as a 'global memory place' where locally disconnected participants can express and debate divergent points of view, and argued that when disconnected participants debate divergent points of view as a process of reconstruction and meaning-making of the past, the global memory place informs collective remembering (Pentzold, 2009). From the perspective of media, memory, and the archive, Joanne Garde-Hansen, one of the most prominent researchers in the field of media and memory, wrote that Wikipedia, in terms of cultural heritage, is leading to the formation and ratification of shared knowledge that constitutes collective memory (Garde-Hansen, 2011). Issues arise when the ratification of this shared knowledge constitutes some sort of socially validated collective memory. Upon closer inspection this "information" is actually a product of biased and western-centred assumptions being implemented as a standard for neutrality, objectivity and validated knowledge.

I frame this aspiration of neutrality in the context of the systemic bias held by the community of editors and policy designers, to indicate how hegemonic normativity is instrumental to validate neutrality claims. For the same reason, I problematize how ideas such as "universality" and "neutrality" rely on socially validated citational practices. Such practices are based on systems of categorization and schematic default narratives which are in turn based on normative socially agreed standards.

Critical thinking around normativity, normalcy, and disability politics is also a fundamental practice of Design Justice. In that regard, Lennard J. Davis (1995) wrote about the construction of normalcy and value from the perspective of disability theory. Davis argues that the idea of normalcy and the "normal body" was constructed in colonial Europe over the period of 1840-1860, following a movement that started with the use of medical statistics in the UK and France. He also wrote that almost all early statisticians were eugenicists in favour of enforcing normalcy by means of

selective breeding. What started in the 19th century as selective breeding, continued throughout the 20th century; following a path of identity degradation, erasure, and participation disruption of all bodies and identities that were considered abnormal. This path of identity degradation, enforced by colonial and hegemonic power structures, is profoundly embedded in European and western cultures of privilege, normalcy and value.

In terms of UX design of mobile applications and everyday smart objects and technology devices, the aspirational universal is monolithic. Technological “progress” is still enforcing normalcy in a pattern that resonates with the design of Wikipedia policy and structures: non hegemonic communities are rarely the center of user-centred experience design. To begin unpacking this thread of thoughts it is important to frame UX in the context of Design Justice and interrogate how Wikipedia reproduces, is reproduced by, and challenges the matrix of domination. The matrix of domination is a sociological paradigm developed by black feminist scholar Patricia Hill Collins that provides a framework for understanding oppression as an outcome of privilege. It is also a tool that can be used to examine the role of white supremacy, heteropatriarchy, capitalism, and settler colonialism in enabling hegemonic ideologies and enforcing hegemonic normativity.

#### **4.1.4. Moving beyond “design full of good intentions” towards “Design Justice”**

The first issue of the Design Justice Network zine *Principles for Design Justice* edited by network contributors Una Lee, Nontsikelelo Mutiti, Carlos Garcia, and Wes Taylor (2016:1) problematizes ideas of “design full of good intentions”, which “can be harmful, exclusionary, and can perpetuate the systems and structures that give rise to the need for design interventions in the first place”. Wikipedia is a clear example of how design full of good intentions - everyone can edit - can also be harmful and exclusionary - not everyone does. Despite good intentions, it perpetuates the very systems and structures that have given rise to the need for design interventions and the

creation of the Design Justice principles and network: the distribution of risks, harms and benefits among different communities cohabiting shared spaces. The Design Justice principles compiled in Figure 4.6 were collaboratively written in the session “Generating Shared Principles for Design Justice” in the Future Design Lab, a practice space in Detroit at the Allied Media Conference 2015. The hope was to approach a shared definition of “Design Justice” and some methods of creating a just design practice as distinguished from design full of good intentions.

### Figure 4.6

#### Design Justice Network Principles (Design Justice Network, 2016)

1. We use design to sustain, heal, and empower our communities, as well as to seek liberation from exploitative and oppressive systems.
2. We center the voices of those who are directly impacted by the outcomes of the design process.
3. We prioritize design’s impact on the community over the intentions of the designer.
4. We view change as emergent from an accountable, accessible, and collaborative process, rather than as a point at the end of a process.
5. We see the role of the designer as a facilitator rather than an expert.
6. We believe that everyone is an expert based on their own lived experience, and that we all have unique and brilliant contributions to bring to a design process.
7. We share design knowledge and tools with our communities.
8. We work towards sustainable, community-led and controlled outcomes.
9. We work towards non-exploitative solutions that reconnect us to the earth and to each other
10. Before seeking new design solutions, we look for what is already working at the community level. We honor and uplift traditional, indigenous, and local knowledge and practices.

Informed by the current concerns and practices of Design Justice (2018) and feminist Human Computer Interaction (HCI), I present a series of case studies concerned with the distribution of risks, harms and benefits among digital communities. I do so as a means to engage with the design of a theoretical model for an interactive system, a safe space for collaborative remembering imbued with sensitivity to the central commitments of feminist epistemologies and practice: “agency, fulfillment, identity and the self, equity, empowerment, diversity, and social justice” (Bardzell, 2010: 1302).

To interrogate how Wikipedia’s infrastructure design is reproduced and reproducing the matrix of domination under white supremacy, heteropatriarchy, capitalism, settler colonialism and other systems of oppression (Design Justice, 2018), the first section of this chapter (The archive as a battleground) focuses on risks and harms for users of vulnerable communities by giving further context for the gender gap and systemic bias in FLOSS cultures. I also present instances of participation disruption where hegemonic normativity has operated as a collaborative inhibition enabler. In those instances inhibition occurs as a result of participation inhibition triggers, such as hostile interpellations directed towards feminist hackers in FLOSS cultures, and women and gender non-conforming Wikipedia users.

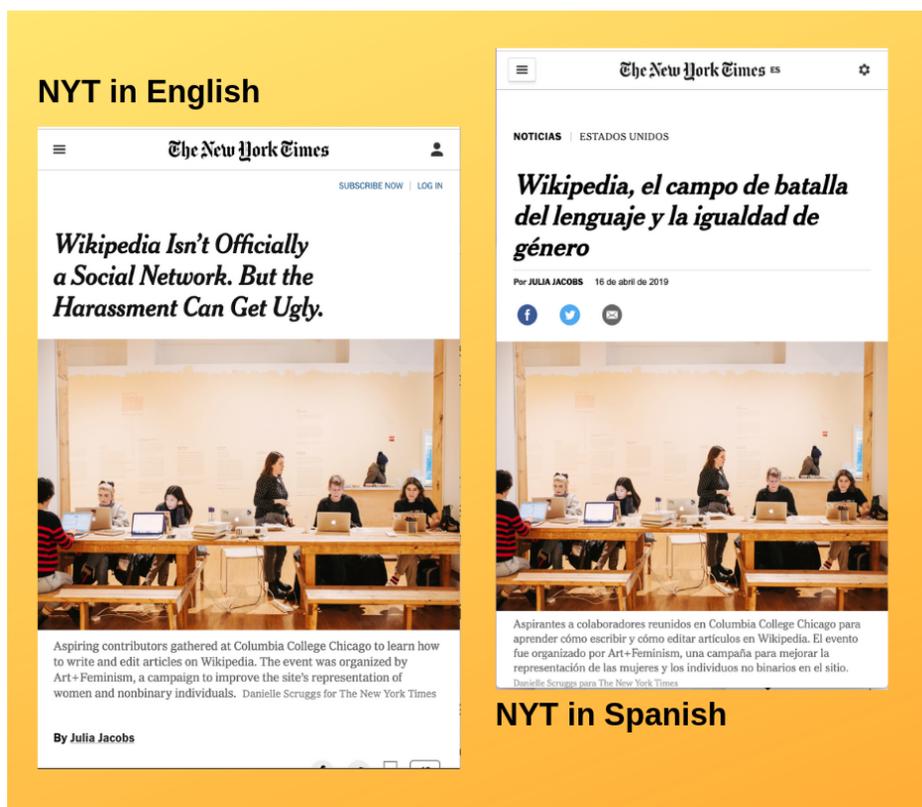
## **4.2. The archive as a battleground (of schema consistency)**

In April of 2019 The New York Times published an article on barriers to gender equality in Wikipedia that referred to discussion pages as one of the problematic spaces where hostility towards women, POC, gender non-conforming folks, and other vulnerable and underrepresented communities are taking place. The article was published in both Spanish and English and it is interesting to see how the combination of the words chosen to illustrate the headline in each language describes the multidimensional aspects of this issue. The headline published for English speaking audiences reads:

“Wikipedia Isn’t Officially a Social Network. But the Harassment Can Get Ugly”, implying that the kind of harassment that we could expect from social media exists also in Wikipedia’s conversational environment. The headline in Spanish translates as “Wikipedia, a battleground for language and gender equality”. This particular headline shown in Figure 4.7 implies how this battle is manifesting through the control of language.

**Figure 4.7**

Screenshots from NYT article “Wikipedia Isn’t Officially a Social Network. But the Harassment Can Get Ugly” Published in English on April 8th, 2019. Republished in Spanish as “Wikipedia, el campo de batalla del lenguaje y la igualdad de género (Wikipedia, a battleground for language and gender equality) April 16th 2019



The battle for the control of language is also epistemological in nature. As I have mentioned earlier, Ford and Wajcman (2017:1) noted that the origins of Wikipedia's policy and structure are based on exclusional and androcentric foundational epistemologies that exclude "knowers whose knowledge does not accord with the standards and models" of universality and hegemonic normativity. In their paper *Design Justice: Towards an intersectional feminist framework for design theory and practice* Sasha Constanza-Chock wrote about how Universalist design practices erase certain groups of people: "When designers do consider inequality in design (and most professional design processes do not consider inequality at all), they nearly always employ a single-axis framework. Most design processes today are therefore structured in ways that make it impossible to see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce" (Costanza-Chock, 2018). In the context of Wikipedia's design policy and structure, the assumption of neutrality required to participate is being widely contested, as knowledge building is a profoundly ideological process. Applying a Design Justice framework of analysis it is possible to question the ways in which Wikipedia reproduces, is reproduced by or challenges heteropatriarchy, capitalism, colonialism and white supremacy under the matrix of domination described by Patricia Hill-Collins (2009). With the matrix of domination systems of oppression, Patricia Hill-Collins theorizes power in four domains: structural (law, politics, religion or economics), disciplinary (bureaucratic organizations that organize human behavior), hegemonic (the culture on the ideas and values), and interpersonal (personal relationships we maintain) (Collins 2009, 40-81). In her paper, *The Difference That Power Makes: Intersectionality and Participatory Democracy* she also writes that "The domains-of-power framework provides a set of conceptual tools for diagnosing and strategizing responses within any given matrix of domination. The framework is deliberately non-linear. There is no assumed causal relationship among the domains such that one determines what happens in the others" (Hill-Collins, 2017:23).

**Figure 4.8**

Design Justice framework of analysis to question the ways in which Wikipedia policy and structure reproduce, is reproduced by or challenge heteropatriarchy, capitalism, colonialism and white supremacy under the matrix of domination described by Patricia Hill-Collins

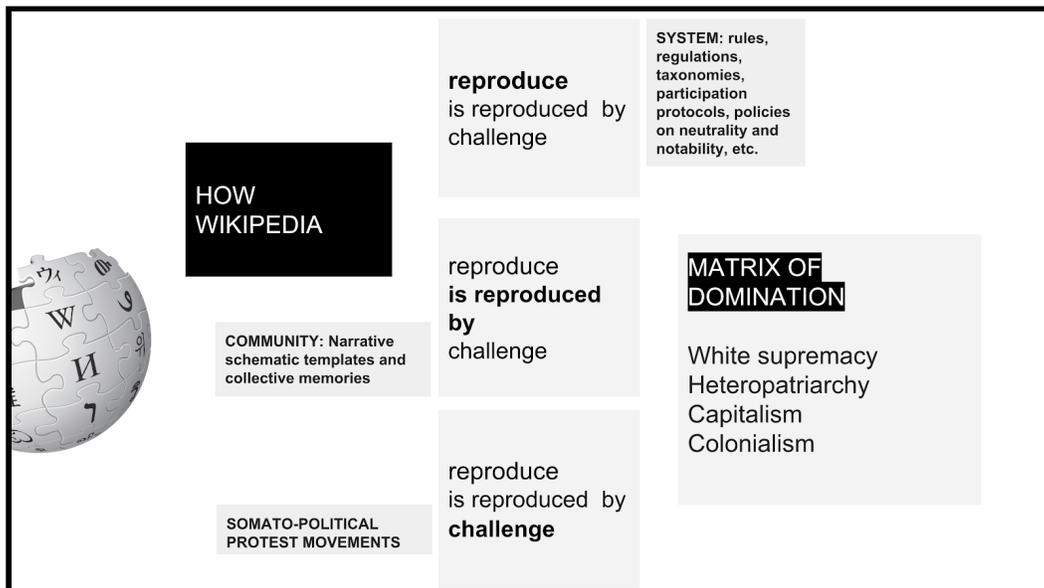


Figure 4.8 shows the result of analysis of observations and claims pulled from the selected literature on the Wikipedia gender gap exposed so far following the aforementioned sociological paradigm. The result of such analysis explains how Wikipedia reproduces the matrix of domination, because both its policy and structure are bound to the colonial practices of knowledge production inherited from the encyclopaedic culture, and also to sexist practices inherited from FLOSS cultures (Ford & Wajcman, 2017). That is manifested through systems of rules and regulations that result in policies informing taxonomies, participation protocols, policies on neutrality and notability etc. Those policies belong to the structural domain and they are being enforced by a 'regime of truth', a regime of normalcy that establishes notability and neutrality. Normalcy ensures that regulations on that structural matter can be enforced and maintained by the community. The set of

'regimes of truth' belong to the disciplinary domain and can also be found manifested through the evaluation of what is considered a reliable source in the context of a eurocentric encyclopedic culture. In this context, the matrix of domination is also being reproduced by language: either the language of interactions between community members in the form of harassment and epistemological denial of non hegemonic systems of knowledge. Or the language of knowledge and memory building in the form of the linguistic bias that can be found in biographies belonging to women and underrepresented communities (Netha Hussain, 2017). Design processes of language building make it difficult to "see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce", as suggested by Costanza-Chock (2018). What could enable us to understand the reason for this difficulty, and to analyse previously unseen aspects of this phenomenon, is Schema Theory. Psychologist Frederic Bartlett Proposes the Schema Theory (1932) to refer to the representations people form from past experiences. Hirsh and Yamashiro, in their approach to Social Aspects to Forgetting (2018) wrote that schematic narrative templates are what people use to "(re)construct their memories" arguing that schemata is, in fact, an embodiment of social influences (2018:83). People fail to memorize what falls from schema-consistent material 'regimes of truth' of hegemonic normativity, therefore endangering what is not consistent to that normative schema into oblivion.

The battleground for the control of language has relevant implications in terms of participation, as it endangers efforts for memory building that are being undertaken by vulnerable communities. In the section, "Interpellations as inhibition triggers: Participant disruption hypothesis" I have compiled instances of participation disruption where hegemonic normativity has operated as a collaborative inhibition enabler. In those instances inhibition occurs as a result of participation inhibition triggers, such as hostile interpellations directed towards feminist hackers in FLOSS cultures and women and gender non-conforming Wikipedia users. Before delving into

that, I want to begin by unfolding risks and harms for vulnerable users by giving further context for the gender gap and systemic bias in FLOSS cultures from a UX perspective. I do that following Design Justice principles and practices, that is articulating a UX research and design practice aimed to inhibit structural inequality and oppression by naming oppressive systems. In that regard Sasha Costanza-Chock (2018) wrote about how Design Justice principles can be applied keeping the feminist perspective intersectional:

“the first principle states that Design Justice practitioners seek *liberation from exploitative and oppressive systems*. More explicitly naming the oppressive systems that Design Justice seeks to counter can strengthen the approach. To do this work, we can draw upon the tradition of Black feminist thought” [...] “Black feminist thought fundamentally reconceptualizes race, class, and gender as interlocking systems: they do not only operate ‘on their own,’ but are often experienced together, by individuals who exist at their intersections” (Costanza-Chock, 2018)

#### **4.2.1. Gender gap and systemic bias in FLOSS cultures**

The gender gap in FLOSS cultures was clearly identified in the 2006 FLOSSPOLS listed in Figure 4.9 and has since then been studied in an attempt to address sexism and systemic bias in FLOSS communities. Many researchers have added on the issue (Nafus, 2012); problematizing the misogynistic culture of open source communities (Reagle, 2015) and centering the focus on community-specific projects. One of them being GitHub (Vasilescu et al, 2015), a web-based hosting service mostly used for computer code that, according to recent reports shown in Figure 4., also has a profound gender gap problem, with only 3% of women participating in the community. For details and data about the gender gap of participation in Wikipedia see details in Figure 4.10.

**Figure 4.9**

Data about Participation of women in FLOSS projects compiled from community surveys since 2006 shows that although participation of women in FLOSS cultures has increased, it is still consistently underrepresented. For clarification: FLOSSPOLs aims to survey the whole community of free libre open source software projects. Other surveys focus on specific communities of FLOSS developers, such as Pearl, Debian or Drupal.

Name of the survey	YEAR	% women
FLOSSPOLs	2006	1.1%
Ubuntu census	2006	2.4%
Drupal	2008	7%
Pearl	2010	3%
Women in Debian	2013	1.8%
Drupal	2014	17%
GNOME Foundation members	2015	8.1%
GUADEC, GNOME's annual conference	2015	8%
OpenStack	2015	11%
PyCon, Python's annual conference (statistics on speakers)	2016	40%
Linux kernel	2016	9.9%
Google Summer of Code participation	2017	11.4%
GitHub 2017 survey	2017	3%

Memory building and maintenance requires participation, therefore, to interrogate who is not participating reflects on who is not remembering, helping identify communities that are being censored and denied inclusion. It also helps identify normalizing exclusionary practices in spaces for collaborative remembering that emerged in digital connected environments, such as Wikipedia, where there is both a gender gap of content and participation. The *Wikipedia Gender Equity report* (2018) already suggested what could be the biggest obstacles to achieving gender equity in the Wikipedia movement as follows: 1) Systemic bias in policies, which refers to policy design 2) Lack of awareness / implicit bias within community, which refers to cultural issues 3) Poor community Health, which is a behavioural issue. The neutral point of view policy has also been proven problematic as it fails to recognize the ideological process that is knowledge building.

**Figure 4.10**

Data about Participation of women in Wikipedia projects compiled from research undertaken between 2010 and 2013

<input type="checkbox"/>	<input type="lock"/> Institution	<input type="lock"/> Study name	<input type="dropdown"/> YEAR	<input type="lock"/> %
1	Wikimedia Foundation	Editor survey	2011	8,5%
2	United Nations University	UNU MERIT survey	2010	13%
3	University of Minnesota	WP: Clubhouse?	2011	16%
4	MIT/NU	The Wikipedia Gender Gap Revisited	2013	16%

In that regard, in 2001 Wikipedia founder Jimmy Wales wrote a statement of principles to share his views on openness and the licence chosen to define, share and protect the Wikipedia project. He expressed: “As we move forward with software and social changes, I think it is imperative that I state clearly and forcefully my views on openness and the license”. In that statement the neutral point of view policy is already mentioned, along with the cryptic idea of *Doing The Right Thing*. He wrote:

This community will continue to live and breathe and grow only so long as those of us who participate in it continue to Do The Right Thing. Doing The Right Thing takes many forms, but perhaps most central is the preservation of our shared vision for the neutral point of view policy and for a culture of thoughtful, diplomatic honesty.

“Doing The Right Thing” can imply different actions and thought processes when schema consistency takes place, because narrative templates of schema consistent material vary in relation to the subjective experience of the user-rememberer. For instance, when Wertsch (2002) developed the term narrative schematic templates applied to national collective memories, it was just after observing how the same event (World War II) was narrated from fundamentally different viewpoints in essays written by Russian and American individuals. Because of that, he suggested that, when observing

and analysing different approaches to narrative schema building, what may be more interesting to focus on is “not what they included, but what they left out”. (2018:85) In that regard, the Wikipedia project “Counting Systemic Bias” (WP:Counting Systemic Bias) recognizes that women are underrepresented, those without Internet are underrepresented, people with little free time are allegedly underrepresented, and availability of sources may cause bias (last edit June 2019). However, recent efforts in addressing this issue coming from the Wikimedia Foundation are not mitigating the issue. Common reactions to any attempt to problematize systemic bias in the Wikipedia community range from being dismissive or patronizing towards the people that are being critical, to personal attacks on social media platforms. Unless the events in which those issues are being discussed are among feminist communities or designated safe spaces in larger technological conventions.

#### **4.2.2 Normativity as collaborative inhibition enabler in transactive memory practices**

I have already established how the perspectives from SPT (Harding, 2004) are concerned with various controversies that involve the creation of knowledge, such as the logic behind and the control of scientific knowledge, and also concerned with questions such as where knowledge is produced, who benefits from and who will pay the costs of certain interrogations. I understand that those questions proposed by feminist philosopher Sandra Harding align with the concern about the distribution of harms and benefits that centers the Design Justice principles and practices for interrogating UX design.

In the context of Wikipedia, the global campaign *Whose Knowledge* is addressing those questions through several projects that focus on three fundamental issues: ‘*Privacy, surveillance and security*’, ‘*Digital Infrastructure*’, and ‘*Public Online Knowledge*’. The community of users

behind the project is addressing those issues through several initiatives, being one of the most relevant the creation of a Wikipedia user group for those “who identify as women, LGBTIQ+ folks, people from the global South, and allies around the world”. The group, as reads in the description of their Wikiproject user group, “aims to correct the skewed representations of knowledge on Wikimedia projects as well as the wider internet” (*Whose Knowledge Website*). In terms of public online knowledge they have reflected on Using Wikipedia as a proxy indicator of freely available online knowledge writing the following in an essay accessible from their website:

Google estimated in 2010 that there are about 130 million books in at least about 480 languages. Of these, only about 20% are freely accessible in the public domain and 10-15% are in print. In a world of 7 billion people speaking nearly 7000 languages and dialects, we estimate that only about 7% of those languages are captured in published material; a smaller fraction of the world’s knowledge is converted into digital knowledge; and a still smaller fraction of that is available on the internet. [...] Using Wikipedia as a proxy indicator of freely available online knowledge, we know that only 20% of the world (primarily white male editors from North America and Europe) edits 80% of Wikipedia currently, and estimate that 1 in 10 of the editors is self-identified female. Studies by Mark Graham and colleagues at the Oxford Internet Institute have found that 84% of Wikipedia articles focus on Europe and North America, and most articles written about the global South are still written by those in the global North, so that even where content is present, skewed representations remain. (*Whose Knowledge Website*, n/d)

Butler (2003) argued that the non-recognition of a minority (an individual or a community), automatically entails the dissolution of the minority's discourse, in the sense of becoming object bodies in the eyes of power, and therefore impossible to receive equal and just treatment. That could explain why normalization is a facilitator for abjection, but also the social mechanism by which marginalized communities have been neglected and instrumentalized in memory building processes. It is also relevant to bear in mind that there is a significant agreement in considering that the notion of group identity is

central to the definition of collective memory, and that there is evidence of the implications of collective memory in “shaping autobiographical memories at historic, cultural, and familial levels” (Suparna Rajaram and Luciane P. Pereira-Pasarin, 2010: 650). This dialogue between identity politics, collective memories and autobiographical memories, opens the possibility for reframing UX from a *community experience* perspective. When asking who is being inhibited from participation and remembering, a long tradition of exclusion appears. This tradition of exclusion has many starting points, one of them being the idea of universality and normalcy that emerged around 1840 and later on was used to argue the implementation of eugenicist policies. Considering that cognitive processes such as the subjective experience of remembering are not ahistorical, but rather a sedimentation of previous experiences, it is urgent to interrogate on how normalcy has shaped the experience of remembering for communities that do not fall under normative regimes of truth, and that may require safer space for building collective memory.

In her book *Mismatch: How Inclusion Shapes Design*, director of UX at Google Kat Holmes writes about how “Designers use many techniques to envision masses of people”, and that “many of them are plagued with one dangerous idea: the “normal” human” an idea that is still heavily influenced by the 19th century astronomer and mathematician Adolphe Quetlet (Holmes, 2018:9). It is relevant that the director of UX at Google is recognizing implications for design attached to ideas of normalcy and universality, although in order to fully understand the felt experiences from perspectives that do not fall under normative regimes of truth, Lennard J. Davis work *Enforcing normalcy: Disability, deafness and the body* (1995), informs on this issue from a different perspective, that is, the one of Children of Deaf Adults. Davis writes that “Our construction of the normal world is based on a radical repression of disability” (J. Davis, 1995: 22) and argues how “as with recent scholarship on race, which has turned its attention to whiteness, I would like

to focus not so much on the construction of disability as on the construction of normalcy” (J. Davis, 1995:23).

Back to Quetelet and the birth of normalcy, Davis describes how the coming into consciousness of the idea in English can be dated between 1840 and 1860. Before normalcy the notion of the ideal body was a fictional representation that had no aspirational intention. The social process of disabling arrived with industrialization via normalization. As Davis explains, the “constellation of words describing this concept: ‘normal’, ‘normalcy’, ‘normality’, ‘norm’, ‘average’, ‘abnormal’ entered late. Normal, as ‘constituting, conforming to, not deviating or differing from, the common type or standard, regular, usual’ has only been in use since around 1855, and normalcy and normality appeared in 1858 and 1849 respectively (J. Davis, 1995:30).

Adolphe Quetelet is the person directly responsible for the establishment of the normal as canon, as default. The logic behind the idea of normalcy proposed by Quetelet follows the ‘law of error’. Davis explains Quetelet’s thought process as follows:

“The ‘law of error’ was used by astronomers to locate a star by plotting all the sightings and then averaging the errors, and could equally be applied to the distribution of human features such as height and weight. He then took a further step of formulating the concept of the average man ‘l’homme moyen’ . Of course this is paradoxical since the rule of statistics is that all phenomena will always conform to a bell curve” (J. Davis, 1995:30).

As J Davis wrote “norming the non-normal is an activity as problematic as untying the Gordian knot” (J. Davis, 1995:30), nevertheless Quetelet provided a scientific justification for “middle class ideology” and “bourgeois hegemony” that later on leads to the use of statistics for eugenicist purposes (J. Davis, 1995:35). Davis described how statistics is bound up with eugenics because the central insight of statistics is the idea that a population can be

normed, he does that by retelling the names of scientists and politicians who were leading figures in the eugenic movement. One of those figures was Karl Pearson who defined the unfit as following: “the habitual criminal, the professional tramp, the tuberculous, the insane, the mentally defective, the alcoholic, the diseased from birth or from excess (1995: 35). Also, the Department of Applied Statistics which included the Galton and Biometric Laboratories at University College in London, gathered eugenic information on the inheritance of physical and mental traits including: “scientific, commercial, and legal ability but also hermaphroditism, hemophilia, cleft palate, harelip, tuberculosis, diabetes, deaf-mutism, polydactyly (more than 5 fingers) or brachydactyly (stubby fingers), insanity and mental deficiency (1995: 36). According to Davis, that connection migrated from the state to the body when Bisset Hawkins defined medical statistics in 1829 as “the application of numbers to illustrate the natural history of health and disease” (Davis 1995:35). If in France the first statistics were used in the area of public health, in Britain that manifested in a connection between the body and the Industry, the reason for that could be the fact that british statistics societies, formed between 1830 and 1849, had really strong connections with the industry (Davis 1995:35).

By using Feminist infopolitics to problematize normalcy, the proposal of feminist standpoint epistemology coined by Harding supports the politics of the present research. It refers to a specific point made by Harding (2004) around the direction that the production of knowledge must take. The postulate is characterized by the need to generate, from the perspective of the subjects affected by the constructions imposed by the dominant groups, a bottom-to-top or bottom view, instead of prevailing on the omniscient look of the dominant subjects. What Harding calls a top-to-bottom or top-down look. Harding argues that a reversal and revulsion of the direction of this look allows us to see oppressions that would otherwise be invisible or normalized, as well as being able to analyze the dominant social groups from below. That

will ultimately allow us to map practices that remain less visible in certain social relations.

#### **4.2.3. The costs of collaborative remembering in the context of normative narrative schematic templates**

In 2014, the young poet Melisa Lozada-Oliva, daughter of Latin American born immigrants established in the United States, was placed in the public spotlight after her poem *You know how to say Arroz con Pollo but not what you are* went viral. She uses that poem to explore and share metaphors around identity and the Latino culture through *language* as a cultural object. That effort reflects on the subjective experience of remembering in a way that has direct implications for memory building. I have selected a few of those verses, that reads as follows:

“if you ask me if I am fluent in Spanish / I will tell you my Spanish is an itchy / phantom limb it is reaching for words / and only finding air my Spanish is my / 3rd birthday party half of it is memory / the other half is that photograph on the / fridge is what my family has told me / [...] my / Spanish is on my resume as a skill

[...] my Spanish asks you why it's always / being compared to food a spicy hot sisal / my Spanish wants to let you know it is / not something to be eaten and then shit / out but does not really believe it too / my Spanish my Spanish if you ask me if I / am fluent in Spanish I'll tell you my / Spanish sits in the corner of a / classroom bites on a pencil does not / raise its hand

[...] my / Spanish is real true story of my parents / divorce / chaotic broken something I have to

choose to remember correctly my Spanish / is asking me if my parents are American / asking me if I'm white yet / [...] my / Spanish is understanding there are / stories that will always be out of my / reach / there are people who will never / fit together the way that I wanted them / to there are letters that will always / stay silent there are words that will / always escape me” (Lozada-Oliva, 2014) .

In the poem Melissa describes her subjective experience of remembering language with a variety of situations, a significant amount of which involve loss: something missing that you can still feel as part of your body (an “*itchy / phantom limb*”), something that leads to objectivation and stereotyping (*my Spanish asks you why it's always / being compared to food a spicy hot sisal*), something that triggers disrupting participation and silence (*my / Spanish sits in the corner of a / classroom bites on a pencil does not / raise its hand*), something that triggers an understanding of the reach of the politics of silencing and forgetting (*my / Spanish is understanding there are / stories that will always be out of my / reach / there are people who will never / fit together the way that I wanted them / to there are letters that will always / stay silent there are words that will / always escape me*).

Hirst and Echerthoff already established how conversational remembering is selective (2012) and highly influenced by collaborative facilitation processes such as transactive memory management practices; and collaborative inhibition processes such as the Retrieval Disruption Hypothesis. It is also being established by literature that selective remembering has the potential to reinforce both remembering and forgetting by means of citational practices: that way, individuals remember mentioned material, and forget unmentioned material, which is often considered as a silence. There is an abundance of literature on mnemonic silences. In *Understanding Autobiographical Memory: Theories and Approaches* (2012) authors provide two possible roots for mnemonic silence relevant in the context of power dynamics in conversational remembering involving non-hegemonic communities such as latino communities in the United States: Either “speakers can be silent because they might not want to talk about something that causes themselves or their audiences stress; or, in the context of national discourse, communities might be silent because they wish to avoid discussing troubling past actions that might even be viewed as criminal from the current vantage point” (2012 :149). However, the consequences of such

silences in a social setting leads to collective forgetting. Following the Design Justice framework, it is interesting to question the distribution of harms and benefits of this phenomenon when designing safer spaces for collaborative remembering.

### I. The social and cultural cost of forgetting

In the context of implications for design of Wikipedia policy and structure, the gender gap of content can be read as a mnemonic silence. That mnemonic silence may be facilitated by the gender gap in participation. I have already introduced the recent research on gender diversity mapping in Wikipedia undertaken by Rosie Stephenson-Goodknight (2017). Results from that investigation identify the most challenging policies for gender equality as standards of notability, neutrality and reliability. Those are policies that can trigger a process to delete a Wikipedia page by means of voting and consensus through discussion. In the specific event of deletion discussions, and because the nature of Wikipedia decision making is through consensus, the gender gap of participations becomes a critical shortage.

The Wikipedia page about Brazilian politician, feminist, and human rights activist Marielle Franco was deleted multiple times arguing a lack of notability, it was only after she was killed on March 14th 2018 that it was possible to reach a consensus on reinstating the previously deleted page. In an article named 'The Life and Death of Marielle Franco on Wikipedia' Adele Vrana from the *Whose knowledge* collective wrote about this deletion process, and how in that particular instance mnemonic silence happened facilitated by a group of six editors that decided Marielle Franco was not deserving of a spot in Wikipedia:

“Although someone had tried to start an article about Marielle in 2017, it was deleted by the volunteer editors who write Portuguese Wikipedia. In the June 2017 deletion discussion, only one editor, Joalpe, was in favor of keeping Marielle’s Wikipedia article alive on the site. His voice was not enough. A group of six editors of the

Portuguese Wikipedia decided that Marielle Franco didn't deserve an article on the site, because she didn't meet Wikipedia's criteria for "notability" – one of the policies that helps volunteers decide who belongs on Wikipedia and who doesn't" (Vrana, 2018)

In *Collaborative Remembering* Hirst and Yamashiro wrote about Social Aspects of Forgetting stating that although there is an agreement on the role of collective forgetting in enhancing the social bonds within a community, it is worth considering how "a collective memory might oppress some within a community and enhance the status of others" (Hirst & Yamashiro, 2018:78) as we can appreciate in the case of Marielle Franco Wikipedia page. That way Hirst and Yamashiro explored how forgetting promotes shared forgetting *within* social groups, but not *across* social groups because of the socially sensitive nature of human memory. That is, it may be worth considering user experience in the context of community experience to be able to infer and evaluate mnemonic silences in dialogue with the idea of prior knowledge and schematic narrative templates. Here, the idea of prior knowledge is "important to the formation of collective memory because communities tend to share similar bodies of knowledge and grant meaning in similar ways, leading members of the community to remember" and forget similar things. (Hirst & Yamashiro, 2018:79)

## II. Schema consistency and normalcy

As I have mentioned earlier, the term schema was coined by Bartlett in 1932 to describe how previous knowledge and familiarity affect the representations people form of past experiences. Hirst and Yamashiro consider schema consistency issues as embodiments of the social influences on forgetting, they wrote:

What makes schema social, and in turn, relevant to the discussion of collective forgetting and mnemonic convergence is that members of a community often share similar schemata. Although some knowledge is shared across different communities, much of what one knows reflects

the community(es) in which one lives. That is, to a large extent, knowledge is culturally specific (Hirst & Yamashiro, 2018:83)

That explains why knowledge building is such an ideological process, and not something that can be done from a neutral point of view.

A large amount of the literature concerned with applying schema theory to collective memory research has focused on collective memories at a national level. One of the most relevant works was developed by Wertsch (2002) in *Voices of collective remembering*, who proposed the notion of *narrative schematic templates* after observing how differences in retelling World War II coming from different national and cultural contexts. Hirst & Yamashiro (2018:83) in their review of Wertsch (2002) add on suggesting that it is interesting to focus on what is left out of schema consistent narratives. In their chapter Hirst & Yamashiro (2018:83) concluded that “the role of meaning and schema, and the presence of socially shared retrieval-induced forgetting<sup>12</sup> [...] bolsters the formation of collective memory which can in turn facilitate social binding, shape collective identity, and guide collective action. The schemata that guide remembering and its counterpart, forgetting, are consequences of past experiences and are often shaped by society”. If normative schematic narrative templates have the potential to guide social action, it may be worth considering how schema consistency informs consensus in monolithic communities with large participation gaps, such as Wikipedia.

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<sup>12</sup> According to literature, selective remembering in conversations induces both Speakers and Listeners to forget unmentioned, but related to the mentioned, memories (Rp-) to a larger degree than unmentioned, but unrelated to the mentioned memories (NRp). This effect is called *socially-shared RIF* (Brown, A. D., Kouri, N., & Hirst, W. (2012). *Memory's malleability: its role in shaping collective memory and social identity. Frontiers in psychology, 3, 257.*)

#### 4.2.4. Consensus on schema consistency in Wikipedia

I have already discussed how in *Understanding Autobiographical Memory: Theories and Approaches* (2012) authors provide two possible roots for mnemonic silence. The situation where “speakers can be silent because they might not want to talk about something that causes themselves or their audiences stress” (2012 :149) informs a specific Wikipedia policy in regard to biographies of living persons (WP:BLP). The policy states that “Biographies of living persons ("BLPs") must be written conservatively and with regard for the subject's privacy” and on the top of that must adhere strictly to all applicable laws in the United States, to this policy, and to Wikipedia's three core content policies: Neutral point of view (WP:NPOV) Verifiability (WP:V) and No original research (WP:NOR). The policy reads: “We must get the article *right*”. But what does *right* means, and to whom?

Reading comments pulled from the South African middle-distance runner and 2016 Olympic gold medalist Caster Semenya Wikipedia discussion page it is possible to interrogate implications for the schema consistency of gender and sex on collective memory building, but also the multidimensional risks of speech acts and its legal, social, and familiar implications. The public scrutiny on Caster Semenya began in 2009 following her astonishing victory at the world championships, where white athletes spoke about her winning in terms of “unfairness”. Caster Semenya’s *butch* aesthetic -characteristic of many women that identify as lesbians- served as an excuse to raise questions about her sex. Caster Semenya’s story is possibly one of the most sad and problematic cases of discrimination and privacy breach in the recent history of sports: sex-tests were performed on her without consent, the results of which were leaked to the press, starting a very painful and very public conversation on intersex traits and “fairness” in sports that was almost exclusively focused on athletes who were also WOC<sup>13</sup>. Semenya was

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<sup>13</sup> Women of colour

presenting herself as a woman and as a lesbian. At the time where the non-consensual tests were performed, she was unaware of her intersex traits, that were revealed to herself and her family under public scrutiny and shame. In a radio interview for the BBC regarding Semenya's discrimination case, Hida Viloria, who is a writer, an activist for intersex people and a Gender and Sexuality graduate from U.C. Berkeley recalled that: "Just like her, people thought I was a man". In regard to ideas of normalcy and schema consistency, Viloria added: "She's being tested simply because she didn't make more of an effort to look like society ideas of female" arguing that it was "her muscular body and deep voice ignited a firestorm of controversy that has the whole world questioning if 18-year-old Caster Semenya is male or female". The discussion was widely reported, many national and international sports publications, but also mainstream newspapers provided sources, so Wikipedia editors began the process of using those sources to expand Semenya's biography on the platform.

I would now like to briefly return to ideas such as *'Doing The Right Thing'* and getting the article *'right'* and its implications for design in the context of Wikipedia policy, structure and culture. Figure 4.11 shows a selection of comments pulled from Caster Semenya's discussion page in Wikipedia. In 2009, when her medical records were leaked, a Wikipedia editor named Chrisrus argued that, because many mainstream media outlets reported on the leaked information, it was imperative to explain "what personal body parts Semenya has and does not have and can never have, something that sources state is absolutely breaking the heart of her mother and other family members". The user recognizes "how unethically these facts were brought to light and the effect on their families" but fails to prioritize on the distribution of harms (the pain for Caster Semenya and her family) and benefits (to document a very unique case of discrimination in sports culture for public knowledge so better informed choices can be made in the future). In response to Chrisrus, another editor named Alison ♥ replied invoking WP:

BLP and wrote: “I won't sacrifice someone's right to privacy and right to not be defamed, over article 'accuracy' or 'completeness'.”

Here, WP: BLP can create mnemonic silences in order to avoid causing stress. In the discussion, Alison ♥ identifies herself as an oversight of the project and recognizes that “the disclosure of non-public, personal information “happens” on a daily basis on Wikipedia and if this information has either been leaked or otherwise disclosed illegally “it has no place in the project”. Because of the wiki-editing style, discussions in Wikipedia are not final in nature. They are final until new sources appear, or until the community reaches for a different consensus. The threat of harmful normative schematic templates can persist, even carried by the user.

As shown in Figure 4.11, a decade after Chrisrus argued in favor of including information about the sex traits of a minor on her biography page, he further insisted: “Years ago, potentially important, well-cited information was removed on the grounds that the referent was a minor. Now that she's an adult, should this be revisited?”. Wikipedia users such as Allison are monitoring pages regarding biographies of living people and intersex culture with the aim to address harmful stereotyping and vandalization, and they have managed to keep details such as specific mentions on Semenya sex traits off the English Chapter of Wikipedia, but the situation could change in the future.

Inspired by Allison’s arguments, I have tried to remove the aforementioned details from Caster Semenya’s biography in the Catalan and Spanish chapter of Wikipedia, as shown in Figure 4.12. At the moment the community of Catalan editors has not shown disagreement in considering this information not appropriate for Wikipedia, although I have not successfully reached consensus in the Spanish chapter, where that information is still available and described as a “chromosomal abnormality”

## Figure 4.11

A selection of comments pulled from the Discussion Page of Caster Semenya's biography in Wikipedia between 2009 and 2019 commenting on the limits of the Wikipedia policy in relation to biographies of living persons (WP: BLP)

“Well, it's all over the BBC and the international wire services and so on. We really can't avoid it now. We are going to have to carefully choose the very best way to state the medical facts as claimed in these reports. This means explaining what personal body parts Semenya has and does not have and can never have, something that sources state is absolutely breaking the heart of her mother and other family members, to say nothing of what it is doing to Semenya, who never asked for or consented to having her gender checked, wasn't aware at the time that it was being checked, and never consented to having the contents of pelvis and fertility status made public. My recommendation is that we state the facts but couch them in quotes and summaries of from reliable sources about how unethically these facts were brought to light and the effect on their families. [Chrisrus \(talk\)](#) 20:15, 11 September 2009 (UTC) ”Wikipedia discussion page for Caster Semeya “What Now: Biological bios of living people”

“My primary interest is **not** article improvement; it's [WP:BLP](#). I won't sacrifice someone's right to privacy and right to not be defamed, over article 'accuracy' or 'completeness'. As an [oversighter](#) on the project, I have to deal with disclosures of non-public, personal information on a daily basis on Wikipedia and if this information has either been leaked or otherwise disclosed illegally, I'm not going to allow it to stand here. Public figures have a right to privacy of their personal medical records and disclosure of these, especially in a place as public and as visible as Wikipedia can be extremely damaging. It's happened before. A medical condition, as is being insinuated here, is a horrific burden for *any* person to carry, and having Wikipedia compound that - especially by propagating rumor or 'leaked' documentation - is not okay - [Alison](#) 👉 22:26, 3 October 2011 (UTC) Wikipedia discussion page for Caster Semeya “Explicitation needed: October”

Years ago, potentially important, well-cited information was removed on the grounds that the referent was a minor. Now that she's an adult, should this be revisited? [Chrisrus \(talk\)](#) 02:52, 11 August 2016 (UTC) “Wikipedia discussion page for Caster Semeya “No longer a teenager”

In reply to my request for eliminating details of private medical information, a Wikipedia user named Chico wrote: “I do not really see what the problem is. There are references that indicate information, so you have to add them (unless they go against what is specified in [the Wikipedia policy on reliable sources] (WP: RS). And if there were references that deny such information, what we must do is to add them too. Nothing else. It is not for us to decide whether a person or a source has sufficient authority to affirm what it says; but we can affirm the fact that it says it”. That indicates a particular viewpoint on *getting the article right* that prioritizes reliability and verifiability over privacy, political awareness, or colonial critique.

### Figure 4.12

Reply to my request for eliminating details of private medical information in the biography of Caster Semenya available from the spanish chapter of Wikipedia

#### Información médica privada y personal (WP: BPV) no verificada (WP: VER) [ editar · sección nueva ]

La única información que tenemos sobre la Sra. Semenya es la especulación en la prensa sensacionalista como resultado de información filtrada. Esta información es información médica privada y personal (WP: BPV) no verificada (WP: VER). Wikipedia no está en el negocio de promulgar rumores, especialmente aquellos que podrían considerarse dañinos. Solo si y cuando la Sra. Semenya haga una declaración sobre su biología (si llega a hacerla), podrá citarse y leerse en Wikipedia. Ha habido mucha especulación en la prensa amarilla pero no hay evidencia concreta, y ciertamente nada confiable para que Wikipedia lo publique.

— El comentario anterior *sin firmar* es obra de NiOedita (disc. · contribs). 15:31 22 may 2019 (UTC)

No veo realmente cuál es el problema. Hay referencias que indican una información, así que hay que añadirlas (salvo que vayan contra lo especificado en WP:FF). Y si hubiera referencias que nieguen dicha información, lo que hay es que añadirlas también. Nada más. No nos corresponde a nosotros decidir si una persona o medio tiene autoridad suficiente para afirmar lo que dice; pero sí podemos afirmar el hecho: que lo dice. --Chico<sup>512</sup> 15:38 22 may 2019 (UTC)

El problema es que la información no ha sido verificada, no sabemos si el informe filtrado es o no fidedigno. Estamos difundiendo rumores que atentan contra WP:BPF --Liquendatalab (discusión) 16:19 22 may 2019 (UTC)

#### **4.2.5. Collaborative inhibition and the Wikipedia gender gap of participation**

Events such as those described above are not limited to controversial topics such as activism and intersex rights or fields widely discussed in the media such as sports. As reported in Undark, a non-profit, editorially independent digital magazine exploring the intersection of science and society, the politics of profile deleting in Wikipedia informs on a larger diversity issue in the platform. Again, the Wikipedia policy for notability applied from the perspective of normative narrative schematic templates seems to be a clear barrier for gender equality in Wikipedia. The instance described in Undark reports on discussions that took place in the profile of Claris Phelps, a nuclear scientist thought to be the first WOC<sup>14</sup> to help discover a chemical element. In the article, Undark contributor Claris Jarvis writes about how deletion was the result of an intense dispute between Wikipedia editors “over whether Phelps met the site’s criteria for notability” (Jarvis et al. 2019).

In her writing it can also be inferred how in that specific instance, transactive memory practices failed to achieve collaborative facilitation:

“The deletion came after a brief but intense dispute between Wikipedia contributors over whether Phelps met the site’s criteria for notability. Ordinarily, such editorial spats are considered a feature of the crowdsourced encyclopedia, not a bug. If one of the site’s hundreds of thousands of active contributors mistakenly or purposely adds incorrect information, the wisdom of the crowd will ensure that truth prevails. But in the case of Phelps, the crowd made the wrong call, and the site’s rules facilitated that. The entire spectacle revealed just how much work remains to be done to address the systemic biases that disproportionately keep women and people of color out of Wikipedia’s pages” (Jarvis et al. 2019).

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<sup>14</sup> Women of colour

One may think such scrutiny is part of the bookworm nature and perfectionism of Wikipedia editors, however, as reported by Jarvis, a look at the profile of James Andrew Harris, who was the first African American man to contribute to the discovery of a new element, demonstrates a shortage of references and sentences describing his contribution to the discovery, but “despite being flagged for years, Harris’ biography remains on the site”. The level of scrutiny in Phelps’s page, which accumulated more than a dozen links to references documenting her scholarly contributions and work, lead to the page being first flagged and later on removed a little more than a week after it was flagged (Jarvis et al. 2019).

Incidents such as those described in the present research indicates that it is urgent to question those situations in the context of how the design of objects and systems influences the distribution of risks, harms, and benefits among various groups of people. For that, Design Justice provides an appropriate framework that focuses on the ways that design reproduces, is reproduced by, and/or challenges the matrix of domination among other systems of oppression. Such systems of oppression accompany underprivileged communities providing a series of experiences that shapes personal and autobiographical memory. We are already in agreement about how autobiographical memories are often reflective of personal identity, national identity, or cultural identity (Meade et al. 9:2018), although we still have a long way to go in questioning the subjective experience of communities that have been considered agrammatical from the perspective of what indian scholar Spivak (1998: 220) calls the "subjects of subaltern status". For communities of subjects of subaltern status, normativity creates mnemonic silences by means of a series of inhibition triggers. Considering collective memory as reflective of group identity, with all its social, cultural, political implications, it can be suggested that, in the context of Wikipedia, the prevalent male eurocentric white group identity is inhibiting participation of communities of women, POC and queer folks.

William Hirst and Gerald Echterhoff describe how Collaborative inhibition occurs because one group's member's pursuit of an effective retrieval strategy disrupts the use of retrieval strategies that may be more effective for other group members. As a result of this situation, called the retrieval disruption hypothesis, some group members may not be able to perform their most effective retrieval strategy. (Basden et al. 1997). As collaborative inhibition is a robust phenomenon, based on comments from women editing Wikipedia, it can be argued that the levels of racism and sexism of the cognitive environments where the transactive memory operates may have a negative impact for the underprivileged communities across the group. In the context of user participation, a kind of retrieval disruption may take place. The principle of the retrieval disruption may also apply when referring to groups of communities cohabiting digital environments. In that setting, the strategies pursued by one community in order to build collective memory, may be disrupting the use of other strategies that may be more effective for other communities. In the context of Wikipedia, content and copyright policies such as notability and neutrality push people in marginalized communities away from participating.

#### **4.2.6. TMS and Wikipedia**

I have already established Wikipedia as a conversational environment where dialogue happens via spaces such as discussion pages, user pages and voting processes. The collaborative wiki-style nature of the project also indicates that the community might be operating in terms of transactive memory practices. Daniel M. Wegner's contributions on transactive memory have revealed that people also may interact with one another in some ways in which computers interact with one another. In that context every social group can operate as a computer network (Wegner 1995). Several of the design factors that must be considered in linking computers together into networks are also relevant to the ways in which individual human memory

systems are linked into group memory systems. These factors according to Wegner include: directory updating, information allocation, and retrieval coordination (Wegner, 1995:324-325). Directory updating in Wikipedia can be done via descriptions of user pages, which often link to different projects and subject centred user groups. Information allocation can happen via @interpellations, following the same logic of other social media platforms, or by means of comment culture either in user pages or discussion pages. The system of categorization via hyperlink that is part of Wikipedia's digital structure is what helps complete the three elements of transactive memory management practices as it provides a strategy for retrieval coordination. That being said, and even if transactive memory practices are usually taken into consideration as facilitators for collaborative remembering, it is worth considering harmful implications that can take place when working with very large communities where normativity seems to be challenging to address and problematize.

In their paper, *Gender stereotypes and assumptions about expertise in transactive memory* (2003), Andrea B. Hollingshead and Samuel N. Fraidin investigated how people use gender stereotypes to infer the relative knowledge of others, and how those assumptions have the potential to influence the division of knowledge responsibilities in transactive memory systems. Those assumptions align with schema consistent theory and normative schematic templates of gender.

“In the experiment, participants indicated their expertise relative to the average male and female undergraduate student in six knowledge categories. Two of these were consistent with female stereotypes (soap operas and cosmetics), two were consistent with male stereotypes (sports and cars), and two were neutral (geography and history). Everyone then worked on a collective memorization task with an assumed partner. The design was a 2 × 2 factorial, with the participants' gender and their assumed partners' gender (same or different as the participant's) as factors. The results showed that both male and female participants shared similar gender stereotypes across knowledge domains. Participants with opposite-sex partners were

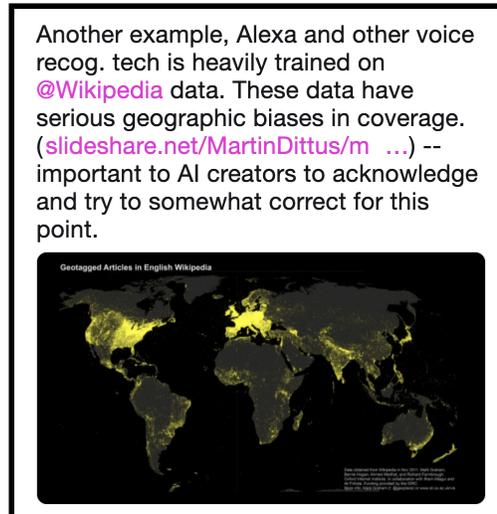
more likely to assign categories based on gender stereotypes than were participants with same-sex partners. As a result, participants with opposite-sex partners learned more information in categories consistent with those stereotypes. These findings suggest that transactive memory systems may perpetuate gender stereotypes” Hollingshead and Fraidin (2003).

Conversational remembering also feeds algorithms that constitute entities of machine learning and AI which is proven to be problematic in terms of UX, as it reproduces and reinforces normativity and systemic bias. For that reason, when the results of a process of collaborative remembering result in the ratification of shared knowledge that constitutes some sort of socially validated collective memory, and this validated collective memory is a product of biased assumptions (as it is, for example, in the case of Wikipedia) it is relevant to interrogate implications for design.

Figure 4.13 and 4.14 shows comments pulled from Twitter where a user envisions a comprehensive “Augmented Reality handbook” of all “stuff that exists in our universe” made from the following ingredients: computer vision, technology, AI and Wikipedia’s database. However, both AI and the Wikipedia database have proven to carry human-like bias through language. Even more, Google provides a publicly available natural language understanding (NLU) dataset with 18 million instances, with the task to predict textual values from the structured knowledge base of Wikidata by reading the text of the corresponding Wikipedia articles (from <https://ai.google/tools/datasets/> and <https://github.com/google-research-datasets/wiki-reading>). In another comment pulled from Twitter, a user shares an example of how Alexa and other voice recognition technologies are heavily trained on Wikipedia data: A map of the geotagged articles in English Wikipedia shows a significant difference in activity (participation) taking place in the United States and Europe in comparison with the rest of the territory.

**Figure 4.13**

Comment pulled from Twitter where a user shared an example of how Alexa and other voice recognition technologies are heavily trained on Wikipedia data. A map of the geotagged articles in English Wikipedia shows a significant difference in activity taking place in the US and Europe in comparison with the rest of the territory



**Figure 4.14**

Comment pulled from Twitter where a user envisions a comprehensive Augmented Reality handbook of all “stuff that exists in our universe” made from three ingredients: computer vision, technology, AI and Wikipedia’s database.

Take three ingredients: computer vision technology, AI, and Wikipedia’s database. Tie them together, and voilà! You’ve just created a comprehensive AR handbook to all the stuff that exists in our universe.

#### **4.2.7. Wikipedia know-it-alls: The asshole consensus and the problem of retrieval coordination**

I have already stated two possible roots for mnemonic silences as described in *Autobiographical Memory: Theories and Approaches*: to avoid causing stress, or to avoid legal and moral implications and reparations at national levels and national discourses. (2012 :149). Beyond community trauma and national discourse, I argue that mnemonic silences can be also facilitated by the culture of heteropatriarchy of what Peake claims to be misogynistic infopolitics, or “struggles concentrated around defining, preserving, and protecting a form of masculinity – male privilege and misogyny – that is always already defined in counterpoint – if not outright hostility – to a concept of femininity-as-inferior” (2015).

In his online paper *WP: THREATENING2MEN: Misogynist Infopolitics and the Hegemony of the Asshole Consensus on English Wikipedia*, Peake writes how the use of his experience on documenting and providing resources on campus sexual violence “light on a larger issue in misogynist infopolitics on the so-called “encyclopedia anyone can edit.” He follows on adding that:

“On Wikipedia, a misogynist infopolitics dictates that “factual information” is information pertaining to, but not threatening of, a sense of masculinity that is situated in a social world that extends beyond the confines of Wikipedia. This sense of masculinity, and its concomitant misogyny, can be enacted and protected by both men and women (2015)

Reading all that into transactive memory practices, it is worth questioning what those kinds of infopolitics can do to what it is called *metamemories*. Wegner reviewed that, according to Flavell and Wellman (1977), and Nelson and Narens (1990) our directories for memories held by others can be thought of as *metamemories* (meaning memories about memories), these memories are not judgements about our own memories, but about the

memory of others. According to Wegner (1995), “we may know that others know something without knowing it ourselves. The question then becomes: How do we know they know it?” (Wegner, 1995:326). I have already established how people use gender stereotypes to infer the relative knowledge of others, and how those assumptions have the potential to influence the division of knowledge responsibilities in transactive memory systems (Hollingshead and Fraidin 2003). In that way, the question “How do we know we *do not* know it” becomes relevant. I am interested in interrogating the figure of what I called the “*know-it-all*” user and its endangering implications for memory building in Wikipedia. Again, Peaks’ paper on misogynistic infopolitics is helpful in assisting to shine a light on the problem of Wikipedia editors being unaware of their own ignorance:

“The expertise of Wikipedians on all things Wikipedia, according to Wikipedians’ actions, trumped any other form of expertise in knowledge production – such that knowledge about (and research on) campus sexual violence and its effects was never the real subject of debate. Instead, where Wikipedians are unable to compete on the terrain of facts and content expertise, they turn to hermeneutic arguments through a near infinite, always self referencing, system of WP:<POLICY>. To paraphrase Latour, these lawyeristic maneuvers are the most effective weapons for individuals who do not know very much about facts, as they allow Wikipedia editors to replace expertise about subject matter with expertise about Wikipedia’s rules.” Peake, B. (2015). WP: THREATENING2MEN: Misogynist Infopolitics and the Hegemony of the Asshole Consensus on English Wikipedia”

I am interested in questioning the implications of the misogynist infopolitics of the *know-it-all user* for collective memory building when operating in transactive memory systems. And the means by which it may work as an extension of the battle that is manifesting through the control of language. In the following section I explore the role of interpellations as inhibition triggers when operating inside normative transactive memory management practices, and sum up the proposal for a Disrupting Participation Hypothesis.

### **4.3. Interpellations as inhibition triggers: the Disrupting Participation Hypothesis**

So far, I have already exposed how collaborative inhibition can inform participation and content gaps in naturalistic online conversational environments in the event of users building collective memory. I have also suggested a possible explanation for this gap by means of contextualizing schema theory with the framework of hegemonic normativity. Now, I want to present an explanation on how hegemonic normativity can act as a collaborative inhibition enabler in online conversational environments by means of interpellations or virtual speech acts.

I have already introduced how J.L Austin named perlocutionary acts those that produce a certain effect as their consequence. His contributions have been reviewed and given new contexts in feminist epistemologies and methodologies. Feminist scholars acknowledge that he provided revolutionary claims on performativity and materiality such as “that all language is performative, and all materiality is linked to the linguistic” (Senft, 1996:2).

I have also introduced how Judith Butler’s take on the Austinian framework has assisted many feminist scholars to conceptualize how language sustains the body, how language *feels* on the body, and how language threatens the body “by virtue of the interpellative or constitutive address of the other” (Butler, 1997:5-6). In terms of the connection between language and the body in ubicomp, in the collection of essays on *Sexuality and Cyberspace* edited in the late 90s by Terri Senft, professor Pamela Gilbert wrote about the effect of her experience of being addressed in virtual environments by means of stalking for over a year. As Senft expressed while introducing this essay to the readers, Gilbert knew “all too well the power of the Net and the fear it can cause”. In the chapter “On sex, cyberspace, and being stalked” Gilbert

described connected environments as spaces where words, by means of discursive action, have the potential to trigger material affects such as very real and material feeling of unsafety:

The Net is not “just words” (as if anything were either that or, conversely, anything else) but a space for social action, in which subjects are responsible for their utterances and performances, and in which discursive actions can mobilize material affects. Like other social spaces, it is not safe... That these spaces are discursive rather than material does not lessen their phenomenological reality (Gilbert in “On sex, cyberspace, and being stalked” edited by Senft, 1997:7).

Austin’s framework for the analysis of speech acts has been largely applied in the context of oral communication and written communication. There are also instances of the framework of analysis being used in the context of virtual communications. Researchers such as Bruno Ambrose provides precedents on thinking about *Speech Acts and the Internet* (2015). In agreement with the possibility of using speech act theory in virtual communication, although departing from a purely linguistic context, I am considering design and interactions as language, and using Austinian analysis to be able to answer the questions of implications for design suggested by Genevieve Bell in *Divining a digital future* (2011) as relevant for ubiquitous computing contexts.

The adaptation of the Austinian framework for the analysis of virtual speech acts from a UX perspective adds on the classic question of locution “what was said?/what was done” incorporating a new setting to answer: “what was designed?”. Following austinian questions for illocutionary acts and perlocutionary acts from UX perspectives, I interrogate what was meant by the designer of such speech act, and what happened as a result, as felt by the user or users interacting with the speech act in the context of virtual communications. It is important to bear in mind that a speech act in this context becomes a document retrievable at any given time, following the same logic as in written speech acts.

Informing on dialogues between written and virtual speech acts, Ambroise (2015) identifies a relevant issue, which is literacy: for a sentence to become an illocutionary speech act it needs to secure its recognition, and thus needs a reader who understands it. “A written speech act exists in an extended time frame: it does not need to be performed at the same time as it is written, since it can be performed at each time it is read [...] In fact it is not performed only when it is read, more exactly it is the very possibility of being readable (again) at any time that makes it effective” (2015). Interested in the distribution of harms and benefits in virtual speech acts, in 2016 I questioned the creator of *Bye Felipe*. Her perception was that the action of screenshotting the abuse and keeping it as a record was facilitating a more vivid remembering process, as opposed to public harassment “in real life” because you don’t have that permanent record “to go back”. In terms of collective memories, she argued that it is hard to point at evidence of harassment and abuse in real life, “since you don’t have anyone following you with a camera all day every day”. As described by this user, to remember harassment outside online environments is up to the individual ability to recall and share information, which from her perception may facilitate forgetting, as she stated:

If you experience something in real life it is a lot easier to forget about it and go on with your day, whereas, if it happens online you can keep it forever and refer back to it or show it to other people. (As described in a series of audio notes sent by email to me by Alexandre Tweten on June 5th 2016).

In that regard, virtual speech acts share some of the characteristics of written speech acts: one being temporality, but also the requirement for literacy to be able to understand what is being said or written. For example, in order to understand speech acts uttered in Korean language, one needs to have a knowledge of Korean. As Bruno Ambroise wrote, an illocutionary act must respect these pragmatic (conventional) conditions to be performed: “It is only

if the people of a certain linguistic community accept and recognize the validity of a given procedure to perform a speech act that people of that community are able to perform such a speech act invoking the defined procedure” (2015). In the context of Internet cultures and online conversational environments what is required is, first, some degree of digital literacy, to be able to navigate conversational environments and the vernacular expressions of their communities. A fair example of complex vernacular internet cultures can be found in meme and emoji cultures, around which users have created a rich culture that is being widely explored in academic contexts by researchers such as Crystal Abidin, resulting in work such as "Between art and application" a special issue on emoji epistemology that she edited in 2018.

Looking at the complex landscapes that internet cultures are, I think about the possibilities for hate and solidarity, and the implications for design of normative systems and systems of interactions that are currently being enabled by means of online hate speech. I am problematizing the extent of which those practices have larger implications in terms of memory building. When all this is taken into consideration from a Design Justice perspective, there is an obvious pattern that emerges. After being the target of online hate, Emma Jane, a researcher that had been studying e-bile for years, wrote:

Harm caused by online misogyny is not just individualized but may buttress the collective experience of status inequality” and for that reason, she suggests that “discourse produced by contemporary cyber-feminists indicates an awareness that e-bile is best conceptualized not as a problem concerning individual men and individual women, but as a diagnostic of a far broader sexism that is making the cyberspace a profoundly inequitable space (Jane, 2016:290-91).

The diagnosis of a far broader sexism that Jane suggests has several implications, I am particularly concerned about those that connect cultural

and autobiographical memory at a community level and informs “what happened as a result” in terms of collaborative remembering and silencing. I am coming back to Butler, as she provides a possible answer for that question. She wrote in *Excitable Speech* (1993) that: “Exposed at the moment of such a shattering is precisely the volatility off one’s place, within the community of speakers [...] one can be put in one’s place by such speech, but such place may be no place” (1993:4). When inquiring about participation in the context of Wikipedia transactive memory practices, we often come up with questions such as: Where are the women on Wikipedia? Where are the gender non conforming folks on Wikipedia? We ought to also inquire if we are designing to allow them to have a place in the community of speakers.

#### **4.3.1 WP: policy as speech acts : What kind of interpellations?**

Bruno Ambrossie wrote about how connected environments create a context to bring new kinds of speech acts into existence. He discussed this idea by observing the social media platform Facebook, and the implicit conventions involved in ‘poking’, an interaction that is no longer part of the platform but that at the time was aiming at allowing users to sort of say “hey” or call for attention in the connected environment of Facebook. Ambroise wrote: “Following Austinian explanation, Facebook establishes a new implicit convention defining a certain procedure and according to which the writing of a certain sign constitutes the performance of a certain act” (2015). There are other examples still in use, such as the *Transactive memory user innovations/ variations/ aggregations* described earlier in this research, for example, @interpellation and #hashtags. The procedure must also be made legitimate by the people it concerns. Shared by a given community in order to be recognized as efficient.

For example, in vernacular internet cultures inhabited by young users, one can often see content tagged with the hashtag #FOMO. Not knowing that

those letters stand for “Fear of missing out” may cause a sense of disorientation and not belonging. In the context of the conversational environment of Wikipedia, one can be interpellated with the tag WP:NPV. Not knowing that those letters stand for the Wikipedia policy shortcut of “Neutral Point of View” may cause a sense of disorientation and not belonging, *but* knowing it when you are a woman editor dedicated to addressing the gender gap of content and participation on the platform, may trigger a feeling of not having a place among the community of speakers that constitute the normative and monolithic community of Wikipedia editors.

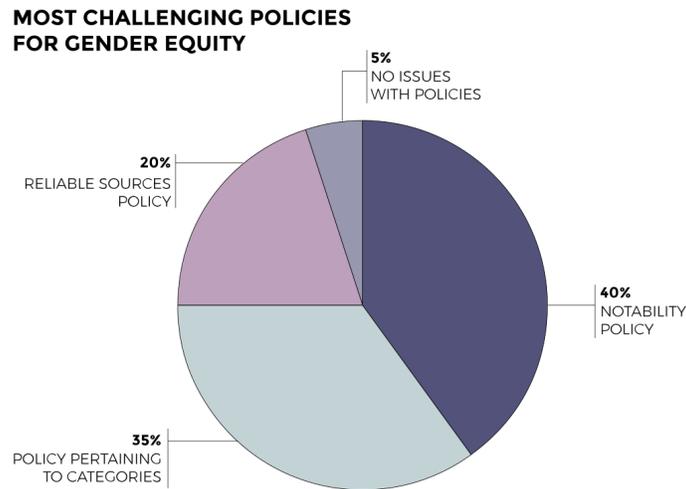
As Ambrose acknowledges in his paper on speech acts and the internet, written speech depends on institutional conditions and authority, such authority must last over time and depends on the perpetuation of the institutional and social conditions that guarantee the validity of the procedure through time (2015) . In their paper *Everyone can edit, not everyone does: Wikipedia and the gender gap* authors Ford, H., & Wajcman, J. (2017:10) wrote about how authority is performed in the context of Wikipedia by means of literacy on digital speech acts that are both object of policy<sup>15</sup> and code. They also stated that, because policies are such an important element for social interaction on Wikipedia, they have turned into a resource for learning about editing, while establishing a social convention that regulates behaviour. Also, the complexity of policy use and application has implications in terms of user participation, as it is often the only means by which one can influence representation.

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<sup>15</sup> Ford & Wajcman wrote that Wikipedia’s content policies are centered around three core principles: neutral point of view (NPOV), no original research (NOR), and verifiability. NPOV demands that articles should be written without bias, by fairly and proportionately representing all significant views. The ‘no original research’ policy requires that Wikipedia editors do not publish original thought, and the verifiability policy determines that all material challenged or likely to be challenged must be attributed to a reliable source (Wikipedia: Core content policies, 2016 in Ford, H., & Wajcman, J. (2017:9).

**Figure 4.15**

Most challenging Policies for gender equity in Wikipedia as identified in the gender diversity mapping project lead by Rosie Stephenson-Goodknight during 2016/17



The research on gender diversity mapping led by the well-known American Wikipedian Rosie Stephenson-Goodknight during 2016 and 2017 already introduced in this study provides an identification of what is considered the biggest obstacles to achieving gender equity in Wikipedia by research participants. Results shown in Figure 4.15 indicate that policies regarding reliable sources, notability and categorization are the most problematic. According to the report, participant contributions indicate that they recalled complex experiences of implicit bias and a will to problematize current Wikipedia policies that demand for western-centric standards of notability and reliability as a means to validate knowledge.

As Ford and Wajcman wrote: “Wikipedia’s infrastructure involves performing particular kinds of authority that, in turn, involves exercising particular kinds of power” (2017:10). This particular form of power is being exercised by means of a rhetoric that it is being known as ‘wiki lawyering’ due to its highly technical and legalistic approach where users “argue for the inclusion of

particular content and sources by interpreting Wikipedia’s core policies” (2017:10). Those policies belong to the structural domain following Patricia Hill-Collins’ sociological paradigm, although are being enforced by a ‘regime of truth’ (of normalcy) that establishes notability and neutrality so regulations on that matter can be enforced and maintained by the community. Ford and Wajcman described it as follows:

The Wikipedian who is able to operate within the highly technical and legalistic framework of Wikipedia’s infrastructure involves performing particular kinds of authority that, in turn, involves exercising particular kinds of power. Once more, this is consequential for the possibility of being a female Wikipedian. Ford, H., & Wajcman, J. (2017:10).

The people that volunteer to enforce Wikipedia’s regime of truth by means of policy enforcement are referred to as metapedians. As written by a former Wikipedia editor “Metapedians love the bureaucracy — the policies, the essays, the processes. [...]” but editing not so much<sup>16</sup>. In the previous section I have introduced what I considered a fundamental issue affecting Wikipedia’s transactive memory management practices, that is the metapedian that fails to execute a proper retrieval coordination by failing to acknowledge their own ignorance. In the following sections I shall present you with a series of incidents involving actions performed by *metapedian know-it-all* users that can illustrate how contributors use their power and privilege to silence other voices by means of speech acts.

#### **4.3.2 How contributors use their power and privilege to silence other voices by means of speech acts**

In 2018 and throughout 2019, the Wikimedia movement started a series of conversations about Community Health. The diagnosis of the current situation on the health of the community in the Wikimedia movement shown in Figure 4.16 acknowledges that contributors “sometimes” do “use their

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<sup>16</sup> From the blog post ‘Why I Quit Wikipedia’ (2006). Retrieved from the Web Archive in 2018.

power and privilege to silence other voices” and that this can “be seen in discussions about changing existing community processes and structures” . The diagnosis also acknowledges something that has been widely reported in literature, and I have observed and experienced: that “participating in discussions or decision making feels unsafe to some contributors” (Wikimedia movement, 2018-19). The feeling of unsafety is fundamentally linked to the conversational environments of the platform, such as discussion pages aimed to enforce established community processes and structures.

### Figure 4.16

Content page that summarizes the scoping format and questions of the Community Health Working Group in the Wikimedia movement for 2018-2019

[https://meta.wikimedia.org/wiki/Strategy/Wikimedia\\_movement/2018-20/2019\\_Community\\_Conversations/Community\\_Health/en#What\\_is\\_the\\_current\\_situation?](https://meta.wikimedia.org/wiki/Strategy/Wikimedia_movement/2018-20/2019_Community_Conversations/Community_Health/en#What_is_the_current_situation?)

Participation in our online projects and offline spaces is currently seen as something everyone can equally access on a level playing field. In reality, participation is a privilege enjoyed only by relatively few contributors compared to our global readership. The current movement culture presents social as well as technical barriers to participation. Contributors sometimes use their power and privilege to silence other voices. This can be seen in discussions about changing existing community processes and structures. The culture in the Wikimedia movement does not adequately address inequities in process. Although community decision making processes are open to all contributors on most projects, many do not participate. This is due to poor culture that exists in our community. Participating in discussions or decision-making feels unsafe to some contributors. To contribute could mean anything from harsh words in the discussion thread to doxxing or other forms of harassment or bullying. As a global community, we do not focus enough on the social dimension of our projects, focusing instead on content. On the journey towards knowledge equity outlined in the 2030 direction, our focus needs to center on the social side of our movement and the technical environments we largely collaborate with each other in.

Ford, H., & Wajcman, J. (2017:10) have reviewed different literature that concludes how the complexity and ambiguity of Wikipedia policy leads to power dynamics among contributors as they try to gain control over the article (Kriplean et al., 2007: 172). They have also identified such power dynamics as both a “significant element of Wikipedia culture” and as something that disables the participation of women “who would rather not participate if participation requires strategies for either bolstering or undermining the positions of contributors” (Menking and Erickson, 2015 in Ford, H., & Wajcman, J. 2017:10). In terms of implications for design of policy and code, It is important to acknowledge the complexity of the question ‘who is being inhibited from participating as a consequence of the violence inflicted through such power plays’. Women, disabled folks, gender nonbinary folks and people of colour have been historically subjected to greater levels of violence and erasure, therefore greater levels of unsafety and harassment. That needs to be seriously taken into account while designing safer spaces for collaborative remembering.

To understand how power dynamics operate within the community of Wikipedians first it is important to understand how this power can be earned and used. I have already mentioned a practice known as ‘wiki-lawyering’ that is used to show authority and literacy on Wikipedia policies. This practice is a power dynamic played against other forms of expertise in knowledge production (Peake, B., 2015). However one of the most relevant forms of power is exercised through the practice of consensus. In such a monolithic community, consensus is being enforced by a ‘regime of truth’ (of normalcy) that establishes notability, neutrality, and relevance, so regulations on that matter can be enforced, maintained and unchallenged by the majority of individuals in the community. Consensus is what binds and validates what is worth knowing and what is worth forgetting.

In the 2006 blog post ‘Why I quit Wikipedia’ a former editor expressed very critical concerns on consensus, while also acknowledging a harmful power dynamic that he had engaged in while participating as a Wikipedian: The possibility of “hurting someone” by means of speech acts such as tagging a specific Wikipedia page for deletion. He wrote about the subjective experience of power felt when he was nominating pages for deletion as follows:

There’s really two areas in which you can focus your efforts on in Wikipedia: the articles (exopedians) and the bureaucracy (metapedians). [...] my efforts were primarily metapedian in nature [...] I had become involved in the “articles for deletion” venue, where I began becoming the target of immense hatred. [...] All the while, I wondered why the hell I was doing it. I began to realize that, for me, the nasty truth was that much of it was a power trip. Oh, don’t get me wrong: my actions were taken because, in part, I did truly believe that the articles I nominated didn’t belong. But it was indeed a manifestation of a darker side of me — I enjoyed the fact that I could hurt someone — make them angry and mad and defensive (From “Why I quit Wikipedia?” 2006)

While acknowledging “I have hurt someone” this former Wikipedia editor also reflects on an experience that he had witnessed and that made him stop participating: He saw someone being *seriously* hurt. He saw the harassment of a gender non-conforming user nicknamed Catamorphism after they were nominated for the role of adminship. Admins have powers such as to delete and protect Wikipedia pages, ban Wikipedia users etc., for this very reason voting processes for adminship are the kind of discussions designed for enforcing established community processes and structures, and therefore the type of conversational environments where the feeling of unsafety is fundamentally linked (Ford, H., & Wajcman, J., 2017:10). This former Wikipedia editor narrates how before knowing that Catamorphism was genderqueer, consensus in voting among the community was establishing that Catamorphism was a model editor and therefore an appropriate

candidate for adminship. The moment someone brought into the discussion the fact that Cathamorphism was genderqueer and their chosen pronouns, consensus began to change, until the community agreed that their insistence on their choice of pronoun would make them a bad administrator.

The user that wrote the post is narrating this particular incident from a position of being critical towards the mistreatment and abuse of gender non-conforming users in Wikipedia, but nevertheless a position of privilege. As Sara Ahmed words it: “privilege could be thought of as contact dermatitis: we are inflamed by something when or because we come into contact with it” (Ahmed: 2016:27). Inflammation is what happened as a result of speech acts. This particular incident and the pronoun-related quotes (speech acts) that can be found in the archived discussion records of Wikipedia, was also documented in the Geek Feminism Wiki community project. The sentences compiled are packed with trans-antagonist expressions and show how consensus can be turned into a power dynamic being played by language. This particular power dynamic allows and legitimizes the violence performed in the form of epistemological denial of non-hegemonic users and their systems of knowledge. In this specific case, the denial of non-hegemonic users is enforcing the erasure of gender non-conforming people, this erasure being expressed in sentences uttered by a community allowed to question trans existence, and that by doing so is threatening trans existence.

An example of this practice of erasure and violence can be found in the disagreement expressed by a Wikipedia editor as “objecting to perfectly normal grammar for political reasons” as a response to a request for respecting genderqueer pronouns.

### Figure 4.17

Transphobic pronoun-related quotes from Catamorphim's request for administration discussion in Wikipedia documented by Geek Feminism Wiki

- Very strident about word use, objecting to perfectly normal grammar for political reasons
- The being harsh about gender pronouns doesn't look good, you can't expect everyone to buy into the validity of genderqueer.
- I think his insistence that everyone adjust their language (and thus, their personal ideas on sex and gender) to accommodate his supposed gender is incivil and reflects an attitude unbecoming an administrator. He has certainly every right to call himself whatever he wants to, but he has no grounds to request that other people (who can see a man's photograph on his user page) call him anything else but the standard English "he". They might do that out of courtesy (or conviction), once they get to know him, but to insist on it reeks of arrogance.
- The nomination is fishy. Is Catamorphism an individual or a THEY?
- Oppose per... perseverations on pronouns. Half a RfA [request for administrator status] devoted to pronouns?! Sheesh.
- Oppose due to pronoun-related disruption, random accusations of misogyny...
- Wikipedia is not the place to change the English language, flawed as it is.

The question then becomes: who is deciding what is “normal” and what is “political” when consensus is established by hegemonic normativity, in this specific instance manifested through agreeing to the schematic templates of traditional biology of sexual difference. For example, as seen in Figure 4.17, a user in the discussion stated: “he has no grounds to request that other people (who can see a man's photograph on his user page) call him anything else but the standard English "he". When a community decides the criteria of traditional biology of sexual difference to decide who counts, the criterion become a “technique for exclusion” (2016:30) because it follows the subsequent logic: “When content (women is X)” and I shall add, (man is X) “is being used as an end (you are not x), ideas have already become weapons” (Ahmed, 2016:30).

We have learned from studies of collaborative remembering that “the role of meaning and schema, and the presence of socially shared retrieval-induced forgetting [...] bolsters the formation of collective memory which can in turn facilitate social binding, shape collective identity, and guide collective action (Hirst & Yamashiro (2018:83). In “On sex, cyberspace, and being stalked” Gilbert described digital connected environments as spaces where words, by means of discursive action, have the potential to trigger material affects such as very real and material feelings of unsafety (Gilbert, 1996). Here, binding, collective identity and social action by means of discursive action has guided collective memory in the event of knowing Catamorphism being genderqueer. Rejecting their validity as administrator for that reason in the form of harassment has in turn triggered the very material affect of unsafety for genderqueer bodies as a result. From studies on collaborative remembering, we also know that, in terms of the social aspects of forgetting, “a collective memory might oppress some within a community and enhance the status of others” (Hirst & Yamashiro, 2018:78), and in this particular instance, normative schematic templates in Wikipedia policy and culture application have facilitated the oppression of a genderqueer individual while enhancing

the status of harassers by means of the legitimization of transphobic consensus practices.

I am in agreement with Ahmed in considering that if we think about gender as an institution, the policing of gender are the norms that maintain the institution in the first place. Ahmed wrote that “when you are talking about the policing of gender, we are talking about walls, those ways in which some are blocked from entry, from passing through. [...] We notice norms as palpable things when they block rather than enable an entry” (2016:32-33). From a perspective that she named as an *affinity of hammers* (2016) Ahmed proposes to push against yet another wall, because: “In chipping away, we come into contact with those who are stopped by what allowed us to pass through. We happen upon each other. We witness the work each other is doing, and we recognize each other through that work. And we take up arms when we combine our forces. We speak up; we rise up.” (Ahmed, 2016:33)

#### I. Silencing genderqueer voices

Pushing the wall of the participation gap in Wikipedia I found the story of Catamorphism documented with the most care in a feminist geek space in 2006, and I begun to search for more traces. I found the archived discussion in Wikipedia, and the archived blog post of the editor who stopped participating after witnessing that discussion. I also found that in 2013 Catamorphism felt strong enough to share their story with the Geek Feminism community, and they did it with a post hosted in the same space moderated by the same community that had documented the incident in 2006. A community that had a long history of showing care and support for women and gender non-conforming folks in geek cultures.

In that sense the editorial guidelines of Geek Feminism Wiki compiled in Figure 4.18 can inform on how a community can design spaces that result in safety for the remembering of users that belong to non-hegemonic

communities. By stating that “Geek Feminism Wiki is not Wikipedia”, the editorial guidelines of this community also informs on why Wikipedia can be an unsafe space for some users. From a collaborative memory perspective, when Robert A. Wilson described his experience from a ten years community-university research in collaboration with eugenic survivors in Alberta, Canada, he insisted on how “recognizing that someone cares about what happened to them, that they can tell a story and that the story provides a valuable insight into much broader issues” (2018:256) was central for enabling safe spaces for collaborative remembering.

### **Figure 4.18**

Fragment of Specific points of clarification from Geek Feminism Wiki Editorial guidelines. Geek Feminism Wiki. (2013).

#### **The Geek Feminism Wiki is not Wikipedia**

- We do not have a neutral point of view (NPOV) policy. Instead, we explicitly declare that we analyse topics from a feminist perspective.
- Further to which: the editorial point of view of the wiki is a feminist one. Framing it as such is not only permitted, but encouraged. Presenting a non-feminist or anti-feminist viewpoint as that of the wiki is verboten.
- While citations are preferred wherever possible, we do not require them. Much of our wiki is primary source material, sometimes added anonymously in order to avoid backlash against the whistleblower. Original research is welcome.
- Notability is measured against the yardstick of this wiki's goals and values, not against that of Wikipedia or geek culture as a whole.
- We can and will ban editors -- whether anonymous (identified by IP addresses) or named -- with no warning and no recourse. Our wiki, our rules.
- We strongly recommend that all edits that could conceivably generate disagreement be discussed on the talk page first. We

strongly discourage new editors, especially those new to feminism, from being bold.

- All decisions by wiki administrators are final.

### **Our vision of intersectional feminism**

As a consequence of the values and purpose described above, we

- are aware that disability issues, race issues, trans issues, queer issues, and age issues (not an exhaustive list) are all women's issues as well
- are not sympathetic to trans-eliminationist (or trans-exclusionary or trans-exterminationist) radical feminist TERF viewpoints, nor any other position that denies the lived experience of people who are genderqueer, transsexual, transgender, gender-non-conforming, genderfree, genderfluid, agender, trans\*, or otherwise are denied the universal acceptance of their sex and gender as valid
- are not sympathetic to health or body policing, including but not limited to fat-shaming, fatphobia, sizeism, healthism, or any other form of oppressing, bullying or belittling a person based on their real or perceived physical appearance or health status
- especially encourage contributions from women whose needs have not historically been served by feminism, including but not limited to women of color, disabled women, and trans women
- emphasize structural rather than individualist analyses of obstacles to women's participation in geek communities
- accept each person's self-reporting of their feelings and lived experiences as valid

Fragments of the specific points of clarification from Geek Feminism Wiki Editorial guidelines refers to some of the most challenging policies for gender equity identified in the Gender Diversity Mapping Project: notability and reliable sources (2018), as well as the problem of neutrality of point of view. I argue that the neutrality of point of view is precisely a strategy that is disrupting efforts of collaborative memory building undertaken by non-hegemonic communities. Let me unpack it: Because remembering collectively requires being allowed to tell a story, the principle of disruption described in the collaborative recall paradigm may apply when referring to non-hegemonic groups of vulnerable communities cohabiting with hegemonic communities in digital environments. Within the collaborative recall paradigm, the retrieval disruption hypothesis suggests that a strategy used by one member of the group recall may be disrupting the most effective retrieval strategy of other group members. I am adding on the characteristics of strategies and considering as well the characteristics of spaces in terms of policy design and standpoint, specifically in the event of monolithic hegemonic communities remembering and building collective memory. I am also arguing that strategies such as schematic narrative templates on notability, neutrality and normalcy, are not allowing, and therefore disrupting the use of other retrieval and participation strategies belonging to non-normative communities. These alternative strategies are central for the experience of vulnerable communities that require safer spaces for collaborative remembering, where they are allowed to tell their story and to be told that their story provides “a valuable insight”.

From the request for adminship voting discussion Catamorphism remembers the opposite of providing “valuable insight”. They remembered: “I was being accused of bringing up something that wasn’t relevant, and of course, as someone who wasn’t unambiguously recognized as a white cis man, I wasn’t allowed to decide what was relevant; other people got that privilege” (When who you are is off topic. Geek Feminist Wiki, 2013). To tell their story,

Catamorphism chose a safer space for the collaborative remembering of queer folks among a community that made the effort to create a space that centers the experience of cis and trans women and gender-non-conforming people. As shown already in Figure 4.18, Geek Feminist Wiki editorial guidelines explicitly recognizes being “not sympathetic to trans-eliminationist (or trans-exclusionary or trans-exterminationist) radical feminist TERF<sup>17</sup> viewpoints” and “any other position that denies the lived experience of people who are genderqueer, transexual, transgender, gender-non-conforming, genderfree, genderfluid, agender, trans, or otherwise are denied the universal acceptance of their sex and gender as valid”. The need to state such viewpoints suggests that exclusion and participation disruption is something that also occurs within feminist communities operating under the hegemonic normative templates of trans exclusionary ideology. In that sense, Ahmed suggests that transphobia within feminism needs to be understood in relation to cis privilege, with not having to come into contact with this *hammering*.

From the critique of trans-exclusionary radical feminists that Ahmed offers in *Affinity of Hammers* (2016) I learned how transphobia operates in the context of free speech when genderqueer expressions are considered something debatable. Ahmed writes that “transphobia works as a rebuttal system, one that, in demanding trans people provide evidence of their existence, is experienced as a hammering, a constant chipping away at trans existence” (Ahmed, 2016:22). In her paper she argues that transphobia within feminism needs to be understood in relation to cis privilege: not having to come into contact with this hammering, but also suggesting that rebuttal is a form of injurious speech as described by Butler. To be addressed injuriously, wrote Butler, is to suffer disorientation of one’s situation as the effect of such speech, “exposed at the moment of such a shattering is precisely the

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<sup>17</sup> Trans exclusionary radical feminism

volatility of one's 'place' within the community of speakers" (1997:4). In the same way, rebuttal can be an address against an existence:

A rebuttal is a form of evidence that is presented to contradict or nullify other evidence that has been presented by an adverse party. A rebuttal system is a form of evidence that is directed against evidence that has already been presented. What if you are required to provide evidence of your own existence? When an existence is understood as needing evidence, then a rebuttal is directed not only against evidence but against an existence. An existence can be nullified by the requirement that an existence be evidenced. The very requirement to testify to your existence can end up being the very point of your existence. (Ahmed, 2016:29)

Ahmed's need for a critique to trans-exclusionary radical feminists was a reaction to the letter that 130 prominent feminists, activists and academics wrote in 2015 supporting trans-exclusionary radical feminists views, claiming that transphobia was "being misused as a way of silencing or censoring critical feminist speech" (Ahmed, 2016:22). Following a speech act analysis of Ahmed's observations, the letter was indeed saying that "transphobia is being misused as a way of silencing or censoring critical feminist speech", although paradoxically it was published by the Guardian reaching a very significant audience. What they meant, though, as Ahmed observed, was that "trans activists are bullying the feminists and universities are allowing this bullying to happen" (2016:24). The implications for design of that letter (what happened as a result) were pointed out by Ahmed's observations: she observed a new legitimacy to trans-exclusionary views. But more importantly, she realized that she was "hearing the sound of a blast" that the trans community had been living for a long time, and that because of her privilege she was not experiencing:

When I first read the letter, I remember thinking that one of the worst consequences of it would be the new legitimacy it would give to anti trans and trans-exclusionary feminism. I thought at first I was indeed witnessing an increase of such speech. But once I began to work through the networks that supported the letter, mostly on social

media, I began to realize that what I first heard as a turning up of the volume was more of the same thing that had been going on all along for many trans people: the volume switch was already stuck on full blast. My cis privilege was, until then, not having had to notice that harassment or not having had to hear the sound of that blast (Ahmed, 2016:27)

In the context of the normative schematic templates of Wikipedia, where there are few women, but even less genderqueer users participating. The volume switch is at a disengaging level for many women, including myself, but our cis privilege *is* not having to notice the sound of the blast to which our fellow trans and genderqueer editors are subjected.

The blast is the serious harassment that Catamorphism experienced during the Wikipedia request for adminship incident because of their gender, a request which they did not initiate, and the subsequent trail of violence and hate that was originated as a result of it. Catamorphism narrates the episode as follows:

The RfA took an even weirder turn when the person who'd originally nominated me — a man using the handle of "Erik the Rude", changed his vote from "yes" to "no" and announced he'd only nominated me to humiliate me, because he hated "bulldykes". What follows was one of the only occasions when I've experienced serious harassment online because of my gender. A user of the hate site called Encyclopedia Dramatica (now rebranded as the warmer, friendlier site "Oh, Internet") created an article about me that was solely based on the transphobic comments I received during my RfA. Because its title was my username — Catamorphism — and because Encyclopedia Dramatica had high page-rank at the time, the attack page was one of the first hits when someone searched for my username. "Catamorphism" is a technical term used in my field, so chances were good that potential colleagues or employers — just looking for information on a technical term used in the narrow professional field I work in — they would find a page with a picture of me and someone calling me a "bulldyke". There's nothing wrong with being a bulldyke, but it's not a term that describes or ever has described me; if people are going to hate me, I'd prefer they hate me for who I am rather than what I'm not.

The blast is the pain and the shame of being “off topic” and having no place in the community of speakers of Wikipedia, which Catamorphism narrate as follows:

I experienced retaliation for reporting harassment that forced me to leave the graduate program I was in, and at the job I went to next, was threatened because I spoke out in favor of having a code of conduct that reflected awareness of power dynamics. Despite not putting my education or job in jeopardy, the Wikipedia incident was more painful for me than my experiences at either Portland State or Mozilla, because of the shame of being off-topic, and perhaps also because of the misunderstandings that lay at the heart of the RfA discussion. I was never heard in the Wikipedia discussion, and any attempts to make myself heard just elicited more refusal to listen.

The blast is the constant violence by means of erasure and participation disruption that Catamorphism was subjected to, which they narrate as follows:

I decided I didn't particularly want to expend effort to contribute to a site that would have welcomed me as an admin if I was a binary-gendered person. So I stopped editing. [...] Although I created a new account eventually and I still edit once in a while, I avoid editing that is potentially factually contentious. I just don't have the energy to argue with aggressive people anymore. What's more, I don't have the energy to explain, over and over, that cissexual and heterosexual people's points of view are not automatically more neutral and objective than the points of view of trans and queer people.

Because Catamorphism's experience was encapsulated in a document written in 2013, you can still hear the blast of what that particular experience felt like by accessing and reading the document, and like Catamorphism, there are other users that had been generous enough to share their experiences so they can be accessed for awareness, so better informed choices can be made.

For many trans people, the volume switch is still *stuck on full blast*, as the story of a trans male editor named Pax Ahimsa Gethen that reflects on the cumulative experience of being a trans Wikipedia editor for a decade indicates. The blast of their story in 2018 is yelling at us that we still have problems in Wikipedia, and the problem is trans-antagonism driving away trans people from editing. Trans-antagonism is manifested by the community by means of enforcing Wikipedia policy and structure, as well as the schematic narrative templates of hegemonic normalcy, telling them they were “unloved” and belonged in an internment camp (Evans et al. 2019). These power dynamics are still making Wikipedia an unsafe space not just for cis women, but also for trans women and men, and gender non-conforming users that understandably refuse to volunteer their time to be abused.

As Ahimsa wrote in the post “10 years a Wikipedian”:

“if all trans people are driven away from editing Wikipedia by trans-antagonism—which comes from established editors and administrators as well as anonymous users—then only cisgender people will decide how we should be represented in the encyclopedia. That, to me, is unacceptable. But as much as I want to be included, I don’t feel that I should have to volunteer my time to be abused. I face enough ridicule and discrimination in my daily life as it is.”. Pax Ahimsa Gethe, “10 years a Wikipedian” (2018)

In *Affinity of Hammers*, Ahmed urges us to hear that blast while she also “offers a model of political hope resting”; that is on, “an affinity that can be acquired through the work of chipping away at the system” that is creating the situation of privilege in the first place (Ahmed, 2016:22). Hammering, keep hammering, tearing the walls that we encounter until systems of privilege and exclusion are crushed.

## II. Failing to address sexist, racist and transphobic incidents in geek communities

In *Living a Feminist Life*, Ahmed wrote that “queer and feminist worlds are built through the effort to support those who are not supported because of who they are, what they want, what they do.” (2016:48). In that sense the Geek Feminism community has provided a consistent effort in supporting underprivileged communities in geek culture since the project -that now is in archival mode- started in 2009. The Geek Feminism community has two contributions that have had a significant impact in terms of use and implementation. One contribution is their set of anti-harassment policies, editorial guidelines and code of conduct, that have been adopted by other communities and projects such as the FreeBSD operating system. Another relevant contribution is their documented timeline of sexist incidents in geek communities, that has been referenced in academic research in fields such as critical system librarianship (Barron, S., & Preater, A. (2018), and research topics such as sexual harassment in museums (Trivedi, N., & Wittman, A. (2018). In May 2009, the Geek Feminist Community began compiling the timeline, that starts in 1963 and contains documentation of 422 incidents occurred in FLOSS communities such as Wikipedia, but also gaming and science fiction communities, conferences, universities, and the technology industry at large.

As a reaction to the timeline, in August 2009, in the discussion page Talk:Geek Feminism Wiki, a commenter asked if documenting sexism would be damaging for the community, arguing that women could feel reluctant to participate as a result of encountering the documented list of incidents. Responding to the inquiry about the possibility of harmful implications for participation that could result from such listing, Mary Gardiner responded with a piece called ‘Why we document’ that was published originally on the Geek Feminism Blog the summer of 2009. In that piece Gardiner reflects on

the importance of being able to answer the question of whether geek women have problems and why. From her perspective, documenting sexism is helping other women build solidarity networks because “geek women were talking about it and had got together and got each other’s back”. As Gardiner wrote:

Had you asked me in 2003 for troublesome incidents in Free Software [...] ”I don’t know that I would have been able to give you examples of anyone doing anything much wrong. [...] Things started to change my awareness slowly. Valerie’s 2002 HOWTO Encourage Women in Linux dug up some incidents at LUGs. In 2005 LinuxChix itself got some attention from (*trigger warning*) the troll Skud posted about. I was personally present at a sexualised presentation, the Acme::Playmate presentation at the Open Source Developers Conference in 2006. And in 2007, very soon after I had seen Kathy Sierra keynote linux.conf.au 2007, she was scared out of her work writing about technology by (*trigger warning*) online harassment and for the first time, I personally saw the Internet explode over the issue of active, virulent sexism against women in technology.

[...]

now if when I’m asked about whether geek women have problems and why there aren’t more of us, I’m not left fumbling to explain it even to myself. (Mary Gardiner, Why we document on Geek Feminism Blog, 2009)

Documenting sexism does not damage a community, because sexism is what is damaging the community. In 2013, the founder of the Geek Feminist Wiki and blog wrote a piece called “On being harassed”. In that piece she shares her cumulative experience of harassment and explains how that can lead to a disruption in user participation. This disruption is not due to technical barriers, but due to the frustration of being part of a community that does nothing to stop abusive behavior towards women and gender nonconforming folks. On the felt experience of being harassed she wrote:

That was about nine months after my OSCON talk, and I'd had three separate cases where abuse related to it had negatively affected my professional life. Other women have talked about cutting back on their blogging out of concern for their personal safety, or to protect their children, but I wonder how many other female bloggers have had work-related problems like I did, and cut back on their blogging to avoid having abuse and harassment leak over into their professional lives?

[...]

By the time this happened, I'd already decided — like many women before me — to drop out of the tech industry, so it was no big deal for me to turn down a high profile speaking opportunity. In fact, I hadn't spoken at any major conferences in a year or so, preferring small events and unconferences where I could focus on teaching people about our technology, rather than on any potential harassment.

[...]

I didn't quit because I couldn't handle the technology, or because I had a baby, but because I had become fundamentally disenchanted with a "community" (please imagine me doing sarcastic air quotes) that supports the kind of abuse I've experienced and treats most human-related problems — from harassment to accessibility to the infinite variety of names people use (ahem ahem Google Plus) — as "too hard". Skud, 2013 on Geek Feminism Blog (On being harassed: a little GF history and some current events

Even though Geek Feminism Wiki has been documenting incidents since 1963, there has been a significant increase of them in the past years, as half of the documented incidents have occurred from 2013 to 2018. The amount of incidents documented reflect on how FLOSS communities fail in addressing the problem of sexism. In the specific context of Wikipedia there have been 15 instances of sexist incidents and harassment and other cases of what can be considered toxic behaviour for the participation of women and gender nonconforming folks in the movement: transantagonism,

misogynistic attacks, name-calling, biased editing, verbal assault, and jokes about rape among other examples of behaviour listed in Figure 4.19 that should not be permitted in the Wikipedia movement.

**Figure 4.19**

Geek Feminist Wiki Incidents documented until 2014

Short description of the incident	year
Catamorphism's Wikipedia RfA (request for adminship) + harassment and transantagonism	2006
Editor repeatedly makes misogynistic attacks and is blocked 7 times before becoming inactive four years later.	2006
Female editors attacked by a male admin who calls them "feminazis", "harpies", and "cretins".	2008
Female editor demeaned and insulted after questioning the notability of Neg (seduction)	2008
Biased editing on the article Patriarchy + misogynistic rant	2009
A male editor argues that women who look like Andrea Dworkin are probably lying when they say they were raped	2010
Editors attack the use of a trans person's chosen pronoun, with one editor referring to the trans person as 'it	2010
Unrelated banter and jokes	2010
Female editor and admin is verbally assaulted before and after blocking a disruptive editor	2010
Vandalization of the "Pregnancy" page + misogynistic rant	2011
A male editor in a dispute with a female editor makes suggestive remarks on her talk page	2011
Editor makes a joke about sodomizing women on the talk page of the Pregnancy article.	2011
A male editor asks another editor, "But you're just a girl (...), what do you know?" He frames the sentence as a "joke"	2011
Discussion in the page "Men's rights movement": There are a bunch of women editing that article, and I can't help but think that biases the content.	2012
2014 Wikipedia Did You Know blurb "Did you know...that an American serial killer said that he killed women before having sex with them because 'I like peace and quiet?'"	2014

### III. Measuring harassment from audit culture perspectives

Because sexist incidents are now being documented, and Wikipedia is such a relevant information gatekeeper with a very strong presence in popular culture, these documented incidents, in Geek Feminist Wiki and other digital spaces, have begun to spread until being widely reported in well known mainstream media such as The Guardian or The New York Times among other media outlets.

In 2018, the German researcher and Wikipedia editor Saskia Ehlers published a report on Wikipedia gender imbalance containing the outcomes of a survey conducted by the researcher at the Wikimedia Diversity Conference. In that report, it is stated that “the negative press that Wikipedia got from low female participation is widely unwarranted as most factors that lead to inequality are not within its power to change, and furthermore, it has a lower gender gap

than traditional encyclopedias and more participation than other FLOSS projects by a wide margin” (Ehlers, 2018:21). This is a conclusion that Ehlers draws from a very specific and problematic premise: that the gender gap of participation is predominantly a PR problem (Ehlers, 2018:5).

In an interview published at the BBC website on August 8th 2014 Wikipedia co-founder Jimmy Wales acknowledged that Wikipedia had “completely failed” to fix gender imbalance after not reaching the goal of increasing the number of women editors to 25% by 2015. In 2019 the community has still not reached that goal yet, and the numbers on participation of women in Wikipedia projects have not been updated since 2013, when 16% of participation was reported. In that context, it is urgent to reconsider what is understood as participation that *counts* in the context of Wikipedia audit culture for diversity. One of the themes that emerged in recent research on gender diversity mapping suggests that it is important to acknowledge various degrees of participation and to not create a hierarchy (Wikipedia Diversity Conference 2017 via YouTube). In that regard, In a 2018 seminar on women and Wikipedia held at the Open University of Catalonia in which I was invited as speaker, I attended the presentation of preliminary findings of the research group that was hosting the event. The preliminary findings were focused on measuring the percentage of women participating in the Spanish chapter of Wikipedia. According to their calculations it was 11% ( Minguillón, J., et al. 2018). I was surprised to find out how they calculated that percentage: counting the number of Wikipedia editors that have a user page, identify as women in their user page, and have more than a certain number of edits. I was also concerned about who they left out of that percentage: women that edit without a user, or without a user page; women that participate in ways other than editing, such as organizing edit-a-thons, creating or finding resources, managing mailing lists, teaching how to edit Wikipedia, doing research on Wikipedia, etcetera.

What they did by fall 2015 via the Safety and Support team (formerly the Community Advocacy Team) is to release a report from a survey of editors to determine the prevalence and problem of online harassment, and a subsequent follow up by the Community Engagement team. The Harassment Survey of 2015 found a significant harassment issue among the community of editors. In the executive summary of the report it is stated that:

“Of the 3,845 Wikimedia users who participated, 38% of the respondents could confidently recognise that they had been harassed, while 15% were unsure and 47% were confident that they had not been harassed. Similarly, 51% witnessed others being harassed, while 17% were unsure and 32% did not witness harassment. (Kalliope Tsouroupidou Harassment Survey Results Report, Wikimedia Foundation 2015).

In the follow up to that report conducted in 2017, a selection of key findings indicate that in the month prior to taking the survey, survey participants avoided Wikimedia projects (49%) at a greater percentage than other social media platforms such as Twitter (19%) or Facebook (26%), because they felt unsafe or uncomfortable. In terms of the kinds of harassment that can take place in Wikimedia projects, 13% of survey participants reported having experienced sexual harassment. When inquiring on the context or motives for the episode of harassment, 57% of respondents reported having experienced harassment for how they express their gender in the 12 months prior to the survey request. 51% reported having experienced harassment for their gender, and 41% reported having experienced harassment for their race or ethnicity in the same time period. That can suggest a pattern of hegemonic normativity in the direction of harassment.

The prevalence of harassment is an alarming situation that needs to be addressed appropriately. Unfortunately, this is not the case as perceived by the community of editors that are being targets of harassment. Findings suggest that 75% of respondents found reporting harassment or attacks to

chapter or affiliate staff in the last six months not at all useful. 77% indicated the response was not at all useful when reporting to Wikimedia Foundation staff in the same time period. For details on findings see Figure 4.20.

### **Figure 4.20**

#### Selection of Key findings from Community Engagement Insights 2016-17 Report

- Of all survey participants, 49% indicated they avoided Wikimedia projects at least one day in the past month because they felt unsafe or uncomfortable.
- 19% of all survey participants reported that they have avoided twitter for at least one day in the last month because they felt uncomfortable or unsafe in the space.
- Of all survey participants, 26% have avoided Facebook at least one day in the past month because they felt unsafe or uncomfortable
- Of all survey participants, 19% indicated they have avoided another space not listed at least one day in the past month because they felt unsafe or uncomfortable
- 13% of survey participants reported having experienced sexual harassment on the Wikimedia projects online.
- Fifty-seven percent of survey participants indicated in the past 12 months they have sometimes, often or

almost always been attacked because of how they express their gender.

- Fifty-one percent of survey participants indicated in the past 12 months they have sometimes, often or almost always been attacked because of their gender.
- Forty-one percent of survey participants indicated in the past 12 months they have sometimes, often or almost always been attacked because of their race or ethnicity.
- Of the people who reported harassment or attacks to chapter or affiliate staff in the past six months, 75% indicated the response was not at all useful.
- Of the people who reported harassment or attacks to Wikimedia Foundation staff in the past six months, 77% indicated the response was not at all useful.

In their online paper *Editing Diversity In: Reading Diversity Discourses on Wikipedia* (2016) authors Maggie MacAulay and Rebecca Visser work with the framework proposed by Ahmed in *On being included* (2012) to offer a critical perspective on audit cultures arguing that “these regulatory and accountability systems make institutions so aware of the possibility for audits that they become more concerned with achieving numbers than improving systems”. They suggest that “quantifying diversity by counting the number of individuals coded as ‘diverse’ is an important institutional practice, with the language of metrics embedded in an audit culture (Power, 1994) used to ‘sell’ diversity as part of an organization’s branding and mission” (MacAulay and Visser, 2016). As they wrote:

If the WMF defines harassment as a behavioral issue and proposes individual-level changes such as software improvements and administrator training while Wikipedia's structures and norms remain unchallenged, then efforts to adequately deal with the sexism women editors experience online will only produce limited effects. But if the WMF is willing to take seriously the feminist argument that the problem is partly rooted in the ways in which women's experiences and ways of knowing are devalued in a patriarchal society—not only through 'negative attitudes' but also through the androcentric bias of Wikipedia itself (Reagle, 2013)—then perhaps more long-term and sustainable changes are possible. (MacAulay and Rebecca Visser, 2016)

In the specific context of Wikipedia, MacAulay and Visser expose the problem of considering harassment as a behavioural issue without challenging structures and norms. They frame this practice of measuring experiences of harassment in the context of audit cultures, arguing that these cultures are offering a limited effect. To achieve long-term significant change, the Wikimedia Foundation needs to seriously address androcentric bias and acknowledge that the problem is “partly rooted in the ways in which women's experiences and ways of knowing are devalued” (2016). This devaluation in the context of Wikipedia normative schematic templates for memory building can be explained by the *Disrupting Participation Hypothesis*: The event in which a collective memory oppresses underprivileged communities and enhances the status of hegemonic communities by means of interpellations or speech acts, specifically when these modes of address take the form of humiliating, patronizing, threatening or hateful speech.

#### **4.3.3 The Disrupting Participation Hypothesis in Wikipedia**

Hirst and Yamashiro wrote about social aspects of forgetting stating that although there is an agreement on the role of collective forgetting in enhancing the social bonds within a community, it is worth considering how “a collective memory might oppress some within a community and enhance

the status of others” (Hirst & Yamashiro, 2018:78). The authors also explored how forgetting promotes shared forgetting within social groups, but not across social groups because of the socially sensitive nature of human memory. That is, it may be worth considering user experience in the context of community experience to be able to infer and evaluate mnemonic silences in dialogue with the idea of prior knowledge and schematic narrative templates.

In that regard, Ford and Wajcman (2017:1) noted that “Wikipedia’s origins and the infrastructures that it relies on are based on foundational epistemologies that exclude women, in addition to other groups of knowers whose knowledge does not accord with the standards and models”. Those standards and models, which I understand to be a product of hegemonic normativity and systemic bias, contribute to inhibit non-hegemonic communities from participation, remembering, and collective memory building. In the context of Wikipedia I argue that a collective memory that results from sexist and colonial contexts and practices, is oppressing underprivileged users and their memories, and enhancing the status of those that reinforce hegemonic and normative narrative schematic templates. This oppression is facilitated by know-it-all users that express misogynistic infopolitics and epistemological denial in the form of interpellations that inhibit the participation of underprivileged users, such as women, queer folks, POC etc., whose experiences and ways of knowing are devalued. When interpellations take the form of humiliating, patronizing, threatening or hateful speech, they may disturb, disrupt and/or inhibit the participation of those targeted -in this case, women and subaltern communities- what I define as Disrupting Participation Hypothesis.

Here I depart from the idea of disruption proposed from cognitive science perspectives, that focuses solely on performance (if recall and remembering has been achieved) to propose a perspective that focuses on the felt experience of remembering. First, I transform the noun “disruption” into an

action, “disrupting”, and then I question what was done, and what happened as a result of such interactions. My proposal is that strategies for remembering manifested through schema consistent normative templates are disrupting -in the sense of interrupting or interfering with- the participation of women and underprivileged communities. But also that women and underprivileged communities are experiencing a disrupting participation -in the sense of perturbing or distressing- while interacting, that prevents them from engaging in meaningful efforts of meaning making and memory building. In terms of the felt experience, Butler wrote that “to be addressed injuriously is not only to be open to an unknown future, but not to know the time and place of your injury, and to suffer disorientation of one’s situation as the effect of one’s speech” (Butler, 1994:4). To be addressed injuriously is disrupting because injurious speech is a form of violence that may lead to a disrupting situation: disorientation, but also inhibition, loss of context, loss of participation, loss of collective memory.

Design Justice perspectives advise us to interrogate the ways in which the design of objects and systems influence the distribution of harms and benefits among different groups of people. For that reason it is relevant to interrogate the implications for design of the call for participation of women and underprivileged communities in Wikipedia, considering that, as I have described before, Wikipedia’s space, policy, structure and code was never designed to be a safe space for the collaborative remembering of users of subaltern status. I have offered numerous instances in which underprivileged users have expressed the context and reasons that led them to stop participating, but there is one example of a conversation that illustrates disrupting participation experiences in multiple time spans of UX providing a comprehensive example of the issue at hand. In 2011 in the Geek Feminism Blog a user posted a text that was a call for participation in Wikipedia. The text was named “I’m a woman, and I’ve edited Wikipedia” and in it the user wrote the following words of encouragement: “Go for it, ladies. Be bold.” As

a result of that post, a few users responded in the comment with very valid concerns.

One commenter (Vaurora) expressed concern about the risks of encouraging women to be bold in a space where they can be subject to hostile and violent interactions without adding any advice on how to navigate such interactions. She adds on a description of her cumulative experience, where the recollection of multiple periods of interactions in Wikipedia has lead her to stop participating in the project:

Vaurora: “If you address specific factors and give concrete advice on how to overcome them, I feel comfortable with a concluding “Just do it!” But otherwise, you’re perpetuating the idea that the fault lies in the women themselves – some insufficiency of personal moral capacity or laziness or weakness. I know why I don’t participate in Wikipedia. My personal biography has been deleted a minimum of 5 times – which is not the problem. The problem is that I started supporting deletion of it the second time around because of the incredibly sexist and nasty things that male editors always added to my page within a few days of its creation (when they aren’t making incredibly sexist and nasty comments on the Talk page in favor of its deletion). Women aren’t participating in Wikipedia for extremely good and valid reasons, having everything to do with the men who are participating in Wikipedia driving them out. Let’s not perpetuate the idea that women themselves are somehow responsible for their own exclusion” (comment in response to the blog post “I’m a woman, and I’ve edited Wikipedia” published in Geek Feminist Blog, 2011)

In terms of implications for design, another comment (The EGE) expresses how participation can also be disrupting if restricted by exclusion. In this particular instance the user is identifying spaces where it is safe to participate and spaces where is best not to participate.

The EGE: “I edit religiously. Not quite addicting, but for me it’s a reward for getting my homework done. It’s very easy to get caught up in edit warring and edit count dick-sizing contests and forget what the real point is: to assemble as much human knowledge as possible. It’s why I mainly stick to the backwaters of the project – obscure train

stations, copy-editing and coding, stuff like that. I've added geographic coordinates for over 60% of Connecticut articles missing them – over 200 articles so far, with over 300 sets of coordinates – and that's my pride and joy. It gives me a feeling of accomplishment, knowing that maybe someday someone will derive some benefit from my work.

I encourage you to keep contributing. Don't let the bastards grind you down. And if you ever need help (coding, referencing, anything), don't hesitate to give me a ring. (comment in response to the blog post "I'm a woman, and I've edited Wikipedia" published in Geek Feminist Blog, 2011)

Restriction and exclusion are strategies to prevent a complete withdrawal from participation, but also a way through which they are avoiding what Ahmed coined as *inflammation as conversation*. In *An Affinity of Hammers* (2016) Ahmed reflects on how racism is precisely how a body of colour becomes the cause of tension, quoting black feminist author bell hooks in *Feminist Theory: from margin to center* (2000:56) when she writes: "the atmosphere will noticeably change when a woman of color enters the room" (in Ahmed, 2016:28). The learning that "you cannot stop an inflammation even if you begin to try to "tone things down" it is learned through material affects: "given that whenever you go, your body goes with you, it can end up feeling like you cause the loss of a good atmosphere. You become tense." (2016: 28)

In the context of digital episodic memories, it is possible that participation is disrupted before usage. The next comment represents an instance of anticipated UX that has resulted in disrupting participation: participation has been broken without the need for an unpleasant, frustrating interaction to be experienced by the user (Jen). Mirroring the experiences of other users, this commenter *finds herself thinking that* "it's impossible even to talk about rape culture on a platform such as Wikipedia which elevates the most mainstream position and dismisses all others" (Geek Feminism Blog, 2011)

Jen: “So after reading this article I was inspired to go look at the Wikipedia article on rape culture. I found the article to be rather short, with no mention of recent controversies such as Roman Polanski or Dickwolves or Michael Moore’s dismissal of rape allegations against Julian Assange, and the talk page contains a comment saying that rape culture is “contradictory” and that the article is “misandric”. I didn’t find anything in that short article that was either contradictory or misandric. So I started a conversation with myself about whether I should go in and improve that article, with the knowledge that I would have to fight against people who know nothing about the topic and are openly hostile to the idea that rape culture even exists, when this would take up time and energy I could productively use on other things, and... well, I’m leaning towards no. Because of the concept “rape culture” is fundamentally a challenge and critiques the mainstream point of view (otherwise known as the “neutral” point of view, although I personally don’t believe a “neutral” point of view exists, there are only majority views and minority views). So I find myself thinking that it’s impossible even to talk about rape culture on a platform such as Wikipedia which elevates the most mainstream position and dismisses all others.

I might still do it, I just worry that it could end up being a colossal, and frustrating, waste of time.” (comment in response to the blog post “I’m a woman, and I’ve edited Wikipedia” published in Geek Feminist Blog, 2011)

As seen in the examples listed above, *disrupting participation triggers* are the instances in which episodic memories about a particular environment, person or event lead to the disruption or inhibition of user participation. When those instances are targeted at communities outside normative schematic templates, they can lead to exclusionary practices, often legitimated by violence exercised through language. There are also implications for collective memory that those changes will involve: removing communities that do not fall under normative schematic templates from the conversation on memory building is another way of contributing to the citational chain that leads to the exclusionary practices that are being questioned in the first place.

In terms of the prevalence of hate speech in the future of digital conversation environments, Pew Research has recently surveyed more than 1,500 technologists and scholars about the question of public discourse online becoming “more or less shaped by bad actors, harassment, trolls, and an overall tone of griping, distrust, and disgust”. Results indicate that 81% of those surveyed expect the tone of online discourse will either stay the same or get worse within the next decade (Rainie et. al. 2019). The media outlet The Atlantic reported those survey results with a headline that leaves no room for doubt: “Trolls are winning the Internet”. In the article, the director of analytics at a social media marketing agency comments on the survey by concluding that “technological evolution has surpassed the evolution of civil discourse” (Adrienne LaFrance, 2017).

Perspectives of online discourse becoming more violent, and actors of violence becoming central to the discussion of online interactions urges us to think first about the distribution of harms, understanding that there are people behind data points experiencing real threats and harassment with material implications for their wellbeing.

#### **4.3.4 Understanding the politics of difference: “Your heart has to be ready to handle the weight of your calling”**

I want to close the body of this research with a very special memory that I treasure from the research journey. It was the time that I met DJ scholar Lynée Denise in Ann Arbor, Michigan, the spring of 2016. I was particularly excited to visit Ann Arbor because almost a decade before, while I was learning about the history of the fluxus art movement with my then very poor English, I mistook the city for a real woman named Ann. I assumed she was somehow part of the fluxus movement, and wondered why her artworks were never mentioned in any writing. Little did I know that years later I would visit the city to discuss strategies to mitigate the erasure of real women, whose lives and work were never cited in Wikipedia.

During 2015 and 2016 I directed the development of a prototype for an app aimed to assist in detecting and reporting bias on Wikipedia pages in order to promote the participation of women and underrepresented communities. I presented the prototype in Ann Arbor, at the FemTechNet conference on pedagogy, technology, and transdisciplinarity Signal/Noise that took place at the University of Michigan in April 2016. At the same conference I was really transformed by Lynné Denise's keynote speech on Organic Intellectualism, DJ Scholarship, Black Feminism and Erasure Resistance.

Lynné Denise was presented as someone whose work engages with underexplored topics related to the cultural history of marginalized communities, including underground cultural movements, the 1980s, migration studies, and electronic music of the African diaspora in the form of pieces that incorporated music, archival video and found sounds remixed into historic poignant and moving sonic portraits. In her dialogue with FemTechNet movement leader Marla Jaksch, she talked about music as a cultural and historical record of black culture, because no other kinds of historical record were ever allowed to be produced from the epistemological standpoint of the black African diaspora. She described how rap was the first step of her journey into becoming a DJ scholar. Rap, rooted in sampling cultures, pointed her towards her parents' record collection. It was a process of learning genealogies and rap lyrics, and experiencing the music and the culture, where episodic and semantic memories were activated. She recalled "holding all these rap songs in my head" until becoming a living body-archive of sonic culture.

Later that day I ended up sitting with her in the corridors of the conference venue, waiting for her car ride and talking about her remix practice, archives and archiving. I discovered that she had created a commissioned mix, a soundtrack, celebrating the American author bell hooks for her "commitment to education, activism, radical openness and feminist scholarship" (Lynée

Denise Website). The mix was accompanied by an essay that I thought was speaking directly to me about the unlearning that needed to be done in Wikipedia, and the nasty task ahead that was calling for me to go fully into autoethnographic mode:

“Your heart has to be ready to handle the weight of your calling,” is what she said casually over Korean BBQ, and for this reason and more I grew up reading bell hooks. ‘Sisters of the Yam: Black Women and Self-Recovery’ was my first dance with her mind. In it she taught me how to identify the ways that patriarchy, white supremacy and global capitalism threatened humanity’s well-being. More specifically, she challenged me to examine the ways in which our own families replicate models of oppression, sometimes trumping the need, or the awareness of the need, for self-care. bell hooks called on me to think critically as a strategy to heal from social and emotional trauma, a task that would require a lifetime of unlearning” Lynnée Denise “Soulful Critical Thought: bell hooks and the Making of a DJ Scholar” (2014)

That same year in March, in the context of the news coverage of 2016 women's day, I collaborated with VICE magazine in Spain, a global media outlet focusing on arts, culture and news topics. I wrote a piece for them about the events that some members of the Wikipedia community were scheduling during the month, and interviewed movement leaders at Art+Feminism, a global campaign to improve coverage of cis and trans women, gender nonconforming people, feminism and the arts on Wikipedia, and to encourage editorship. In that interview Art+Feminism founders stated that one of the challenges the Wikimedia Foundation faces is that ‘it cannot dictate what the community does. “The Wikimedia community is an autonomous self-governing online society. Change is slow, as the community continues its own inertial path, producing conflicts like the Arbitration Committee’s controversial Gamergate Controversy decision” (Delatte, 2016). The Gamergate Controversy was a very serious harassment campaign that involved extreme harassment such as doxxing, rape and death threats, attempts to hack personal accounts etcetera. The harassment campaign was aimed at women in the videogame industry and took place between 2013

and 2014 primarily accompanied by the use of the hashtag #GamerGate. Discussions on the Wikipedia page describing the incident ended up the “Online encyclopedia’s highest court votes on more than 10 editors deemed to be breaking the site’s rules amid Gamergate controversy”, as reported by The Guardian, and banning feminist editors from gender-related articles (Hern, Alex., 2015).

The following year I returned home to Barcelona after a three year period in the UK, and had my feminist network and support system back. Inspired by the work on erasure resistance of Lynnée Denise, the political organizing of Art+Feminism, and a desire to be able to better understand and narrate and explain what has been referred to as the *asshole consensus* in Wikipedia (Peake, 2015), I began editing and organizing edit-a-thons myself. I was empowered by three premises: as a journalist I know how to navigate sources, as a researcher I know to find literature, and as a person that reads, speaks and writes in three languages I was going to be able to contribute to interrogating the experience of participation across chapters. Not to mention my natural predisposition to experience *all things digital*.

Peake (2015) wrote that in the tradition of phenomenologically-oriented sociology and anthropology (Schutz, 1967; Bourdieu, 1977), he was using his own body in, and experiences with “the process of writing campus sexual violence into Wikipedia as the site for analysis of misogyny and online knowledge culture”. In a very similar way, I have used my body in, and experienced with, the process of writing about women, queer people and POC on Wikipedia, inquiring on the platform and the movement as the site for analysis of the ways that patriarchy, white supremacy, colonialism and global capitalism threaten humanity’s well-being. And to examine the ways in which Wikipedia replicates models of oppression by means of the speech acts that are in, or result from, their structure, policy and code.

According to Creswell, a holistic view of how a culture-sharing group's works results in ethnography. An in-depth study of a bounded system or a case (or several cases) becomes a case study (Creswell, 2016:77). The present study has not relied solely on one or the other. I made use of different techniques of both that have been useful in the different stages of the research.

In terms of validation, Creswell also wrote how in *Getting Smart: Feminist Research and Pedagogy within/in the Postmodern* (1991), Patricia Lather identifies different types of validation. One that I have attempted is the catalytic validation (which energizes participants towards knowing reality in order to transform it) (Creswell, 2016:247). In *Four frames of validation* (Lather, 1993) the terms used by the author became more closely related to my research journey. Creswell describes the "fourth frames of validation as follows: The fourth type is situated, embodied or *voluptuous* validation, which means that the researcher sets out to understand more than one can know and to write toward what one does not understand (Creswell and Miller, D. L., 2000:124-130). In that sense, even though I have presented results of those ethnographic experiences in the context of feminist safe spaces where I have been invited to speak, such as conferences, it is important to stress that I have not been capable to write in the present text most of the experiences of harassment that I have experienced both on social media platforms such as Facebook or YouTube, and in digital projects for memory building such as Wikipedia.

These experiences of suffering and participation disruption, although missing from the manuscript, are archived on the Internet, on my computer, and on my body.

# chapter V

## CONCLUSIONS

### HOW TO DO THINGS WITH DESIGN JUSTICE

#### 5. Suffering and healing while remembering together with ubicomp

Digital conversational environments represent a new setting for the study of collaborative memory building where we can find signs of both networked abuse and solidarity. While it is important to focus on UX research and design practices that promote benefits amongst different groups of people, such as solidarity practices, it is also urgent to interrogate the implications for design in the context of ubicomp that are facilitating and allowing harmful practices, and engage in meaningful efforts to mitigate them.

In that regard, Genevieve Bell (2011) identified the question of *implications for design* as a pattern emerging from ubicomp literature, and detected a misuse of ethnographies as a tool to extract data with which to provide insights to answer the question of implications. From Bell's perspective, the methodological view was marginalizing theory (2011:66). I consider the question of implications for design of language to be essential in the context of UX design and research, and I have addressed this question centering the role of theory from an interdisciplinary approach as a way to acknowledge its complexity. In that regard, in my research I contribute to the discussion with a proposal for the *Disrupting Participation Hypothesis*, where I bring feminist

perspectives into inhibition theories in order to problematize how gender gaps of participation are being addressed in digital conversational environments.

Bell also urges to make room for the social and the cultural and to approach ubicomp as a “sociocultural object, both in its artifacts and practices” (2011:46). In that sense, the misuse of the ethnographic enterprise as a tool for extracting data from settings that would eventually provide insights with which to answer the question of implications for design has proven especially problematic when dealing with issues of diversity and inclusion. In *On being included* feminist scholar Sara Ahmed wrote that “If we merely extract data, the measure of good performance will show, masking the fact that when equality and inclusion becomes another performance indicator, it cannot be treated as outside of the disciplinary regimes” (Ahmed, 2012:85). In *The non-performativity of anti-racism* (2006) Ahmed developed a new approach to texts that she called ‘an ethnography of texts’ to explore the non-performativity of the term diversity, by asking “what does diversity do” when it is put into “action” (2006:5). In the article she defines some acts as non-performative when the failure to do what they say is not a failure of intent, but what the speech act is doing. In that sense to track what texts do, we need to follow them around (Ahmed, 2006).

Following around “what does diversity do” when it is put into “action” in Wikipedia, a site that claims to gather “the sum of all knowledge” I conclude that some failed efforts can be analysed in terms of power dynamics, not as a failure of intent, but what the community is doing by means of speech acts. That happens when powerful and large clusters within the Wikipedia community do not want to include the sum of all knowledge, even if there is an acknowledgement about gender gap of content and participation. In that event the failure to address the gender gap is not a failure of intent on diversity, but a success in maintaining hegemonic standards of normalcy and value. Those standards of normalcy are passed from generation to

generation because they are embedded in collective memories, and manifested in language and behaviour. An example of those standards of normalcy are assumptions of womanhood and manhood, where to utter “it’s a girl”, or “it’s a boy” entails the activation of a citational chain validated by an entire linguistic community. The language of normalcy that has very material implications in relation to how bodies are constituted, and how collective memories are maintained.

In that regard, Internet scholar Terri Senft suggests that it is only when we understand combinations of individual vision and social touch “as both personalized sensation and the result of social, machinic and biological forces, we move from the space of phenomenology to the framework of ethics, in which we find ourselves moving away from the question, “what does this represent?” and towards the question, “What is this doing to us, and how are we responding?” (Senft, 2015). The main contributions of my research have been organized following this move.

The first half of the thesis lays out a broader picture: setting the landscape of debates and theories about memory, knowledge, digital culture, and new approaches to UX design and research that suggest a multidimensional reach. In chapter three “Remembering together in connected environments” I depart from a phenomenological approach to frame the experience of remembering in a new setting where we went from remembering by ourselves to remembering together in connected conversational environments. Adding on feminist theorizing on cognition approaches, I have proposed a reconceptualization of transactive memory management practices, but also a proposal for a design model for building and evaluating safe/brave spaces. This theorization is initially proposed at the end of the first half of the thesis and developed in the second half of the thesis, where I keep testing the hypothesis in the specific context of Wikipedia. To that end, in chapter four “How does it feel when remembering together in connected environments” I interrogate the barriers for participation of women and

underprivileged communities co-existing with hegemonic communities in spaces where schematic templates of normalcy and universal design operate. I do so by gathering all relevant previous literature on the Wikipedia gender gap to achieve a sense of summary and agenda setting, following the work done by Bardzell's pivotal paper "Feminist HCI: Taking Stock and Outlining an Agenda for Design" (2010), and centering design theory and practice around the agenda of the Design Justice movement, that is to challenge structural inequalities while actively avoiding to reproduce them.

I suggest that asking "what was said", "what was meant", and "what happened as a result, as suggested by the Austinian framework for the analysis of speech acts and adding the perspective of Feminist Standpoint thinking, can give an appropriate set of tools to interrogate implications of that move, in the event of speech acts that are harmful to vulnerable communities, such as instances of hate speech in online spaces. Running with the analysis of felicity conditions I have framed Senft's question to understand how the user experience of participation is affecting the formation of collective memories in the context of online conversational environments.

J.L Austin named perlocutionary acts those that produce a certain effect as their consequence, which I understand can be taken as a sort of implication for design of language as a sociocultural object. In the context of hate speech, the threat and violence takes place in language, the threatened act as an experience takes place in the materiality of the body, being that experience enabled by online or offline environments. Building from Butler's work, a critical approach to establish implications for design has been undertaken through the entire research, having in mind that practices of disidentification from the normative schematic templates "can facilitate a reconceptualization of which bodies matter, and which bodies are yet to emerge as critical matters of concern" (Butler, 1993:4). In other words: such collective disidentifications can in turn create new felicity conditions for

citational practices, conditions that need to be established by what the Spanish author, scholar and curator Paul B. Preciado calls *somato-political* protest movements (2011). We have seen this happen to many words such as *butch*, *queer*, or */\** whose history has a legacy of degradation that was reverted once *somato-political* movements such as the LGBTQI+ movement and the disability justice movement started transforming the meaning by means of changing the practices and context of use.

During the research process I have searched for what Morse and Richards (2004) described as “methodological congruence”, which means that “the purposes, questions, and methods of research are all interconnected and interrelated so that the study appears as a cohesive whole rather than as fragmented isolated parts” (Creswell, 2012: 39). In that regard, although interdisciplinarity has been a necessary challenge in order to provide a hollistic view with which to answer the main question of implications for design, keeping a feminist approach has enabled both to maintain methodological congruence and to ensure the user-centred focus.

Interrogations resulting from the question of implications for design, such as those shown in Figure 5.1 are summarized in the following sections as conclusion to the preceding body of research.

### Figure 5.1

Interrogations resulting from the questions of implications for design answered as conclusions to the preceding body of research for methodological congruence

- 1) How does it feel when we remember together on-line? And who gets to say what it is worth to be remembered?
- 2) How can somatopolitical protest movements (Preciado, 2011) articulate conversational networks of solidarity and knowledge building in archives of vernacular creativity (Burgess, 2007)?
- 3) How should we manage triggers and collaborative inhibition in the context of transactive memory management practices?
- 4) Which protocols or theoretical design models may be appropriate to build and maintain safer and braver spaces for collaborative remembering in digital archives?
- 5) What is online misogyny doing with and to us, and how are we responding? (Adapted from Senft, 2015)
- 6) How does a culturally constituted body enact community rules, beliefs, rituals, and power dynamics through ubicomp's new spaces? How are places (re)configured as a result of ubicomp to enable such performances? (Bradzell, 2010: 1305)
- 7) How do we simultaneously serve real-world computing needs and avoid perpetuating the marginalization of women and indeed any group in technology? (Bradzell, 2010: 1304)

## **5.1 We are building and validating the collective memories of the asshole consensus**

In the present research I have employed methodological and analytical frameworks of critical user experience (UX) research as an instrumental path to move towards a framework of ethics. An example of critical UX is the theory and practice of Design Justice, which focuses on outcomes of the design rather than the intentions of the designer. There is also a will to acknowledge the multidimensional reach of UX, and for that I have addressed several areas, such as the design and construction of digital archives, the idea of the body as an archive of experiences, and the relationship of all these to the cognition and memory theories in connected environments. In all that reach I have taken into consideration the implications of bias and harassment in online spaces as participation inhibition triggers. That is summarized in the questions: How does it feel when we remember together online? And who gets to say what is worth to be remembered?, that I have explored in a series of case studies and observations focusing on the digital infrastructure, policy and practices of the Wikipedia community.

To inform those questions, Peake's paper *WP: THREATENING2MEN: Misogynist Infopolitics and the Hegemony of the Asshole Consensus on English Wikipedia* (2015) has been essential to problematize the misogynistic infopolitics of consensus on Wikipedia. Peake writes how the use of his experience on documenting and providing resources on campus sexual violence reveals that in Wikipedia "misogynist infopolitics dictates that "factual information" is information pertaining to, but not threatening of, a sense of masculinity that is situated in a social world that extends beyond the confines of Wikipedia (2015). I have questioned the implications of the misogynist infopolitics of the *know-it-all user* for collective memory building when operating in transactive memory systems, and the means through

which these practices work as an extension of the battle that is manifested through the control of language.

To understand how power dynamics enabled by language operate within the community of Wikipedians, first, it is important to understand how this power can be earned and exercised. In that regard, practices such as 'wiki-lawyering' are being used to show authority and literacy in Wikipedia policies. This practice is a power dynamic played against other forms of expertise in knowledge production (Peake, B., 2015). However, one of the most relevant forms of power is still exercised through the practice of consensus. In such a monolithic community, consensus is being enforced by a 'regime of truth' (of normalcy) that establishes factuality, notability, neutrality, and relevance, so regulations on that matter can be enforced, maintained, and unchallenged by the majority of individuals in the linguistic community. Consensus is what binds and validates what is worth inclusion and what is worth forgetting.

Of all the instances of problematic consensus that I have compiled in the manuscript, perhaps one of the most relevant is the resistance to acknowledge Marielle Franco. The Wikipedia page about Brazilian politician, feminist, and human rights activist Marielle Franco was deleted multiple times arguing a lack of notability and relevance. Only after she was killed on March 14th 2018 was it possible to reach consensus on reinstating the previously deleted page. In an article named 'The Life and Death of Marielle Franco on Wikipedia' Adele Vrana from the *Whose knowledge* collective wrote about this deletion process, and how in that particular instance the silencing and invisibilization was imposed by a group of six editors that decided Marielle Franco's life and achievements were irrelevant.

In the context of implications for the design of Wikipedia policy and structure, the gender gap of content can be read as a mnemonic silence, or what happens when a memory is not expressed. That mnemonic silence may be

facilitated by the gender gap in participation. Research on gender diversity mapping in Wikipedia undertaken by Rosie Stephenson-Goodknight (2017) identifies the most challenging policies for gender equality as standards of notability, neutrality and reliability. Those are policies that can trigger a process to delete a Wikipedia page by means of voting and consensus through discussions. In the specific event of deletion discussions, and because the nature of Wikipedia decision making is through consensus, the gender gap of participation becomes a critical shortage.

Reading all that into practices of collaboration such as transactive memory practices, it is worth questioning what those kinds of infopolitics can do to what it is called *metamemories*. Wegner reviewed that, according to Flavell and Wellman (1977), and Nelson and Narens (1990) our directories for memories held by others can be thought of as *metamemories* (meaning memories about memories), these memories are not judgements about our own memories, but about the memory of others. According to Wegner (1995), “we may know that others know something without knowing it ourselves. The question then becomes: How do we know they know it?” (Wegner, 1995:326). Literature has already established how people use gender stereotypes to infer the relative knowledge of others, and how those assumptions have the potential to influence the division of knowledge responsibilities in transactive memory systems (Hollingshead and Fraidin 2003). In this context, the question “How do we know we *do not* know it” becomes relevant. In that regard, I warn about the figure of what I called the “*know-it-all*” user and its endangering implications for memory building in Wikipedia, a figure that operates under harmful schematic templates of normalcy and value. The role of users that act as patrollers monitoring new pages has been diagnosed as especially problematic. In an editors gathering organized in the context of the Barcelona Science Biennale in 2019, participants recommend that the quota of users that act as patrollers of new content be reviewed according to logics of knowledge production and reproduction, in opposition to the logics of meritocracy linked to the number

of total editions in Wikipedia. An example of this recommendation is that a person who has no knowledge of anti-racism cannot decide on the relevance of anti-racist content, which can effectively challenge the schematic templates of normalcy being reproduced on the platform.

Wertsch (2002) in *Voices of collective remembering* proposed the notion of *narrative schematic templates* after observing the differences in retelling World War II coming from different national and cultural contexts. Hirst & Yamashiro (2018:83) in their review of Wertsch (2002) add on suggesting that it is interesting to focus on what is left out of schema consistent narratives. In their chapter Hirst & Yamashiro (2018:83) concluded that “the role of meaning and schema [...] bolsters the formation of collective memory which can in turn facilitate social binding, shape collective identity, and guide collective action. The schemata that guide remembering and its counterpart, forgetting, are consequences of past experiences and are often shaped by society”. If normative schematic narrative templates have the potential to guide social action, it may be worth considering how schema consistency, passed as an aspiration of neutrality, informs consensus in monolithic communities with large participation gaps, such as Wikipedia. But also how this issue can be addressed by challenging the reproduction of normativity by means of identifying a false logic of neutrality that is erasing and othering entire knowledge systems.

I frame this aspiration of neutrality in the context of the systemic bias held by the community of editors and policy designers, to indicate how hegemonic normativity is instrumental to validate neutrality claims. For the same reason, I problematize how ideas such as “universality” and “neutrality” rely on socially validated citational practices. Such practices are based on systems of categorization and schematic default narratives which are in turn based on normative socially agreed-upon standards.

Lennard J. Davis (1995) wrote about the construction of normalcy and value from the perspective of disability theory. Davis argues that the idea of normalcy and the “normal body” was constructed in colonial Europe over the period of 1840-1860, following a movement that started with the use of medical statistics in the UK and France. He also wrote that almost all early statisticians were eugenicists in favour of enforcing normalcy by means of selective breeding. What started in the 19th century as selective breeding, continued throughout the 20th century; following a path of identity degradation, erasure, and participation disruption of all bodies and identities that were considered abnormal. This path of identity degradation, enforced by colonial and hegemonic power structures, is profoundly embedded in European and western cultures of privilege, normalcy and value. In the context of Wikipedia’s design policy and structure, the assumption of neutrality required to participate is being widely contested, as knowledge building is a profoundly ideological process.

I have observed how the potentiality of schematic narrative templates of normalcy did guide social action in a request for adminship discussion in Wikipedia, where knowing that an editor was genderqueer followed the rejection of their validity as administrator. The rejection was preceded by antagonizing in the form of harassment, that in turn triggered the very material effect of unsafety for genderqueer bodies as a result. From studies on collaborative remembering, we know that, in terms of the social aspects of forgetting, “a collective memory might oppress some within a community and enhance the status of others” (Hirst & Yamashiro, 2018:78), and in this particular instance, normative schematic templates in Wikipedia policy and consensus culture have facilitated the oppression of a genderqueer individual while enhancing the status of harassers by means of the legitimation of transphobic consensus practices.

As Bruno Ambrose acknowledges in his paper on speech acts and the internet, written speech depends on institutional conditions and authority, such authority must last over time and depends on the perpetuation of the institutional and social conditions that guarantee the validity of the procedure through time (2015). In their paper *Everyone can edit, not everyone does: Wikipedia and the gender gap* authors Ford, H., & Wajcman, J. (2017:10) wrote about how authority is performed in the context on Wikipedia by means of literacy on digital speech acts that are both object of policy<sup>18</sup> and code. They also stated that, being policies such an important element for social interaction in Wikipedia, they have turned into a resource for learning about editing, while establishing a social convention that regulates behaviour. Also, the complexity of policy use and application has implications in terms of user participation, as it is often the only means by which one can influence representation. This shows a clear connection between Wikipedia policy design and the politics of representation that inform the gender gap of content and participation.

## **5.2 The feminist politics of networked solidarity have the power to reverse normative and harmful schematic templates**

In terms of epistemological and ontological foundations for the contribution to knowledge, I have also built from feminist standpoint thinking practices to add to the questions of which bodies come to matter (Butler, 1993) in the context of the Internet ecology, and how somatopolitical protest movements

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<sup>18</sup> Ford & Wajcman wrote that Wikipedia's content policies are centered around three core principles: neutral point of view (NPOV), no original research (NOR), and verifiability. NPOV demands that articles should be written without bias, by fairly and proportionately representing all significant views. The 'no original research' policy requires that Wikipedia editors do not publish original thought, and the verifiability policy determines that all material challenged or likely to be challenged must be attributed to a reliable source (Wikipedia: Core content policies, 2016 in Ford, H., & Wajcman, J. (2017:9).

(Preciado, 2011) can articulate conversational networks of solidarity and knowledge building in archives of vernacular creativity (Burgess, 2007) by operating under protocols for safe space management and maintenance.

In *Living a Feminist Life*, Ahmed wrote that “queer and feminist worlds are built through the effort to support those who are not supported because of who they are, what they want, what they do” (2016:48). In that sense the Geek Feminism community has provided a consistent effort in supporting underprivileged communities in geek culture since the project started in 2009. The Geek Feminism community has two contributions that have had a significant impact in terms of use and implementation. One contribution is their set of anti-harassment policies, editorial guidelines and code of conduct, that have been adopted by communities and projects. Another relevant contribution is their documented timeline of sexist incidents in geek communities.

As a reaction to the timeline, in August 2009, in the discussion page Talk:Geek Feminism Wiki, a commenter asked if documenting sexism would be damaging for the community, arguing that women could feel reluctant to participate as a result of encountering the documented list of incidents. Responding to the inquiry about the possibility of harmful implications for participation that could result from such listing, contributor Mary Gardiner responded with a piece called ‘Why we document’ that was published originally on the Geek Feminism Blog the summer of 2009. In that piece Gardiner reflects on the importance of being able to answer the question of whether geek women have problems and why. From her perspective, documenting sexism is helping other women build solidarity networks because “geek women were talking about it and had got together and got each other’s back”. Documenting sexism does not damage a community, because sexism is what is damaging the community. Here, documentation and archiving is an act of feminist solidarity. In that regard my research acknowledges the importance of documenting. I have followed the legacy of

geek feminism wiki and wrote the story of people harmed by sexism, transantagonism and racism in Wikipedia, but also the story of networks of solidarity and resistance that have paved the path for many of us to exist and resist in digital spaces, and that we will continue to pave so all of us can thrive there too.

In a recent research on gender diversity mapping Rosie Stephenson-Goodknight identified important themes that identify challenges and potentials, such as that among vulnerable communities there is a feeling of isolation, and also a feeling of solidarity, and women and others users from vulnerable communities are still learning how to tell their story (Wikipedia Diversity Conference 2017 via YouTube). As we all learn, I stress the importance of shifting focus away from exclusively tech-building and into problematizing how language in the context of technology devices and platforms shapes our experiences, by means of both user interpellations, but also platform policy, and content guidelines.

### **5.3 Managing triggers and collaborative inhibition in the context of transactive memory practices**

Bell suggested that if we have learned something about all the different stories on computing, it is that “most technology does not end up in the hands of the people it was anticipated for, doing the work it was anticipated to do” (2015:18). This is what is understood as user-led innovations, being the trigger warning practices in social media platforms and one that I found especially relevant for transactive memory management practices.

Geek Feminism Wiki, has a specific page describing trigger warnings that is particularly interesting because it frames trigger warnings as a user-led product of UX design proposed to improve the experience of vulnerable communities. It does that by means of preventing “unaware encountering of certain materials or subjects for the benefit of people who have an extremely

strong and damaging emotional response (for example, post-traumatic flashbacks or urges to harm themselves) to such topics. Having such responses is called "being triggered" (Trigger Warning, Geek Feminism Wiki, n/d). I have observed inhibition triggers operate in critical cases of damaging response, but also in a more quotidian level of normalized violence such as name-calling. This is why I argue that collaborative inhibition can also be explicit when inhibition triggers activate it, as I have developed in depth in the Disrupting Participation Hypothesis.

Personal stories shared by other users, but also hostile virtual speech acts - such as name-calling, public humiliation, threats or sexual harassment among other practices observed in the behaviour of online communities- have the potential to become inhibition triggers for users from communities placed outside the center of hegemonic standards (considering here the hegemonic default-user as white, cis-heterosexual male, abled, educated and from the global north). Which leads to what I have identified as transactive memory user-led innovation via reappropriation of the term (trigger).

In the chapter devoted to memory practices, I have discussed the logic under which, if @mentions can operate today as a tool for assigning memory items to group members (information allocation) ideograms and other artefacts such as reactions, trigger warnings and content warnings may also enable communities to assign reactions to memory items (Critical feedback). Critical feedback is a way to prevent inhibition in transactive memory practices by means of providing a strategy for planning how to find memory items in a way that takes advantage of *who knows and feels what*, preventing interactions or content that can be harmful for some members of the community, and therefore ultimately celebrating the participation of vulnerable communities by creating safer and braver spaces for remembering.

The trigger warning guide - a collaborative project to define and catalogue triggers, now on hiatus but still online - defines a trigger or content warning (TW and CW) as practice “used to warn people of content that might elicit a strong or potentially harmful emotional response”. According to the statement on the site it can be noted that the community consider content warnings as potentially “less harmful or threatening (or more broad) than trigger warnings, but the severity of response varies” (Shannon Frey and Nicole Stark’s, Trigger Warning Guide on Tumblr, 2012-ongoing). TW and CW started as a customary practice in feminist online communities and in other digital “safe spaces”.

I found that trigger warnings and content warnings in the context of digital communities are not just a transactive memory user innovation/aggregation/variation but also a user-led product of UX design. Digital trigger warning practices include first the shortcut CW or TW followed by tags that inform the topic that can hurt people (for example: eating disorders, rape, self-harm, etcetera). As I illustrate in Figure 3.29 on page 157, by means of utilizing space and dots, users hide potentially harmful messages from vulnerable users, that at their own informed choice can decide to access the content or not, depending on the context. In the specific example that I have chosen to illustrate the technique to hide potentially harmful content, the user is discussing periods and free bleeding. In another example a user is asking for the community to start using trigger warning tags when discussing food related content. Here, the transactive memory is not only taking into consideration what users know, it is also taking into consideration what users feel.

There are also other interesting transactive memory user innovations involving strategies to maintain safe spaces, for example, silencing hostile users, not listed in the present research but shown in page 158. The set of standards presented here, aims to mitigate collaborative inhibition and provide better experiences to underprivileged communities, this can be

utilized as a user evaluation tool for designers to interrogate the kind of experiences that their design choices are enabling, that I have developed into a proposal for the Ana Mendieta protocols, summarized in the next section of the conclusions.

## **5.4 The Ana Mendieta Protocols**

In 2004 feminist scholar Sandra Harding edited a volume with a collection of articles and essays focusing on the intellectual and political controversies of Feminist SPT which included an essay by black feminist scholar bell hooks that reflects on her relation with language, and the relationship of language with memory. The piece "Choosing the margin as a space of radical openness", that was first published in the late eighties (1989:15-23), departs from a lived and embodied experience to claim that language is a place of struggle. She wrote: "To me, the effort to speak about issues of "space and location" evoked pain. The questions raised compelled difficult explorations of "silences" - unaddressed places within my personal political and artistic evolution. Before I could consider answers, I had to face ways these issues were intimately connected to intense personal emotional upheaval regarding place, identity, desire" (2004:153). This is an embodied experience intimately connected to personal and autobiographical memories that urges to reclaim safe spaces for personal and collaborative remembering, as hook words it: "spaces where one is able to redeem and reclaim the past, legacies of pain, suffering, and triumph in ways that transform present reality" (2004:155).

From a collaborative memory perspective, when Robert A. Wilson described his experience from ten years of community-university research in collaboration with eugenic survivors in Alberta, Canada, he insisted on how "recognizing that someone cares about what happened to them, that they can tell a story and that the story provides a valuable insight into much broader issues" (2018:256) was central for enabling safe spaces for collaborative remembering.

For the past five years I have lived online following threads of data on user participation available on discussion pages, posts, social media platforms and list servers, all of which contain digital episodic memories of users describing their experiences in Wikipedia and other open source projects. Eventually, after studying the Wikipedia community for two years I started participating myself as event coordinator of the project *Art+Feminism* in Barcelona in local campaigns to address systemic bias in Wikipedia. Both as Wikipedia editor and event coordinator, I have observed and experienced how standards of normativity and alterity may act as implicit collaborative inhibition enablers when operating in connected environments. Those standards inform gender stereotypes and power dynamics such as the assumptions of expertise (Hollingshead and Fraidin, 2003) and the division of knowledge and responsibilities in transactive memory systems. I have also explored how feminist projects in FLOSS communities have created an ongoing culture of safe space design that we can learn from to provide a better experience of collaborative remembering. Doing so is a joint effort of both designers and digital communities to enable, facilitate, amplify or address the inhibition triggers that may be highly disruptive for vulnerable users - women, LGBTQI+, racialized folks etc. Communities and designers can address inhibition triggers when safer spaces for collaborative remembering are designed and maintained. Safer spaces for collaborative remembering have a component of reparation by means of Design Justice practices, which in Wikipedia requires challenging hegemonic standards that inform western assumptions of neutrality, objectivity, and what constitutes knowledge.

In that sense the editorial guidelines of Geek Feminism Wiki can inform on how a community can design spaces that result in safety for the remembering of users that belong to non-hegemonic communities. By stating that “Geek Feminist Wiki is not Wikipedia”, the editorial guidelines of this community also inform on power dynamics exercised through the

language of policies. The policy application of neutral point of view that makes Wikipedia an unsafe space not just for cis women, but also for trans women and men, and gender non-conforming users that understandably refuse to volunteer their time to be abused. The community differentiates their guidelines from Wikipedia in what has been identified by Rosie Stephenson-Goodknight (2017) in the research on gender diversity mapping in Wikipedia as the most challenging policies for gender equality: standards of notability, neutrality and reliability.

Fragments of Specific points of clarification from Geek Feminism Wiki Editorial guidelines (2013) indicate a rejection of the neutral point of view policy in favour of a feminist perspective. As well as an inclination towards measuring notability using feminist goals and values, and not “not against that of Wikipedia or geek culture as a whole”. That means having a flexible approach to sources that recognizes both oral traditions neglected by modern encyclopaedic standards, and to protecting users from backlash that would otherwise represent a risk to their lives. In that regard, some editors have recommended the creation of experimental areas that accept articles in discussion and construction without references or with primary or secondary sources - that is, a space to work through primary sources or secondary sources before there are tertiary sources to write about the phenomenon. It is also a recommendation that patrolling activities should be limited only by request in those designated spaces for experimentation, as a way of mentoring the page, rather than fiscalizing another user’s efforts and contributions.

The Geek Feminism Wiki editorial guidelines also provide resources to build and maintain safer spaces in terms of policy design, by sharing the community agreement and vision on intersectional feminism. The agreement includes acknowledging intersectionality and different ways of participating that are not hierarchical, and rejecting trans-exclusionary debates and other problematic positions that “denies the lived experience of people who are

genderqueer, transexual, transgender, gender-non-conforming, genderfree, genderfluid, agender, trans\*, or otherwise are denied the universal acceptance of their sex and gender as valid” (Geek Feminism Wiki, 2013).

My research builds from feminist standpoint thinking practices to answer how somatopolitical protest movements can articulate conversational networks of solidarity and knowledge building in creative archives by operating under protocols for safe space management and maintenance. For that I present a proposal for the Ana Mendieta Protocols as a tool to address collaborative inhibition and promote participation in the context of digital communities and Free/Libre Open Source Software (FLOSS) cultures.

The Ana Mendieta protocols add feminist perspectives to transactive memory management practices, that way directory updating suggests Learning *who knows what*, but also *who feels what* in the group; information allocation is also upgraded with the new functionalities of bias evaluation and content warning, suggesting reactions/warnings to memory items, and memory items to group members. Operating under the Ana Mendieta protocols, retrieval coordination suggests planning how to find items in a way that takes advantage of information allocation, bias evaluation & content warning to consider users’ specific emotions and knowledge.

In the context of designing for safe/brave spaces, to mitigate harm, I propose that reaction buttons can be used for feedback and warning management. For that reason I have experimented with the possibility of using reaction-style buttons as a bias detection tool to be used by feminist-centred spaces first within the Wikipedia community. This implementation can assist in addressing issues of systemic bias in Wikipedia pages. Furthermore, feedback on usage can be collected by keeping track of the users reactions on the documents shared through specific feedback buttons. This track record (critical feedback) can reveal the type of bias (e.g. gender bias, race bias, social level bias etc) that characterizes the content explored and

evaluated by each user, providing both qualitative and quantitative evidence to assist the communities in identifying both issues regarding systemic bias in content, and responses to harassment and toxic behavior. In 2016 I presented and tested the prototype for a bias detector in the specific context of Wikipedia. After the first tests, participants agreed that the node maps were contributing to visualize the complexity within Wikipedia categories, and to look for items where controversy was detected. They also found it interesting to be able to see the connection between the nodes that represent pages, and see which nodes were performing in isolation and which ones were performing as a network. That insight fueled the development of a second prototype for The Body Archive, discussed in chapter three, where I focused on exploring ways to organize community knowledge.

Resulting from all the observations and experiences, I have presented a proposal for a theoretical design model to develop a woman and girl centred cognitive tool for collaborative learning, that can be adapted to fit the needs of different feminist knowledge communities. Taking into consideration some of the reasons why there are fewer women editors in Wikipedia, the proposal for a theoretical design model has been developed to assist in the design of cognitive tools to facilitate feminist engagements with archives, the model also follows the Ana Mendieta protocols for feminist transactive memory management practices, and works towards ensuring that: the community will be able to organize their work collaboratively and inform gently about bias-related issues to others, and structural issues of sexism, racism and other stereotyped biases which will be identified and challenged.

In addition to the feedback button, the theoretical model has three other components proposed to explore and compile content of a topic of users choice by means of collaborative tagging: knowledge lists (Knowledge Playlist) related to the knowledge topic, which will provide an organization/compilation of the content of the topic; visual maps (Hashtag

Map) created on the basis of the items provided in each knowledge list; visual maps (Users Map) created by the app on the basis of the knowledge maps and lists created by each user. These three components are related to the three design factors of a transactive memory system (1995) after applying Ana Mendieta protocols. Users Map will act as a directory updating process, (learning who knows and needs what in the group); Knowledge Playlist acts as information allocation process (assigning reactions and warnings to memory items and memory items to group members); Hashtag Maps act as retrieval coordination process (planning how to find items in a way that takes advantage of information allocation, bias evaluation & content warning to consider users' specific emotions and knowledges.

In the context of the Science Biennale of Barcelona, in 2019 I organized an event where a group of 12 editors met to collectively put together a list of ten diagnosis and recommendations that indicate some potential for further development of my design proposals. As recommendation, there is a proposal for activating a policy that replaces neutrality with accuracy and that implements bias labels on the pages and discussion pages. That could be done by means of implementing the feedback button for bias in both pages and discussion pages. In that regard, my proposal for reaction buttons could also serve as a way to explore alternative ways of visualizing consensus. There is also an alternative for implementing bias detectors under the current logics of tagging in Wikipedia, where the labels in Wikipedia pages and discussion pages appear at the top of the page or at the end of a sentence. That way bias templates could be easily implemented as a new Wikipedia Policy, for example WP: BIAS/transphobia. Participants also suggested that protection templates can be activated according to the needs of users at risk. Those templates would recognize and provide context to the knowledge building labor of somatopolitical protest movements, but also, if needed, limit the potential from harmful interactions. New information on what users need provided by the implementation of the Ana Mendieta protocols can help activate and configure the protection template at a larger scale.

There is a last recommendation that indicates potential for implementation and further development of bias detector and knowledge maps. Participants suggested that the quota of users that act as patrollers of new content be reviewed according to logics of knowledge production and reproduction, in opposition to the logics of meritocracy linked to the number of total editions in Wikipedia. An example of this recommendation is that a person who is not an expert in anti-racism cannot decide on the relevance of anti-racist content. It is possible that, if implemented, knowledge maps could be a way to evaluate the specific knowledge of a user, by observing their knowledge map and the feedback for bias that was given to their editing activity.

## **5.5 The Disrupting Participation Hypothesis**

In their paper, *Learning and Remembering with Others: The Key Role of Retrieval in Shaping Group Recall and Collective Memory* J. Barber, Rajaram and B. Fox (2012:4) expose some of the benefits and costs of collaborative remembering. According to the authors, remembering collaboratively (collaborative recall) has the capability to promote the formation of collective memories, but also the potential to induce the collaborative inhibition effect.

What explains collaborative inhibition is the retrieval disruption hypothesis, the event in which the strategy pursued by one individual in order to remember (to retrieve), is disrupting the use of other retrieval strategies that may be more effective for other group members (Barber et al. 2012: 60). The larger the group, the larger the chances for inhibition to occur (Basden et al. 2000). I argue that the same principle may apply when referring to groups of communities cohabiting digital environments, and that strategies pursued by one community in order to remember and build collective memory, may be disrupting the use of other retrieval strategies that may be more effective for other communities (for example LGTB and Christian communities on issues such as family or marriage).

My theoretical proposal for a Disrupting Participation Hypothesis complicates the disruption and inhibition theories on the social sharing and reshaping of memories by Hirst and Echterhoff (2001) and Weldon and Bellinger (1997) by hypothesizing how hate speech may also disturb, disrupt and/or inhibit the participation of those targeted -in this case, women and underprivileged communities-, causing in turn a disruption in their knowledge discovery experience. In a series of case studies focusing on the context of the Wikipedia community, I have observed how normativity, by means of schema consistent narratives of sexual difference, may act as a collaborative inhibition enabler in connected environments by means of virtual speech acts. In the specific context of Wikipedia, the power/knowledge relations attached to sexism and transphobia is collaboratively inhibiting women, trans folks and non binary folks to participate as editors. This approach builds on the work done by many researchers inquiring about the Wikipedia gender gap.

The gender gap in Wikipedia is a widely reported problem. A comprehensive survey conducted in 2008 revealed that only a small percentage of Wikipedia contributors are women - 13% worldwide (Glott and Ghosh, 2010). In a survey based on a US sample, results showed that there is a greater frequency of articles on topics of interest to men compared to articles on topics of interest to women (Cohen 2011; Reagle and Rhue 2011). In their paper, *Where are the Women in Wikipedia? Understanding the Different Psychological Experiences of Men and Women in Wikipedia* (2016), authors Julia B. Bear and Benjamin Collier also revealed that confidence in expertise and discomfort with editing partially mediated the gender difference in the number of articles edited. In terms of memory building, only 16,8% (Gender Gap on Wikipedia, accessed february 24th 2018) of biographies in Wikipedia, one of the most popular and frequently accessed knowledge repositories, are focused on the lives and achievements of women.

By questioning collaborative inhibition in terms of implications for design in ubiquitous computing, I interrogate the extent to which hostile settings, attitudes, and interactions towards vulnerable and underrepresented communities goes beyond a simple distraction or annoyance. I do so by proposing participation and content as a measure to assess collaborative remembering. The result of such deterrents is an added layer to the acknowledged costs of collaborative remembering (Hirst and Echterhoff, 2012). This particular type of inhibition is a robust phenomenon, although usually studied in controlled settings. I acknowledge the phenomenon of collaborative inhibition as robust enough to inform content and participation gaps in naturalistic online conversational environments -such as Wikipedia- in the event of users building collective memory.

I have also explored how hegemonic normativity may act as a collaborative inhibition enabler in online conversational environments by means of interpellations or virtual speech acts. In that regard, in the introduction and methodology sections of this manuscript, I have established how in speech-act theory, the British philosopher of language J.L Austin (1962) defined perlocutionary speech acts as those that produce certain effects as their consequence, and how this analysis can assist answering the question of implications for design proposed by Genevieve Bell (2011). Asking the question of implications for design from a feminist standpoint, I want to situate myself in a framework of ethics. To that end, I follow the question proposed by Terri Senft (2015): What is this [online misogyny] doing to us, and how are we responding?.

My proposal for a Disrupting Participation Hypothesis informs a new setting for studying how collaborative inhibition and the retrieval disruption hypothesis operates in connected conversational environments where groups of communities co-exist in a shared space to build collective memories. The retrieval disruption hypothesis is the event in which the strategy pursued by

one individual, in order to remember, is disrupting the use of other retrieval strategies that may be more effective for other group members (Barber et al. 2012: 60). The larger the group, the larger the chances for inhibition to occur (Basden et al. 2000).

Considering participation in the context of inhibition theories, we can add another layer for questioning how disruptions in participation may lower the memory performance of the group. Individuals from groups historically silenced, misrepresented and oppressed, encounter more challenges to participation in hegemonic spaces. An individual may have recalled an item of information, but eventually failed to share it with the rest of the group, for many reasons involved with collaborative remembering and the ethics of forgetting. Hirst and Yamashiro wrote about social aspects of forgetting stating that although there is an agreement on the role of collective forgetting in enhancing the social bonds within a community, it is worth considering how “a collective memory might oppress some within a community and enhance the status of others” (Hirst & Yamashiro, 2018:78). The authors also explored how forgetting promotes shared forgetting within social groups, but not across social groups because of the socially sensitive nature of human memory. That is, it may be worth considering user experience in the context of community experience to be able to infer and evaluate mnemonic silences in dialogue with the idea of prior knowledge and schematic narrative templates.

In that regard, Ford and Wajcman (2017:1) noted that “Wikipedia’s origins and the infrastructures that it relies on are based on foundational epistemologies that exclude women, in addition to other groups of knowers whose knowledge does not accord with the standards and models”. Those standards and models, which I understand to be a product of hegemonic normativity and systemic bias, contribute to inhibit non-hegemonic communities from participation, remembering, and collective memory building. In the context of Wikipedia I argue that a collective memory that

results from sexist and colonial contexts and practices, is oppressing underprivileged users and their memories, and enhancing the status of those that reinforce hegemonic and normative narrative schematic templates. This oppression is facilitated by know-it-all users that express misogynistic infopolitics and epistemological denial in the form of interpellations that inhibit the participation of underprivileged users, such as women, queer folks, POC etc., whose experiences and ways of knowing are devalued.

In my definition for a Disrupting Participation Hypothesis I depart from the idea of disruption proposed from cognitive science perspectives, that focuses solely on performance (if recall and remembering has been achieved) to propose a perspective that focuses on the felt experience of remembering.

I suggest that strategies for remembering manifested through schema consistent normative templates are disrupting -in the sense of interrupting or interfering with- the participation of women and underprivileged communities. And that women and underprivileged communities are experiencing a disrupting participation -in the sense of perturbing or distressing- while interacting, that prevents them from engaging in meaningful efforts of meaning making and memory building.

I have also identified disrupting participation triggers as instances in which episodic memories about a particular environment, person or event lead to the disruption or inhibition of user participation. When those instances are targeted to communities outside normative schematic templates, they can lead to exclusionary practices, often legitimated by violence exercised through language. There are also implications for collective memory: removing communities that do not fall under normative schematic templates out of the conversation on memory building is another way of contributing to the citational chain that lead to the exclusionary practices that are being questioned in the first place.

Considering participation in the context of inhibition theories, I add another layer for questioning how disruptions in participation may lower the memory performance of the group. Individuals from groups historically silenced, misrepresented and oppressed encounter more challenges to participation in hegemonic spaces. An individual may have recalled an item of information, but eventually failed to share it with the rest of the group. That can happen for many of the reasons involved with collaborative remembering and the ethics of forgetting proposed by Robert A. Wilson (2018) in his paper *Group-level cognizing, Collaborative Remembering and Individuals*.

From Robert A. Wilson's experience with the creation of the project *Living Archives on Eugenics in Western Canada* (2014), we understand that remembering collectively requires being allowed to tell a story, therefore, a principle of disruption may apply when referring to groups of vulnerable communities cohabiting with hegemonic communities in digital environments. The characteristics of the spaces used and strategies pursued by hegemonic communities in order to remember and build collective memory, may be not allowing, and therefore disrupting the use of other retrieval and participation strategies. These alternative strategies may be more effective for vulnerable communities that require safer spaces for collaborative remembering where they are allowed to tell their story and told that their story provides "a valuable insight". To identify disruptions in participation and interrogate the implications of such silences in the collaborative remembering process I suggest to add into consideration participation as part of the set of measurements and metrics commonly used to assess collaborative remembering in social and cultural settings, which usually include productivity, content, accuracy, process and functions (Meade et al. 2018: 9-10)

Because remembering occurs within a cultural context (2019:8) collective remembering influences the assimilation or contestation of the body of

knowledge that feeds the formation of hegemonic collective memories. In that regard identifying who is participating and who is not participating, and therefore who is remembering and who is not remembering, can be a strategy to guide us answering how, when, and with whom we have to collaborate to implement safer spaces for collaborative remembering in order to address barriers to participation.

The theoretical models and designs that I proposed in the third and fourth thesis chapters, such as the Disrupting Participation hypothesis and the Ana Mendieta Protocols, are a result of observations, prototype design and case studies and my own experiences being part of the feminist geekspace. My hypothesis, informed by feminist standpoint thinking, is that hostile interactions and hate speech can act as an inhibition trigger in the context of digital conversational environments. They do so by triggering a disruption or inhibition of the participation experience of those targeted, in a large number of situations, women and underprivileged communities. I argue that this is causing a disruption in their memory experience which also results in a lack of representation of their communities in terms of collective memory building, as it has been observed in knowledge repositories such as Wikipedia.

## **5.6 A way out of the matrix of domination in ubicomp**

In her influential paper on feminist HCI, Bradzell stressed the importance of questioning how does a culturally constituted body enact community rules, beliefs, rituals, and power dynamics through ubicomp's new spaces, and how are places (re)configured as a result of ubicomp to enable such performances (2010: 1305). To undertake this type of inquiry, Genevieve Bell urges to make room for the social and the cultural and to approach ubicomp as a "sociocultural object, both in its artifacts and practices" (2011:46). Very broadly, that means the scales and structures of social life, or "the patterns and functioning social institutions, the interrelations between social structures and their evolution, and questions of the stratification, segregation,

and distribution of social resources, including money, power, influence, and authority” (the social). And also its symbolic forms (the cultural) or “the conditions under which specific kinds of collective value and significance attend to the ritual practices of everyday life, the world as we encounter it, and the ways in which we interact” (2011:46). Classic accounts of a social perspective in ubicomp include examinations of the ways in which digital technologies affect power relations or are used as a resource to revise communication patterns (2011:49).

In that regard, Design Justice frameworks can be of assistance in undertaking this examination in an holistic manner that takes into consideration both social and cultural aspects. Those cultural aspects of a semiotic nature are concerned with the ways in which we find meaning in the world (2011:51). In their paper *Design Justice: Towards an intersectional feminist framework for design theory and practice* Sasha Constanza-Chock wrote about how Universalist design practices erase certain groups of people, because most design processes today are structured in ways that “make it impossible to see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce” (Costanza, Chock, 2018). To understand the social and cultural dimensions of ubicomp in the context of the unequal distribution of harms and benefits that they reproduce, Design Justice practitioners and researchers use the framework of analysis that Patricia Hill-Collins coined as the matrix of domination, a sociological paradigm that provides a framework for understanding oppression as an outcome of privilege.

If a generative account of culture suggests that we want to concentrate on how culture instead operates and is enacted in everyday practice (2011:54) and the study of the social impact urges to ask, “what are the consequences?” (2011:50), then Design Justice provides a framework for working in interdisciplinary domains, and, as Genevieve Bell suggests, for finding a role for ethnography in methodology and theory, and “reconnect the

ways we approach research questions (methodologies) with the ways in which such questions might be framed, articulated and addressed (theory)” (2011:62).

The use of Design Justice as a field of theory and practice aligns with one of the ways in which researchers can broaden the scope of ethnographic impact in ubicomp, which is affective computing research. Affective computing researchers place the emotional aspect of interaction alongside the more traditional cognitive and analytic elements (2011:75) recognizing that affect is something that lies, both temporally and spatially, between perception and action. In that sense, ethnographic studies of emotion can provide an alternative account that has been useful in two ways: to imagine a different relation between information, technology and emotions, and to continue the conversation about the cultural specificities of the parallelism between emotion and cognition.

## **5.7 How to do things with Design Justice**

The use of Design Justice perspectives is a relevant contribution of my research for its novelty. There is a lack of genealogy in using Design Justice frameworks, which makes it relevant to provide insights with which new controversies and agreements can grow. The first issue of the Design Justice Network zine *Principles for Design Justice* edited by network contributors Una Lee, Nontsikelelo Mutiti, Carlos Garcia, and Wes Taylor (2016:1) problematizes ideas of “design full of good intentions”, which “can be harmful, exclusionary, and can perpetuate the systems and structures that give rise to the need for design interventions in the first place”. With that in mind, I have centered the collaborative remembering experience of vulnerable, non-hegemonic communities of users as a priority for my research and design practice.

Informed by the current concerns and practices of Design Justice (2018) and feminist Human Computer Interaction (HCI), I have presented a series of case studies with an analysis of the distribution of risks, harms and benefits among digital communities participating in Wikipedia. This analysis has allowed me to engage with the consolidation of a proposal for a theoretical model and an interactive system that is meant to help build and maintain safer and braver spaces for collaborative remembering. The design of those spaces embrace the central commitments of feminist epistemologies and practice: agency, fulfillment, identity and the self, equity, empowerment, diversity, and social justice (Bardzell, 2010: 1302).

To interrogate how Wikipedia's infrastructure design is reproduced and is reproducing the matrix of domination (Hill-Collins 2009) under white supremacy, heteropatriarchy, capitalism, and settler colonialism and other systems of oppression (Design Justice, 2018), I have considered risks and harms for users of vulnerable communities by giving further context for the gender gap and systemic bias in FLOSS cultures. I have also presented instances of participation disruption where hegemonic normativity has operated as a collaborative inhibition enabler. In those instances inhibition has occurred as a result of participation inhibition triggers, such as hostile interpellations directed towards feminist hackers in FLOSS cultures, and women and gender non-conforming Wikipedia users.

An analysis of observations and claims pulled from the selected literature on the Wikipedia gender gap exposed following Patricia Hill-Collin's sociological paradigm explains how Wikipedia reproduces the matrix of domination, because both its policy and structure are bound to the colonial practices of knowledge production inherited from the Encyclopaedic culture, and also to sexist practices inherited from FLOSS cultures (Ford & Wajcman, 2017). That is manifested through systems of rules and regulations that result in policies informing taxonomies, participation protocols, policies on neutrality and

notability etc. Those policies belong to the structural domain. Although they are being enforced by a 'regime of truth', a regime of normalcy that establishes notability and neutrality. Normalcy ensures that regulations on that structural matter can be enforced and maintained by the community. The set of 'regimes of truth' belong to the disciplinary domain and can also be found manifested through the evaluation of what is considered a reliable source in the context of an Eurocentric encyclopaedic culture.

In this context, the matrix of domination is also being reproduced by language: either the language of interactions between community members in the form of harassment and epistemological denial of non-hegemonic systems of knowledge, or the language of knowledge and memory building in the form of the linguistic bias that can be found in biographies belonging to women and underrepresented communities (Netha Hussain, 2017). Design processes of language building make it difficult to "see, engage with, account for, or attempt to remedy the unequal distribution of benefits and burdens that they reproduce", as suggested by Costanza-Chock (2018).

Following the politics of prioritization informed by the Design Justice principles and practices, I have presented a proposal for the implementation of a bias detector, which can act as a tool to challenge the matrix of domination. Furthermore, by giving a feminist perspective to my proposal for feminist transactive memory practices, I am incorporating a way to learn about the distribution of risks of benefits by means of embracing the Ana Mendieta protocols. I have also articulated a UX research and design practice aimed to inhibit structural inequality and oppression by naming and identifying oppressive systems. To that end I have followed Sasha Costanza-Chock's (2017) recommendations on how to apply Design Justice principles keeping the feminist perspective intersectional. To *seek liberation from exploitative and oppressive systems*, Costanza-Chock (2017) considers essential to explicitly name the oppressive systems that Design Justice seeks to counter drawing upon the tradition of Black feminist thought. In that

regard, they wrote "[...] "Black feminist thought fundamentally reconceptualizes race, class, and gender as interlocking systems: they do not only operate 'on their own,' but are often experienced together, by individuals who exist at their intersections" (Costanza-Chock, 2017). To that end I have established how the perspectives from SPT (Harding, 2004) concerned with the creation, validation and distribution of knowledge align with the concern about the distribution of harms and benefits that centers the Design Justice principles and practices for interrogating UX design.

I have considered the implications for design of normative systems and systems of interactions that are currently being enabled by means of online hate speech to problematize the extent to which those practices have larger implications in terms of memory building. When we take these implications into consideration from a Design Justice perspective, there is an obvious pattern that emerges: "Harm caused by online misogyny is not just individualized but may buttress the collective experience of status inequality" and "it is best conceptualized not as a problem concerning individual men and individual women, but as a diagnostic of a far broader sexism that is making the cyberspace a profoundly inequitable space" (Jane, 2016:290-91).

The diagnosis of a far broader sexism that Jane suggests has several implications, I am particularly concerned about those that connect cultural and autobiographical memory at a community level and inform "what happened as a result" in terms of collaborative remembering and silencing. For that reason I have interrogated the implications for design of the call for participation of women and underprivileged communities in Wikipedia, considering that, as I have described before, Wikipedia's space, policy, structure and code was never designed to be a safe space for the collaborative remembering of users of subaltern status. I have offered numerous instances in which underprivileged users have expressed the context and reasons that led them to stop participating, but there is one example of a conversation that illustrates disrupting participation experiences

in multiple time spans of UX providing a comprehensive example of the issue at hand.

In 2011 on the Geek Feminism Blog a user posted a text that was a call for participation in Wikipedia. The text was named: "I'm a woman, and I've edited Wikipedia" and in it the user wrote the following words of encouragement: "Go for it, ladies. Be bold." As a result of that post, a few users responded in the comment with very valid concerns.

One commenter expressed concern about the risks of encouraging women to be bold in a space where they can be subject to hostile and violent interactions without adding any advice in how to navigate such interactions. She added a description of her cumulative experience, where the recollection of multiple periods of interactions in Wikipedia has led her to stop participating in the project. In terms of implications for design, another commenter expressed how participation can also be disrupting if restricted by exclusion. In this particular instance the user explained how she was identifying spaces where it was safe to participate and spaces where it was best not to participate. The consequences of such silences in a social setting leads to collective forgetting. Following the Design Justice framework, it is essential to consider the distribution of harms and benefits of this phenomenon and center major efforts on designing safer spaces for participation and collaborative remembering.

# chapter VI

## DISCUSSION

### IT IS STILL IN OUR HANDS

#### **6. The digital revolution will be embodied**

To close this research, I am also presenting opportunities for further research that builds from Bardzell's suggestions. It is my recommendation to continue using feminist critique-based contributions towards core operational concepts, assumptions and epistemologies of HCI, such as neutrality, objectivity and universality (2010:1305). I also urge to take an embodied standpoint from feminist theory to contribute towards our understanding of the phenomena of social media and the culture of user-generated content, considering that gender identity play, sexism, and above all sexual harassment are well known phenomena of social lives online and deserve further research. But foremost I encourage to consider how embodied mind theories open neurocognitive processes to feminist theorizing (Pitts-Taylor, 2013: 2013:858) in the context of digital environments.

## **6.1 The myth of neutrality and objectivity as implications for design**

Wikipedia is one of the most solid online communities that exists in the Internet ecology - with an estimated of 70.313.387 users and 469.324 unique users distributed among the 288 active Wikipedia sites of different languages. For this reason, as I have described in detail in page 184, it becomes an appropriate community to observe in order to understand how transactive memory management practices in digital environments are reproducing stereotypes and systemic bias in several forms. One of which being how the aspiration of neutrality fails to represent women, people of colour, and perspectives from the global south among other relevant knowledge sources and systems. In recent research on gender diversity mapping led by the well-known American Wikipedian Rosie Stephenson-Goodknight during 2016 and 2017, seven themes emerged, including that implicit biases “permeate everything” and create a false sense of neutrality (Wikipedia Diversity Conference, 2017). The aspiration of neutrality is one of the five pillars found in the Wikipedia policy. Quite paradoxically, Wikipedia’s aspiration of neutrality enforced by hegemonic communities, is enabling a monolithic coverage of western perspectives, instead of enabling the sum of all knowledge.

Issues arise when the ratification of this shared knowledge constitutes some sort of socially validated collective memory. Upon closer inspection this “information” is actually a product of biased and western-centred assumptions being implemented as a standard for neutrality, objectivity and validated knowledge. I frame this aspiration of neutrality in the context of the systemic bias held by the community of editors and policy designers, to indicate how hegemonic normativity is instrumental to validate neutrality claims. For the same reason, I problematize how ideas such as “universality” and “neutrality” rely on socially validated citational practices. Such practices

are based on systems of categorization and schematic default narratives which are in turn based on normative socially agreed standards.

The same way Genevieve Bell offers a critique to new empiricism in solving the question of implications for design, and a way of out the misuse of ethnography by countering it with our own stories, Harding also stresses the importance in critically engaging in how the conceptual frameworks of both scientific disciplines and also public policy “never achieved the desired political and cultural neutrality that their scientific methods and related administrative procedures had been claimed to promise” (2004: 4). This is clear in the context of Wikipedia, as I develop in chapter four “Wikipedia and the future of Digital Memory”.

In Bell's stories there is also a critique of the new empiricism and the power of numbers to talk about people. Bell suggests to “re-rehearse” some of the theoretical tools that can articulate conversations around intersectionality and power (2015:25), placing ubicomp in an interdisciplinary conversation with science and technology studies, sociocultural anthropology, media and cultural studies, feminist criticism, and, finally “your own experience” (*Building invisible interfaces*, Weiser 1994, slide 10 in *Divining a Digital Future*, Bell, 2011:14).

From a perspective addressed from the field of philosophy of science, feminist theorist Sandra Harding (2004) propose the SPT, a "feminist epistemology of point of view" that help us confront "androcentric ideologies" based on binary oppositions and the assumes neutrality on the scientific and hegemonic production of knowledge. In the context of Wikipedia's design policy and structure, the assumption of neutrality required to participate is being widely contested, as knowledge building is a profoundly ideological process. But beyond that there is an added risk as the uncritical adherence to Wikipedia neutrality standards recreates structural inequality, as suggested by Art+Feminism community organizers.

## **6.2 Designing for an embodied experience: The cognitive and somatic implications of online misogyny and online abuse**

Elizabeth Wilson, whose work has focused on how biological and neurological data can be used in feminist theory, in 1998 described the neurological body in classical understandings of cognition as “decapitated” because it has been conceptualized in isolation from everything below the head (in Victoria Pitts-Taylor, 2013:857). Anne Jaap Jacobson sees a coincidence of interests in feminist epistemology and embodied cognition, particularly in work on perception (Jacobson 2012). Following Solomon and Jacobson, feminist scholar Victoria Pitts-Taylor, whose work focuses on the intersection of neuroscience and body politics, also suggests that embodied mind theories open neurocognitive processes to feminist theorizing (Pitts-Taylor, 2013: 2013:858).

In that context, mirror neuron activity has not been especially taken into consideration in the context of digital environments because it is found in the sensorimotor cortex, covering actions such as movement and vision often associated with experiences that have not been mediated by digital technologies. However, writing about political organizing in media space, Jodi Dean (1996) speaks of “reflective solidarity”: a commitment to share the struggle of another, based on an imagination of their pain, or their shame (in Senft, 2013) in a way that resonates with how mirror neuron activity works.

Because mirroring is the “fundamental mechanism at the basis of the experiential understanding of the others’ actions and emotions” (Pitts-Taylor, 2013: 857), on page 77 I have presented how episodic memory - the memory of our experiences - may play a more relevant role for our understanding or the affordances of mirroring in the context of digital conversational environments. An embodied and experiential understanding of linguistic vulnerability and linguistic pain, being that experiences mediated by digital

technologies or not, could be facilitating the experience of the pain of others through their experiences as document, which in turn can lead to a disruption of user participation just by mirroring the pain of others.

I have suggested that in the context of digital episodic memories (the documented digital memory of our personal experiences), it is possible that participation is disrupted before usage without the need for an unpleasant, frustrating interaction to be experienced by the user just by mirroring the experiences of other users. Disrupting participation triggers are the instances in which episodic memories about a particular environment, person or event lead to the disruption or inhibition of user participation. When those instances are targeted at communities outside normative schematic templates, they can lead to exclusionary practices, often legitimized by violence exercised through language.

What could explain the event in which Disrupting Participation happens before usage, is mirroring. According to Pitts-Taylor, mirror neurons are relevant for critical theorizing because they help establish that there is a profound relation between social grounds and the body. As she wrote: “Along with other models of “embodied cognition,” mirror neuron theories reject views of mind as disembodied and abstract and point toward the situatedness of knowledge” (Pitts-Taylor, 2013:853)

In her article *I feel your pain: Embodied Knowledges and Situated Neurons* Victoria Pitts-Taylor critiques the dominant neuroscientific account of mirror neurons, called embodied simulation theory, and describes alternative interpretations of mirror neurons in cognitive science and in philosophy of the mind that takes into account that mirroring needs to be essentially conceptualized as a situated experience of embodied perception because context is saturated with information, including highly cultural variables: “This context includes the unique biographical/physiological context of the brain—its own past experiences of action and feeling—as well as the social

context of any event of perception, which includes the subject's relation to the other" (Pitts-Taylor, 2013:862).

Drawing from a range of findings and hypotheses in cognitive science and philosophy, she explores how mirroring can be considered to be situated, in the sense that scholar Miriam Solomon suggests (Pitts-Taylor, 2013:861) Pitts-Taylor's review of Miriam Solomon's literature places situated cognition as strongly resonant with feminist epistemologies, including Donna Haraway's notion of situated knowledges (Haraway 1991); the standpoint theories of Sandra Harding; and feminist critiques of objectivity (in Pitts-Taylor, 2013:858). A situated understanding of mirroring suggests a dynamic relation between the microarchitecture of brains, bodily processes, and the social world influenced by memory (2013:864) that I understand highly relevant for the question of implications for design. She writes:

"[...] in my view it follows that mirror neurons do not register an objective perception, as embodied simulation theory seems to suggest, but rather registers ineluctably situated perception. They cannot objectively represent the other's body in pain, but they may involve my own body in perceiving the other in pain. Such a situated neural experience could draw upon my prior experiences or memories of pain. Damasio and Meyer postulate, for example, that action understanding "is not created just by mirror-neuron sites, but also by the nearly simultaneous triggering of widespread memories throughout the brain" (Damasio and Meyer 2008, 168). The same might be true for empathic understanding at the level of "basic empathy" (Stueber 2012). My perception is an embodied experience whose meaning is partly constituted by my own neural and embodied history" (Victoria Pitts-Taylor, 2013:861-62)

Paul B. Preciado addresses the question of archive from a biopolitical perspective, considering the body as an archive or experiences – Preciado refers to the body/archive with the word *Somateque* (archive of experiences)- and developed an approach to the body as a cultural and political archive (2008). Following Preciado's work, it is appropriate to also consider both

feminist and queer approaches to the embodied experience. In that sense it is relevant to acknowledge the disruption that I myself have experienced, of which I have only been able to share the online abuse placed in the context of ethnographic work within feminist safe spaces where I have been invited to speak, such as conferences, and where I have explicitly asked for no recordings. It is also important to stress that I have not been capable of writing into the present text most of the experiences of harassment that I have experienced both on social media platforms such as Facebook or YouTube, and on digital projects for memory building such as Wikipedia. These experiences of suffering and participation disruption are archived in my body and present in the collective memories of other users of subaltern status. That poses a risk for the cultural and social survival of *somato-political* protest movements. Considering that discourse is becoming more violent, and actors of violence will become even more central to the discussion of online interactions, as I have reported on page 269, that leads me to consider that it is urgent to continue the conversation in order to understand the physical and cognitive implications of online abuse, especially for those communities whose collective memories have been consistently neglected and unrecognized. I hope my study will inspire new research that, departing from those implications, focuses on providing answers and resources to not just mitigate those harms, but also to further research on what is an urgent next step: how to build and design policies and tech making sure those communities receive reparations.

# APPENDICES

## Appendix 1

Presentation given at the conference Feminist Methodologies: Challenges and Negotiations, Sheffield Hallam University (2015)



**THE EXPERIENCE AS DOCUMENT**

Evaluating the futures of Digital Memory in Creative Archives from a Feminist and Post-colonialist perspective

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<sup>19</sup> For accessing the multimedia presentations click on the slide or take a picture of the QR code and a link will open

## Appendix 2

Presentation given at Signal/Noise: A FemTechNet Conference on Pedagogy, Technology, and Transdisciplinarity, University of Michigan (2016)

Everything not saved will be lost  
- Nintendo “Quit Screen” message



## Appendix 3

Presentation given at Accumulation Technologies: Databases and "Other"  
Archives, University of Barcelona (2017)



**RETRIEVING FROM MY DIGITAL BODY  
A MAP OF ABUSE AND SOLIDARITY**

Marta Delatte  
University of Hull  
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## Appendix 4

Presentation given at the seminar, Where are the women in Wikipedia?, Open University of Catalunya (2018)

**Design Justice**

Challenges Status Quo  
Equitable Processes  
Equitable Outcomes  
Listening Instead of Prescribing

"EIGHT" PEOPLE  
ACCESS & EQUITY  
UNDERSTANDING THE PROBLEM  
NOT DEFINING THE PROBLEM  
FIRST - UNDERSTAND FIRST  
LOOK AT OTHER MODELS  
MOST ELEGANT INTERVENTION

**WIKIPEDIA EN EL CONTEXTO DE LA  
#DESIGNJUSTICE**

@martadelatte

Research Dir @LiquenDataLab |  
PhD Candidate - University of Hull (UK)

image from Design Justice Zine Issue 1  
<https://designjusticenetwork.org/>

Dalatte, Maria. 2018. "Wikipedia en el contexto de la Design Justice". Seminario "Wikipedia i dones editores", Universitat Oberta de Catalunya, Barcelona, December 20, 2018. <<LINK >>



## Appendix 5

Presentation given at the conference Ontologías Feministas at La Neomudéjar (2019)



A message to my enemies.

[#laZowiGate](#)  
and *the asshole*  
consensus en  
[#Wikipedia](#)

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# REFERENCES

- Abel, M., Umanath, S., Wertsch, J. W., & Roediger, H. L. (2018). Collective memory: How groups remember their past. Collaborative remembering: Theories, research, and applications, 280-296.
- Ahmed, S. (2004). Declarations of whiteness: The non-performativity of anti-racism. *borderlands*, 3(2), 1-15.
- Ahmed, S. (2006). The non-performativity of antiracism. *Meridians*, 7(1), 104-126.
- Ahmed, S. (2007). A phenomenology of whiteness. *Feminist theory*, 8(2), 149-168.
- Ahmed, S. (2012). *On being included: Racism and diversity in institutional life*. Duke University Press.
- Ahmed, S. (2016). An affinity of hammers. *Transgender Studies Quarterly*, 3(1-2), 22-34.
- Ambrose, B. (2015). Speech Acts and the Internet: Austin to Bourdieu and Fraenkel. *Philosophy of Emerging Media: Understanding, Appreciation, Application*, 333-346.
- Anderson, R. J. (1994). Representations and requirements: the value of ethnography in system design. *Human-computer interaction*, 9(2), 151-182.
- Austin, J. L. (1975). *How to do things with words*. Oxford university press.
- Ball, S. J. (1998). Performativity and fragmentation in 'postmodern schooling'. *Postmodernity and the fragmentation of welfare*, 187-203.

- Barber, S. J., Rajaram, S., & Fox, E. B. (2012). Learning and remembering with others: The key role of retrieval in shaping group recall and collective memory. *Social Cognition*, 30(1), 121-132.
- Bardzell, S. (2010, April). Feminist HCI: taking stock and outlining an agenda for design. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1301-1310). ACM.
- Bartlett, F. (1932). *C.(1932). Remembering*. Cambridge: Cambridge University Press.
- Basden, B. H., Basden, D. R., & Henry, S. (2000). Costs and benefits of collaborative remembering. *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition*, 14(6), 497-507.
- Basden, B. H., Basden, D. R., Thomas, R. L., & Souphasith, S. (1997). Memory distortion in group recall. *Current Psychology*, 16(3-4), 225-246.
- Bear, J. B., & Collier, B. (2016). Where are the women in Wikipedia? Understanding the different psychological experiences of men and women in Wikipedia. *Sex Roles*, 74(5-6), 254-265.
- Bell, G. (2015). The secret life of big data. *Data, now bigger and better*, 7-26.
- Berntsen, D., & Rubin, D. C. (Eds.). (2012). *Understanding autobiographical memory: Theories and approaches*. Cambridge University Press.
- Bluhm, R., Maibom, H. L., & Jacobson, A. J. (2012). *Neurofeminism: Issues at the intersection of feminist theory and cognitive science*. Springer.

- Boddie, E. C. (2017, June 20). Philando Castile and the Terror of an Ordinary Day. Retrieved from <https://www.nytimes.com/2017/06/20/opinion/philando-castile-and-the-terror-of-an-ordinary-day.html>
- Bødker, S. (2006, October). When the second wave HCI meets third wave challenges. In Proceedings of the 4th Nordic conference on Human-computer interaction: changing roles (pp. 1-8).
- Bourdieu, P. (1977). Outline of a Theory of Practice (Vol. 16). Cambridge university press.
- Brockmeier, J. (2010). After the archive: Remapping memory. *Culture & Psychology*, 16(1), 5-35.
- Brown, R., & Kulik, J. (1977). Flashbulb memories. *Cognition*, 5(1), 73-99.
- Brown, R., & Kulik, J. (1982). Flashbulb memories. *Memory observed: Remembering in natural contexts*, 23-40.
- Brown, A. D., Kouri, N., & Hirst, W. (2012). Memory's malleability: its role in shaping collective memory and social identity. *Frontiers in psychology*, 3, 257.
- Bruns, A., & Burgess, J. E. (2011, August). The use of Twitter hashtags in the formation of ad hoc publics. In Proceedings of the 6th European Consortium for Political Research (ECPR) General Conference 2011.
- Bruns, A., & Burgess, J. E. (2011). New methodologies for researching news discussion on Twitter.
- Burgess, J. E. (2007). Vernacular creativity and new media (Doctoral dissertation, Queensland University of Technology).

- Burgess, M. (2017, February 9). DeepMind's AI has learnt to become 'highly aggressive' when it feels like it's going to lose. Retrieved from <https://www.wired.co.uk/article/artificial-intelligence-social-impact-deepmind>
- Butler, J. (1988). *Performative Acts and Gender Constitution: An Essay in Phenomenology and Feminist Theory* (Vol. 40). Recuperado de [https://www.amherst.edu/system/files/media/1650/butler\\_performative\\_acts.pdf](https://www.amherst.edu/system/files/media/1650/butler_performative_acts.pdf).
- Butler, J. (1997). *Excitable speech: A politics of the performative*. Psychology Press.
- Butler, J. (2002). *Gender trouble*. Routledge.
- Butler, J. (2003). Violence, mourning, politics. *Studies in gender and sexuality*, 4(1), 9-37.
- Caliskan, A., Bryson, J. J., & Narayanan, A. (2017). Semantics derived automatically from language corpora contain human-like biases. *Science*, 356(6334), 183-186.
- Carter, A., & Sneesby, J. (2017). Mistreatment of women MPs revealed. *BBC News*, 25.
- Castells, M. (1997). Communal heavens: Identity and meaning in the network society. *The power of identity*, 2.
- Castells, M. (2011). *The rise of the network society* (Vol. 12). John Wiley & Sons.
- Chakraborty, A., & Hussain, N. Mapping and bridging the gender gap: an ethnographic study of Indian Wikipedians and their motivations to contribute.
- Chemaly, S. (2014). There's no comparing male and female harassment online. *Time*. September, 9, 2014.

- Chevalier, T., Bacon, L., Brown, M. J., Liz, Larissa, & David. (2014, February 10). When who you are is off-topic. Retrieved from <https://geekfeminismdotorg.wordpress.com/2013/07/11/when-who-you-are-is-off-topic/>
- Chicago, J., & Woodman, D. (2007). *The dinner party from creation to preservation*. London: Merrell.
- Chiel, E. (2017, July 24). Who turned Microsoft's chatbot racist? Surprise, it was 4chan and 8chan. Retrieved from <https://splinternews.com/who-turned-microsofts-chatbot-racist-surprise-it-was-1793855848>
- Citron, D. K. (2014). *Hate crimes in cyberspace*. Harvard University Press.
- Clayton, N. S., & Dickinson, A. (1998). Episodic-like memory during cache recovery by scrub jays. *Nature*, 395(6699), 272.
- Cohen, D. (2017, February 24). Facebook's Reactions Are Now One Year Old, and They Have Been Used 300 Billion Times. Retrieved from <https://www.adweek.com/digital/facebook-reactions-one-year-old-300-billion/>
- Cohen, N. (2011). Define Gender Gap? Look Up Wikipedia's Contributor List. *New York Times*, January, 30(362), 1050-56.
- Collins, P. H. (2019). The difference that power makes: Intersectionality and participatory democracy. In *The Palgrave handbook of intersectionality in public policy* (pp. 167-192). Palgrave Macmillan, Cham.
- Costanza-Chock, S. (2018). Design Justice: towards an intersectional feminist framework for design theory and practice. *Proceedings of the Design Research Society*.

- Crasnow, S. (2009). Is standpoint theory a resource for feminist epistemology? An introduction. *Hypatia*, 24(4), 189-192.
- Creswell, J. W. (2012). *Educational research: planning. Conducting, and Evaluating.*
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches.* Sage publications.
- Creswell, J. W., & Miller, D. L. (2000). Determining validity in qualitative inquiry. *Theory into practice*, 39(3), 124-130.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches.* Sage publications.
- Crew, B. (2017, February 13). Google's AI Has Learned to Become "Highly Aggressive" in Stressful Situations. Retrieved from <https://www.sciencealert.com/google-deep-mind-has-learned-to-become-highly-aggressive-in-stressful-situations>
- Cuc, A., Koppel, J., & Hirst, W. (2007). Silence is not golden: A case for socially shared retrieval-induced forgetting. *Psychological Science*, 18(8), 727-733.
- Damore, J. (2017). Google's ideological echo chamber. Internal Google Memo.
- Davis, L. J. (1995). *Enforcing normalcy: Disability, deafness, and the body.* Verso.
- Dean, J. (1996). *Solidarity of strangers: Feminism after identity politics.* Univ of California Press.
- Delatte, M. (2014, July 3). La testosterona como arma política. *VICE Spain* . Retrieved from <https://www.vice.com/es/article/gqep3y/la-testosterona-como-arma-politica>

- Delatte, M. (2016, March 4). La Wikipedia huele a pene y tú puedes hacer algo para remediarlo. Broadly. Retrieved from [vice.com/es/article/bjg3ga/wikipedia-pene-machismo-pocas-mujeres](https://www.vice.com/es/article/bjg3ga/wikipedia-pene-machismo-pocas-mujeres)
- Delatte, M. (2017) Retrieving from my digital body: A map of abuse and solidarity. International Symposium “Accumulation Technologies: Databases and ‘other’ archives”. University of Barcelona. Retrieved from <https://docs.google.com/presentation/d/1GsB6U1qCmKzykBbKZAdu0a9JtdBcZflxEWdJEJrmeu8/edit?usp=sharing> "
- Delatte, M. (2017). Retrieving from My Digital Body: A Map of Abuse and Solidarity. *Feminist Media Histories*, 3(3), 167-172.
- Delatte, M., & Klein, M. (2016, September 23). Retrieved from [lists.wikimedia.org/pipermail/gendergap/2016-October/thread.html](https://lists.wikimedia.org/pipermail/gendergap/2016-October/thread.html)
- Delatte, Marta. 2019 “#laZowiGate and the asshole consensus en #Wikipedia” Congreso Ontologías Feministas, divina y precaria juventud” Madrid. Abril 2019.
- Denise, L. (2016, April). Organic Intellectualism: DJ Scholarship, Black Feminism and Erasure Resistance. FemTechNet’s conference on Feminist Pedagogy, Technology, and Transdisciplinarity. Ann Arbor .
- Derrida, J. (1996). *Archive fever: A Freudian impression*. University of Chicago Press.
- Desmet, P., & Hekkert, P. (2007). Framework of product experience. *International journal of design*, 1(1), 57-66.
- DJ Lynnee Denise (2014) Soulful Critical Thought: bell hooks and the Making of a DJ Scholar. [online] Available: [https://www.podomatic.com/podcasts/djlynneedenise/episodes/2014-04-20T10\\_38\\_19-07\\_00](https://www.podomatic.com/podcasts/djlynneedenise/episodes/2014-04-20T10_38_19-07_00)

- Dourish, P., Bell, G., & Divining, A. (2011). Digital Future-Mess and Mythology in Ubiquitous Computing.
- Dybwad, B. (2009, September 14). HOW TO: Use Facebook's @Mentions Status Tagging. Retrieved from <https://mashable.com/2009/09/14/how-to-facebook-status-tagging/?europe=true#2ia.Edl1bSqG>
- Echterhoff, G., Hirst, W., & Groll, S. (2001). The communication of misinformation: Conversational assumptions affect source monitoring strategies. Unpublished manuscript, University of Cologne.
- Efron, M. (2011). Information search and retrieval in microblogs. *Journal of the American Society for Information Science and Technology*, 62(6), 996-1008.
- Ehlers, S. Gender Imbalance on Wikipedia-An Insider's perspective.
- Emoji cheat sheet for GitHub, Basecamp and other services. (1995-2020). Retrieved from <https://www.webfx.com/tools/emoji-cheat-sheet/>
- Envel Le Hir & Wikimédia France (2017-2020) Gender Gap in Wikidata. Retrieved from <https://www.denelezh.org/gender-gap/>
- Facebook App. (2009, Sep 10). Facebook Post [UPDATE on Monday, September 14: Status tagging is now available to everyone on Facebook...]. Retrieved from [www.facebook.com/notes/facebook/tag-friends-in-your-status-and-posts/109765592130/](http://www.facebook.com/notes/facebook/tag-friends-in-your-status-and-posts/109765592130/)
- "Fayyad, U., Piatetsky-Shapiro, G., & Smyth, P. (1996). From data mining to knowledge discovery in databases. *AI magazine*, 17(3), 37-37.

- Fell, A. (2017, July). Why storytelling is so powerful in the digital era | Ashley Fell | TEDxUniMelb [Video file]. Retrieved from <https://www.youtube.com/watch?v=mSi0kmqOBu4>
- Fischer, R., & Plessow, F. (2015). Efficient multitasking: parallel versus serial processing of multiple tasks. *Frontiers in psychology*, 6, 1366.
- Fontcuberta, J. (2010). *La cámara de Pandora*. Editorial Gustavo Gili.
- Fontcuberta, J. (2013). *La furia de las imágenes*. Lecture at Arts Santa Mònica
- Ford, H., & Wajcman, J. (2017). 'Anyone can edit', not everyone does: Wikipedia's infrastructure and the gender gap. *Social studies of science*, 47(4), 511-527.
- Foucault, M. (1975). *Discipline and punish*, 1978 edn.
- Foucault, M. (1980). *Power/knowledge: Selected interviews and other writings, 1972-1977*. Vintage.
- Foucault, M. (2007). *Security, territory, population: lectures at the Collège de France, 1977-78*. Springer.
- Foucault, M., & del Camino, A. G. (1977). *La arqueología del saber*. Siglo XXI.
- Franconeri, S. L., Alvarez, G. A., & Cavanagh, P. (2013). Flexible cognitive resources: competitive content maps for attention and memory. *Trends in cognitive sciences*, 17(3), 134-141.
- Freeman, J. (1972). The tyranny of structurelessness. *Berkeley Journal of Sociology*, 151-164.
- Gallese, V., Keysers, C., & Rizzolatti, G. (2004). A unifying view of the basis of social cognition. *Trends in cognitive sciences*, 8(9), 396-403.

- Garcia, M. (2017, June 3). How to Keep Your AI From Turning Into a Racist Monster. Retrieved from <https://www.wired.com/2017/02/keep-ai-turning-racist-monster/>
- Garde-Hansen, J. (2011). Media and memory. Edinburgh University Press.
- Gardiner, B., Mansfield, M., Anderson, I., Holder, J., Louter, D., & Ulmanu, M. (2016, April 12). The dark side of Guardian comments. Retrieved from <https://www.theguardian.com/technology/2016/apr/12/the-dark-side-of-guardian-comments>
- Gardiner, M. (2009, August 19). Why we document. Retrieved from [geekfeminismdotorg.wordpress.com/2009/08/19/why-we-document/](http://geekfeminismdotorg.wordpress.com/2009/08/19/why-we-document/)
- Gardner, S. (2011, February 21). Nine Reasons Women Don't Edit Wikipedia (in their own words). Retrieved from <https://suegardner.org/2011/02/19/nine-reasons-why-women-dont-edit-wikipedia-in-their-own-words/>
- Gatenby, B., & Humphries, M. (2000, January). Feminist participatory action research: Methodological and ethical issues. In Women's Studies International Forum (Vol. 23, No. 1, pp. 89-105). Pergamon.
- Geek Feminist Wiki Contributors. (2009-2016). Safe space [Online]. Geek Feminist Wiki. Available: [https://geekfeminism.wikia.org/wiki/Safe\\_space](https://geekfeminism.wikia.org/wiki/Safe_space)
- Geek Feminist Wiki Contributors. (2009-2018). Timeline of incidents [Online]. Geek Feminist Wiki. Available: [https://geekfeminism.wikia.org/wiki/Timeline\\_of\\_incidents](https://geekfeminism.wikia.org/wiki/Timeline_of_incidents)
- Geek Feminist Wiki Contributors. (2009-2019). Trigger Warning [Online]. Geek Feminist Wiki. Available: [https://geekfeminism.wikia.org/wiki/Trigger\\_warning](https://geekfeminism.wikia.org/wiki/Trigger_warning)

- Geek Feminist Wiki Contributors. (2012-2016). Catamorphism's Wikipedia RfA [Online]. Geek Feminist Wiki. Available: [https://geekfeminism.wikia.org/wiki/Catamorphism%27s\\_Wikipedia\\_RfA](https://geekfeminism.wikia.org/wiki/Catamorphism%27s_Wikipedia_RfA)
- Geek Feminist Wiki Contributors. (2013). Meta:Editorial guidelines. [online] Available at: [https://geekfeminism.wikia.org/wiki/Meta:Editorial\\_guidelines](https://geekfeminism.wikia.org/wiki/Meta:Editorial_guidelines)
- Gender and Technology Institute Contributors (2017) 18Th Gender and Technology Institute Workshop. Malaysia
- Gender equity report 2018. (2018). Retrieved from [https://meta.wikimedia.org/wiki/Gender\\_equity\\_report\\_2018](https://meta.wikimedia.org/wiki/Gender_equity_report_2018)
- Gethen, P. A. (2018, August 29). Ten years a Wikipedian. Retrieved from [medium.com/@funcrunch/ten-years-a-wikipedian-fd0a7c574d2a](https://medium.com/@funcrunch/ten-years-a-wikipedian-fd0a7c574d2a)
- Gibs, S. (2016, March 30). Microsoft's racist chatbot returns with drug-smoking Twitter meltdown. Retrieved from <https://www.theguardian.com/technology/2016/mar/30/microsoft-racist-sexist-chatbot-twitter-drugs>
- Gilbert, P. (1996). On sex, cyberspace, and being stalked. *Women & Performance: a journal of feminist theory*, 9(1), 125-149.
- Glott, R., Schmidt, P., & Ghosh, R. A. (2010, March). Wikipedia survey—Overview of results. Retrieved from UNI-MERIT at [wikipediasurvey.org/docs/Wikipedia\\_Overview\\_15March2010-FINAL.pdf](http://wikipediasurvey.org/docs/Wikipedia_Overview_15March2010-FINAL.pdf)
- Goel, V. (2015, October 8). Facebook to Test Emoji as Reaction Icons. Retrieved from [https://www.nytimes.com/2015/10/09/technology/facebook-to-test-emoji-as-reaction-icons.html?smid=tw-share&\\_r=](https://www.nytimes.com/2015/10/09/technology/facebook-to-test-emoji-as-reaction-icons.html?smid=tw-share&_r=)

- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of personality and social psychology*, 74(6), 1464.
- Hakkarainen, K., Paavola, S., & Lipponen, L. (2004). From communities of practice to innovative knowledge communities. *Lifelong Learning in Europe*, 2, 75-83.
- Hammersley, M., & Atkinson, P. (1995). *Ethnography: Practices and principles*. New York: Routledge. Retrieved December, 2, 2008.
- Haraway, D. (1991). Situated knowledges: The science question in feminism and the privilege of partial knowledge. *Human Geography: An Essential Anthology* Eds J Agnew, DN Livingstone, A Rodgers (Blackwell, Malden, MA) pp, 108-128.
- Haraway, Donna (1985) 'Manifesto for Cyborgs: Science, Technology and Socialist Feminism in the 1980's, *Socialist Review* 15(2):65-107. (Reprinted in revised form as 'A Cyborg Manifesto: Science, Technology and Socialist Feminism in the Late Twentieth Century', pp.149-81 in Simians, *Cyborgs, and Woman: The Reinvention of Nature*. New York: Routledge, 1991)
- Harding, S (2015) Objectivity for sciences from below. Mary Wollstonecraft lecture. University of Hull."
- Harding, S. (1991). Whose science. Whose knowledge, 1, 83-106.
- Harding, S. (Ed.). (2011). *The postcolonial science and technology studies reader*. Duke University Press.
- Harding, S. G. (Ed.). (2004). *The feminist standpoint theory reader: Intellectual and political controversies*. Psychology Press.
- Harris, M. (1968). Emics, etics, and the new ethnography. *The rise of anthropological theory: A history of theories of culture*, 568-604.

- Hassenzahl, M., & Tractinsky, N. (2006). User experience-a research agenda. *Behaviour & information technology*, 25(2), 91-97.
- Hassenzahl, M., Eckoldt, K., Diefenbach, S., Laschke, M., Len, E., & Kim, J. (2013). Designing moments of meaning and pleasure. *Experience design and happiness. International journal of design*, 7(3)
- Heath, A. (2016, February 24). Here's why Facebook didn't make a 'Dislike' button. Retrieved from <https://www.businessinsider.com/why-facebook-didnt-make-dislike-button-2016-2?IR=T>
- Hills Collins, P. (1991). *Black Feminist Thought: Knowledge, Consciousness and the Politics of Empire*.
- Hirst, W., & Echterhoff, G. (2012). Remembering in conversations: The social sharing and reshaping of memories. *Annual review of psychology*, 63, 55-79.
- Hirst, W., & Manier, D. (2008). Towards a psychology of collective memory. *Memory*, 16(3), 183-200.
- Hirst, W., & Yamashiro, J. (2017). Social aspects of forgetting. *Collective remembering: How remembering with others influences memory*, 76-99.
- Hollingshead, A. B., & Fraidin, S. N. (2003). Gender stereotypes and assumptions about expertise in transactive memory. *Journal of Experimental Social Psychology*, 39(4), 355-363.
- Holmes, K. (2018). *Mismatch: How inclusion shapes design*. MIT Press.
- Hooks, B. (1989). Choosing the margin as space of radical openness. *Framework*, (36), 15.

- Isaac, M., & Ember, S. (2016, July 9). Live Footage of Shootings Forces Facebook to Confront New Role. Retrieved from <https://www.nytimes.com/2016/07/09/technology/facebook-dallas-live-video-breaking-news.html>
- Issues. (n.d.). Retrieved from <https://whoseknowledge.org/issues/>
- Jacobs, J. (2019, April 8). Wikipedia Isn't Officially a Social Network. But the Harassment Can Get Ugly. Retrieved from <https://www.nytimes.com/2019/04/08/us/wikipedia-harassment-wikimedia-foundation.html>
- Jacobs, J. (2019, April 16). Wikipedia, el campo de batalla del lenguaje y la igualdad de género. Retrieved from <https://www.nytimes.com/es/2019/04/16/espanol/wikipedia-acoso-comunidad-lgbt.html>
- 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).
- Jane, E. A. (2016). *Misogyny online: A short (and brutish) history*. Sage.
- Japanese Bot Teen Gets Suicidal. (2016, October 7). Retrieved from <https://financialtribune.com/articles/economy-sci-tech/51224/japanese-bot-teen-gets-suicidal>
- Jarvis, C., Menger-Anderson, K., & III, E. S. (2019, September 30). What a Deleted Profile Tells Us About Wikipedia's Diversity Problem. Retrieved from <https://undark.org/2019/04/25/wikipedia-diversity-problem/>
- Jen (2011, February 13). So after reading this article I was inspired to go look at the Wikipedia article on rape culture. [Blog comment]. Retrieved from

<https://geekfeminismdotorg.wordpress.com/2011/02/11/im-a-woman-and-ive-edited-Wikipedia/>

- Judith, B. (1993). *Bodies That Matter: On the Discursive Limits of "Sex."*. New York and London: Routledge.
- Kapowaz. (2006 Nov 23). Tweet text [wondering if there should be a pseudo-syntax for letting a Follower on twitter know you're directing a comment at them.]. Retrieved from <https://twitter.com/kapowaz/status/139453>
- Klein, M., & Konieczny, P. (2015). Gender gap through time and space: A journey through wikipedia biographies and the " wigi" index. arXiv preprint arXiv:1502.03086.
- Kriplean, T., Beschastnikh, I., McDonald, D. W., & Golder, S. A. (2007, November). Community, consensus, coercion, control: cs\* w or how policy mediates mass participation. In Proceedings of the 2007 international ACM conference on Supporting group work (pp. 167-176).
- Krug, S. (2019, November 7). Reactions Now Available Globally. Retrieved from <https://about.fb.com/news/2016/02/reactions-now-available-globally/>
- Kvavilashvili, L., Mirani, J., Schlagman, S., & Kornbrot, D. E. (2003). Comparing flashbulb memories of September 11 and the death of Princess Diana: Effects of time delays and nationality. *Applied Cognitive Psychology: The Official Journal of the Society for Applied Research in Memory and Cognition*, 17(9), 1017-1031.
- Lafferty, J. (2016, February 26). You Want a Dislike Button? Here's Why Facebook Isn't Giving You One. Retrieved from <https://www.adweek.com/digital/you-want-a-dislike-button-heres-why-facebook-isnt-giving-you-one/>

- LaFrance, A. (2017, March 30). Trolls Are Winning the Internet, Technologists Say. Retrieved from <https://www.theatlantic.com/technology/archive/2017/03/guys-its-time-for-some-troll-theory/521046/>
- Lallemand, C. (2015). Towards consolidated methods for the design and evaluation of user experience (Doctoral dissertation, University of Luxembourg, Luxembourg).
- Lang, I., 2004, January. Janice M. Morse & Lyn Richards (2002). Readme First for a User's Guide to Qualitative Methods. In Forum Qualitative Sozialforschung/Forum: Qualitative Social Research (Vol. 5, No. 1).
- Larson, S. (2016, December 13). Microsoft unveils a new (and hopefully not racist) chat bot. Retrieved from <https://money.cnn.com/2016/12/13/technology/microsoft-chat-bot-tay-zo/index.html>
- Lather, P. (1991). Getting smart: Feminist research and pedagogy within/in the postmodern. Routledge.
- Lather, P. (1993). Fertile obsession: Validity after poststructuralism. *The sociological quarterly*, 34(4), 673-693.
- Law, E. L. C., Vermeeren, A. P., Hassenzahl, M., & Blythe, M. (2007, September). Towards a UX manifesto. In Proceedings of the 21st British HCI Group Annual Conference on People and Computers: HCI... but not as we know it-Volume 2 (pp. 205-206). BCS Learning & Development Ltd.
- Le Hir, E., & Wikimédia France. (2017-2020.). Gender Gap in Wikidata. Retrieved from <https://www.denelezh.org/gender-gap/>
- Lee et al. (2016). Principles for Design Justice. Design Justice Zine issue#1

- Leeson, L. H. (2013). ! Women Art Revolution.
- Leung, C. (2012). Profile: The Living Archives Project: Canadian Disability and Eugenics. *Canadian Journal of Disability Studies*, 1(1), 143-166.
- Levin, S. (2016, September 8). A beauty contest was judged by AI and the robots didn't like dark skin. Retrieved from <https://www.theguardian.com/technology/2016/sep/08/artificial-intelligence-beauty-contest-doesnt-like-black-people>
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. *The Sage handbook of qualitative research*, 4, 97-128.
- Lloyd, A. (2006, June 8). A statistical survey of the Ubuntu community. Retrieved from <https://launchpad.net/ubuntu/spec/ubuntu-census-survey>
- Lorite, S. (2017). Tretze passes endavant. *Konvent Zero*.
- Lothian, A. (2013). Archival anarchies: Online fandom, subcultural conservation, and the transformative work of digital ephemera. *International Journal of Cultural Studies*, 16(6), 541-556.
- Lozada Oliva, M (2015). "My Spanish" (WoWPS 2015) [Online]. YouTube. Available: [https://www.youtube.com/watch?v=fE-c4Bj\\_RT0](https://www.youtube.com/watch?v=fE-c4Bj_RT0)
- Lozada-Oliva, M. (2017). *Peluda*. Minneapolis, United States of America: Button Poetry.
- MacAulay, M., & Visser, R. (2016). Editing diversity in: Reading diversity discourses on Wikipedia. *Ada: A Journal of Gender, New Media, and Technology*, 9.

- Manier, D., & Hirst, W. (2008). A cognitive taxonomy of collective memories. *Cultural memory studies: An international and interdisciplinary handbook*, 253-262.
- Manovich, L. (1999). Database as symbolic form. *Convergence*, 5(2), 80-99.
- Manovich, L. (2007). What comes after remix. *Remix Theory*, 10, 2013.
- Manthorpe, R. (2017, March 2). Beauty.AI's 'robot beauty contest' is back – and this time it promises not to be racist. Retrieved from <https://www.wired.co.uk/article/robot-beauty-contest-beauty-ai>
- Mark Zuckerberg. (2015, Oct 8). Facebook Post [Today we're launching a test of Reactions --a more expressive Like button ... ]. Retrieved from <https://www.facebook.com/zuck/videos/10102412343501081/>
- McCulloch, G. (2019). *Because Internet: Understanding the new rules of language*. Riverhead Books.
- McCurry, J. (2016, October 27). The inventor of emoji on his famous creations – and his all-time favorite. Retrieved from <https://www.theguardian.com/technology/2016/oct/27/emoji-inventor-shigetaka-kurita-moma-new-york-text#img-1>
- McLuhan, M. (1994). *Understanding media: the extensions of man*. 1964. *Pour comprendre les média: Les prolongements*.
- McMillen, A., Henry, L., Reid, K., Dorothea, Yatima, Conley, M., ... Skud Post. (2011, October 14). On being harassed: a little GF history and some current events. Retrieved from <https://geekfeminismdotorg.wordpress.com/2011/10/13/on-being-harassed-a-little-gf-history-and-some-current-events/>

- Meade, M. L., Harris, C. B., Van Bergen, P., Sutton, J., & Barnier, A. J. (Eds.). (2018). Collaborative remembering: Theories, research, and applications. Oxford University Press.
- Messina, C. (2007). Groups for twitter; or a proposal for twitter tag channels. Factory Joe.
- Minguillón Alfonso, J., Meneses, J., Fàbregues Feijóo, S., Aibar Puentes, E., & Ferran Ferrer, N. (2018). Are women present, absent or in disguise? Analyzing gender bias in the Spanish Wikipedia.
- Morrison, T. (1995). Lecture and Speech of Acceptance Upon the Award of the Nobel Prize for Literature. 1993.
- Mulato, A. (2016, May 19). El gráfico sobre la edad a la que empieza el acoso en México. Retrieved from [verne.elpais.com/verne/2016/05/19/mexico/1463615258\\_699475.html](http://verne.elpais.com/verne/2016/05/19/mexico/1463615258_699475.html)
- Musings of a Chicagoan. (n.d.). Retrieved from <http://web.archive.org/web/20061115200046/http://windycitymike.com/2006/08/02/why-i-quit-wikipedia/>
- Nafus, D. (2012). 'Patches don't have gender': What is not open in open source software. *New Media & Society*, 14(4), 669-683.
- Nafus, D., Leach, J., & Krieger, B. (2006). Free/Libre and Open Source Software: Policy Support (FLOSSPOLs). *Gender Issues*, 16, 1-75.
- Narayan, U., Harding, S. G., & Harding, S. (Eds.). (2000). Decentering the center: Philosophy for a multicultural, postcolonial, and feminist world. Indiana University Press.
- NeilCrosby (2006 Nov 23). Tweet text [@kapowaz: Probably]. Retrieved from <https://twitter.com/NeilCrosby/status/139513>
- Nietzsche, F. (1957). *The Use and Abuse of History*, trans. A. Collins. Bobbs-Merrill, Indianapolis.

- Norman, D., Miller, J., & Henderson, A. (1995, May). What you see, some of what's in the future, and how we go about doing it: HI at Apple Computer. In Conference companion on Human factors in computing systems (p. 155). ACM.
- Oremus, W. (2014, December 15). The Real Reason Facebook Will Never Have a "Dislike" Button. Retrieved from <https://slate.com/technology/2014/12/facebook-dislike-button-why-mark-zuckerberg-wont-allow-it.html>
- Owen, T. (2016, March 26). Microsoft Is 'Deeply Sorry' Its Artificial Intelligence Bot Became Horribly Racist. Retrieved from [https://www.vice.com/en\\_us/article/ev9qj4/microsoft-is-deeply-sorry-its-artificial-intelligence-bot-became-horribly-racist](https://www.vice.com/en_us/article/ev9qj4/microsoft-is-deeply-sorry-its-artificial-intelligence-bot-became-horribly-racist)
- Parkinson, H. J. (2015, November 17). Oxford Dictionary names emoji 'word of the year' - here are five better options. Retrieved from <https://www.theguardian.com/technology/2015/nov/17/oxford-dictionary-emoji-word-of-the-year-crying-face>
- Peake, B. (2015). WP: THREATENING2MEN: misogynist infopolitics and the hegemony of the asshole consensus on English Wikipedia. *Ada: A Journal of Gender, New Media, and Technology*, 7.
- Penny, L. (2017, April 20). Robots are racist and sexist. Just like the people who created them | Laurie Penny. Retrieved from <https://www.theguardian.com/commentisfree/2017/apr/20/robots-racist-sexist-people-machines-ai-language>
- Pentzold, C. (2009). Fixing the floating gap: The online encyclopaedia Wikipedia as a global memory place. *Memory studies*, 2(2), 255-272.
- Perez, S. (2016, March 24). Microsoft silences its new A.I. bot Tay, after Twitter users teach it racism [Updated]. Retrieved from

<https://techcrunch.com/2016/03/24/microsoft-silences-its-new-a-i-bot-tay-after-twitter-users-teach-it-racism/>

- Peters, I. (2009). Folksonomies. Indexing and retrieval in Web 2.0. Walter de Gruyter.
- Pew Research Center, October 2014, "Online Harassment" Available at: <http://www.pewinternet.org/2014/10/22/online-harassment/>
- Pitts-Taylor, V. (2013). I feel your pain: Embodied knowledges and situated neurons. *Hypatia*, 28(4), 852-869.
- Power, M. (1994). The audit explosion (No. 7). *Demos*.
- Preciado, P. B. (2011, November). Seminario Cuerpo Impropio. Guía de modelos somatopolíticos y de sus posibles usos desviados. *seminario Cuerpo Impropio. Guía de modelos somatopolíticos y de sus posibles usos desviados. Sevilla*. Retrieved from [https://ayp.unia.es/index.php?option=com\\_content&task=view&id=696](https://ayp.unia.es/index.php?option=com_content&task=view&id=696)
- Preciado, P. B. (2014). *Testo yonqui*. Grupo Planeta Spain.
- Rainie, L., Anderson, J., & Albright, J. (2019, December 31). The Future of Free Speech, Trolls, Anonymity and Fake News Online. Retrieved from <https://www.pewresearch.org/internet/2017/03/29/the-future-of-free-speech-trolls-anonymity-and-fake-news-online/>
- Rajaram, S., & Pereira-Pasarin, L. P. (2010). Collaborative memory: Cognitive research and theory. *Perspectives on psychological science*, 5(6), 649-663.
- Rankin, K. (2019, December 16). READ: Transcript of the Philando Castile Video. Retrieved from <https://www.colorlines.com/articles/read-transcript-philando-castile-video>

- Rawlinson, K. (2018, June 11). Labour MP calls for end to online anonymity after '600 rape threats'. Retrieved from <https://www.theguardian.com/society/2018/jun/11/labour-mp-jess-philips-calls-for-end-to-online-anonymity-after-600-threats>
- Reagle, J. (2013). "Free as in sexist?" Free culture and the gender gap. *first monday*, 18(1).
- Reagle, J., & Rhue, L. (2011). Gender bias in Wikipedia and Britannica. *International Journal of Communication*, 5, 21.
- Reinharz, S., & Davidman, L. (1992). *Feminist methods in social research*. Oxford University Press.
- Replies Are Now Mentions. (2009 March 31). Retrieved from [blog.twitter.com/official/en\\_us/a/2009/replies-are-now-mentions.html](http://blog.twitter.com/official/en_us/a/2009/replies-are-now-mentions.html)
- Roediger, H. L., Meade, M. L., & Bergman, E. T. (2001). Social contagion of memory. *Psychonomic bulletin & review*, 8(2), 365-371.
- Roto, V., Law, E., Vermeeren, A. P. O. S., & Hoonhout, J. (2011, September). User experience white paper: Bringing clarity to the concept of user experience. In *Dagstuhl Seminar on Demarcating User Experience*
- Royer, A. (2010). *Warming Up Records: Archives, Memory, Power and Index of the Disappeared*. *InterActions: UCLA Journal of Education and Information Studies*, 6(1).
- Schutz, A. (1967). *The phenomenology of the social world*. Northwestern University Press.
- Senft, T. M. (2015a). The skin of the selfie. *Ego update: The future of digital identity*, 134-161.
- Senft, T. M. (2015b, October). *Affect Theory Conference*. Affect Theory Conference. Lancaster

- Senft, T., & Horn, S. (1996). Special issue: Sexuality and Cyberspace: Performing the Digital Body. *Women & Performance: A Journal of Feminist Theory*, 17.
- Shank, G. D. (2002). *Qualitative research: A personal skills approach*. Upper Saddle River, NJ: Prentice Hall.
- Snees, A. C. & J. (2017, January 25). Mistreatment of women MPs revealed. Retrieved from <https://www.bbc.com/news/uk-politics-38736729>
- Spacefem. (2011, February 10). I'm a woman, and I've edited Wikipedia. Retrieved from <https://geekfeminismdotorg.wordpress.com/2011/02/11/im-a-woman-and-ive-edited-Wikipedia/>
- Sparrow, B., Liu, J., & Wegner, D. M. (2011). Google effects on memory: Cognitive consequences of having information at our fingertips. *science*, 333(6043), 776-778.
- Spivak, G. C. (1988). Can the subaltern speak?. Can the subaltern speak? Reflections on the history of an idea, 21-78.
- Spradley, J. P., & McCurdy, D. W. (1980). *Anthropology, the cultural perspective*. John Wiley & Sons
- Staff and agencies. (2016, March 26). Microsoft 'deeply sorry' for racist and sexist tweets by AI chatbot. Retrieved from <https://www.theguardian.com/technology/2016/mar/26/microsoft-deeply-sorry-for-offensive-tweets-by-ai-chatbot>
- Stanley, L., & Wise, S. (1993). *Breaking out again: Feminist epistemology and ontology*.

- Stephenson-Goodknight, R. (2017). Gender Diversity Mapping Project - Diversity Conference 2017. Retrieved from <https://www.youtube.com/watch?v=GgTkIE9UGsk>
- Strategy/Wikimedia movement/2018-20/2019 Community Conversations/Community Health. (n.d.). Retrieved from [https://meta.wikimedia.org/wiki/Strategy/Wikimedia\\_movement/2018-20/2019\\_Community\\_Conversations/Community\\_Health/en#What\\_is\\_the\\_current\\_situation?](https://meta.wikimedia.org/wiki/Strategy/Wikimedia_movement/2018-20/2019_Community_Conversations/Community_Health/en#What_is_the_current_situation?)
- Suchman, L. (2002). Located accountabilities in technology production. *Scandinavian journal of information systems*, 14(2), 7.
- Sweeney, M. E. (2016). The Ms. Dewey “experience”: Technoculture, gender, and race. *Digital sociologies*, 401-420.
- Tacopino, J. (2016, March 25). AI is a racist with daddy issues. Retrieved from <https://nypost.com/2016/03/24/ai-is-a-racist-with-daddy-issues/>
- The Alcheminists. (n.d.). Power and control wheel and respect wheel for online engagement. Retrieved from <http://femtechnet.org/csov/educator/>
- The EGE (2011, February 12). I edit religiously. [Blog comment]. Retrieved from <https://geekfeminismdotorg.wordpress.com/2011/02/11/im-a-woman-and-ive-edited-Wikipedia/>
- Thomson, S. D. (2016). Preserving Social Media: DPC Technology Watch Report 16-01, February 2016. Digital Preservation Coalition.< DOI: [http://dx. doi. org/10.7207/twr16-01](http://dx.doi.org/10.7207/twr16-01), 13, 2017.
- Trigger & Content Warnings. (n.d.). Retrieved from <https://trigger-warning-guide.tumblr.com/triggers>

- Tsouroupidou, K. (2016). Harassment Survey Report (2015) .  
Wikimedia Foundation. Retrieved from  
[https://meta.wikimedia.org/wiki/File:Harassment\\_Survey\\_2015\\_-\\_Results\\_Report.pdf](https://meta.wikimedia.org/wiki/File:Harassment_Survey_2015_-_Results_Report.pdf)
- Tulving, E. (1983). Elements of episodic memory.
- Tulving, E. (1984). Precis of elements of episodic memory. *Behavioral and Brain Sciences*, 7(2), 223-238.
- Tulving, E. (2002). Episodic memory: From mind to brain. *Annual review of psychology*, 53(1), 1-25.
- Tulving, E., & Thomson, D. M. (1971). Retrieval processes in recognition memory: Effects of associative context. *Journal of Experimental Psychology*, 87(1), 116.
- Tweten, A. (2018). *Bye Felipe: Disses, Dick Pics, and Other Delights of Modern Dating*. Running Press Adult.
- Van Dijck, J. (2005). From shoebox to performative agent: the computer as personal memory machine. *New Media & Society*, 7(3), 311-332.
- Van Dijck, J. (2007). *Mediated memories in the digital age*. Stanford University Press.
- Vasilescu, B., Posnett, D., Ray, B., van den Brand, M. G., Serebrenik, A., Devanbu, P., & Filkov, V. (2015, April). Gender and tenure diversity in GitHub teams. In *Proceedings of the 33rd annual ACM conference on human factors in computing systems* (pp. 3789-3798).
- Vaurora (2011, February 11). At my first Grace Hopper conference for women in computing, I went to a panel about founding successful startups [Blog comment]. Retrieved from

<https://geekfeminismdotorg.wordpress.com/2011/02/11/im-a-woman-and-ive-edited-Wikipedia/>

- Vincent, J. (2016, March 24). Twitter taught Microsoft's friendly AI chatbot to be a racist asshole in less than a day. Retrieved from [theverge.com/2016/3/24/11297050/tay-microsoft-chatbot-racist](https://theverge.com/2016/3/24/11297050/tay-microsoft-chatbot-racist)
- Vingiano, A. (2014, May 5). How The "Trigger Warning" Took Over The Internet. Retrieved from <https://www.buzzfeednews.com/article/alisonvingiano/how-the-trigger-warning-took-over-the-internet>
- Vrana, A. (2018, March 26). The Life and Death of Marielle Franco on Wikipedia. Retrieved from [whoseknowledge.org/the-life-and-death-of-marielle-franco-on-wikipedia/](https://whoseknowledge.org/the-life-and-death-of-marielle-franco-on-wikipedia/)
- Waugh, R. (2016, August 29). Why are robots so racist? Another AI is busted for hating the name 'Jamal'. Retrieved from <https://metro.co.uk/2016/08/29/why-are-robots-so-racist-another-ai-is-busted-for-hating-the-name-jamal-6097455/>
- Wegner, D. M. (1995). A computer network model of human transactive memory. *Social cognition*, 13(3), 319-339.
- Weldon, M. S., & Bellinger, K. D. (1997). Collective memory: collaborative and individual processes in remembering. *Journal of experimental psychology: Learning, memory, and cognition*, 23(5), 1160.
- Wertsch, J. V., & Roediger III, H. L. (2008). Collective memory: Conceptual foundations and theoretical approaches. *Memory*, 16(3), 318-326.

- Wikimedia Contributors (2017-2018). Gender Diversity Mapping [Online]. Wikimedia. Available:  
[https://meta.wikimedia.org/wiki/Gender\\_Diversity\\_Mapping](https://meta.wikimedia.org/wiki/Gender_Diversity_Mapping)
- Wikimedia Contributors (2017-2018). Research:Gender gap in Wikipedia's content [Online]. Wikimedia. Available:  
[https://meta.wikimedia.org/wiki/Research:Gender\\_gap\\_in\\_Wikipedia%27s\\_content](https://meta.wikimedia.org/wiki/Research:Gender_gap_in_Wikipedia%27s_content)
- Wikimedia contributors (2017-2019). Community Insights/2016-17 Report/Community Engagement [Online]. Wikimedia. Available:  
[https://meta.wikimedia.org/wiki/Community\\_Insights/2016-17\\_Report/Community\\_Engagement](https://meta.wikimedia.org/wiki/Community_Insights/2016-17_Report/Community_Engagement)
- Wikipedia 'completely failed' to fix gender imbalance. (2014, August 8). Retrieved from  
<https://www.bbc.com/news/av/business-28701772/wikipedia-completely-failed-to-fix-gender-imbalance>
- Wikipedia Contributors (2001-2020). User:Jimbo Wales/Statement of principles [Online]. Wikipedia. Available:  
[https://en.wikipedia.org/wiki/User:Jimbo\\_Wales/Statement\\_of\\_principles](https://en.wikipedia.org/wiki/User:Jimbo_Wales/Statement_of_principles)
- Wikipedia Contributors (2001-2020). Wikipedia:Neutral point of view [Online]. Wikipedia. Available:  
[https://en.wikipedia.org/wiki/Wikipedia:Neutral\\_point\\_of\\_view](https://en.wikipedia.org/wiki/Wikipedia:Neutral_point_of_view)
- Wikipedia Contributors (2003-2020). Wikipedia:No original research [Online]. Wikipedia. Available:  
[https://en.wikipedia.org/wiki/Wikipedia:No\\_original\\_research](https://en.wikipedia.org/wiki/Wikipedia:No_original_research)
- Wikipedia Contributors (2003-2020).Wikipedia:Verifiability [Online]. Wikipedia. Available:  
<https://en.wikipedia.org/wiki/Wikipedia:Verifiability>

- Wikipedia Contributors (2004-2020). Wikipedia:WikiProject Countering systemic bias [Online]. Wikipedia. Available: [https://en.wikipedia.org/wiki/Wikipedia:WikiProject\\_Countering\\_systemic\\_bias](https://en.wikipedia.org/wiki/Wikipedia:WikiProject_Countering_systemic_bias)
- Wikipedia Contributors (2005-2020). Wikipedia:Biographies of living persons [Online]. Wikipedia. Available: [https://en.wikipedia.org/wiki/Wikipedia:Biographies\\_of\\_living\\_persons](https://en.wikipedia.org/wiki/Wikipedia:Biographies_of_living_persons)
- Wikipedia Contributors (2006-2020). Wikipedia:Systemic bias [Online]. Wikipedia. Available: [https://en.wikipedia.org/wiki/Wikipedia:Systemic\\_bias](https://en.wikipedia.org/wiki/Wikipedia:Systemic_bias)
- Wikipedia Contributors (2009-2019). Talk:Caster Semenya [Online]. Wikipedia. Available: [https://en.wikipedia.org/wiki/Talk:Caster\\_Semenya](https://en.wikipedia.org/wiki/Talk:Caster_Semenya)
- Wikipedia Contributors (2009, October 5). Talk:Caster Semenya/Archive 1. [Online] Wikipedia Available: [https://en.wikipedia.org/wiki/Talk:Caster\\_Semenya/Archive\\_1#Biological\\_bios\\_of\\_living\\_people](https://en.wikipedia.org/wiki/Talk:Caster_Semenya/Archive_1#Biological_bios_of_living_people)
- Wikipedia Contributors (2016-2020). Shooting of Philando Castile [Online]. Wikipedia. Available: [https://en.wikipedia.org/wiki/Shooting\\_of\\_Philando\\_Castile](https://en.wikipedia.org/wiki/Shooting_of_Philando_Castile)
- Wikipedia contributors (2019, July 28). Talk:Caster Semenya/Archive 4. [Online] Wikipedia Available: [https://en.wikipedia.org/wiki/Talk:Caster\\_Semenya/Archive\\_4#oct](https://en.wikipedia.org/wiki/Talk:Caster_Semenya/Archive_4#oct)
- Wikipedia contributors (2019, July 28). Talk:Caster Semenya/Archive 4. [Online] Wikipedia. Available: [https://en.wikipedia.org/wiki/Talk:Caster\\_Semenya/Archive\\_4#No\\_longer\\_a\\_teenager](https://en.wikipedia.org/wiki/Talk:Caster_Semenya/Archive_4#No_longer_a_teenager)

- Wilson, R. A. (2017). Group-level cognizing, collaborative remembering, and individuals.
- Women in Drupal (Formerly DrupalChix). (2008). Retrieved from <https://groups.drupal.org/women-drupal>
- Yanisky-Ravid, S., & Mittelman, A. (2015). Gender biases in cyberspace: A two-stage model, the new arena of Wikipedia and other websites. *Fordham Intell. Prop. Media & Ent. LJ*, 26, 381.