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**Figuring things out together: on the relationship between design and collective practice**  
Groten, A.

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Intersectionality

Ashgate 14

Palgrave Macmillan 10

Athena  
Emerald 49

Stylus Publishing 12

Wiley

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100

tsearchtool.nl

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B I U S [List Icons] [Undo] [Redo] [Eye]

Connected.

1 Thit :D

2

3 hey there!!

4 wohooo

5 hallo

6 Let's put notes here

7 amazinggggggg!

8

9

10 **10.October 2018, Reading Group/meeting Laura, Anja, Svenja, Annette**

11

12 question/preparation fro Atria meeting(Thesaurus)

13 Manual: Please feel free to add your own questions!

14 • what is the motivation of the individual participation (passion for the subject?, or else?)

15 • What's the role of head of collection?

16 • history of thesaurus... how would they organize back then?

17 • what are the skills that you need for a thesaurus?

18 • did they experiment with different models, how was the collaboration...? Workflow? External parties...

19 • talking about our processes...encounters...

20 • how and if it was updated...?

21 • analytics , on how they are using it now

22 • diagrammtic of the thesaurus: why that shape?

23 • digital heritage: what is done with the thesaurus now?

24 • why is there only a focus on gender, not race?

25 • data processing: Andre:

26 • what were the thesaurus that you looked at

27 • beta version, testings of user interface, and how they did, target group

28 • audience...who are our adresseses?

29

30 new dates to prepare Atria meeting:

31 19.10, 5pm Annette, Svenja &?

32 22.10, 8.30pmAnja, Laura, Svenja &?

33

34

35

36 Friday, 19.Oct

37 Meeting Preparation Meeting Women's Thesaurus

38 Present: Annette, Svenja

39

40 Budget for speakers/participants from outside

41 Gusta Drenthe 100-150Euro

42 Maria van der Sommen 100-150Euro

43 IHLIA?

44 Book voucher for Noortje for organizing/support

45

46 Sending funding application to participants

47 'Concrete outcome':

48 Be strategic over audio during meeting

49 Gender Heritage Connection: How are you making this initiative intersectional?

50

51 History of terms adopted--made visually

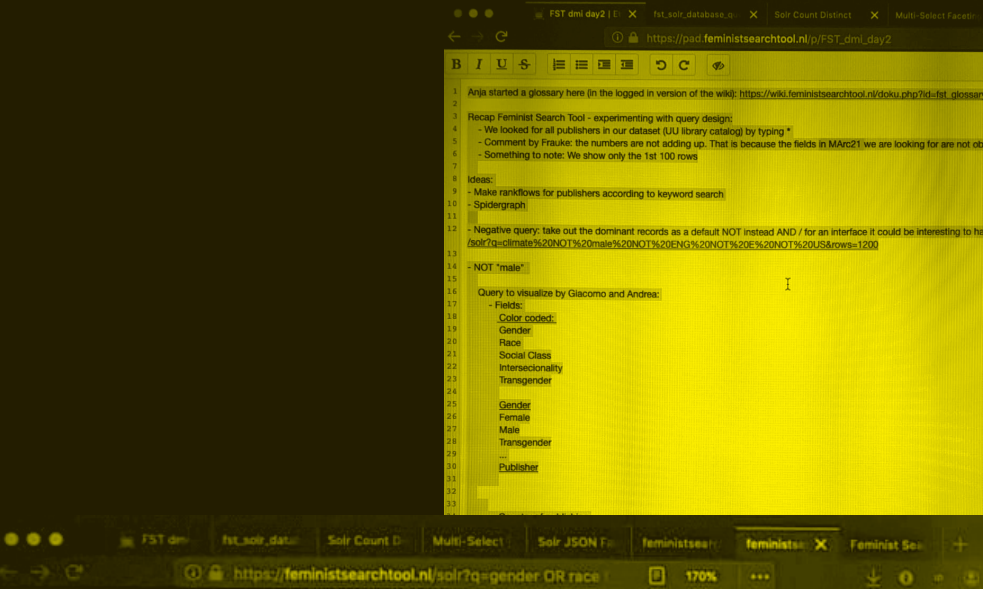
52 What are the 2200 words

53 How many words have been added/taken away?

54 Where is all the background information of the 2200 stored and made accessible?

55 (e.g.






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/ edited by Mike Cole."]],
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: issues of gender, \"race\", sexuality, disability and social
class / edited by Mike Cole."]],
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type your keyword

Default:

 Feminism\*

Terms retrieved from Atria Women Thesaurus:  
<https://institute-genderequality.org/library-archive/collection/thesaurus/5287/>



anarcha feminism\*



Black Feminism\*



Christian feminism\*



cultural feminism\*



cyber-feminism\*



ecofeminism\*



equal rights feminism\*



first feminist wave\*



global feminism (eng)\*



Marxist feminism\*



Muslim feminism\*



new feminism\*



radical feminism\*



second feminist wave\*



socialist feminism\*



third wave feminism\*

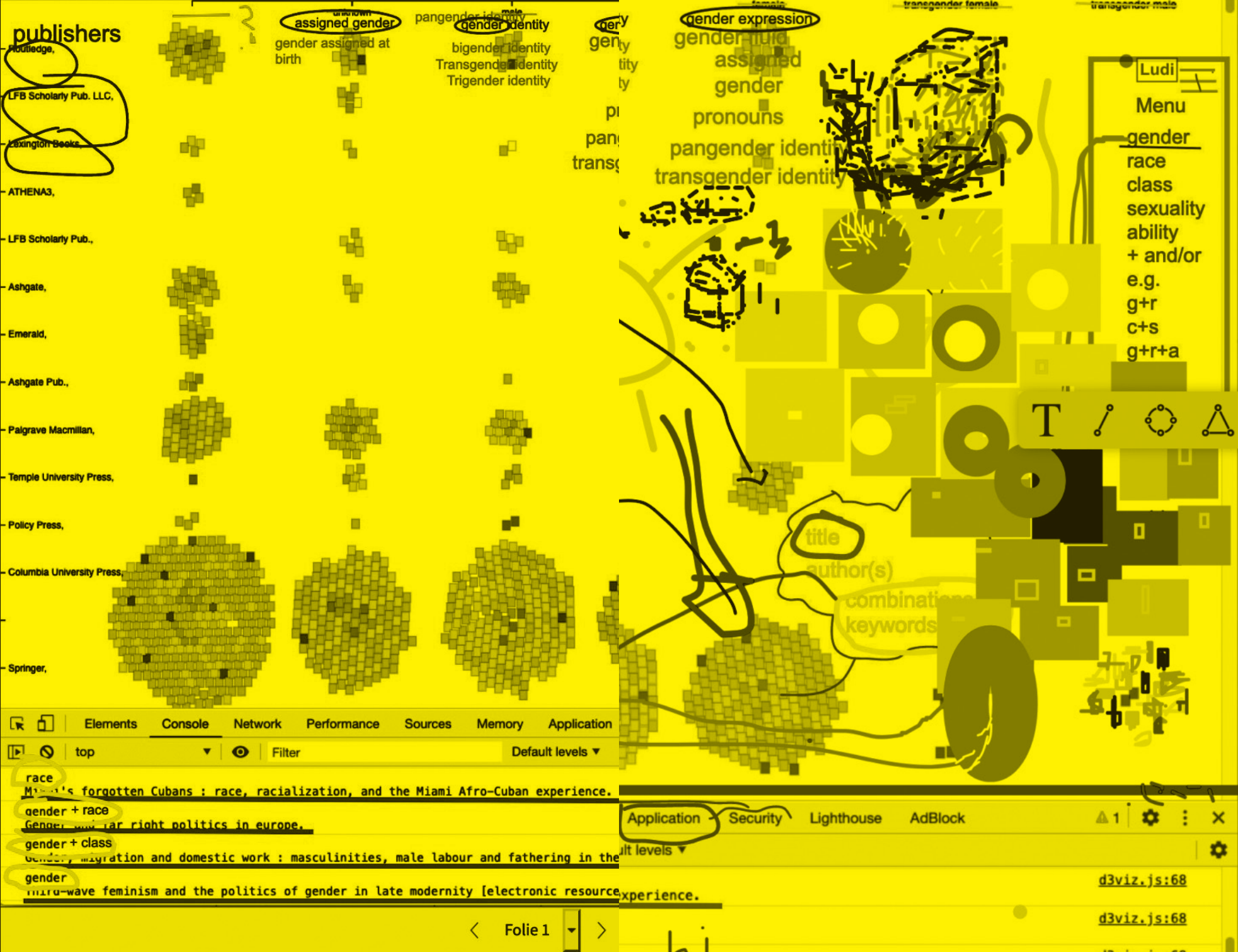


add category\*

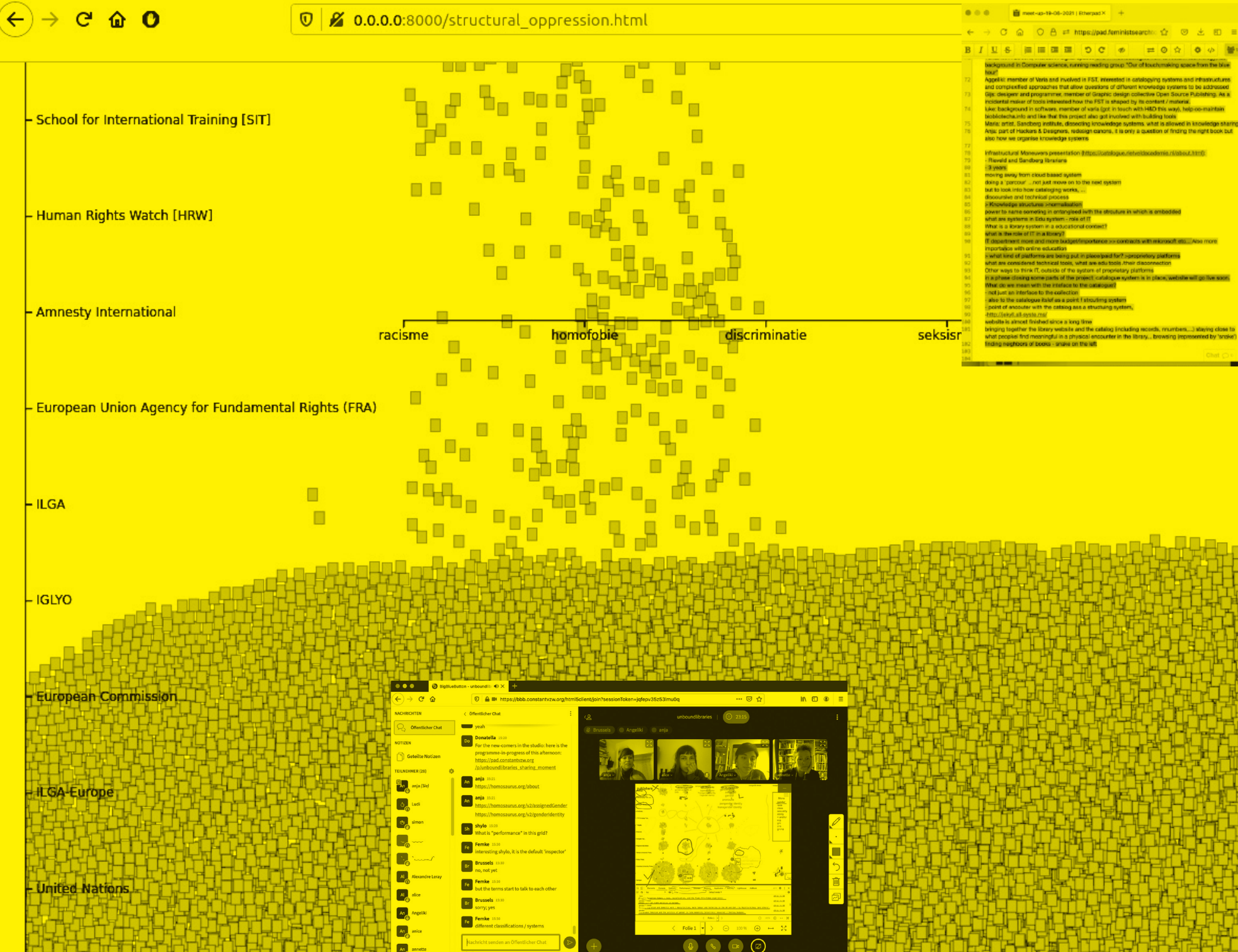


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## Chapter 3: Tool Building

This chapter discusses the ways in which tools (in the context of self-organized collective work) may or may not be perceived and actualized as purposeful objects that can be used, or are designed to be used. More specifically, I will discuss an ongoing, non-conclusive process of collectively imagining, building, and modifying a set of digital tools entitled 'Feminist Search Tools'.

Drawing on Sara Ahmed's exploration of the concept of 'use', and on the metaphysical meaning of 'tool' and 'broken-tool' as discussed by Karen Barad, Bruno Latour and Graham Harman, the inefficiency of a collective tool building process brings to the fore other-than-utilitarian articulations of tools. That is, the processes of collective tool building, through their distributed and fragmented character, can create conditions in which tools are not presumed as an inevitable outcome but as ongoing and discursive.

## Introduction: Situating tools within the H&D collective

In the context of Hackers & Designers, ‘tools’ usually refer to digital tools, software or hardware that we, as designers, artists, technologists and organizers interact with, on a daily basis. H&D tends toward free and open-source tools. In H&D workshops, the accessibility of source code offers possibilities for using, copying, studying and changing, thus learning from and with technical objects. In contrast to the restrictions of using, sharing and modifying proprietary software, free and open-source principles derive from software development practices where technical objects “are made publicly and freely available.”<sup>1</sup> According to the Free Software Foundation, ‘free’ is defined as liberty, as “free from restriction, not as ‘free of charge.’”<sup>2</sup> The collective aspects of free and open-source software are expressed through particular modes of licensing and the practice of documentation and publication of source code on platforms for distributed version control and source code management such as Github and Gitlab. In the context of H&D, these principles are explored in and outside of

the domain of computer programming.<sup>3</sup> Such principles are nurtured through a shared understanding that nothing is really made from scratch, and that the software and hardware we are working with, have been passed through many hands

There are certain open-source tools that H&D accumulated around organizational activities, such as the web spreadsheet tool Ethercalc<sup>4</sup> to create overviews for budgets and plans or the real-time collaborative note taking tool Etherpad.<sup>5</sup> As free and open-source projects, these tools are used by many collectives and individuals who put them into practice across various contexts. For H&D, such tools are enmeshed with organizational routines, with other technical systems and are also connected to other communities of toolmakers and users.

Furthermore, H&D builds and works with digital tools that are situated in the realm of experimental publishing and graphic design. These include self-made publishing tools such as ChattyPub,<sup>6</sup> Momentary Zine,<sup>7</sup>

3 In his dissertation “Sandbox Culture: A Study of the Application of Free and Open Source Software Licensing Ideas to Art and Cultural Production” Aymeric Mansoux wrote about the ways in which principles of free and open-source have been interpreted and actualized in free and open-source software on art and culture since the late nineties.

Aymeric Mansoux, “Sandbox Culture: A Study of the Application of Free and Open Source Software Licensing Ideas to Art and Cultural Production” (PhD diss., Centre for Cultural Studies, Goldsmiths, University of London, 2017).

4 Documentation of the Ethercalc instance hosted by H&D: [https://hackersanddesigners.nl/s/Tools/p/H%26D\\_Ethercalc](https://hackersanddesigners.nl/s/Tools/p/H%26D_Ethercalc), last accessed May 2022.

5 Documentation of the Etherpad instance hosted by H&D: [https://hackersanddesigners.nl/s/Tools/p/H%26D\\_Etherpad](https://hackersanddesigners.nl/s/Tools/p/H%26D_Etherpad), last accessed May 2022.

6 ChattyPub documentation can be found at: <https://hackersanddesigners.nl/s/Tools/p/Chattypub> <https://chatty-pub.hackersanddesigners.nl/>, last accessed March 2022.

7 Momentary Zine documentation can be found at: [https://hackersanddesigners.nl/s/Tools/p/Momentary\\_Zine](https://hackersanddesigners.nl/s/Tools/p/Momentary_Zine), last accessed March 2022.

1 Christopher Kelty, *Two Bits: The Cultural Significance of Free Software* (Durham: Duke University Press, 2008), xi.

2 ‘Free Software’ was defined and written by Richard Stallment and published by the Free Software Foundation. “The Free Software Foundation is dedicated to eliminating restrictions on copying, redistribution, understanding and modification of software. The word “free” in our name does not refer to price; it refers to freedom. First, the freedom to copy a program and redistribute it to your neighbors, so that they can use it as well as you. Second, the freedom to change a program, so that you can control it instead of it controlling you; for this, the source code must be made available to you.”

*GNU Bulletin* 1, no. 1, (1986), <https://www.gnu.org/bulletins/bull1.txt>, last accessed May 2022.



and the Heartbeat-to-print tool.<sup>8</sup> In experimenting with design and publishing tools, H&D draws inspiration from other collectives and individuals, such as the Brussels-based collective Open Source Publishing<sup>9</sup> and ‘Constant Association for Art & Media’,<sup>10</sup> the Rotterdam-based collective Varia,<sup>11</sup> the Amsterdam-based collective fanfare,<sup>12</sup> the publishing practice of Vienna-based artist Eva Weinmayr,<sup>13</sup> or the embodied publishing practices of Rotterdam-based designers Amy Suo Wu and Clara Balaguer.<sup>14</sup> In addition, the knowledge and practices evolving from educational environments are encapsulated by the student-led interdepartmental initiative PUB at the Sandberg Instituut Amsterdam<sup>15</sup> or the experimental publishing program XPUB at Piet

Zwart Institute in Rotterdam,<sup>16</sup> as well as the digital and hybrid publishing research groups of the Institute of Network Cultures.<sup>17</sup>

At H&D, such tools are often activated through workshops and are used to design small edition self-published printed matter. H&D’s experiments with design tools have challenged my design routines, more specifically the relationships I have built with design software, the tools I have become used to since my design education. In the context of H&D, publishing tools are not replacements but function in parallel to proprietary tools. They are indicative of an attempt to envision a process of designing a publication differently than it would be conventionally done. The practical and experimental approach to conceptualizing and building design and organizational tools differently has allowed me to test out other scenarios for tool-designer relationships and interactions.

Furthermore, H&D’s hands-on workshops bring together people and tools, in a temporary, focused environment. Such workshops feed off and nurture communities of tool users and makers who consider it relevant to expand the conception of tools and tool-building processes, to learn about the ways in which tools are constructed in a hands-on, practical and often playful manner. In all instances it seems to me that people involved with H&D ascribe a certain value to toolmaking. Yet, it also seems as if the shared enthusiasm for experimenting with tools cannot be located within the tool itself, nor in the products or outcomes these self-made

- 8 Documentation on the Heart-beat-to-print tool can be found at: <https://hackersanddesigners.nl/s/Tools/p/Heartbeat-to-print>, last accessed March 2022.
- 9 Website of Open Source Publishing: <http://osp.kitchen/>, last accessed March 2022.
- 10 Website of Constant Association for Art and Media <https://constantvzw.org/site/>, last accessed March 2022.
- 11 Website of Varia—Center of Everyday Technology: <https://varia.zone/>, last accessed March 2022.
- 12 Website of fanfare: <https://fanfarefanfare.nl/> <http://fanfareinc.world/colophon>, last accessed March 2022.
- 13 Website of Eva Weinmayr: <http://evaweinmayr.com/work-categories/publishing/> <http://andpublishing.org/>, last accessed March 2022.
- 14 Lecture and workshop by Clara Balaguer about “Publishing as Bloodletting,” <https://www.kabk.nl/agenda/studium-generale-lecture-clara-balaguer> <https://pub.sandberg.nl/sessions/pub-e-pub-4-session-3-publishing-as-bloodletting-w-clara-balaguer>.  
Example of Amy Suo Wu’s ‘embodied publishing’ practice: “garments [that] are experiments in embodied publishing, spectral publishing, navel expanding, and ghostwriting” <https://amysuowu.net/content/dear-ursula> <https://amysuowu.net/content/shapeshifty-0>, last accessed March 2022.
- 15 Website of the student initiative of the Sandberg Instituut, PUB <https://pub.sandberg.nl/>, last accessed March 2022.

- 16 Website of the Piet Zwart Experimental Publishing Master: <https://www.pzwart.nl/experimental-publishing/>, last accessed March 2022.

- 17 Joe Monk, Miriam Rasch, Florian Cramer and Amy Wu, eds., *Hybrid Publishing Toolkit*: <https://networkcultures.org/blog/publication/from-print-to-ebooks-a-hybrid-publishing-toolkit-for-the-arts/>, last accessed March 2022.

tools produce. The appreciation for such self-made tools seems to lie in the *process* of building tools. In my experience of experimenting with tools in the context of H&D, there is a common understanding that tools are not mere instruments but that, as tool-users and makers, we are implicated in them, in ways that go beyond their immediately evident utility or the products they may produce.

In this chapter I will discuss the implications of tools in collective design practice. More precisely, I will attend to the ways in which tools (in the context of self-organized collective work) may or may not be perceived and actualized as ‘purposeful’ objects that can be used, or are made to be used. Through my work with H&D, I realized that the particularity of a collective environment contributes to the ways in which tools are used, produced and discussed. Conversely, tools and processes of toolmaking can also affect the ways in which a collective environment evolves. These processes influence how H&D is organized as a group, how activities and interests are pursued and how certain values are articulated and rearticulated. In my experience collective practices are constantly in flux and tend to lean into their entanglements with tools in ways that make it difficult to sustain the perception of tools as being for something. In fact, the articulation and actualization of ‘tools’ within the context of H&D is driven by a certain resistance towards the conception of tools as simply practical and discrete objects.

In his book *Tool-being* (2002), the philosopher Graham Harman refuses a conceptualization of the tool as a merely pragmatic entity. Harman discusses Martin Heidegger’s tool analysis, where the philosopher pays particular attention to tools as metaphysical objects. According to Harman, a tool is a relational thing that “does not merely have some neutral presence that could

be viewed from the outside, but actually exists in a network of forces and meanings that determine its reality.”<sup>18</sup> Following this understanding of ‘tools’ they “cannot be confined to officially sanctioned tool-items such as picks, drills and chains.”<sup>19</sup> Due to the ways in which tools take part in a network of forces and meanings, it can become rather difficult to determine where a particular tool begins and ends. This is evident in my work with H&D, where relational aspects of tools come to the fore. Tools are sometimes introduced with a certain purpose in mind, but then travel through different contexts and change their function and meaning along the way. The role and function of a tool within collective design practice may change over time and influence how it is spoken about and actualized. Collaborative writing tools such as Etherpad or Ethercalc serve a certain organizational purpose, such as keeping track of budgets, plans and assemblies. However, such collaborative tools may also become the subject of a workshop or are conceptualized as a site/place/space in which workshops take place. An example is the *Temporary Riparian Zone*<sup>20</sup> workshop that was hosted by two members of the Varia collective, Cristina Cochior and Angeliki Diakrousi, during the Hackers & Designers Summer Academy of 2020. Another example is the short workshop sequel *Ethercalc routines* hosted by H&D member Karl Moubarak and myself, during the Hackers & Designers Summer Academy of 2021. In both workshops, participants joined remotely and spent time navigating through timed prompts and exercises on Ethercalc and Etherpad.

18 Graham Harman, *Tool-being: Heidegger and the metaphysics of objects* (Chicago: Open Court, 2002), 39.

19 *ibid.* 36.

20 Documentation of the ‘Temporary Riparian Zone’ workshop: [https://hackersanddesigners.nl/s/Summer\\_Academy\\_2020/p/Temporary\\_Riparian\\_Zone](https://hackersanddesigners.nl/s/Summer_Academy_2020/p/Temporary_Riparian_Zone), last accessed March 2022.

At H&D we sometimes speak about how ‘self-made’ tools (self-made not in the sense of made-from-scratch but rather as participants become involved in their making process) can estrange design processes, break with the routines we may have already established and instill in us a greater sense of our interdependence. When my relation to the tools I use has reached a point of routine, when a process ‘goes without saying,’ so to speak, the use of the tool becomes subconscious and unquestionable. In her book *What’s the use?* feminist writer and scholar Sara Ahmed stated, “When mechanisms work to enable or to ease a passage they become harder to notice.”<sup>21</sup> Furthermore, Graham Harman described such ‘tools-in-action’ as “operat[ing] in an inconspicuous usefulness, doing their work without our noticing it.”<sup>22</sup> When a tool is not functioning in a seamless manner, it may be perceived as broken, failing or unusable. This is what Harman refers to as the ‘broken tool’, which does not mean literally broken. Rather, it describes the moment in which a tool is considered directly. It comes to the fore, is rendered noticeable. There is thus, a double life in tools, *tool-in-action* and *tool-out-of-order*.

It seems a ‘tool-in-action’, as Harman describes it, or a ‘tool-routine’ as I would describe it, does not require explanation and therefore goes without saying. Yet I have come to question the refusal of tool-routines, particularly when it becomes inherently part of the functioning of a collective to continuously question, alter and change the meaning of tools. Can the so-called ‘brokenness’ of a tool become a tool’s purpose? Is there such a thing as a broken-tool-in-action?

21 Sara Ahmed, *What’s the use? On the uses of use* (Durham: Duke University Press, 2019), 12.

22 Graham Harman, *Tool-being: Heidegger and the metaphysics of objects* (Chicago: Open Court, 2002), 45.

Or to formulate this idea more broadly, are other-than-utilitarian relationships to tools possible? If so, how could such relationships be articulated?

In the following section, I attend to these questions by drawing on a collaborative project Feminist Search Tools (FST). The FST project encompassed a set of tools-in-the-making and is an ongoing self-organized collective process crossing various collective environments and breaching different discourses and fields of knowledge. I will begin by contextualizing the project and discussing my personal involvement in it. My personal perspective and motivations form one amongst many different viewpoints and incentives that were involved and evolved as part of this toolmaking process. I pay attention to the fragmented and contingent character of the process, its interwovenness with various collective environments and timelines, as well as the significance of such a fragmented process for the ways in which the ‘tool’ is conceptualized and materialized. Additionally, I will focus on the (re)articulation of a tool’s ‘usefulness’—when determining what is considered a useful or usable tool is not about defining a common goal for it. Instead, the question of what is a useful/usable tool may emphasize the differences of personal desires, expectations, frustrations and feelings of responsibility towards others.

I then discuss aspects of digital interface design as part of the process of imagining, articulating and making the FST. I examine interfaces’ relation to the systems they interact with, and the ways in which certain interface design conventions can be related to the concepts of ‘tool-in-action’ and ‘broken tool’. I also reflect on the concept of versioning and the notion of the 1st version, in particular how it has been used to negotiate the pressure of publishing a ‘functioning’ search tool on the one hand and the resistance to resolving, finishing or



releasing it on the other. I will go on by contextualizing the significance of the different environments, in which the tool versions have been brought and evolved within. More precisely, I will attend to the permeability of the collective toolmaking process, and its receptiveness to context-specific terminologies, cultures and conducts. I will analyze how the context of the Amsterdam-based Digital Methods Summer School (DMI) has introduced specific divisions of roles and tasks, and specific understandings and actualization of design and visualization practices that had significant influence on the continuation of the toolmaking process.

Drawing on an example of an off-shoot tool that was also produced during DMI, I will elucidate how the particular contexts the collective toolmaking process passed through and brought together were not always in alignment. Such moments of incompatibility were occasions to express commonalities and discrepancies regarding values and ethical concerns. In the chapter's conclusion, I propose an approach that I call 'slow collective processing'—an approach to collective tool-building that is reflective of the diverging socio-economic realities of a collective on the one hand and, on the other, precipitates the constant questioning of the tool-in-the-making.

### The Feminist Search Tools project

'Tool' in the context of the FST project describes a digital search interface in different iterations that allow for textual search queries within digital catalogs of libraries and archives. There have been various focal points within this project. One focus has been the context in which the tools have been developed and conceptualized, such as library catalogs, as well as the knowledge economies that libraries as institutions represent. This includes the

ways in which libraries and the knowledge they hold are made (in)accessible through search tools that build upon standardizations of search categories such as the Library of Congress subject headings.<sup>23</sup>

As the title of the project suggests, the initiative is guided by feminist thinking, practices and principles. The FST project took as a starting point library search engines that are intertwined with underlying systems of categorization, which are a result of and reproduce structural discrimination based on gender, sexual orientation, age, race, class, (dis)ability. The question of the purpose or usefulness of the FST closely relates to the project's emphasis on such discriminatory effects and on rendering them tangible or even undoing them by building new/other tools.

The group that evolved around the FST project is composed of the two collectives Read-in<sup>24</sup> (Annette Krauss, Svenja Engels, Laura Pardo) and Hackers & Designers (Anja Groten, André Fincato, Heerko van der Kooij, and previous member James Bryan Graves). Members of the Varia collective (Angeliki Diakrousi and Alice Strete) and frequent collaborator Ola Hassanain are also participants. The members involved in the FST have in common that they are not experienced in designing, conceptualizing or building search engines, including working with large datasets. They are artist researchers, gender studies scholars, designers (architectural, graphic and web design), educators, (self-taught) computer programmers, librarians and

23 Emily Drabinski, "Queering the Catalog: Queer Theory and the Politics of Correction," *The Library Quarterly: Information, Community, Policy* 83, no. 2 (April 2013): 94-111.

Hope Ohlson, "Mapping Beyond Dewey's Boundaries: Constructing Classificatory Space for Marginalized Knowledge Domains," *LIBRARY TRENDS* 47, no. 2, (Fall 1998): 253-254.

24 Website of the Read-in collective: <https://read-in.info/>, last accessed March 2022.

archivists. Throughout the project, the group met sporadically and consulted with librarians, information specialists and other artists and researchers working with and around subjects related to libraries and librarianship.

The FST project followed different incentives, timelines and levels of intensity in terms of involvement with various collaborators. I cannot speak on behalf of all members but I will try to describe how I became part of this initiative and how my connections and appreciation for it have developed and have been challenged. When I got involved in this collaboration, I was already working with the Read-in collective in the role of a graphic designer. I designed and built Read-in's website, and worked on some of their publications.<sup>25</sup> I became interested in their project *Bookshelf Research*<sup>26</sup> for which Read-in members looked closely at different libraries, such as their own private libraries or the library of the art institution Casco in Utrecht.<sup>27</sup> The group considered each library book closely and created a statistical breakdown based on self-chosen categories. Categories entailed 'gender of the author', 'place of origin' as well as 'material condition' of the books. I invited Read-in to join one of the H&D meetups<sup>28</sup> in 2015, during which we looked into ways of searching within the digital catalog of the public library in Amsterdam. In retrospect, this

marked the beginning of the collective exploration of digital search tools and the relation of such tools to library cataloging systems.

This particular project is prescient to this dissertation as it has challenged me in its resistance to finality. It has been ongoing since 2015, and yields a manifold of documentation such as workshop outlines, code repositories, collaboratively written texts, audio recordings and transcripts of interviews and conversations, photographs and videos, collective notes and annotations of interfaces. The challenge of determining where a tool begins and ends becomes, in my view, particularly stark in this project. Karen Barad argues that "what is needed is a method attuned to the entanglement"<sup>29</sup> of what she calls "apparatuses of production."<sup>30</sup> These require "genealogical analyses of how boundaries are produced rather than presuming sets of well-known binaries in advance."<sup>31</sup> The purpose and meaning of the FST have been (re)articulated and actualized throughout and in a non-conclusive manner, and fostered a relational understanding of tools-in-the-making. That is, the characteristics, possibilities and limitations of the tool, and the way the members of the FST group related to it, were not known in advance but evolved through the coming-into-being of the different tool iterations within particular contexts. Collective and individual understandings of what constitutes a (useful) tool seem to have been (and still are) continuously in-the-making, as the feminist search tools are also continuously in the making (including the different understandings of feminism and

25 Some examples of my graphic design work for Read-in:  
<https://read-in.info/example-1/>  
[https://read-in.info/wp-content/uploads/2015/06/no\\_innocent-reading\\_red.jpg](https://read-in.info/wp-content/uploads/2015/06/no_innocent-reading_red.jpg)  
<https://read-in.info/wp-content/uploads/2018/10/Unlearning-My-Library-Forum1-Copyright-Coco-Duivenvoorde-38-768x512.jpg>,  
 last accessed May 2022.

26 Bookshelf Research is a project initiated by Read-in:  
<https://read-in.info/bookshelf-research/>, last accessed May 2022.

27 Casco Art Institute Working for the Commons  
<https://casco.art/>

28 H&D Meetup "Scraping, counting and sorting", 2015  
[https://hackersanddesigners.nl/s/Activities/p/Scraping%2C\\_counting\\_and\\_sorting](https://hackersanddesigners.nl/s/Activities/p/Scraping%2C_counting_and_sorting), last accessed May 2022.

29 Karen Barad, *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning* (Durham, London: Duke University Press, 2007).

30 *ibid.*

31 *ibid.*

intersectionality that are also continuously in the making). Materializations that evolved from this collective toolmaking process cannot be understood in terms of finality. Yet there also seems to be relationships evolving from toolmaking and tool-imagining processes, which bind those involved—people and (imagined) tools—to each other over a long period of time. The question is, what precisely motivates and connects the tool-collective, if the final destiny of the tool(s) is uncertain or perhaps not even the goal?

A challenge in discussing this particular tool project as a case study is its connection to a manifold of people, as well as various critical discourses, such as feminist and decolonial theory, critical librarianship, critical studies of web search engines and algorithmic bias. At the same time, the project's distributed character is indicative of its potential, as it brings tool-discussions into a variety of contexts.<sup>32</sup> However, discussing the multiple implica-

tions of this project is beyond the scope of this dissertation. I will therefore relate the project more specifically to the subject matter of this chapter and focus on the evolving understandings, articulations and purposes of self-made tools (or lack thereof). In addition, I will examine the implication of such tools-in-the-making within self-organized collective practices.

By elucidating the project's composition and purpose, I explore how my perception of 'use' or 'usefulness' of evolving tools relates to the collective toolmaking process. For instance, the activity of organizing workshops and meetups has been significant throughout the FST project, and was precisely what allowed this 'new' FST collective to evolve. Such short-lived gatherings energized the process and contributed to its continuation and at the same time to its non-conclusiveness. In approaching the question of what is considered a useful tool, this workshop-based approach needs to be taken into account, as it hints at both a fragmentation of the process and a fragmentation of the tool and its envisioned purpose. Reflecting back on the initial meetup with H&D and Read-in in 2015, the emphasis was on 'scraping'<sup>33</sup> datasets from the internet. We used the digital library catalog of the public library in Amsterdam as an example.<sup>34</sup> The interest in datasets was not entirely connected to the project FST. In fact, the FST project, as it is referred to today (with the recurring project title and a committed group of collaborators) was not perceived as a project/tool/collective at the time of the initial meetup. Rather, it is only in retrospect that this meetup is understood as a significant moment in the

32 Selection of different contexts in which the FST has been presented: 'Teaching the radical syllabus' in collaboration with Lucie Kolb and Eva Weinmeyr <https://constantvzw.org/site/Constant-in-Teaching-the-Radical-Catalogue-Een-syllabus.html>, last accessed May 2022. 'Feminist Search Tools. "Intersectional Search: addressing own complicities" [https://vimeo.com/660599698?embedded=true&source=vimeo\\_logo&owner=45925538](https://vimeo.com/660599698?embedded=true&source=vimeo_logo&owner=45925538), last accessed May 2022. 'Feminist Search Tools Meetup', 2021 [https://hackersanddesigners.nl/s/Events/p/H%26D\\_Meetup\\_2%3A\\_Feminist\\_Search\\_Tools](https://hackersanddesigners.nl/s/Events/p/H%26D_Meetup_2%3A_Feminist_Search_Tools), last accessed May 2022. 'Feminist Search Tools talk and mini workshop with Alice Strete, Sven Engels and Anja Groten', at 'Post-digital archiving and publishing', organized by Maria van der Togt, Sandberg Instituut, 2020 "Intersectional Search in Queer and Trans Archives", IHLIA Amsterdam <https://ihlia.nl/events/intersectional-search-in-queer-and-trans-archives/>, last accessed May 2022. Feminist Search API Workshop [https://hackersanddesigners.nl/s/Activities/p/Feminist\\_Search\\_API\\_Workshop](https://hackersanddesigners.nl/s/Activities/p/Feminist_Search_API_Workshop), last accessed May 2022. 'Unbound Libraries Worksession' organized by Constant in 2020 <https://constantvzw.org/site/-Unbound-Libraries,224-.html>, last accessed May 2022. 'Repository of Feminist Search Strategies', 2020 [https://hackersanddesigners.nl/s/Events/p/Workshop%3A\\_Repository\\_of\\_Feminist\\_Search\\_Strategies](https://hackersanddesigners.nl/s/Events/p/Workshop%3A_Repository_of_Feminist_Search_Strategies), last accessed May 2022.

33 'Scraping' refers to Web scraping, or web data extraction and is used for extracting data from websites.

34 The title of the meetup was "Scraping, counting and sorting" [https://hackersanddesigners.nl/s/Activities/p/Scraping%2C\\_counting\\_and\\_sorting](https://hackersanddesigners.nl/s/Activities/p/Scraping%2C_counting_and_sorting), last accessed May 2022.



FST's genealogy. The group evolving around the FST continued to focus on working with datasets, on trying to make sense of them and (re)organizing them, on finding other ways of searching in them. In my view, this emphasis on datasets may be partially related to this initial meetup, to the people that happened to be there, and hence my perception of it as the retrospective beginning of the FST collective.

To summarize, a collective toolmaking project such as the FST project needs to be understood as distributed and fragmented—contingent in the ways it evolved. Its unfolding journey was not always deliberate, which, as I will explore in the following section of this text, may have also affected the perception of the (im)possibility of the FST to become a useful/usable tool. Therefore, a toolmaking process such as the FST requires articulation that resists linearity and progress-based understandings of the design process.

### Distributed articulation of use

Collective design processes such as the FST, could also be described as continuously changing socio-technical configurations. Short-lived group gatherings, such as H&D workshops, as well as various configurations of people that continued working together for longer and shorter periods of time and across different contexts took part in the FST's different iterations. The process has been dispersed and contingent and, as such, puts into perspective collective conditions in which the purpose of the FST can neither be predefined nor concluded. In fact, the question of what the FST is for remains unresolved. Nevertheless, the FST materialized into several digital interfaces along the way, which were referred to as prototypes, as iterations or as versions. At first, the tool was understood as a search interface

for digital catalogs of libraries and archives. Throughout the process the tool also evolved into a shadow search engine and an interactive visualization of a library catalog. To clarify, when I refer to 'tool versions', my intention is not to suggest that one tool version is an 'improvement' of the previous one. While the different tools relate to each other, they are also materializations of specific moments in a tool-building process that influenced perceptions and expectations of what constitutes a tool, in addition to the usability or usefulness of a tool.

The question of what the tools are or will be for remains pending. The desire for the FST to be useful has been one of its underpinnings. However, throughout its process, it became clear that the notion of usefulness and usability cannot be taken for granted. As a socio-technical object-in-the-making, the FST posed more questions than it resolved. For instance, in what context should it exist? How does it relate to existing search engines, including the people who built, maintain and use them? What and who should the tool be useful for? The definition of use or use-value depends on who you ask. In a conversation, one of the members of the FST group, Sven, articulated their personal criteria for the purpose of the tool:

**Sven:**

[...]

I do have to admit there is also a desire around usability of the tool, which for me simply stems from, really wanting to find queer literature. I want to be able to find that identification in the material I am looking for and I still find it very frustrating not being able to find that within mainstream media outlets

or libraries. So I think we should also not do away so easily with these hopes and desires that come with the use value of a tool. [...] we need to understand where that desire is coming from—wanting the tool to function and being able to provide something valuable to the person who is engaging with the tool.

(excerpt from 'Tool conversation', 17 February 2021)

Sven's hopes for the tool-in-the-making seems to derive from a frustration with a gap in mainstream media outlets and libraries. In articulating their hope for the tool to be *for* something (*for* finding queer literature), they ascribe a personal desire towards its use, which informs their expectation of the tool (finding identification). In my interpretation, this also implicitly suggests responsibility towards someone who may be using the tool in the future. In my understanding, Sven's articulation of all of these aspects form their conception of a tool and its potential use-value. It seems these characteristics of a potentially useful tool are distributed across people, objects and time, which relates to Ahmed's concept of 'use' as "an intimate as well as a social sphere."<sup>35</sup>

In "A Collective of Humans and Nonhumans" Bruno Latour (building upon Heidegger), proposes conceiving of the relationship between tools and people as constituted by what he calls a symmetry between a materialist and a sociologist perspective. With reference to the materialist perspective, he describes a tool as an autonomous entity with a 'script'. The script determines its destiny and has a significant influence on the person

who uses it. Considering the sociological perspective, he maintains that a person sustains full control over a tool's action, the tool plays "the role of the passive conductor."<sup>36</sup> By proposing a symmetry between the materialist and sociologist perspectives, Latour argues that a person changes with the tool in their hand and that the tool changes when a person holds it. This reciprocal tool-person relation, brings about a condition in which the outcome of such a relation is neither determinable by tool or person entirely. This contingent 'outcome' could constitute an ephemeral characteristic such as an attitude towards tools. Rather than explicitly articulated, an attitude towards tools may evolve latently, through certain gestures or the use of specific vocabulary. This vocabulary may be established through repetitive use or resistance to using specific kinds of tools.

Sven's manner of articulating the tool-in-the-making is imaginative, reflective, but also concrete and consequential,—all attributes that resonate with what Barad referred to as 'Gedankenexperiment'. According to Barad, "Gedanken experiments are pedagogical devices. They are tools for isolating and bringing into focus conceptual issues."<sup>37</sup> For Barad, while thought experiments are non-material eventualities, they do matter in material ways. 'Real' experiments on the other hand, which incorporate real apparatuses and measurement devices, can be flawed as we cannot presume "independently existing objects—separate from the measuring agencies."<sup>38</sup> According to Barad, apparatuses are entangled

36 Bruno Latour, "A Collective of Humans and Nonhumans: Following Daedalus's Labyrinth." in *Pandora's hope: essays on the reality of science studies* (Cambridge, Massachusetts: Harvard University Press, 1999), 174–215.

37 Karen Barad, *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning* (Durham, London: Duke University Press, 2007), 100.

38 *ibid.* 107.

35 Sara Ahmed, *What's the use? On the uses of use* (Durham: Duke University Press, 2019).

in ways that make them not “passive observing instruments. On the contrary, they are productive of (and part of) phenomena. [...] [A]n “‘apparatus’ emerges within a specific observational practice”<sup>39</sup> and it is unclear where the apparatus ‘ends’. Barad’s ideas on entangled, (im) material apparatuses can be related to the evolution of the FST and the difficulty of determining where the FST may ‘end up’. The FST’s resistance to absolute determination, in my view, requires articulation that accounts for a tool-in-the-making, a tool that is imaginative as well as concrete and material, including different scenarios for future use. At the same time, its relation to past experiences and personal frustrations have also shaped expectations, hopes and desires for another kind of tool and other tool articulations.

To recap, in the attempt to determine criteria for usefulness of a collectively made tool, the notion of a tool-in-the-making (determining its meaning and purpose through the process of making it) is intertwined with the notion of tool-imagining. With reference to Barad’s proposition *Gedankenexperiments* and their significance to the material world, the process of collective tool-imagining in the FST project distributes the task of determining and articulating criteria for usefulness of the tool across different people, objects and temporalities.

## Interfaces as tool simulations

The first version of the FST<sup>40</sup> [see image 1] was developed in the context of the Utrecht University Library, more specifically their digital library catalog. The FST group has referred to it as ‘1st version’, even though there was initially no other version planned. The formu-

lation ‘1st version’ became part of a shared vocabulary and was adopted even by collaborators who joined the project after this ‘1st version’ was built. This expression conveys that this ‘1st attempt’ at designing a search tool should not be perceived as a final product. I would also relate the notion of the 1st version to the rushed manner in which this particular search interface was implemented, to how ‘1st version’ became an apologetic phrase for publishing something that I was not convinced was, or perhaps ever would be ready for release.

The Read-in collective was invited to participate in the project ‘Zero Footprint Campus’ organized by ‘Department of Search’, which took place at the Utrecht University in 2016.<sup>41</sup> This research project was supposed to result in new work and to be presented at the Science Park campus public areas in Utrecht, at the end of the research trajectory in June 2017.<sup>42</sup> I recall a lot of our time being spent on negotiating time schedules of everyone involved, on attuning the ethos of the two collectives working together and on understanding what it is we wanted and could achieve together. Perhaps, the expression ‘1st version’, suggests that the tool is still under development, that it is not completed (yet).

Nevertheless, the 1st version of the FST materialized into a web interface with a search function.

41 “Zero Footprint Campus was an art program in the public area of the Utrecht Science Park, the area formerly known as De Uithof in Utrecht. Twelve artists selected from the Netherlands and abroad have been commissioned to conduct a one-year artistic study into the possibilities and impossibilities of Zero Footprint Campus.” <http://www.zerofootprintcampus.nl/en/participants/read-in/>, last accessed March 2022.

“The initiative of the Department of Search was taken by the Aardschap Foundation and the municipality of Utrecht in collaboration with the Utrecht Science Park Foundation and University Utrecht.” <http://www.zerofootprintcampus.nl/en/about-zero-footprint-campus/>, last accessed March 2022.

42 <http://www.zerofootprintcampus.nl/en/about-zero-footprint-campus/>, last accessed March 2022.

39 *ibid.* 199.

40 Website of the 1st version of the FST: <https://feministsearchtool.nl/>, last accessed February 2022.

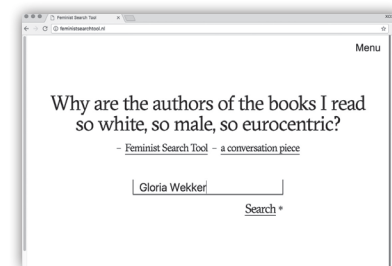


The search takes place within a dataset of library records.<sup>43</sup> The dataset of records we worked with were based on a number of so-called MARC21 fields, which one of our collaborators Sven carefully selected in conversation with a librarian.<sup>44</sup> When conducting a search in this tool, a page opens and displays the search result in the form of a numerical breakdown of library records found under each category.

To anyone who has used a search engine before, the interface will look somewhat familiar. It is approximate to the many search interfaces we have learned to recognize due to the ubiquity of major web search engine monopolies such as Google Search, Bing or Baidu. A border around the search field suggests the possibility of clicking inside the box. If you do so, the cursor blinks and invites the user to type something. The search interface of this first tool version, could be considered *usable* as a search tool, through its recognizable aesthetic and interactive properties.

Graphic User Interfaces (GUI) play a significant role in the ways digital tools are conceived. They influence

the perception of usability of computers and software by adding a visual layer between its user and its code and hardware. The interface design of the 1st version of the FST to some extent relies on the recognizability of its elements such as the search input field and the search button. However, the expectation of usability may be disrupted once the tool is actually in use. The first disruption in the flow of interaction arises from the appearance of the question on top of the search field:



"1st version" of the Feminist Search Tool.

[https://feministsearchtools.nl/wp-content/uploads/2020/10/Presentation\\_H\\_D\\_fst.014.jpeg](https://feministsearchtools.nl/wp-content/uploads/2020/10/Presentation_H_D_fst.014.jpeg)

"Why are the authors of the books I read so white so male so eurocentric?" The question causes confusion. Who is the "I"? People who encountered the tool on their own told me later that they weren't sure if they were supposed to use the search field to respond to the question. They assumed the tool was 'speaking' to them. Others embodied the question, typed in a keyword, an author or book title and expected to receive some sort of answer to the question. Some people expected to receive suggestions for books 'other' than those written by 'white, male, or eurocentric' authors. This created another rupture in the search flow, as the search result does not show books (as some expected), but a barebone list of subject headings. Underneath each heading, library records are listed. A graphic lay-

- 43 The search takes place specifically within works published in the period of 2006 till 2016. This version of the Feminist Search Tool provides a possibility to query an xml file containing a selection of 355000 records that were added to the Utrecht University Library in the period of 2006–2016. The selection of fields was composed mostly by Sven Engels in collaboration with information specialists from the UU library and in conversation with other members of the FST project about the relevance of the fields for our inquiry.  
The selection consisted of the MARC21 fields:  
Predominant language, Original language, Place of publication, Country of Publishing, Publisher, Date of publication (part 1), Date of publication (part 2), Relator term 'Gender' is not an MARC21 field but was added to the database by trying to find the author on wikidata and using the "gender API" as a fallback if there was no entry on wikidata ([https://gender-api.com/de?utm\\_source=adw&utm\\_medium=cpc&utm\\_campaign=ga3&gclid=CjwKCAjw36DpBRAYEiwAmVVDMCdx8cQDbNKlyoR0p\\_nJjxS3JwVd26ac2\\_Lklob-VeAboDtiZov2yBoCEk0QAvD\\_BwE](https://gender-api.com/de?utm_source=adw&utm_medium=cpc&utm_campaign=ga3&gclid=CjwKCAjw36DpBRAYEiwAmVVDMCdx8cQDbNKlyoR0p_nJjxS3JwVd26ac2_Lklob-VeAboDtiZov2yBoCEk0QAvD_BwE))
- 44 MARC21 (abbreviation for Machine-Readable Cataloging) is an international standard administered by the Library of Congress; it is a set of digital formats used to describe items that are cataloged.

over functions as a legend to the subject headings and contextualizes the system of categorization.

I recently revisited the discomfort I experienced at the moment of uploading the 1st version of the FST onto its domain, the moment when it became accessible to anyone on the internet. At first, I thought I was uncomfortable with losing control over the moment of encounter between the user and the FST. Perhaps, I was discomforted by the possibility of it being misunderstood. However, I later realized I had not understood the meaning and functioning of the tool myself. The process of figuring the tool out was (and still is) ongoing. Rather than weariness about exposure and potential judgment, the issue may be that, on its own, the tool is missing the articulation work necessary to turn it from 'broken-tool' to 'broken-tool-in-action'. While users can interact with the tool, click buttons, open pages, read and navigate, the interactive features of the interface seem metaphorical and are missing the context they emerged from. Distilled from its collective activation moments, the tool seemed to me only half-actualized. In the way I relate to it, despite its interactive features, the 1st version is a still image of a collective process, a capture of a tool-in-the-making, a figure, like a figure of speech that, if someone does not speak the language, needs some figuring out.

In their introduction to *Reflect and Act! Introduction to the Society of the Query Reader* (2014), researchers Miriam Rasch and René König write: "While most users feel confident with search engines (simply because they use them every day), they usually don't know much about how they actually function and how to operate

them efficiently."<sup>45</sup> This confidence seems necessary for a search tool to be perceived as operational.

The appearance of the 1st FST version, through its recognizable features caters to such confidence of a user, who is used to using search engines every day without having to deal with the ways it actually works. Yet, through producing an expectation of operability the confidence of a user is also frustrated once actually using the FST.

Rosie Graham, lecturer in contemporary literature and digital culture, wrote that

*"[u]sers do not need to know how search engines work to find out the year Barack Obama was born, or the date he became president. When our tools work, specific language or specialized knowledge may seem unimportant. When our expectations, intentions, and results are in line with one another, a deeper understanding of a technology and the vocabulary with which to discuss it, recedes into the background."*<sup>46</sup>

Thus, in the case of the 1st version of the FST, the functioning of the search tool could perhaps be described in the opposite manner. In my estimation, the tool 'worked' when it was involved in figuring out specific language that springs from specific constellations of people and technical objects, collective configurations that converged different domains and experiences. Digital user interfaces

45 René König and Miriam Rasch, "Reflect and Act! Introduction to the Society of the Query Reader," *Society of the Query Reader*. Amsterdam: Institute of Network Cultures, 2014): 14.

46 Rosie (Richard) Graham, "A 'History' of Search Engines: Mapping Technologies of Memory, Learning and Discovery," *Society of the Query Reader*, René König and Miriam Rasch, eds. (Amsterdam: Institute of Network Cultures, 2014): 107.

(not only search engines) are usually perceived as usable if they work intuitively and if interaction works somewhat subconsciously. For digital tools to function effectively, their user interfaces need to be unquestionable. Brian Rosenblum, a librarian at the University of Kansas Libraries, warns of incontestability in the context of digital library search engines as ‘affordances of ignorance’ that are reproduced through certain conventions of ‘usable’ ‘interfaces that may obscure their biases.

The usability of digital interfaces may be connected to an individual’s feeling of being in control. As part of a long history of human computer interaction, interfaces were conceptualized within the context of military projects.<sup>47</sup> Contemporaneously, they have evolved into universalized cultural objects that build upon specific kinds of psychologies of perception, visualization, and ‘liveness on demand’.<sup>48</sup> Digital interfaces ought to give a ‘user’ the feeling of ‘mastery’ over their computer programs.<sup>49</sup> According to Wendy Hui Kyong Chun, scholar in media studies and cultural theory, “[t]he notion of interfaces as empowering is driven by a dream of individual control: of direct personal manipulation of the screen, and thus, by extension, of the system it indexes or represents.”<sup>50</sup>

Digital search engines make library catalogs (in) accessible through their interfaces, which are perceived as useful if they sustain a certain incontestability. While this version of the FST introduced some ruptures—such as questionable moments in user-tool interaction—it also reproduced a common image of what a search tool

should look like and how information should be delivered (the answer being only one click away). The aesthetic choices may obscure the processes the tool is involved in and gets its ‘user’ involved in.

The function of the first version of the FST is that of a collective study object that, through its evolution into what resembles a search interface, created occasions to concretely and imaginatively reflect and disentangle the ways people and tools are involved in making items (in)accessible in digital cataloging systems. Certain rhetorical tricks, such as the notion of the 1st version, are a collective attempt to articulate a tools’ unresolved issues, preparing someone for the experience of the ‘broken-tool’. However, the rushed process of designing what could be conceived as a ‘functioning’ website also contributed to the FST’s conceptualization and materialization as a digital search interface that can work ‘on its own’.

This also led to the digital interface being actualized—to some extent in the most obvious manner. The recognizable image of a search interface may not fully satisfy the expectations it creates, but simultaneously conveys a certain ambition. If there wasn’t the pressure to produce and present what would be regarded as a ‘tangible’ end result (which we interpreted as a search interface), the notion of the ‘1st version’ of the tool would perhaps have not emerged, along with the implied promise to continue and to produce a 2nd or 3rd version of the digital interface.

## Contextualizing visualization

The FST collective was introduced to different cultures and conditions of working together. These included different terminology and social conduct and diverging ways of understanding and speaking about ‘tools’,

47 Wendy Hui Kyong Chun, *Programmed visions: software and memory* (Cambridge, London: MIT Press, 2011), 60.

48 Lev Manovich, *The language of new media* (Cambridge, Massachusetts, London, England: MIT Press, 2001).

49 Wendy Hui Kyong Chun, *Programmed visions: software and memory* (Cambridge, London: MIT Press, 2011), 66.

50 *ibid.* 62.

‘design’ and ‘collectivity’. One context, which has been significant for the continuation of the FST collective, was the ‘Digital Methods Summer School’ (DMI), a two-week program organized by the Digital Methods Initiative (DMI) at the University of Amsterdam.<sup>51</sup> DMI is an Internet Studies research group, directed by Richard Rogers, professor of New Media and Digital Culture since 2007. DMI’s objective is to design methods and tools for doing research with internet platforms such as Twitter, Facebook and Google but also with digital applications and devices. Rogers describes Digital Methods as: “redoing online methods for different purposes to those intended.”<sup>52</sup>

In July 2019, I signed up to participate in DMI. The program was explained as a collaborative, interdisciplinary and explorative research environment, bringing together practical and theoretical knowledge. It seemed to have common ground with the H&D approach and with the characteristics of the FST collective. Yet, DMI turned out to be a rather different work environment, in which separations between tasks, roles, subjects and approaches were quite distinct, compared to what I was familiar with. The understanding that a tool-building process could be experimental, open-ended and discursive, which were possibilities I had become used to in the context of the FST project were not applicable in the same manner within the working environment of the DMI.

It was striking how much of the terminology used in the context of DMI seemed familiar. Yet, the way in which certain terms and concepts were understood and put into practice was quite different from what I knew

from the H&D Summer Academy, from H&D workshops and from working with the FST group. The notion of ‘design’ seemed to be dedicated to the fields of ‘user experience’, ‘data visualization’ and ‘information design’ and was impersonated by a distinct group of designers from DensityLAB, based in Milan.<sup>53</sup> The people from DensityLab were introduced and referred to as ‘the designers’, who could be consulted and had the authority to translate the researchers’ ideas and spreadsheets into data visualizations. Furthermore, the notion of ‘tool’<sup>54</sup> occurred in the context of tutorials and referred to code repositories, also described as ‘scrapers’, and ‘crawlers’, that could be used to extract data from the internet and to accommodate processing of such data for further analysis. Participants could sign up for tutorials in which they would familiarize themselves with those tools.

The DMI took place at the University of Amsterdam, during the summer break. Participants were able to receive ECTS credits. Thus, there were other incentives at play for participation than in the context of H&D, where collaborative learning environments mostly evolve outside of accredited educational institutions. Participation was possible only through full commitment to the two week long program. In addition, the participation fee was high (EUR 995,00). This financial commitment did not align with the fiscal realities of the FST collective. Fortunately, through my research position I was able to get my own participation fee reimbursed. I participated in the full program and negotiated on the part of my collaborators to join free of charge for the second part of the program. The FST group got to work together in

51 Wiki of the Digital Methods Summer School of 2019: <https://wiki.digitalmethods.net/Dmi/SummerSchool2019>, last accessed March 2022.

52 Interview with Richard Rogers published on the website of the DensityLab: <http://densitydesign.org/2014/05/an-interview-with-richard-rogers-repurposing-the-web-for-social-and-cultural-research/>, last accessed March 2022.

53 Website of DensityLab: <http://densitydesign.org/>, last accessed March 2022.

54 Tools documented on the DMI Wiki: <https://wiki.digitalmethods.net/Dmi/ToolDatabase>, last accessed March 2022.



this environment for a full week, which in comparison to previous work rhythms, was an extraordinarily commitment from the group members.

I participated in tutorials in the first week of the program and sat in, with another research group, trying to grasp the dynamic and terminology of the environment. In the second week of the program, I ‘pitched’ the FST project with three of my peers from the FST group. A project pitch at DMI refers to a five minute presentation during which participants try to convince other participants to work on their research project for one week. Our proposition was to explore with researchers from other fields and contexts (im)possibilities of incorporating feminist approaches into discovery tool development.

During the week the group spent together, we had the chance to revisit the 1st version of the FST, which we had not considered with much attention for about one and a half years. Having to explain the tool to the other participants, we were reminded of the choices we made in terms of its interface design. We benefited from those participants who were familiar with methods of ‘query design’<sup>55</sup> and helped us consider different search

methods.<sup>56</sup> We tested out the method of ‘negative query’ to intervene with search results by consciously excluding items or categories that are usually most visible. Taking the time to actively and intensively ‘use’ the 1st version of the FST as a group, while speaking about it and trying to make sense of it, created momentum in the collective process. It felt to me as if we had become more familiar with it and felt increasingly connected to the tool and to each other.

One of the outcomes of DMI was another 2nd tool version. The so-called ‘visualization tool’<sup>57</sup> refers to an interactive browser animation that shows little colored squares, each of which represents a book in the catalog. The squares are organized in groups within two axes. The X-axes represented gender categories as they were applied in the first version of the tool, the Y-axes listed all publishers represented in the library catalog. Thus, the books were organized ‘spatially’ according to (assumed) gender of an author of a book and the publisher. This second version of the tool was supposed to ‘visu-

56 We queried the feminist search tool (feministsearchtool.nl) for different terms and did some initial comparisons for publishers and the gender of authors. For a dataset to visualize, we queried the tool with the search string [gender OR race OR intersectionality OR transgender OR “social class”]. In order to get data on each individual record in the query results, this was done through the Solr search interface that is part of the feminist search tool with the following URL:

[https://feministsearchtool.nl/solr?q=gender%20OR%20race%20OR%20intersectionality%20OR%20transgender%20OR%20%22social%20class%22&rows=3000&fl=gender\\_s%20AND%20a\\_title\\_statement\\_t%20AND%20b\\_title\\_statement\\_t%20AND%20title\\_statement\\_t%20AND%20imprint\\_s](https://feministsearchtool.nl/solr?q=gender%20OR%20race%20OR%20intersectionality%20OR%20transgender%20OR%20%22social%20class%22&rows=3000&fl=gender_s%20AND%20a_title_statement_t%20AND%20b_title_statement_t%20AND%20title_statement_t%20AND%20imprint_s)

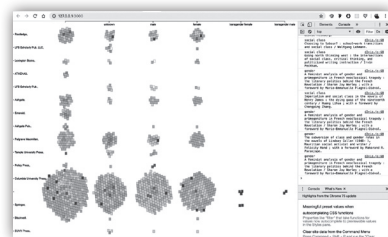
The results were extracted into a json file and each record was annotated with the search terms that occur in the record (gender, race, intersectionality, transgender, social class).

Using the javascript library D3.js, the records were color-coded by search terms and spatialized according to gender (horizontal) and publisher (vertical).

57 Documentation of the visualization tool:  
<https://github.com/hackersanddesigners/fst-viz-tool> in collaboration with DMI and Density Lab. Last accessed March 2022.

55 Richard Rogers, “Foundations of Digital Methods: Query Design” *The Datafied Society: Studying Culture through Data*, Mirko Tobias Schäfer, Karin van Es, eds. (Amsterdam: Amsterdam University Press 2017): 75-94.

alize' which publishers represent more or less female/male/transgender authors. The way the books are organized around the axes is animated in an entertaining and lively manner. I recall the moment when we first saw the



Screenshot of the 'visualization tool'

animation on a screen, some of us (including me) burst out with an excited "Ohhh". This moment was referred to and critically reflected upon repeatedly throughout the continuation of the project:

#### Sven:

I still find it a bit funny that you are so excited about the visualization tool Anja, since you were the one at the beginning of this project who was cautioning us not to expect too much, or like you put it, don't trust the 'magic,' of a visualization. You said, the visualization will only give you what you're asking for, which really stayed with me. And yet, when we get to the visualization and everybody gets excited. [laughs]

#### Annette:

I agree that we should not project too much on visualizations. But for me the visualization tool has finally been the

moment that allowed us to investigate our own tool, the first prototype of the Feminist Search Tools.

#### Anja:

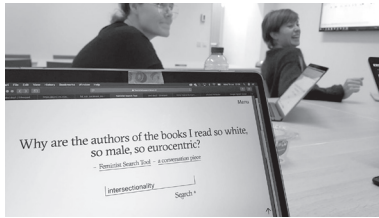
In my view the big difference the visualization tool made, is that we see books and not only records. [...] you can click on a square that represents the actual book and see more information about the book. This was not possible before. It was just numbers and records, which was an abstract idea and difficult to relate to, for me. Being able to check and see some of the flaws of our initial tool, by checking the actual books was an important moment for me.

(excerpt from 'Tool conversation' recorded and collectively edited conversation between the FST group, 17 February 2021)

According to Wendy Hui Kyong Chun, "interfaces seem to concretize our relation to invisible (or barely visible) 'sources' and substructures."<sup>58</sup> Being able to 'see' books (represented through colored squares) that were spatially organized on our screen, produced the impression of a more concrete relation to the invisible sub-structure of the library catalog and its system of categorization. In my recollection of the situation, my enthusiasm for witnessing visual squares moving around on a screen stems from not having to conceptualize a library catalog as an abstract system of categorization, or a large intangible knowledge institution. Rather, I could conceptualize and visualize the library catalog as some kind of container that holds distinct, countable

58 Wendy Hui Kyong Chun, *Programmed visions: software and memory* (Cambridge, London: MIT Press, 2011), 59.

items. The recognizability of ‘books’ as distinct objects created a sense of comfort. The impression of seeing books represented in this way made me feel that I knew what I was looking at—books. The concept of a ‘library record’, a textual representation of a system that groups, moves and fixes books based on classification standards, felt rather abstract. When I saw colored clickable squares, I *felt* as if I could finally ‘see’ the books. The emphasis here is on feeling, and the excitement caused by encountering something that seemed familiar.



Digital Methods Summer School 2019.

Digital interfaces and the ways they work as simulations, rely on emotional responses. Perhaps, subconsciously, I felt as if I could ‘manage’ such books. In the case of the FST, it meant that by visualizing books as squares and ordering them in certain ways, I was under the impression that I could gain a better understanding about which books are represented and which books were missing from the digital library catalog. This moment of enthusiasm also made me feel more connected to the tool and it’s coming into being.

Returning to the aforementioned diverging culture and terminology of the DMI context, it seems significant to mention the way the visualization was presented to us. We approached the designers of DenesityLab to support our group halfway through the week by suggestion of one of the facilitators of DMI. We tried to explain to

them what we were trying to do with the tool and asked them if they could think with us about ways to visualize the library cataloging system. Where the previous tool showed search results in a textual way and as a list, we were curious how a more visual approach could provide new insights. The designers left the room and worked on the visualization somewhere else before returning the next day to show us the result. The translation of a textual representation into a visualization of the search results in my expectation would bring new insights, perhaps more clarity about the functioning of the tool and its underlying system of categorization. While aiming to see rather than read search results, the process of making the visualization happened out of sight. That is, the FST group was not present during its making process.

In “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” (1988), Donna Haraway wrote, “Vision is always a question of power to see.”<sup>59</sup> She asked: “How to see? Where to see from? What limits to vision? What to see for? Whom to see with? Who gets to have more than one point of view? Who gets blinded? What other sensory powers do we wish to cultivate besides vision?”<sup>60</sup> I relate this quote by Haraway to the visualization the designers produced. More precisely, I question what we saw in the visualization and our responses to it; how it created a certain comfort and also joy to look at and perhaps made me feel more connected to the tool and the collective.

The fact that the designers left the room to work somewhere else is worth noting. Their leaving the room signifies the division of labor conceptualized and put

59 Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective,” *Feminist Studies*, 14, no. 3. (Autumn, 1988): 575–599.

60 *ibid.*

into practice in the context of DMI, and which also had implications for the way in which the FST further evolved in that particular context. When we saw the visualization for the first time, we were looking *at* it and not *with* it. There was labor implied in the visualization that was not visible to us at that moment. There was a certain distance to the making process of the visualization, which created the surprise effect. We were impressed because we had not observed the process of its production, the sweat and struggles. As I understood later from reading back through time stamps of messages sent by the designers, they worked late and long hours, material conditions that had not been visible to us.

To recap, the participation in the 2-week at DMI was significant for the way in which the FST has been conceptualized and actualized as a tool, as well as the ways in which our understanding and problematization of it as a 'useful' tool has unfolded along the way. Through our participation concepts and questions of visualization were introduced and developed, but also made apparent how specific contexts can produce tools, tool concepts and conditions for toolmaking. The condition of an (for the FST collective) exceptionally committed working environment made it significant and distinct. It is referred to often with fondness and criticality equal measure. In my view, it contributed to people feeling enthusiastic and connected to the FST, but it also shows how permeable collective projects such as FST are; how they are receptive to the contexts in which they evolve.

## Discontinuation and reorientation

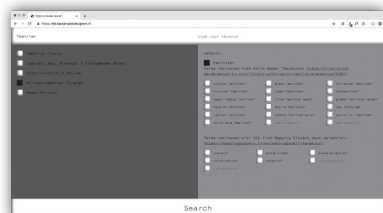
The Feminist Search Assistant<sup>61</sup> is a shadow search website, which was developed during the Digital Methods Summer School as a parallel project to the visualization tool. It was developed in collaboration with two DMI researchers Emile den Tex and Lonneke van der Velden. This tool version intended to provide a more gender sensitive search experience on Amazon. The Feminist Search Assistant consists of a search bar that builds on Amazon's algorithmic recommendation system, which suggests books that are oriented towards topics related to feminism and intersectionality. This tool version was built to rethink how algorithmic recommendations work, as they are known to personalize search results in an opaque manner. It addressed matters of search engine development that we had not explored before, although these questions had been raised as a concern by the librarians of the UU library. Their concerns were that people who search in a library catalog most likely have already searched on Google or Amazon search engines before. Thus, they already know what they are looking for and use library search tools for so-called 'known-item search', rather than a 'discovery search'. The amount of so-called discovery searches in library search engines has decreased tremendously since the invention of Google Search. The basic principles of the Feminist Search Assistant, was to provide a search bar and a set of specific interests to choose from, of which the term 'feminism' was added by default. The queries were then sent to amazon.com. This set of interests were embedded in the link sent to Amazon in the initial search page and

61 The 'Feminist Search Assistant' was a collaboration with Emile den Tex, at Digital Methods Summer School 2019.  
<https://fst.hackersanddesigners.nl/>  
<https://github.com/hackersanddesigners/fst-amz-shadow-search>,  
 last accessed May 2022.



prompted Amazon's advanced search feature to configure around those interests (called 'departments' in amazon.com). This was supposed to make it more likely to find results by feminism-filtered sources.

I decided to include this short off-shoot project, even though it concluded with a shared agreement not to continue and not to publish it. It is a good example of how the evolving FST collective was not always in alignment with its different contexts. These



Interface of the 'Feminist Search Assistance'  
<https://feministsearchtools.nl/wp-content/uploads/2020/10/Screenshot-2019-07-12-at-12.08.05.png>

instances of incompatibility and disagreement were important moments in which to express commonalities and discrepancies. Expression of disagreement is essential for the preservation of values and the ethical concerns around collective tool-building.<sup>62</sup>

The Feminist Search Assistant included and built upon book selections, which were carefully curated by different grassroots libraries and archives such as Mapping Slavery,<sup>63</sup> The Black Archives<sup>64</sup> and Atria Kennisinstituut voor Emancipatie en Vrouwen-

geschiedenis.<sup>65</sup> Similar to the 1st version of the FST, this tool version also functioned as a simulation of a search tool. It produced very specific search queries and, as expected, most of the time the search result showed '0 found items'. The fact that books were hard to locate with this tool seems indicative of the heteronormativity of mainstream media outlets. Yet, on its own, the tool seemed to have missed crucial reflection on the context and conditions in which the references were initially sourced. At the beginning of the FST project in 2017, when we were still working in the context of the Utrecht University Library, Annette and Sven contacted various grassroots communities and libraries with an invitation to curate book selections. We printed out covers of selected books and glued them onto bok-sized wood panels. These 'book dummies' were placed in book-trolleys outside the Utrecht University library, "drawing attention to silenced and marginalized voices excluded from our current knowledge economies."<sup>66</sup> The Feminist Search Assistant was missing crucial contextualization of these book selections, which the search queries were based upon. This made the tool ignorant of the work and efforts libraries and archives did to curate the book selections to create visibility for marginalized communities who are excluded from mainstream media outlets and current knowledge economies. It seemed irresponsible to use these book selections to 'feed' online platforms that run personalization algorithms, which we will never understand and don't trust.

65 Vrouwenthesaurus of Atria Kennisinstituut voor Emancipatie en Vrouwengeschiedenis <https://atria.nl/bibliotheek-archief/collectie/thesaurus/459>, last accessed March 2022.

66 Bookshelf Trolleys: [https://read-in.info/bookshelf\\_research-2/](https://read-in.info/bookshelf_research-2/), last accessed March 2022. [https://read-in.info/wp-content/uploads/2017/08/teppich-install\\_uithof1.jpg](https://read-in.info/wp-content/uploads/2017/08/teppich-install_uithof1.jpg), last accessed March 2022.

62 There were many more moments such as these, moments that were less distinct and seeped through different timelines, tool versions and group constellations. For clarity's sake, I decided to make this point by focusing on this specific tool version.

63 Website of Mapping Slavery: <https://mappingslavery.nl/educatie/publicaties/>, last accessed March 2022.

64 Website of The Black Archives: <https://www.theblackarchives.nl/>, last accessed March 2022.

The installation of bookshelf trolleys by Read-in in 2017 included another crucial gesture that was missing in this digital tool—the gesture of reciprocity. The invitation for proposing book selections was extended to visitors who could “select books of their choice, responding to and intervening into the question: Why are the authors of the books I read, so white, so male, so Eurocentric?”<sup>67</sup> While this tool version was discontinued, the trajectory of the FST seems incomplete without mentioning it. Creating this particular tool version was significant to our continuation. It made apparent ethical aspects inherent in our work, as well as aspects of labor, time and effort. We became more aware of our own investment in the project and simultaneously more critical and selective about the contexts and collaborations we chose to engage with. We decided not to continue spending time investigating large search engines such as Amazon and Google and connect more actively to smaller initiatives such as ATRIA and IHLIA, two archives based in Amsterdam.

This short experiment was a crucial moment in the process and evolution of FST. It raised important ethical concerns but also posed new ideas for future tool versions. The possibility for a search tool and its underlying categorization system to sustain some form of mutability sparked excitement. In addition, incorporating recommendations for books and search categories which could be curated by grassroots initiatives and communities holding specialized collections was invigorating. Such grassroots libraries, of which ATRIA and IHLIA are two examples, develop specialized vocabularies according to which they organize books.

## Intersecting and complexifying

Throughout the collective process of making the FST, I frequently asked myself if I (and perhaps others in the group) had fallen into the trap of a linear, progress-oriented understanding of collective toolmaking. Features were implemented at certain moments with the idea of being replaced or improved upon at a later stage, which the collective toolmaking process, due to its fragmented nature, could not live up to. I felt there were many weak spots within various implementations of the tools that were a result of rushed processes, lack of understanding in terms of computer programming and working with datasets. At times, technical terminology dominated the ‘tool’ narrative, which seemed to reduce important socio-political debates around feminist, queer, anti-racist, intersectional, decolonial discourses to overly utilitarian and simplistic reasoning. For the first version of the FST, Sven had looked at all MARC21 fields and made a selection of search categories that seemed most relevant to us. In conversation with the librarians of the UU library, Sven and Annette formulated a question as a guideline for this selection: How many female, non-Western authors and authors of color are represented in the library? Examples of fields that Sven selected were ‘place of publication’ and ‘language’. They also inquired about the possibility of retrieving information about the gender and nationality of an author.

Yet, as we discovered through conversations with the librarians, information about authors is generally not retrievable in European library cataloging standards, while information about books is retrievable. James, who worked on the development of the tool, explored other ‘tactics’ to find information about authors. James did this by linking the library dataset to Wikidata. Wikidata gender entries encompass more than the usual binary

67 “Bookshelf Research”: [https://read-in.info/bookshelf\\_research-2/](https://read-in.info/bookshelf_research-2/), last accessed March 2022.

gender categories (female, male, transgender-male, transgender-female, unknown). However, these extended categories still did not represent the wide spectrum of gender identification. James also introduced other data-sets as a ‘fall back’. In the case that no gender category could be found in the Wikidataset, the tool would resort to the so-called Gender API, a commercial closed source application that assigns the normative binary gender categories ‘female’ and ‘male’ based on names. The Gender API is usually implemented in commercial websites in order to optimize customer experiences (i.e. people identified as female get to see search results that are considered relevant for their gender category from a marketing standpoint). The Gender API does not address non-binary gender categories at all. Due to its closed source, it was also not possible to reconstruct how the program determined and applied gender categories.

Another issue that arose from trying to categorize authors according to gender, is that it does not allow for ambiguity or mutability. For example, what is not addressed when attributing gender categories (on the basis of the name) is self-narration. Mutability of gender categories and names as well as gender fluidity is particularly important when it comes to trans\* and non-binary identities. In the way gender was attributed to authors in the 1st and 2nd version of the FST stabilized such categories in ways that risk misrepresentation.

The workshop at DMI led to the realization that we had focused on one problem for too long; the problem of not being able to search by means of gender categories. In 1989 Kimberle Crenshaw<sup>68</sup> stated: “When feminism and anti-racism are non intersectional, when

feminism does not contest the logic of racism, when anti-racism refuses to take up questions of patriarchy they often wind up reinforcing each other.”<sup>69</sup> By taking a rather pragmatic, and linear approach at first, taking one step at a time we, the FST group, had separated the topic of gender discrimination and prioritized it over other forms of discrimination. While it was known quite soon in the process of conceptualizing and building the FST, it would not be possible to retrieve information about the author, the process continued as if we could find out eventually. We also knew the information we retrieved through Wikidata or the GenderAPI could not be representative of the gender of authors. Yet, gender categories were applied using these approaches as ‘a first step’. Rehashing the chain of choices that led to the technical implementations of the first and second version of the FST the utilitarian approach to addressing questions of systemic discrimination is difficult to reason with. I came to wonder if the desire for a tool to ‘function’, to show any result at all, attracted approaches and technologies such as the Gender API into the process. These may deliver quick results but are also unethical implementations, especially considering the subject matter of the FST project.

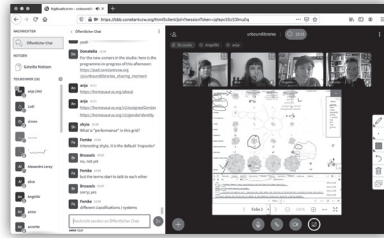
The 3rd version focused on implementing an intersectional approach by offering the possibility of selecting different clusters of intersecting search categories, on the bases of which books were displayed. The subject categories such as ‘race’, ‘gender’, ‘class’, were selected by Sven and Annette and were highlighted through specific color-coding.<sup>70</sup> Instead of searching for information

69 [https://www.youtube.com/watch?v=-DW4HLgYPIA&ab\\_channel=SouthbankCentre](https://www.youtube.com/watch?v=-DW4HLgYPIA&ab_channel=SouthbankCentre) Kimberlé Crenshaw, “On Intersectionality” keynote, 2016.

70 Green: gender, Light-green: race, Blue: Social class, Light Yellow: Social class, race, Light purple: Transgender, Pink: Intersectionality, Orange: gender, race

68 Kimberle Crenshaw, “Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics.” *University of Chicago Legal Forum* 1, no. 8 (1989).

on the identity of an author, the new method of categorization was applied based on the descriptions of books and the descriptions of authors as they were inserted by the librarians. Thus, the tool catered to searching about the content of the book rather than based upon the identity of an author.



'Unbound Libraries' hosted by Constant Association for Art and Media, on the open-source video conferencing software BigBlueButton, May / June 2020.

An important moment for this version of the FST was the 'Unbound Library' work session<sup>71</sup> organized by Constant in 2020.<sup>72</sup> The one-week session took place online and brought together artists, technologists and researchers who were given a space to exchange and work together on the subject of digital libraries. The starting point of the session was that "tools cannot be separated from the knowledge systems in which they have been

imagined and in which they were made."<sup>73</sup> For the FST group the session provided another committed environment for working together and an occasion to introduce two collaborators to the project. Alice Strete and Angeliki Diakrousi had met the Read-in collective during a studio visit by students of the experimental publishing Master XPUB at Piet Zwart Institute.<sup>74</sup> As part of their studies, Alice and Angeliki had worked on a collective pirate library XPPL,<sup>75</sup> which is described on their project documentation wiki as "a space for potential pirate librarianship aimed at people who are studying the field of media culture."<sup>76</sup> The various initiatives connected through their shared interest in rethinking the manner in which libraries and library catalogs can be made (in)accessible through tools.

The context of the work session motivated us to reconnect to the IHLIA LGBTI Heritage collection, an archive that is located in the public library of Amsterdam and specializes in literature (and other materials) about and by lesbian, gay, bisexual, transgender, intersex people. Similar to the participation at DMI, this session also offered a concrete context for the otherwise fragmented working process; a context that was facilitated, committed and focused. Yet the atmosphere and collaborative conditions were entirely different to DMI. There were less participants. Most people participating

73 <https://constantvzw.org/site/-Unbound-Libraries,224-.html?lang=en> Cited: Martha Nell Smith, "Frozen Social Relations and Time for a Thaw: Visibility, Exclusions, and Considerations for Postcolonial Digital Archives." *Journal of Victorian Culture*, 19, no. 3 (July 2014): 403-410. Last accessed March 2022.

74 Wiki of the experimental publishing Master XPUB at Piet Zwart Institute: <https://www.pzwart.nl/experimental-publishing/wiki/>, last accessed March 2022.

75 Student project 'XPPL,'— a collective pirate library <https://git.xpub.nl/XPUB/XPPL> [https://pzwiki.wdka.nl/mediadesign/XPPL\\_Documentation](https://pzwiki.wdka.nl/mediadesign/XPPL_Documentation), last accessed March 2022.

76 Documentation of 'XPPL,' <https://pzwiki.wdka.nl/mediadesign/XPPL>, last accessed March 2022.

71 "Constant organises a worksession every six months. They function as temporary research labs, collective working environments where different types of expertise come into contact with each other. Worksessions are intensive otherwise-disciplined situations to which artists, software developers, theorists, activists and others contribute. During worksessions we develop ideas and prototypes that in the long-term lead to publications, projects and new proposals." <https://constantvzw.org/site/Unbound-Libraries-Worksession.html?lang=en>, last accessed March 2022.

72 Information on the worksession "Unbound Libraries" <https://constantvzw.org/site/-Unbound-Libraries,224-.html?lang=en>, last accessed March 2022.



were also working in various self-organized collective constellations. The session was organized bottom-up. The structure and approach were determined together, through getting to know the other participants by way of a centralized check-in meeting each morning in which plans were shared and in which a time table was composed together. A modest compensation for our participation was distributed amongst those of us who did not receive any grants for our participation. The wish to connect to smaller self-organized groups, as it evolved during DMI, was revitalized. With IHLIA as a potential collaborator, we hoped for more frequent exchanges with people who worked with library cataloging on a daily basis and who were thematically aligned with the issues the project was investigating.

In the first meeting with IHLIA, I tried to explain what we were trying to do with the FST to the head of collections and to someone who was knowledgeable about the technical aspects of the cataloging system. IHLIA provided us with access to the digital catalog of their collection. This allowed us to start developing a new version of the tool. We also started looking closer into the *Homosaurus*, a research tool and controlled vocabulary of lesbian, gay, bi, transgender and intersex index terms that are applied in IHLIA's cataloging system. The *Homosaurus* can also be found on IHLIA website as a search enhancement tool that offers broader, narrower or related search terms. The *Homosaurus* also exists as a text document. We started reading this vocabulary more closely and became interested in its structuring mechanisms.

Connections and relations in the *Homosaurus* vocabulary are established through a long process of labor (on the part of librarians). This involves careful and critical consideration, in addition to a general commitment and dedication to this tool. As we learned from the

librarians and staff of IHLIA, it was mostly due to the personal investment of the by now retired head of collection Jack van der Wel and his collaboration with the international *Homosaurus* committee that the English version of the *Homosaurus* was updated frequently and is functioning well (in comparison to the Dutch version of the *Homosaurus* or the *Vrouwenthesaurus*, another similar project implemented by Atria which is less well maintained.)<sup>77</sup>

The 3rd tool version of the FST converged IHLIA's digital catalog, the visualization tool as developed with DensityLab at DMI and the *Homosaurus*. The integration required Angeliki and Alice to restructure the dataset that we had received from IHLIA.

#### Angeliki :

Having to find solutions for the axes was an interesting process. I was wondering how the code could actually also become part of this dialogue. [...] creating

<sup>77</sup> In October 2018 we introduced the Feminist Search Tools project to Atria Kennisinstituut voor Emancipatie en Vrouwengeschiedenis and IHLIA LGBTI Heritage collection. There were short presentations of the Women's Thesaurus by the initiators of the Women's Thesaurus (Maria van der Sommen & Gusta Drenthe) and the *Homosaurus* by the initiator, current board member of the *Homosaurus* and head of collection in 2018 of IHLIA (Jack van der Wel). The session brought these different projects into dialogue with each other and reflected on the first prototype of FST. Furthermore, the roundtable aimed to gain deeper insights into the design and drafting process of the Women's Thesaurus (Atria) and the *Homosaurus* (IHLIA) as well as aligned content to see how the latter could inform the new iteration of FST. For Atria and IHLIA, their distinct thesauri functioned as a form of self-empowerment by not trusting the mainstream method of searching and offering additional tools—namely thesauri—to the communities or people that use their archives. This has been an important entry point for our research in digital library catalogs. Audio fragments of the roundtable are made available on the project's website of the new iteration: <https://feministsearchtools.nl/>. Furthermore, the event was the starting point for our collaboration with IHLIA LGBTI Heritage Collection and more in-depth conversations about the cataloging system used for their collection, CardBox and the *Homosaurus*.

'intersectional' axes meant that we had to bring everything into the same place. Everything had to become one script.

(excerpt from 'Tool conversation', 17 February 2021)

In conversation with IHLIA information specialist Thea Sibbels, Sven and Annette rethought the X-axes through clustering terms<sup>78</sup> that derived from the Dutch *Homosaurus*. Clusters were incorporated into the design of the interface and were being sketched collectively in an open-source video calling software called Big Blue Button,<sup>79</sup> which provided us with a collaborative drawing option. During the 'Unbound Library' workshop, we started sketching on top of a screenshot of the latest version of the visualization tool and included the feedback and input from other participants who joined us for the sessions.

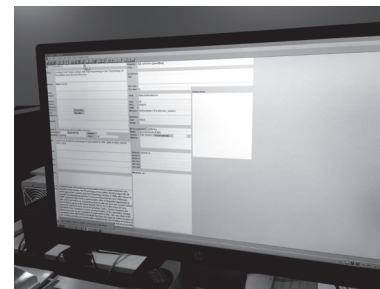
We had been thinking of the concept of the 'red link', as it is also known from Wikipedia, for a while.<sup>80</sup> A red link on Wikipedia/MediaWiki is the highlighting of terms that are 'missing' and need to be added. The red link seemed an interesting concept to consider—an approach that would not only aim at correction or improvement of the tool, but also point at what can be improved in the classification system itself. Another

78 The clusters are: Race, Gender, Sexuality, Disability and Structural Oppression and each contained terms that were selected by Sven and Annette from the *Homosaurus*, in conversation with Thea Sibbels.

79 Hosted by Constant's Big Blue Button instance.

80 "A red link, like this example, signifies that the linked-to page does not exist—it either never existed, or previously existed but has been deleted. It is useful while editing articles to add a red link to indicate that a page will be created soon or that an article should be created for the topic because the subject is notable and verifiable. Red links help Wikipedia grow. The creation of red links prevents new pages from being orphaned from the start. Good red links help Wikipedia—they encourage new contributors in useful directions, and remind us that Wikipedia is far from finished." [https://en.wikipedia.org/wiki/Wikipedia:Red\\_link](https://en.wikipedia.org/wiki/Wikipedia:Red_link), last accessed March 2022.

inspiration for this approach is the project *Infrastructural Maneuvers*,<sup>81</sup> initiated by the (self-taught) librarians at the Rietveld Academie and Sandberg Instituut in Amsterdam, who we had crossed paths with several times during the toolmaking process. They also joined the Unbound Library sessions. *Infrastructural Maneuvers* built a cataloging system that allows catalog users to



Looking over the shoulder of the information specialist Thea in the basement of the Public Library in Amsterdam, I saw her navigating a software called Cardbox—with care and attention. Apparently the Cardbox software only runs on this old Linux desktop computer. There were no windows in the office. Thea seemed surprised about the attention. Why would anyone be interested in this old cataloging system?

The Dutch version of the *Homosaurus* was lying next to her keyboard, printed out and ring bound.

propose new search categories to the cataloging system. These categories can then be reviewed by the librarians who decide whether they would be implemented as part of the cataloging system.

In the third tool version, the idea of showing what is missing was translated in relation to search categories (not books). The concept of 'missing' was interpreted in different ways. 'Missing' was understood, not only as 'what is missing but should be there', but also as 'what is there but should be revisited or should perhaps not be used any longer'.

81 Development website of 'Infrastructural Maneuvers': <https://jekyll.all-syste.ms/>, last accessed March 2022.

- ~~Strike-through~~: Terms were crossed out when they should not be used anymore, for instance because they are discriminatory.<sup>82</sup> Crossing out indicates that a term is still in usage (for now). For instance, terminology now considered offensive but not considered problematic at the time of authorship may appear in certain historical



Visualization Tool

<https://feministsearchtools.nl/wp-content/uploads/2020/11/Screenshot-from-2020-11-02-14-53-56.png>

texts and would be struck through. The strike-through signals a general disapproval of the existence and usage of this term.

- Red terms show when no book is found in the catalog under a certain category.
- USE: indicates when another term should be used.<sup>83</sup>
- ADD: signals suggestions that were made by the FST group for adding certain terms.
- (Exclude): The term (exclude) signals terms that the FST group has excluded from the search, for instance to give space to other categories that are less represented in the catalog.

This version of the tool has been shown and tested on different occasions, usually in the context of workshops during which the tool could be contextualized, including

choices that led to certain functions as well as malfunctions and shortcomings. The tool requires a login, which was a condition for IHLIA to let us use their dataset. Every time we would be workshopping the tool in a new context, we would inform IHLIA and ask permission, with an explanation of the context and our motivation for bringing it into the context. We would provide short updates after workshops about how the tool was used, perceived and discussed in the respective context. I perceived IHLIA's request for a login as a gesture of care, rather than a restriction. This request sets a condition in which tool use requires a certain commitment to contextualization in order for it to be used. Without explicitly articulated as a required condition, this tool version has always been part of a workshop situation and has never 'taken off' on its own terms, meaning it was never used independently of the collective condition in which it was developed.

This version of the FST (in comparison to the other versions) and its conceptualization and actualization of tool and tool-use was rendered more complex in various ways. In terms of its interface design, the x-axes is more dynamic. It can be adjusted according to thematic clusters of search terms, which were curated on the basis of the Dutch version of the *Homosaurus*, by members of the FST collective and in sporadic collaboration with a librarian and information specialists.<sup>84</sup> The search for the gender or nationality of an author has not been further pursued in this tool version. Instead intersections of themes and categories have been combined. Through color coding, overlaps of different thematic clusters are made visible. This means that when a book is part of several thematic clusters, it will be visible, in addition to

<sup>82</sup> An example of that is the term *blanken*, which is a Dutch term that refers to white people as superior.

<sup>83</sup> For example 'witte' instead of 'blanken'

<sup>84</sup> The clusters were curated by Sven Engels and Annette Krauss and were called: Race, Gender, Sexuality, Disability, Structural Oppression.

others it is a part of. The vocabulary of terms that was used for the X-axes derives from the context-specific vocabulary of the library itself—a text document which the librarians initiated, used and took care of for many years. Interventions by the FST group as well as interventions from the *Homosaurus* were differentiated in the tool.

This version of the tool shifted from searching and displaying results based on author's identities as the main organizing principle, to looking at other factors of categorization such as publishers, description of books, as well as applying a specialized situated vocabulary of searched terms. To clarify, the search categorization in the IHLIA catalog is based on a cataloging system called Cardbox, a system IHLIA uses, which is linked to the widely used MARC21 and Worldcat cataloging standards. However, it also exists independent of them. The *Homosaurus* is an integral part of the Cardbox system and the librarians use it every time a new item is added to the catalog.

This version of the FST still applied search categories in an accumulative way. Examples of search categories coming from the *Homosaurus* were 'racisme', 'discriminatie', 'homofobie', 'sexuele\_minderheden', 'genderidentiteit', 'transfobie', 'klassisme', 'validisme'. Adding and combining categories and creating clusters of categories remains questionable. If a book description contains terms such as race, gender or social class it cannot be determined with certainty how these terms are used in the respective book. However, by sustaining a closer connection to the context within which the tool is developed and by implementing a categorization system based on vocabularies and tools developed within a particular context, this tool version seems to have followed a situated trajectory and creates separations and intersections in less crude ways than previous versions.

## Conclusion: Slow collective processing

In this chapter, I discussed a distributed process of collectively imagining and building tools—more specifically different tool versions that are referred to as 'Feminist Search Tools'.

The FST project moved through and fed off short-lived formats for working together across different contexts. This included workshops (some of which self-organized and some were organized by like-minded initiatives), summer schools and events by universities, art academies, cultural institutions and meetings with librarians and archivists. Such contexts became significant for the tool-building process. Workshops, meetups and recorded conversations energized the collective tool imagining and making process and contributed to its continuation as well as occasional postponements.

In approaching the question of how the meaning and purpose of a tool is articulated through a collective process, the workshop-based approach to collective work needs to be taken into account. It signifies the manner in which fragmented, unconcluded definitions of the meaning and functioning of the 'tool' are also related to the fragmentation of its process of development. The distributed character of collective tool-building and tool-imagining also carries the potential to enter into and combine various contexts. The manner in which purpose and meaning are continuously rearticulated contributes to the possibility of context-specific and relational understandings, in addition to articulations of tools-in-the-making.

The answer to the question, 'what is the FST for?' will most certainly vary depending on who poses and who is asked the question. The distributed process of collective toolmaking also distributed the task of determining and articulating criteria for usefulness of the



tool-in-the-making across different people, contexts, and timelines. This makes it difficult to sustain a generalized conception of what the tool may be for. Yet, I would argue there is also a common ground, which is a refusal of 'tool-routines' (when tools become unquestionable). The process of continuous tool interrogation, collectively imagining tools *differently*, as well as actually altering them, became inherent to the collaborative processes adopted by the FST group; how we worked together and established relationships with the tools-in-the-making. Thus, to some extent, the so-called 'brokenness' (the moment in which a tool becomes noticeable) of the FST tool became its purpose.

The pressure to produce something that can be considered 'functioning' (a tool-in-action) combined with rushed processes can result in approaches and technologies that may deliver quick results but may also contradict values and ethics that evolve as part of the longer trajectory of collective toolmaking. Yet, notions such as '1st version' are a way to articulate and uphold their unresolvedness and, at the same time, lay the path for continuation, for future (unresolved) versions. On their own, such unresolved tools miss the articulation work necessary to turn them into meaningful discursive objects. However, by drawing boundaries that are responsive to specific contexts and conditions (i.e. including context-specific vocabularies, limiting full access through a login or activating the tool within workshop contexts), collective tool-building can incite critical conversations, in addition to the questionability and mutability of the 'tool'.

One of the challenges of the FST project has been to accommodate various levels of involvement, states of precarity and the different timelines of the collaborators. As a collective toolmaking project, the FST required articulations and approaches that resist linearity and

progress-oriented understandings of a design process. With reference to Barad, what is needed in such a process "is a method attuned to its entanglements."<sup>85</sup> Collectively imagined and built tools are relational things and time is needed to get used to them. The same applies to the systems and contexts they evolve within and interact with, which also require attunement. These environments seem to render separations between tasks, roles, subjects and approaches, bringing about their own vocabularies and social-technical conducts. Such conditions have implications for the tool-building process and those who are involved in it. Collective tool-building processes are receptive to influences that come with the contexts they move through.

This chapter discussed the manner in which a tool can 'emerge' from particular configurations of short-term as well as longer-lasting collectives, socio-technical configurations. The 'inefficiency' of the process constituted the way relationships to the tool and those involved with it developed. Such processes may confront expectations of a productive and rewarding process as they resist linearity and progress-oriented understandings of a design or development process. Yet, I argue it is precisely through the slowness of process that the tool can be questioned conceptually, technically, ethically and not necessarily conclusively. Observations and issues that emerge can be repeated and rehearsed across different contexts and at an inclusive pace, regardless of whether participants are able to attend each workshop and meeting.

Moments of demonstrating collective tool-in-the-making, explaining intentions and negotiating terms of publishing are important moments in which to reflect on

85 Karen Barad, *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning* (Durham, London: Duke University Press, 2007), 29.

the context and imagine the various ways in which the tool could live on. These meetings, workshops, presentations and demonstrations create a culture in which the tool is not presumed as an inevitable outcome. By repeatedly explaining and demonstrating the tool, by reconstructing its timeline, imagining its future use and hearing others explain it, the tool develops relationships in other-than-utilitarian ways. Narrating such a tool in the context of more and less public moments, revisiting



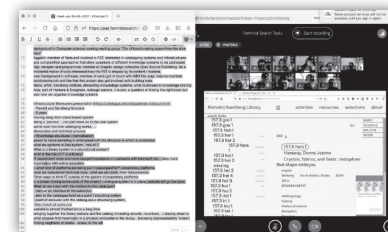
Workshop: Repository of Feminist SeAarch Strategies, February 2020  
[https://hackersanddesigners.nl/s/Activities/p/Workshop%3ARepository\\_of\\_Feminist\\_Search\\_Strategies](https://hackersanddesigners.nl/s/Activities/p/Workshop%3ARepository_of_Feminist_Search_Strategies)

the same issues over and over again is a generative, inventive process in and of itself—sometimes a rehearsal, sometimes a ritual, sometimes a practice.

The collective slow processing of potential meaning and functioning of the tool in these moments, occurred with the digital interface(s) as a central reference point. We gave so-called ‘tool tours’. However, throughout its various phases and contexts, the FST has also produced a series of non-tool artifacts that took center stage at certain moments as well: stickers and book-marks, paper prototypes, wooden book dummies, recordings and transcriptions of conversations. Reintroducing the tool over and over again meant that every time our perception of the tool had a slightly different

emphasis. In addition, our interpersonal relationships emerged and changed through these different ‘tool-encounters’.

I argue that this consciously ‘inefficient’ approach to toolmaking is indicative of the manner in which collective toolmaking practices attempt to, and sometimes succeed in upholding critical, ethical, and sustainable ways of working and being together. Such an approach is certainly not suitable for any context. It will not pro-



‘Unbound Libraries’ hosted online, May / June 2020.

duce search tools that take the place of existing library search engines. However, such processes bring about *other* formats, methods and articulations for tool-relationships that are contextual and self-critical, with the purpose of readjusting general perceptions of what is inevitable and what is useful in conceptualizing and actualizing tools.

## Bibliography

- Ahmed, Sara. *What's the use? On the uses of use*. Durham: Duke University Press, 2019.
- Barad, Karen. *Meeting the Universe Halfway. Quantum Physics and the Entanglement of Matter and Meaning*. Durham, London: Duke University Press, 2007.
- Barad, Karen. "On Touching—The Inhuman That Therefore I Am." *differences* 23, no. 3 (2012): 206–223.
- Barad, Karen. "Intra-Actions." *Mousse* 34 (Summer 2012): 76–81.
- Bardzell, Shaowen. "Feminist HCI: Taking stock and outlining an agenda for design." *HCI For All* (April, 2010).
- Chun, Wendy Hui Kyong. "Daemonic Interfaces, Empowering Obfuscations." *Programmed Visions. Software and Memory*. Cambridge, Massachusetts: MIT Press, 2011.
- Crenshaw, Kimberle. "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." *University of Chicago Legal Forum* 1, no. 8 (1989).
- Drabinski, Emily. "Queering the Catalog: Queer Theory and the Politics of Correction." *The Library Quarterly: Information, Community, Policy* 83, no. 2 (April 2013): 94–111. The University of Chicago Press.
- Drenthe, Gusta and Maria van der Sommen. "Vrouwenthesaurus: lijst van gecontroleerde termen voor het ontsluiten van informatie over de positie van vrouwen en vrouwenstudies." *Internationaal Informatiecentrum en Archief voor de Vrouwenbeweging* (1992).
- Ferreira da Silva, Denise. "On Difference without Separability." Catalog of the 32a São Paulo Art Biennial, *Incerteza viva (Living Uncertainty)*, 2016.
- Ferreira da Silva, Denise. "How." *e-flux Journal* 105 (December, 2019). <https://www.e-flux.com/journal/105/305515/how/>
- Graham, Rosie (Richard). "A 'History' of Search Engines: Mapping Technologies of Memory, Learning and Discovery." In *Society of the Query Reader*, edited by René König and Miriam Rasch. Amsterdam: Institute of Network Cultures, 2014.
- Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies* 14, no. 3. (Fall, 1988). Ann Arbor: Michigan Publishing.
- Halberstam, Jack. *Vertiginous Capital, Or The Master's Toolkit*. [https://www.dropbox.com/s/sal72piqxqpo58g/QUEER.ARCHIVE.WORK\\_1.zip?dl=0&file\\_subpath=%2FQUEER.ARCHIVE.WORK\\_1\\_Jack\\_Halberstam.pdf](https://www.dropbox.com/s/sal72piqxqpo58g/QUEER.ARCHIVE.WORK_1.zip?dl=0&file_subpath=%2FQUEER.ARCHIVE.WORK_1_Jack_Halberstam.pdf)
- Halberstam, Jack. *Queer Art of Failure*. Durham: Duke University Press, 2011.
- Harman, Graham. *Tool-being: Heidegger and the metaphysics of objects*. Chicago: Open Court, 2002.
- Henry, Ray. "Moving from Theory to Practice: Incorporating Feminist Approaches into Search and Discovery Tool Development." *Journal of academic librarianship* 41, no. 4 (July 2015): 514–516.
- Kelty, Christopher. *Two Bits: The Cultural Significance of Free Software*. Durham: Duke University Press, 2008.
- Knowlton, Steven A. "Three Decades Since Prejudices and Antipathies: A Study of Changes in the Library of Congress Subject Headings." *Cataloging & Classification Quarterly* 40, no. 2 (2005).
- Latour, Bruno. "A Collective of Humans and Nonhumans: Following Daedalus's Labyrinth." *Pandora's hope: essays on the reality of science studies*, 174–215, Cambridge, Massachusetts: Harvard University Press, 1999.
- Laurel, Brenda. *Computers as theatre. Reading*, Massachusetts: Addison-Wesley Pub. Co., 1993.
- Mansoux, Aymeric. "Sandbox Culture: A Study of the Application of Free and Open Source Software Licensing Ideas to Art and Cultural Production." PhD diss.,

- Centre for Cultural Studies, Goldsmiths, University of London, 2017.
- Le Guin, Ursula K. "She unnames them." *The New Yorker*, 1985.
- Manovich, Lev "The Language of Cultural Interfaces," *The Language of New Media*. Cambridge, Massachusetts: MIT, 1999.
- Noble, Safiya Umoja. *Algorithms of oppression: how search engines reinforce racism*. New York: New York University Press, 2018.
- Olson, Hope A. "The Power to Name: Representation in Library Catalogs." *Signs* 26, no. 3 (Spring, 2001): 639–668. The University of Chicago Press.
- Olson, Hope A. "Mapping Beyond Dewey's Boundaries: Constructing Classificatory Space for Marginalized Knowledge Domains." *LIBRARY TRENDS* 47, no. 2 (Fall 1998): 253–254.
- Miriam Rasch and René König, eds., *Society of the Query Reader*. Amsterdam: Institute of Network Cultures, 2014.
- Rogers, Richard. "Foundations of Digital Methods: Query Design." In *The Datafied Society: Studying Culture through Data*, edited by Mirko Tobias Schäfer, Karin van Es. Amsterdam: Amsterdam University Press (2017): 75–94.
- Rosenblum, Brian. "Decolonizing Libraries" (extended abstract): [http://brianrosenblum.net/2015/02/01/decolonizing\\_libraries/](http://brianrosenblum.net/2015/02/01/decolonizing_libraries/)
- Schmitt, Richard. "Heidegger's Analysis of 'Tool'." *The Monist* 49, no. 1 (January 1965): 70–86.
- Smith, Martha Nell. "Frozen Social Relations and Time for a Thaw: Visibility, Exclusions, and Considerations for Postcolonial Digital Archives." *Journal of Victorian Culture* 19, no. 3 (July 2014): 403–410.
- Snelting, Femke. "I think that conversations are the best, biggest thing that free software has to offer its user." *Conversations*, 2015. <https://conversations.tools/>

- Suchman, Lucy. "Located accountabilities in technology production." *Scandinavian Journal of Information Systems* 14, no. 12 (2002).
- Suchman, Lucy. "Agencies in Technology Design: Feminist Reconfigurations." In *Machine Ethics and Robot Ethics*. Routledge (2001).
- Wright, Stephen. "Towards a lexicon of usership." Van Abbemuseum, 2013.

### Relevant Links:

- <https://feministsearchtools.nl/>
- <https://feministsearchtool.nl/>
- <https://github.com/hackersanddesigners/fst-viz-tool>
- <https://fst.hackersanddesigners.nl/>
- <https://github.com/hackersanddesigners/fst-amz-shadow-search>
- GNU Bulletin, 1, no. 1, 1986,  
<https://www.gnu.org/bulletins/bull1.txt>
- Homosaurus IHLIA: <https://www.ihlia.nl/van-schoenendoos-tot-homosaurus/>
- Women's Thesaurus Atria: <https://institute-genderequality.org/library-archive/collection/thesaurus/5710/>
- <https://womensbios.lib.virginia.edu/about.html>
- <https://feministinternet.com/>
- [https://www.youtube.com/watch?v=-DW4HLgYPIA&ab\\_channel=SouthbankCentre](https://www.youtube.com/watch?v=-DW4HLgYPIA&ab_channel=SouthbankCentre) (Kimberlé Crenshaw - On Intersectionality - keynote, 2016)
- 'Teaching the radical syllabus' in collaboration with Lucie Kolb and Eva Weinmeyr <https://constantvzw.org/site/Constant-in-Teaching-the-Radical-Catalogue-Een-syllabus.html>
- "Feminist Search Tools. "Intersectional Search: addressing own complicities"
- [https://vimeo.com/660599698?embedded=true&source=vimeo\\_logo&owner=45925538](https://vimeo.com/660599698?embedded=true&source=vimeo_logo&owner=45925538)



Feminist Search Tools Meetup, 2021

[https://hackersanddesigners.nl/s/Events/p/H%26D\\_Meetup\\_2%3A\\_Feminist\\_Search\\_Tools](https://hackersanddesigners.nl/s/Events/p/H%26D_Meetup_2%3A_Feminist_Search_Tools)

“Intersectional Search in Queer and Trans Archives”,

IHLIA Amsterdam

[“https://ihlia.nl/events/intersectional-search-in-queer-and-trans-archives/](https://ihlia.nl/events/intersectional-search-in-queer-and-trans-archives/)

Feminist Search API Workshop

[https://hackersanddesigners.nl/s/Activities/p/Feminist\\_Search\\_API\\_Workshop](https://hackersanddesigners.nl/s/Activities/p/Feminist_Search_API_Workshop)

‘Unbound Library Worksession’ organized by Constant in 2020

<https://constantvzw.org/site/-Unbound-Libraries,224-.html>

‘Repository of Feminist Search Strategies’, 2020

[https://hackersanddesigners.nl/s/Events/p/Workshop%3A\\_Repository\\_of\\_Feminist\\_Search\\_Strategies](https://hackersanddesigners.nl/s/Events/p/Workshop%3A_Repository_of_Feminist_Search_Strategies)

<https://read-in.info/>

<https://read-in.info/bookshelf-research/>

[https://read-in.info/wp-content/uploads/2015/06/no\\_innocent-reading\\_red.jpg](https://read-in.info/wp-content/uploads/2015/06/no_innocent-reading_red.jpg)

<https://read-in.info/wp-content/uploads/2018/10/Unlearning-My-Library-Forum1-Copyright-Coco-Duivenvoorde-38-768x512.jpg>

H&D Meetup “Scraping, counting and sorting”, 2015

[https://hackersanddesigners.nl/s/Activities/p/Scraping%2C\\_counting\\_and\\_sorting](https://hackersanddesigners.nl/s/Activities/p/Scraping%2C_counting_and_sorting)

<http://www.zerofootprintcampus.nl/en/participants/read-in/>

<https://wiki.digitalmethods.net/Dmi/SummerSchool2019>

<http://densitydesign.org/2014/05/an-interview-with-richard-rogers-repurposing-the-web-for-social-and-cultural-research/>

<http://densitydesign.org/>

<https://wiki.digitalmethods.net/Dmi/ToolDatabase>

<https://mappingslavery.nl/educatie/publicaties/>

<https://atria.nl/bibliotheek-archief/collectie/thesaurus/459/>

<https://www.theblackarchives.nl/>

[https://read-in.info/bookshelf\\_research-2/](https://read-in.info/bookshelf_research-2/)

<https://constantvzw.org/site/-Unbound-Libraries,224-.html?lang=en>

<https://git.xpub.nl/XPUB/XPPL>

[https://pzwiki.wdka.nl/mediadesign/XPPL\\_Documentation](https://pzwiki.wdka.nl/mediadesign/XPPL_Documentation)

[http://wiki.evaweinmayr.com/index.php/Project\\_2\\*\\_Library\\_of\\_Inclusions\\_and\\_Omissions](http://wiki.evaweinmayr.com/index.php/Project_2*_Library_of_Inclusions_and_Omissions)