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**Relating Systems Thinking and Design
(RSD12) Symposium | October 6–20, 2023**

Locally Grown: Mapping the spaces between the elements of a hyperlocal human hair waste ecosystem

Sanne Visser

A synthesis map highlighting the observations of the collection and recycling process of hair to explore systemic design interventions

In the UK, human hair from hair salons and barbershops is currently being discarded as waste despite its valuable qualities (lightweight, compostable, high tensile strength, insulating) and widely available in many localities, especially urban environments. However, this raw material is becoming increasingly popular amongst designers, researchers, and makers because it has a low impact, and a systemic design approach to human hair as a resource is underexplored. As part of a 12-month design residency at the Design Museum London, I set out to actively engage with the main stakeholders in the system - the hairdressers and barbers - to rethink, reimagine and redesign the system of hair recycling for regenerative futures.

This synthesis map highlights my observations of a small-scale hair collection and recycling process and aims to identify the key leverage points for systemic design intervention.

KEYWORDS: human hair, bio-based materials, regenerative Design, Systemic Design, mapping, circular economy.

RSD TOPIC(S): Cases & Practice, Mapping & Modelling, Sociotechnical Systems

Map description

Process

This synthesis map (Figure 1) highlights the observations of a hyperlocal waste stream of human hair within the urban environment of Kensington & Chelsea, London. The investigation involved active engagement and interaction with eight local hairdressers and barbershops selected from the ninety-seven establishments within a one-mile radius of the Design Museum. The fourth-month engagement involved bi-weekly human hair collections, coupled with participatory, collaborative methods such as dialogue, ethnography, and observations to gather qualitative and quantitative data.

The map is formed around the lifecycle of hair, which proceeds with the process of cutting hair, the collection of hair within the salon, and the hair preparation for subsequent applications. The map excludes the actual processing, utilisation, and end-of-life stages. This decision is driven by the study's primary focus on the early stages of the lifecycle. The aim was to comprehend how interventions at hair salons and barbershops during these initial stages could bring about more significant changes compared to intervening later in the lifecycle through technical solutions. Through this exploration, the synthesis map revealed complex interconnections, potential opportunities, and identified barriers within this ecosystem. These insights facilitated the recognition of key leverage points essential for systemic design intervention.

Barriers becoming opportunities

While hairdressers and barbers predominantly manage or 'farm' the hair waste stream, one of the initial and primary barriers encountered in this study related to the contamination of hair with other waste (i.e. tissues, dust) and the absence of sorting by type, length or colour. At the same time, new design applications using hair, from yarn and textiles to interior objects and wigs, require specific lengths, types and hygienic conditions; in some cases, the hair even needs to be sterilised. At the same time, sorting and washing hair after collection would be time-consuming and extremely labour-intensive. It would lead to excessive use of water, energy, and chemicals, as is the case with other waste streams such as plastics and textiles.

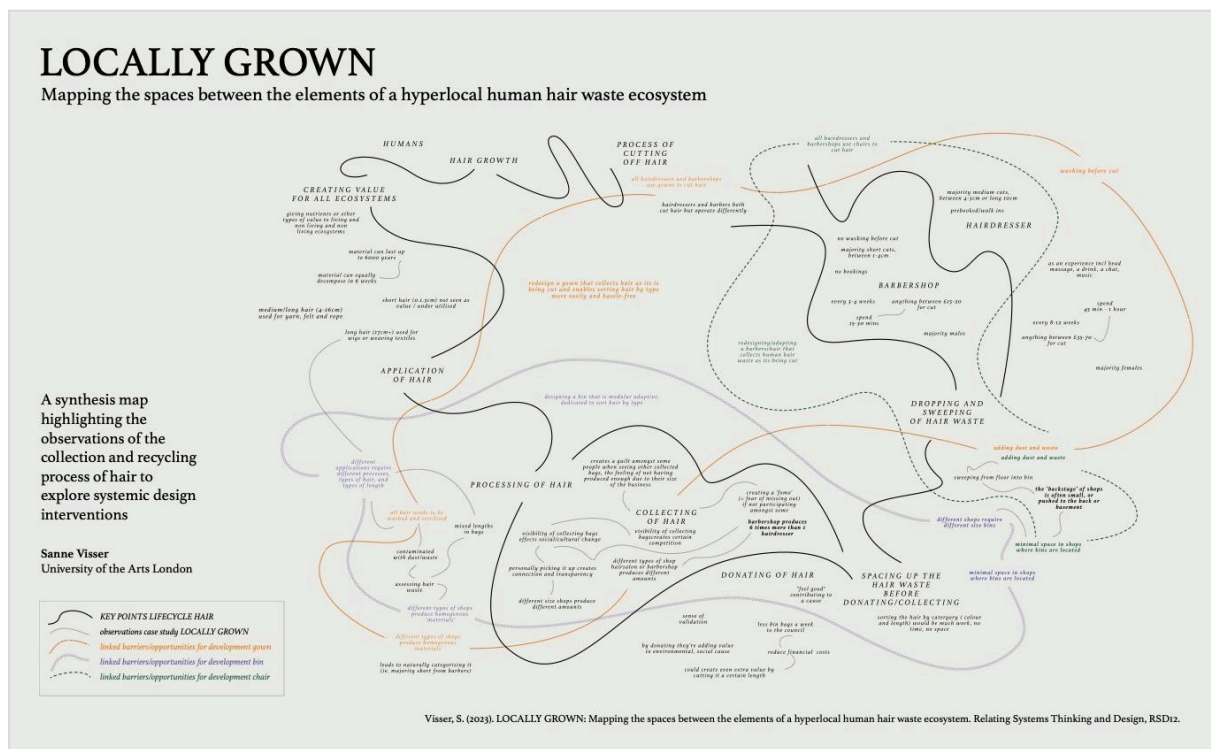


Figure 1. A synthesis map highlighting the observations of the collection and recycling process of hair to explore systemic design interventions.

Considering social, economic, and environmental factors, this challenge prompted the development and prototyping of tools: a redesigned barber's chair, gown, and bin trolley. These tools aimed to materialise and enable a possible alternative future system of hair recycling.

Additional barriers emerged throughout the hair recycling process, extending from the early stages of hair growth to the material's eventual 'end-of-life.' These obstacles give rise to economic, political, and even social and ethical concerns, consequently generating more questions than answers. As the author continues to dissect challenges and establish connections within the hair waste stream, Keller Easterling's assertion that 'designing is entangling' holds significant resonance (2020).

Design

The map was developed through several iterations in terms of shape, form, and size. Various graphic design visualisations, including icons, colours, legends, and multiple layers, were considered during the development process. While the map primarily served as a research and sense-making tool—it was also crafted for the associated publication *Restore* alongside the prototypes as part of the residency exhibition at the Design Museum.¹ Consequently, the final version of the map needed to align with the aesthetics of the overall publication.

Although the shape of the map and the main headings may resemble a traditional lifecycle visualisation of an innovative material (in this case, hair), depicting stages from raw material to processing, application, use, and end of life, this lifecycle map is not focused on the practical steps from A to B. Instead, it emphasises the socio-material entanglements leading up to the re-processing stage.

Reflection

The map enabled me to see the whole rather than just parts, to zoom in and out of the system, to perceive how problems could be transformed into opportunities, and how interventions may relate to changes to the whole—key aspects of a systems thinker and systemic designer.

The map wasn't created primarily for sharing and communicating with other stakeholders, as synthesis maps often are, but rather as a means to explore the interconnections between observations, findings, elements, and stakeholders. This process prompts the formulation of new 'How Might We...?' questions (i.e., How might we... redesign a chair that catches hair as you get it cut?).

A further iteration of the map might include positive and negative feedback loops, as well as differentiations between stakeholders and elements.

¹ *Restore* brings together the work of the 2021/22 Design Researchers in Residence at the Design Museum, working on research projects in response to the climate crisis.
<https://designmuseum.org/learning-and-research/design-museum-research/future-observatory/design-researchers-in-residence-restore#> | <https://futureobservatory.org/programme/exhibitions/design-researchers-in-residence-restore>

A limitation at this stage is that the map focuses on changes to tools or infrastructures, which, according to Meadows (1999), are considered medium leverage points in the system. This approach might not generate the broader changes necessary for the system to transition to a world where human hair is a regenerative material resource rather than an abundant and neglected waste material. Whilst this case study demonstrated some changes in the mindset and behaviour of the participating hairdressers and barbers, such as questioning other waste streams in the salon, envisioning new economic models, and recognising the value of hair as a resource for the environment, there is a need to focus on the higher leverage points. This involves understanding how to change the goal of the system itself and, even more ambitiously, how to change or transcend the paradigm in which hair plays a role.

References

1. Easterling, K. (2020) *Medium Design: Knowing How to Work on the World*. London, UK: Verso Books, p. 1
2. Meadows, D.H. (1999) *Leverage points: places to intervene in a system*. The Sustainability Institute.
<https://donellameadows.org/archives/leverage-points-places-to-intervene-in-a-system/>

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To read more about LOCALLY GROWN, visit <https://sannevisser.com/locally-grown>.