

AAG 2021 Access Copies (please do note distribute)

Collectively Designing Icons, Feminist Vocabularies for Map Design
Meghan Kelly, Dartmouth College



Slide 1: Good afternoon everyone! Thank you for being here today. My name is Meghan Kelly and I'm a postdoc at Dartmouth College in the Critical Geospatial Research Lab.

Image alt-text: A composite image that shows a series of map icon sketches hand drawn by workshop participants. Icons include representations for campsite, bathroom, library, police, doctor, and entrance.



Outline

Research Question

Feminist Mapping Framework

Form, Why icons?

Feminist Icon Design Workshops

Key Takeaways

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Slide 2: Today, I will be sharing a portion of my research on feminist icon design. I'll introduce a feminist framework for mapping that I apply iconography in a series of workshops. I will argue that feminist perspectives generate alternative graphic vocabularies for icon design and expand the possibilities for feminist map design, more broadly.

Research Question

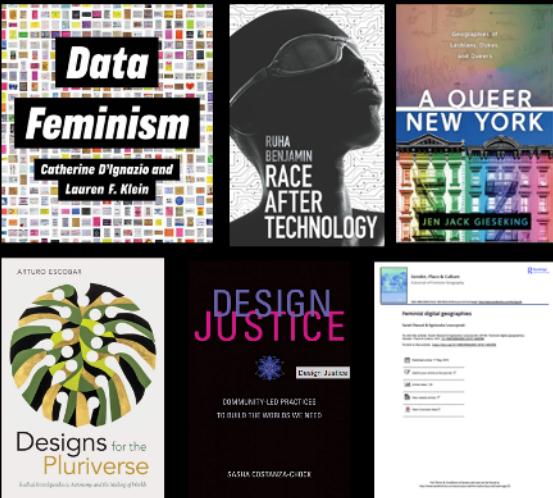
How can a feminist mapping framework expand the graphic vocabulary for map icons?

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Slide 3: In this particular paper, I ask: how can a feminist mapping framework expand the graphic vocabulary for map icons? How can a feminist framework create an alternative and more just icon set?

Feminist Mapping Framework



Data Feminism/Feminist Data Science

Feminist Digital Geographies

Design Justice

Feminist Geographies

Feminist GIS

Critical Cartography

Race Critical Code Studies

Queer GIS

Indigenous Cartographies

Community GIS

Kelly (2021) *Routledge Handbook*



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Slide 4: Recent work in data feminism, design justice, and feminist digital geographies among other areas listed here has sparked renewed energy and motivation for feminist mapping. Feminism is not new to mapping, yet it remains an area of study often erased or niche in GIScience and critical GIS conversations. Feminist mapping today is truly a transdisciplinary field.

Image alt-text: A composite image showing six influential book covers and article title pages, including *Data Feminism* (D'Ignazio and Klein 2020), *Race after Technology* (Benjamin 2019), *A Queer New York* (Gieseking 2020), *Designs for the Pluriverse* (Escobar 2018), *Design Justice* (Costanza-Chock 2020), and “Feminist Digital Geographies” (Elwood and Leszczynski 2018).

La Señorita geofeminista 🌈 @Srita_peperina - Nov 16
En una peleita o lucha: ¿Qué es mapeo feminista/cartografía feminista?

In one word or one line: What is feminist mapping/feminist cartography for you? [@ischat](#) [@GeoLatinas](#) [@geopolitawomen](#) [@LadiesOfLandart](#) [@GeochicasGSV](#) [@BlackGirlsMapp](#) [@OSMGirls](#) [@GeoCriticaEc](#) [@GeoBrujas](#)


6 25

La Señorita geofeminista 🌈 @Srita_peperina
Replying to @Srita_peperina

@mapbosse @meghankellymaps @HeatherLeson @wonderchuck @Honorable_Nath @sarahbellmaps @NACIS @SpatialRed @latoyasgray would love your input on this :)

11:01 PM · Nov 16, 2020 · Twitter Web App

3 Likes

Meghan Kelly @meghankellymaps - Nov 18
Replying to @Srita_peperina @mapbosse and 7 others
Ohhh great thread! I went with this definition in my dissertation... a collective endeavor grounded in bodies and situated praxis that continuously grapples with systems of power and oppression in spatial data, map design, and mapping workflows [theory/practice/action]

1 3

Meghan Kelly @meghankellymaps - Nov 18
Definitely adding this thread to the dissertation though :)

1 2

Show replies

Sarah Bell @sarahbellmaps - Nov 17
Replying to @Srita_peperina @mapbosse and 7 others
I've been giving this some thought. I am drawn to the notion that it is dialogues through and about mapping. And that these dialogues intentionally challenge dominant discourse that defines for whom space exists. But that is more than one word 😊

1 3

Sarah Bell @sarahbellmaps - Nov 17
Replying to @Srita_peperina @mapbosse and 7 others
I've been giving this some thought. I am drawn to the notion that it is dialogues through and about mapping. And that these dialogues intentionally challenge dominant discourse that defines for whom space exists. But that is more than one word 😊

1 5

La Señorita geofeminista 🌈 @Srita_peperina - Nov 18
Thank you all for your amazing thoughts on this! <3
One word, one line, one paragraph, one tweet. Hopefully this conversation will become more than just one thing :)

1 3

LaToya S. Gray @latoyasgray - Nov 17
Replying to @Srita_peperina @mapbosse and 7 others
Thank you for including me on this thread and dialogue. I too am at a loss for words to truly capture my thoughts, but based on some observations I have since plunging deeper into the geo-spatial world, I would say...

1 1

LaToya S. Gray @latoyasgray - Nov 17
My story told through my voice. Sorry that it is more than one word, but I am noticing and getting wary of narratives being appropriated.

1 5

Kate Chapman 🌈 @wonderchuck - Nov 18
Replying to @Srita_peperina @mapbosse and 7 others
one word is so hard, two is also hard. What would mutual aid look like in mapping?

1 4

La Señorita geofeminista 🌈 @Srita_peperina - Nov 18
You can make it one/two lines, one/tweets as well:D

1 1

DENISE MCKENZIE @SpatialRed - Nov 17
Replying to @Srita_peperina @mapbosse and 7 others
Like @sarahbellmaps have been thinking about this, but one word is hard. So can I compromise with 2? #diversity and #collaboration

1 3

Dr. Amber J. Bosse @mapbosse - Nov 16
Replying to @Srita_peperina @GeoLatinas and 7 others
Giving it a shot!

for me...it's a persistent attention to "who?"

Who made this?
Who informed the authors' representational framework?
Who does this serve?

1 5

Dr. Amber J. Bosse @mapbosse - Nov 16
This is juxtaposed against a traditional framework that attends first and foremost to the product (what was made and how). As you know, fixation on product can be used to mask intention (think 'you can't blame me...that's what the data says!')

1 2

Patricia Solis @Patriciafia - Nov 16
Replying to @Srita_peperina @GeoLatinas and 7 others
#everywhereshemaps ❤️ 🌈

1 1

Natalia Morandeira @Nat_Mora - Nov 16
Replying to @Srita_peperina @GeoLatinas and 7 others
@SistersofSAR ❤️

1 3

Gabriela Belauzán @GabrielleBelau1 - Nov 16
Replying to @Srita_peperina @GeoLatinas and 7 others
Empoderamiento

1 1

You're unable to view this Tweet because this account owner limits who can view their Tweets. [Learn more](#)

La Señorita geofeminista 🌈 @Srita_peperina - Nov 16
¡Gracias! Estoy recopilando ideas, dudas, comentarios, propuestas sobre mapeo feminista para mis investigaciones 💜
PD. Yo soy fan tuy

1 2

Slide 5: Marking this resurgence of feminist mapping, Selene Yang took to Twitter in November 2020 asking feminist mappers to define feminist mapping in one word or phrase. In a matter of hours, feminists from around the world digitally gathered to carve out space for feminist perspectives and push the boundaries of existing frameworks. I highlight this Twitter thread to illustrate how this work is happening and evolving in real time.

Image alt-text: An image of a Twitter thread that documents responses to Selene Yang's prompt asking folks to define feminist mapping in one word or phrase. Responses included attention to voice and stories, questions of who ("who made this and who does it serve"), power, empowerment, mutual aid, power, collaboration, and diversity.

Feminist Mapping Framework

Feminist Principles

- 1. Power**
- 2. Context and Situated Knowledge**
- 3. Pluralism**
- 4. Uncertainty**
- 5. Emotion and Embodiment**
- 6. Binaries and Hierarchies**
- 7. Labor and Reflexivity**

D'Ignazio and Klein (2018)

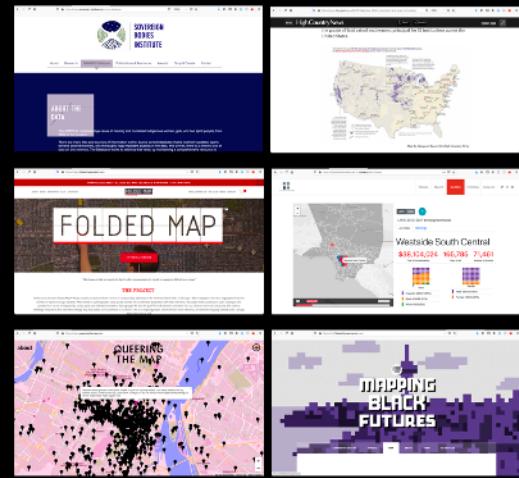
Kelly (2021)

DARTMOUTH



Slide 6: In my dissertation work, I adapt Catherine D'Ignazio and Lauren Klein's feminist framework for data science to mapping contexts. Their 2018 version of this framework relies on seven feminist principles including considerations of power, context, pluralism, uncertainty, emotion and embodiment, binaries, and labor.

Feminist Mapping Framework



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D'Ignazio and Klein (2018)

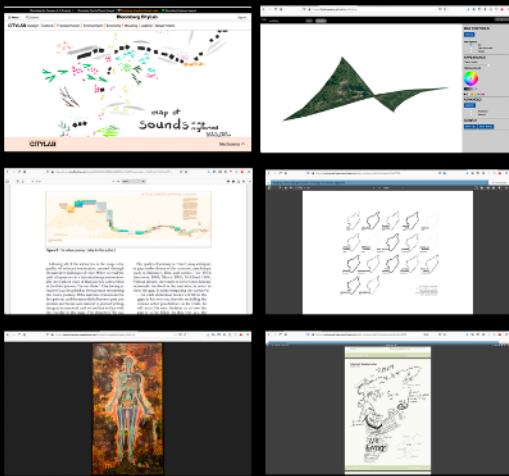
Kelly (2021)



Slide 7: Within this framework, we can take power as one example. In my work, I draw on Black feminist thinkers to examine intersecting systems of power that are baked within geospatial data, map design, and mapping processes. These are systems of power that simultaneously privilege and oppress. In terms of geospatial data, power dynamics determine what “counts” as data. Power permeates through the design of maps determining what is made visible, invisible, or hyper visible in the selection and generalization processes. Finally, power informs mapping workflows and the distributions of labor, who’s included and who’s not.

Image alt-text: A composite image showing six projects that exemplify power in mapping. They include the Sovereign Bodies Institute, Land-Grab Universities, Folded Map, Million Dollar Hoods, Queering the Map, and Mapping Black Futures. Links to these projects will be provided in the chat.

Feminist Mapping Framework



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D'Ignazio and Klein (2018)

Kelly (2021)

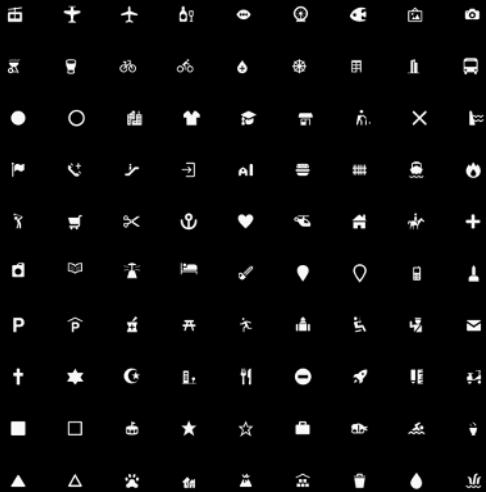


Slide 8: In addition to power, feminists recognize that all knowledge comes from somewhere and as a result, all knowledge is partial. In a mapping context, this means that all data (no matter it's size) can never be neutral or objective. Data, maps, and mapping processes are deeply connected to the systems of power that I mentioned before. As such, a feminist approach to mapping requires us to press pause and situate ourselves and our work in relationship to power.

To save time, I won't go into detail with each principle BUT I will be nodding back to this framework but I have provided links to these projects on the slides in the chat.

Image alt-text: A composite image showing six projects that exemplify context and situate knowledge in mapping. They include "How 2020 Remapped Your world," Enfolding, "Framing the Days," Borders: An Atlas of Syrian Border Crossings, Sum, and "Collectively Mapping Borders." Links to these projects will be provided in the chat.

Feminist Mapping Framework



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D'Ignazio and Klein (2018)

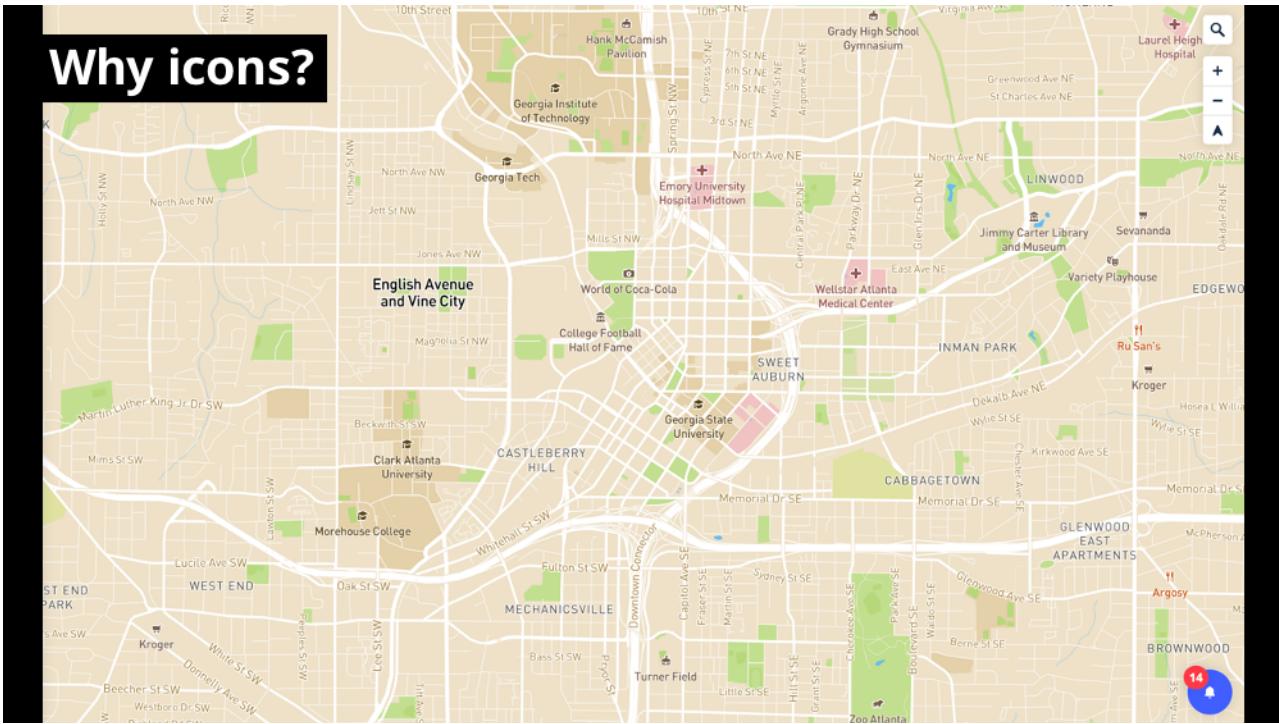
Kelly (2021)



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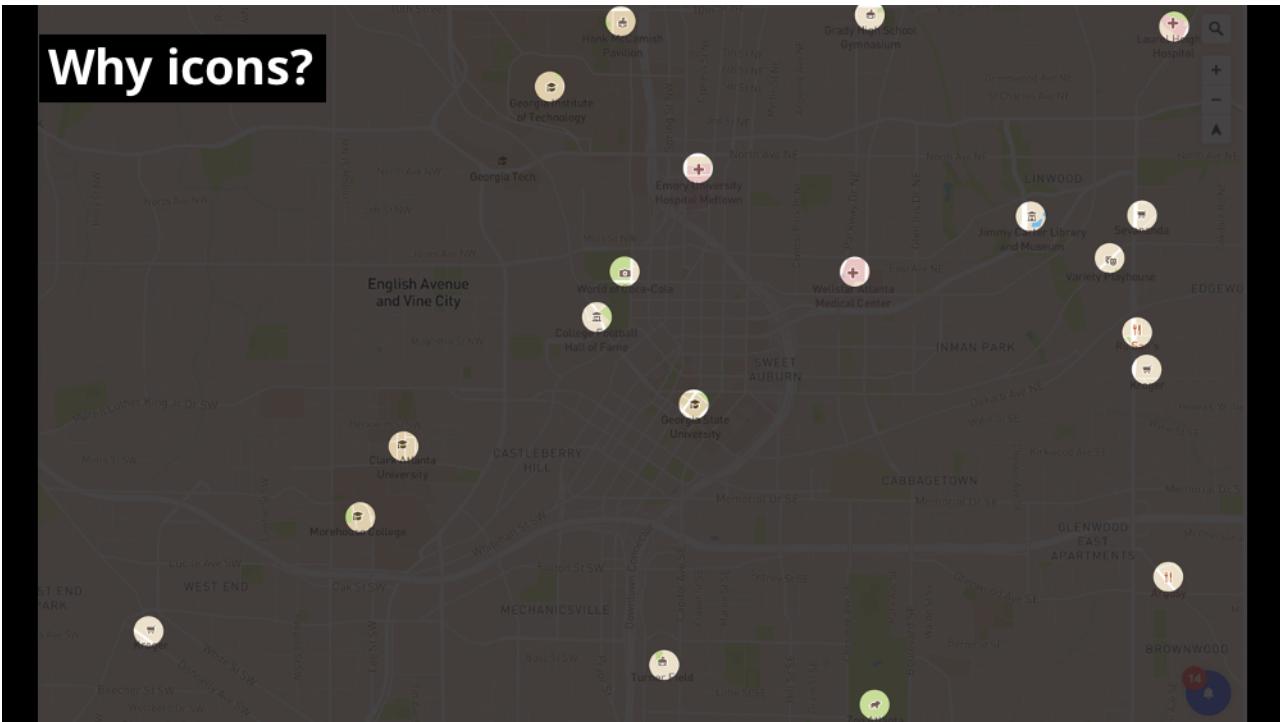
Slide 9: As I began exploring the possibilities of feminist mapping and these seven feminist principles, map icons became my “go to” entry point for introducing these concepts. The further I went the more obvious it became that icons and icon sets needed feminist thought.

Image alt-text: An image showing Maki map icons laid out within a grid. Each icon is portrayed in white with sharp contrast to a black background. The icons appear uniform in their design.



Slide 10: So, why icons? Map icons are everywhere and they are ubiquitous in interactive maps. They are tiny (11x11 pixels) map features that are typically baked within a base map.

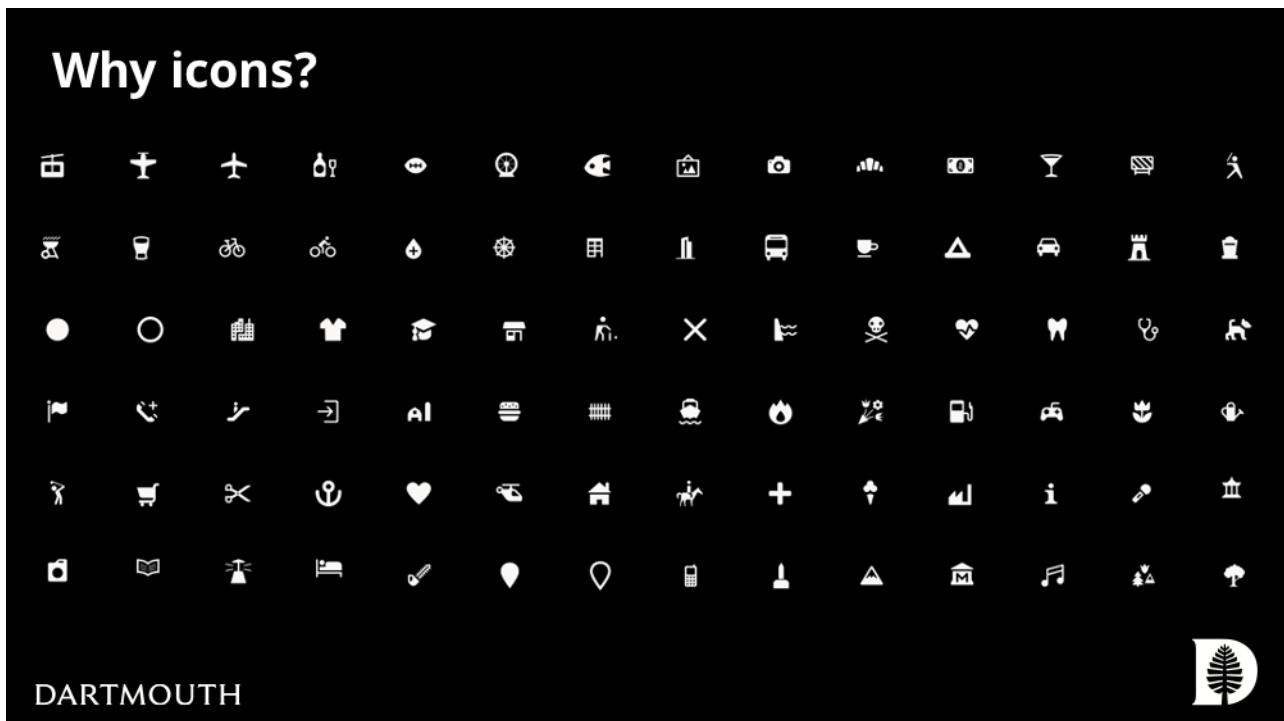
Image alt-text: An image of an interactive map centered on a city.



Slide 11: And as a result, they fly under the radar.

Image alt-text: The same image from the previously slide. This time a majority of the map is grayed out to highlight the very tiny map icons within the map.

Why icons?



Slide 12: The icons on this page are part of Mapbox's Maki icon set, arguably one of the most used icon sets out there today. Icon sets like this one are meant to be universal, meaning you only need this one icon set for your interactive mapping needs. Yet, as we know, all data and map symbols are deeply situated in power relations and context.

Image alt-text: An image showing Maki map icons laid out within a grid. Each icon is portrayed in white with sharp contrast to a black background. The icons appear uniform in their design.

Feminist Icon Design Workshops

Workshop Design

8 workshops (2 online)

Participants ranging from n=4-80+

Sketching for in-person workshops

Miro for digital workshops



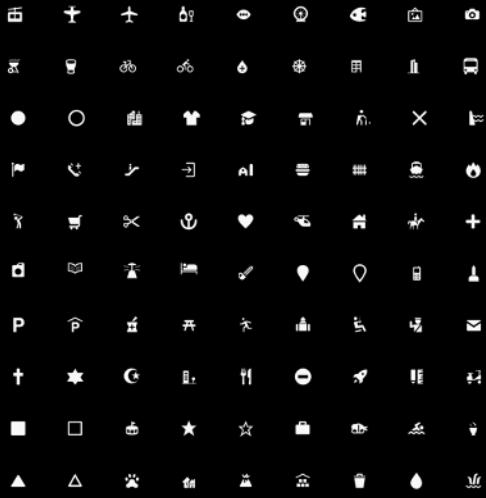
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Slide 13: This brings me to workshop portion of my talk. In the past two years, I've facilitated 8 feminist icon workshops. I utilize workshops as a feminist method for map design because they slow down the map production, fostering reflexive and intentional practice. They also provide a site for creativity and experimentation, opening the design possibilities for icons.

Image alt-text: An image of workshop participants gathered around four tables in groups of 3–5 people. Each group appears to be discussing and/or drawing map icons.

Feminist Icon Design Workshops



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- 6. Binaries and Hierarchies**
- 7. Labor and Reflexivity**

D'Ignazio and Klein (2018)

Kelly (2021)



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Slide 14: In each workshop, I introduce participants to the feminist mapping framework and then ask them to apply the framework in the redesign individual icons.

Image alt-text: An image showing Maki map icons laid out within a grid. Each icon is portrayed in white with sharp contrast to a black background. The icons appear uniform in their design.

Feminist Icon Design Workshops



swimming

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D'Ignazio and Klein (2018)

Kelly (2021)

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Slide 15: Participants begin with a single icon and then iteratively sketch alternatives drawing on various principles. For example, how might the police icon change through the lens of power and systems of oppression? What changes if we explore this icon through a situated lens?

Image alt-text: An image of Maki's "swimming" icon, which shows a bodily figuring with their arm raised in a swimming motion.



Slide 16: These workshops have resulted in over a 1000 alternative design sketches that include annotations recording their process including the opportunities and limitations within each redesign.

Image alt-text: A composite image showing a series of icon sketches created by workshop participants. The sketches include annotations describing their work and process.

Feminist Icon Design Workshops



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D'Ignazio and Klein (2018)

Kelly (2021)

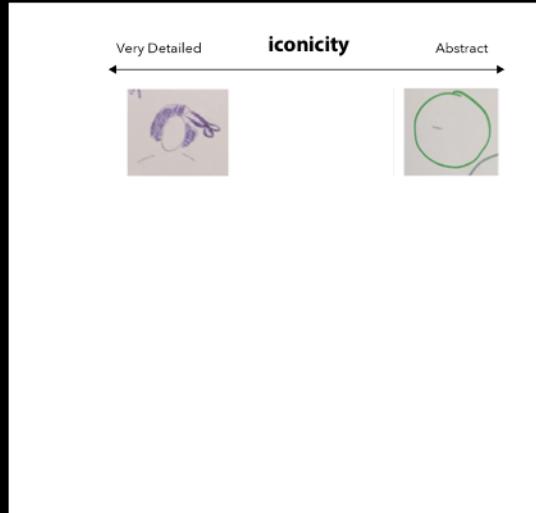


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Slide 17: I've analyzed and coded these sketches in relationship to the feminist framework.

Image alt-text: A composite image that shows a series of map icon sketches hand drawn by workshop participants. Icons include representations for campsite, bathroom, library, police, doctor, and entrance.

Feminist Icon Design Workshops



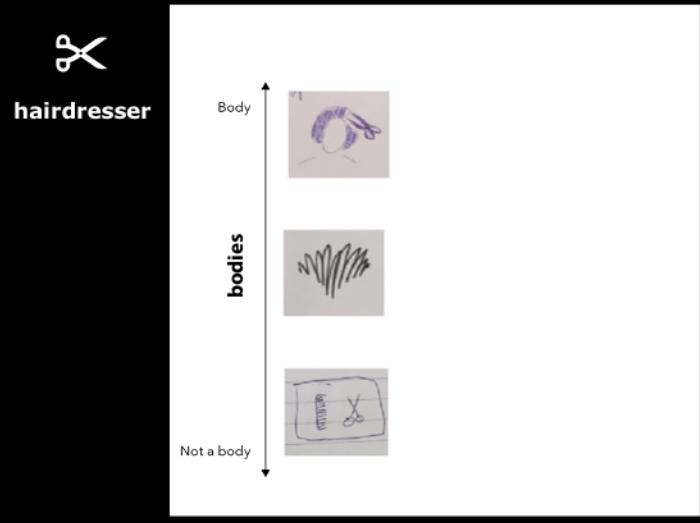
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Slide 18: Additionally, I've analyzed the level of detail in their designs.

Image alt-text: An image of Maki's "hairdresser" icon depicted as a scissors. The second image shows an "iconicity" continuum ranging from "very detailed" to "abstract." Below are two alternative sketches for the hairdresser icon. On the "very detailed" end is a figure's head and shoulders with a scissors cutting their hair. On the "abstract" end is a circle.

Feminist Icon Design Workshops



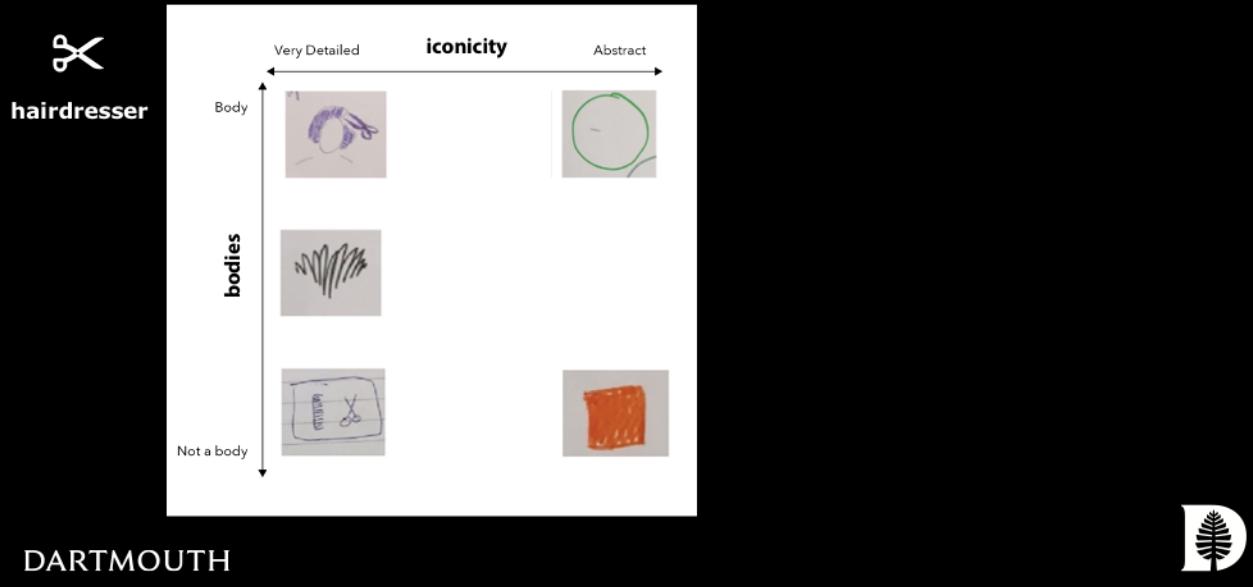
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Slide 19: As well as the presence and absence of bodily figures.

Image alt-text: An image of Maki's "hairdresser" icon depicted as a scissors. The second image shows a "body" continuum ranging from "body" to "not a body." To the right of the continuum are two alternative sketches for the hairdresser icon. On the "body" end is a figure's head and shoulders with a scissors cutting their hair. On the "not a body" end is tray with a comb and scissors. In this middle of this continuum is a bodies hairline.

Feminist Icon Design Workshops



Slide 20: I've utilized this schematic to explore the cartographic vocabulary of each alternative design.

Image alt-text: An image of Maki's "hairdresser" icon depicted as a scissors. The second image is a Cartesian grid that shows the "iconicity" continuum as the x-axis and the "body" continuum as the y-axis. The alternative icon sketches are placed within this grid.

Feminist Icon Design Workshops



police



doctor



toilet



square

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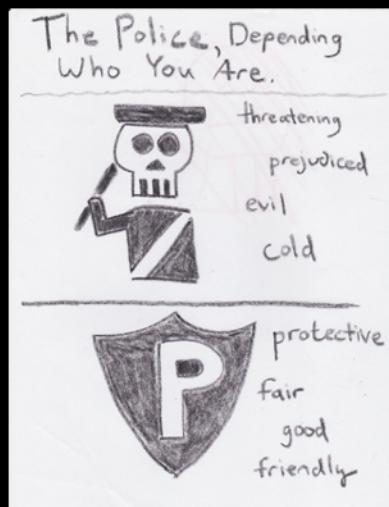
Slide 21: For the remainder of my time, I will explore four of the most frequently redesigned icons.

Image alt-text: An image of Maki's "police," "doctor," "toilet," and "square" icons depicted as a police officer with their arm raised, a stethoscope, a conventional bathroom icon with gendered bodies, and a square, respectively.

Feminist Icon Design Workshops



police



DARTMOUTH

1. Power

2. Context and Situated Knowledge

3. Pluralism

4. Uncertainty

5. Emotion and Embodiment

6. Binaries and Hierarchies

7. Labor and Reflexivity

D'Ignazio and Klein (2018)

Kelly (2021)



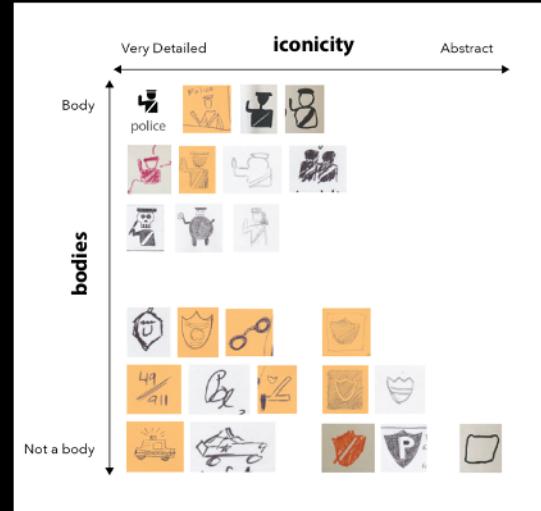
Slide 22: First up is the police icon. In this example, one participant redesigned the police icon from two perspectives that differ “depending on who you are.” This example embraces the feminist principles of power and situated to produce viewpoints that might vary depending on your race, gender, ability, or class.

Image alt-text: An image of Maki's “police” icon depicted as a police officer with their arm raised. The second image shows hand drawn alternative sketches of the police icon, including a police officer with a skull for a head labeled as “threatening, prejudiced, evil, cold” and a shield with a P in the center labeled as “protective, fair, good, friendly.” The image is titled “The Police, Depending on Who You Are.”

Feminist Icon Design Workshops



police



DARTMOUTH



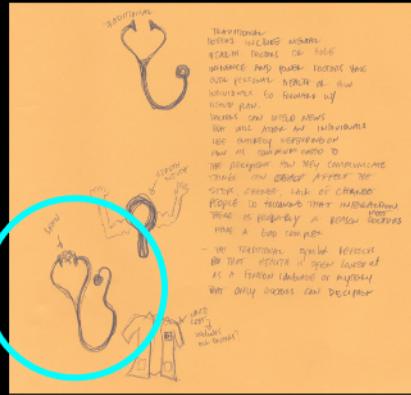
Slide 23: In other sketches, participants introduced varying types of bodies to the police icon. They removed bodies by using associative icons like the police car or a shield. They also played with abstraction reducing police to a square.

Image alt-text: An image of Maki's "police" icon depicted as a police officer with their arm raised. A second image shows the Cartesian grid illustrating the "iconicity" and "bodies" with alternative police icons placed within the matrix.

Feminist Icon Design Workshops



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D'Ignazio and Klein (2018)

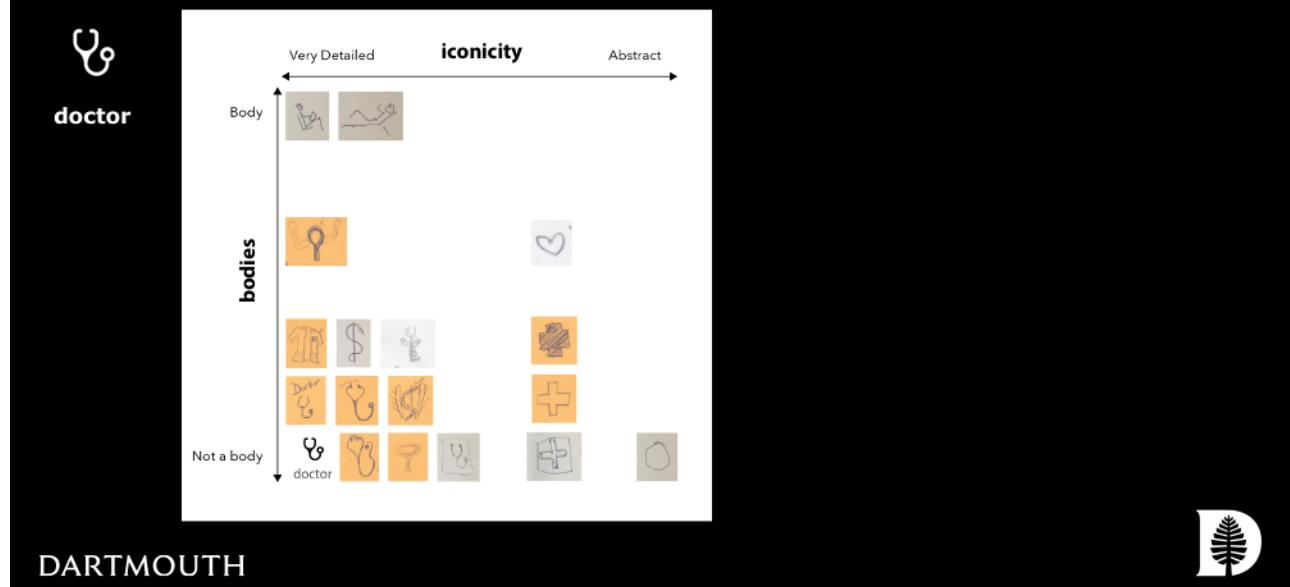
Kelly (2021)



Slide 24: In the case of the doctor icon, one participant annotates that the traditional icon “doesn’t include mental health doctors.” In their redesign, they drew a brain between the stethoscope’s ear pieces, an approach that explores medical contexts that are often not talked about.

Image alt-text: An image of Maki’s “doctor” icon depicted as a stethoscope. The second image shows hand drawn alternative sketches of the doctor icon, including a stethoscope listening to a brain as opposed to the heart.

Feminist Icon Design Workshops



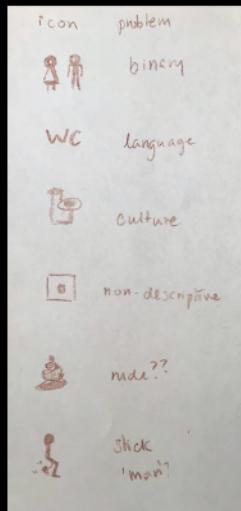
Slide 25: Participants rarely opted to included bodies in their redesigns of the doctor icon. Instead, they focused their efforts on associative icons like the stethoscope, white jacket, and the Red Cross symbols that didn't specify particular bodies.

Image alt-text: An image of Maki's "doctor" icon depicted as a stethoscope. A second image shows the Cartesian grid illustrating the "iconicity" and "bodies" with alternative doctor icons placed within the matrix.

Feminist Icon Design Workshops



toilet



1. Power

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3. Pluralism

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D'Ignazio and Klein (2018)

Kelly (2021)

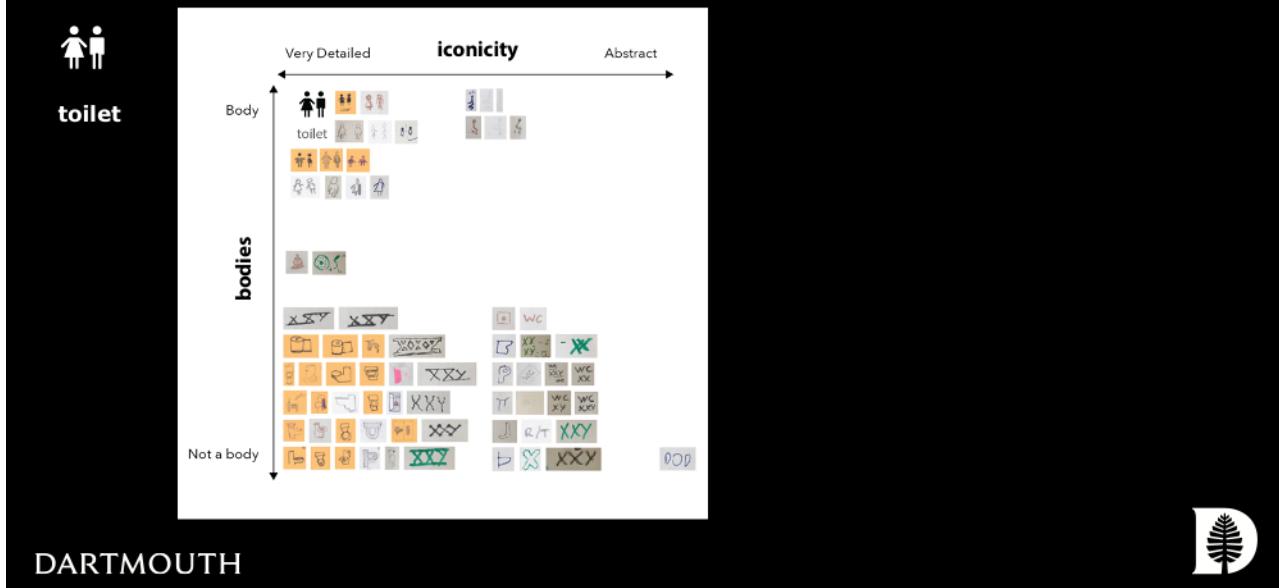
DARTMOUTH



Slide 26: Toilet was the most redesigned icon throughout all of the workshops. In this example, we can clearly see the designers iterative process between sketches and critique.

Image alt-text: An image of Maki's "toilet" icon depicted as a conventional bathroom icon with gendered bodies. The second image shows hand drawn alternative sketches of the doctor icon, including the gendered icon, WC, an actual toilet, a square with a circle in the middle, a turd emoji, and a person squatting. Each rendition is accompanied with a written critique.

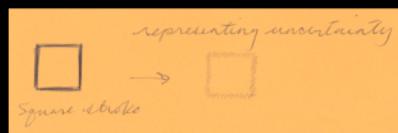
Feminist Icon Design Workshops



Slide 27: Many participants toyed with the original design incorporating less detailed bodies that were sitting/squatting. Others replaced bodily figures with toilets, turd emojis, and toilet paper or used cultural conventions like WC for water closet. Each design presenting alternative contexts.

Image alt-text: An image of Maki's "toilet" icon depicted as a conventional bathroom icon with gendered bodies. A second image shows the Cartesian grid illustrating the "iconicity" and "bodies" with alternative toilet icons placed within the matrix.

Feminist Icon Design Workshops



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D'Ignazio and Klein (2018)

Kelly (2021)

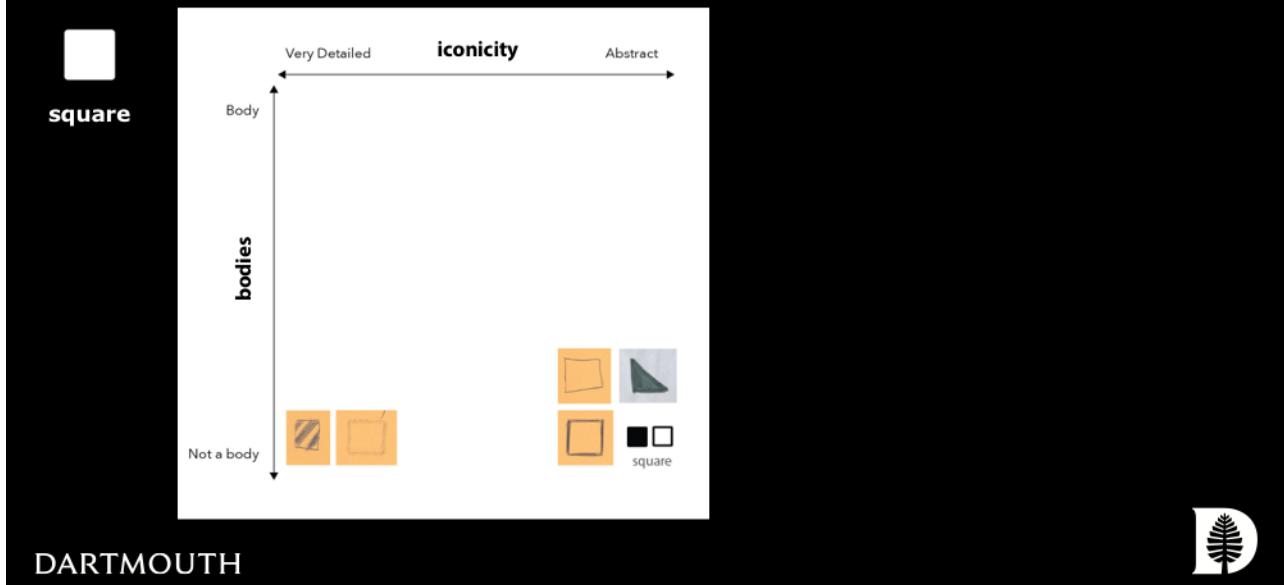
DARTMOUTH



Slide 28: Brave participants also tackled abstract icons in varying ways. In this example, the participant blurred the boundary of the square to show uncertainty.

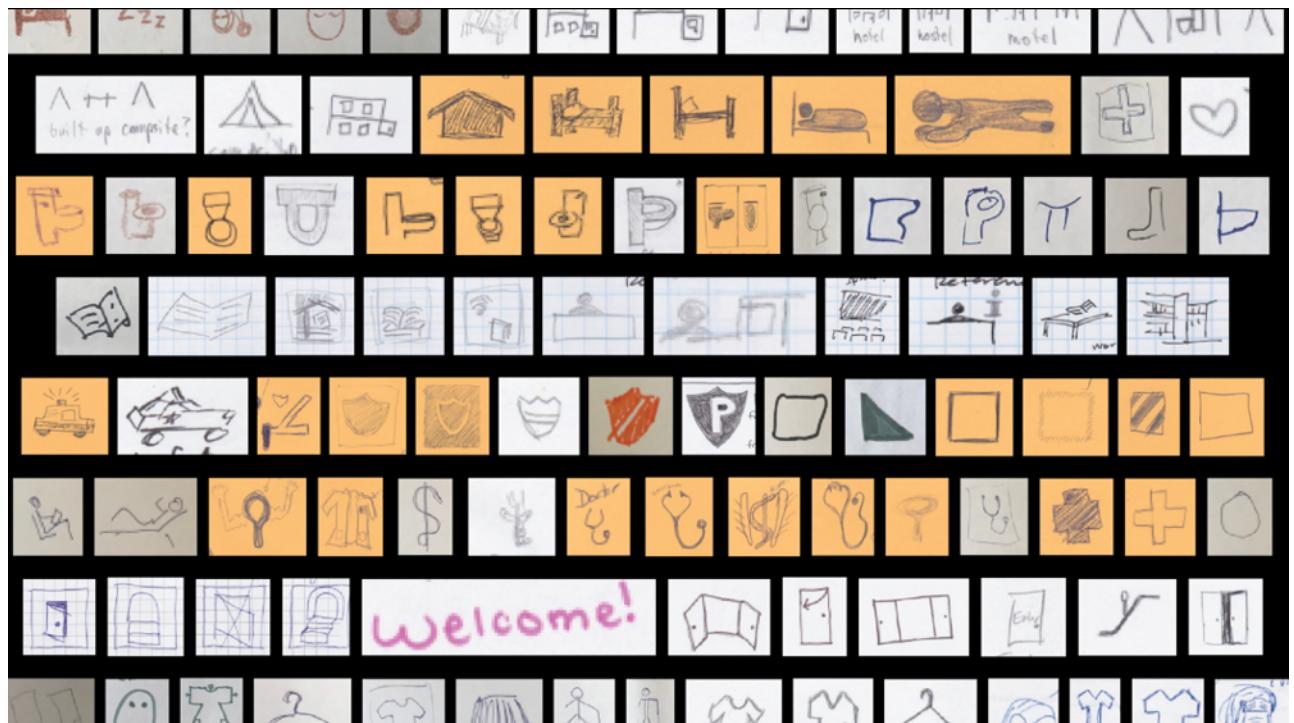
Image alt-text: An image of Maki's "square" icon depicted a square with a solid fill. The second image shows hand drawn alternative sketches of the square icon, concluding a square with a fuzzy boundaries labeled as "representing uncertainty."

Feminist Icon Design Workshops



Slide 29: Participants uncovered that even abstract shapes like squares or circles or triangles or stars carry symbolic weight. Abstract shapes are equally powerful and connotative in their meaning and uses.

Image alt-text: An image of Maki's "square" icon depicted a square with a solid fill. A second image shows the Cartesian grid illustrating the "iconicity" and "bodies" with alternative toilet icons placed within the matrix.



Slide 30: The most significant takeaway from this body of work is that feminist framework and collective spirit of the workshops radically expanded the cartographic vocabulary of icons and advised more inclusive and more just icons center on feminist principles like power and context. Participants explored iconicity or the level of details and in many ways threw out convention by add more detail at larger sizes. When they included bodies, they often included bodies on the margins. They also strategically used associations to avoid bodily prescriptions.

Image alt-text: A composite image that shows a series of map icon sketches hand drawn by workshop participants. Icons include representations for campsite, bathroom, library, police, doctor, and entrance.

Takeaways

Icons cannot be universal.

Icons (and their makers) must be contextualized.

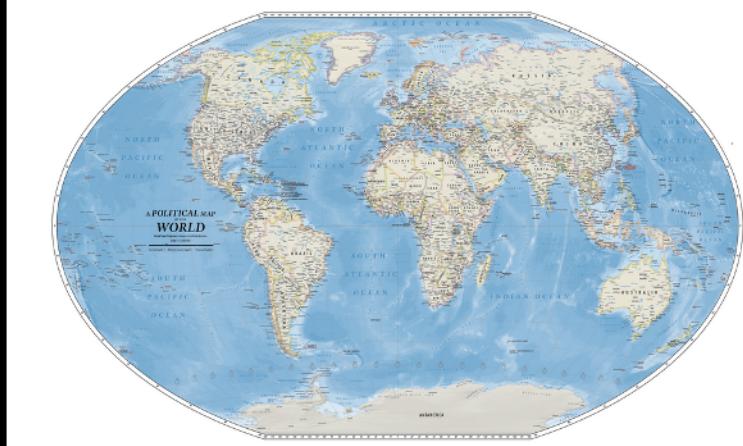
Icon sets must be pluralistic as well as collective.

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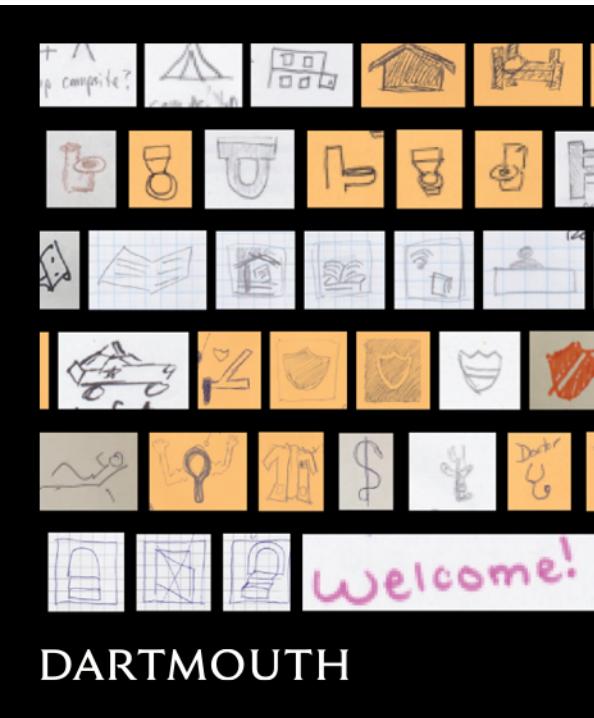
Slide 31: More broadly, icons can never be universal. A feminist icon set should not be limited to a set number of icons (146 in the case of Maki). A universal approach will always leave some out. We must be specific in our design and prioritize multiple worlds views, particularly those on the margins. Second, icons and their makers must be contextualized. Labels are not enough. We must think about icons as having metadata that recognizes the process of their making and situate the icons within power structures and the mapmakers world view. This is particularly important when we used off the shelf icon sets. Finally, icons must be pluralistic and collective. In my most recent work, I'm exploring means to create an icon set or what I like to call a gallery of possibilities that harnesses the power of the collective and serves hundreds of possible icons for one particular use case.

Takeaways



Slide 32: In sum, spatial data, maps, and mapping technology are being used at unprecedented levels and in increasingly complex contexts like Covid-19 and climate change. Feminist perspectives are needed within these conversations. If we can challenge, rethink, and remake the tiniest, most mundane elements on our maps in more equitable way, we then have the necessary tools in our toolkit to address broader challenges.

Image alt-text: An image showing Maki map icons laid out within a grid. Each icon is portrayed in white with sharp contrast to a black background. The icons appear uniform in their design. A second image shows a world map.



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Thank you!!

Any questions?

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Slide 33: Thank you for your time and attention. I'm happy to take any questions.

Image alt-text: A composite image that shows a series of map icon sketches hand drawn by workshop participants. Icons include representations for campsite, bathroom, library, police, doctor, and entrance.