

Repair Cafés as Circular Economy Enablers: Exploring Participants Practices through Social Practice Theory

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Abstract: In this paper, we study the repair practices in Danish repair cafés, to understand how repair activities initiated by civil society are organized and sustained within broader social and material contexts. By applying Social Practice Theory, the analysis dissects the interconnected elements of materials, competencies, and meanings that constitute and shape the ongoing practice of repair in Danish Repair cafés. The repair practices form part of "bundles" of interconnected practices within the repair cafes. The study demonstrates that repair cafés are more than spaces for fixing broken items; they hold broader societal and cultural aspects. Through the interconnectedness of repair, learning, and community-building practices, these cafés challenge the "throwaway culture" and foster a collective commitment to sustainability that potentially could have implications far beyond their immediate settings.

Introduction

In recent years, repair cafés have become key components of the circular economy, addressing environmental sustainability and community cohesion (Moalem & Mosgaard, 2021; Madon, 2022). These community spaces, where volunteers help individuals repair various items, serve not only to reduce waste but also to foster connections and skills-sharing among participants. Originating in Amsterdam in 2009, they have rapidly expanded globally, countering the prevailing "throwaway culture" (Moalem & Mosgaard, 2021). Denmark alone has seen repair cafés grow from zero to 127 since 2013 (Repair Café Denmark, 2022, October 3).

Embedded in the circular economy, repair cafés counter high-income societies' "throwaway mindset," shaped by economic growth, planned obsolescence, and consumer convenience, leading to a preference for newness over durability (McCollough, 2020). This mindset discourages repair through high costs, time constraints, and limited access to repairable designs (Forti et al., 2020; Hennies & Stamminger, 2016).

By providing accessible repair services, repair cafés aim to overcome these barriers, offering community hubs where people from various backgrounds can develop skills, share knowledge, and access tools. By addressing common socioeconomic barriers these spaces aim to make repair a viable option for all consumers (Hennies & Stamminger, 2016; Meißner, 2021). This accessibility is vital for overcoming some of the entrenched socioeconomic challenges associated with repair (McQueen et al., 2022a).

Repair cafés also promote stronger attachment to personal belongings through hands-on involvement, challenging dominant consumer norms around disposability (Lee & Wakefield-Rann, 2021).

Despite the benefits, repair cafés face obstacles in countering design trends. Planned obsolescence, where products are manufactured with limited lifespans, remains a significant barrier to repairability and favors replacement over repair (Jaeger-Erben et al., 2021). Additionally, consumer preferences for low-cost replacements, coupled with time constraints, make repair seem impractical or inconvenient (McCollough, 2020; Forti et al.,

2020). Repair cafés address these barriers by providing resources, skills, and a supportive environment dedicated to sustaining consumer goods (McQueen et al., 2022b).

Participants' motivations in repair cafés are diverse, ranging from environmental concerns to the appeal of community and learning. Studies show that while a minority of individuals join to reduce waste, others find value in social interactions and the sense of achievement that comes from repairing items themselves or are motivated by cost savings (Madon, 2022; Jaeger-Erben et al., 2021).

As repair cafés continue to expand, their significance lies less in the volume of waste they prevent and more in their potential to reshape consumer practices. While their direct contribution to waste reduction is limited, they play a crucial role in fostering repair skills, increasing awareness of product longevity, and challenging throwaway habits. By examining the social practices and motivations of participants in Danish repair cafés, this study aims to deepen our understanding of the elements that sustain and drive these initiatives and how they contribute to a broader cultural shift toward repair-minded consumption within a circular economy in Denmark.

Theoretical Framework

Social Practice Theory (SPT) offers a framework for understanding how practices are shaped and sustained through the interactions between social norms, cultural meanings, and material infrastructures (Shove et al., 2012). Drawing on earlier philosophies, SPT shifts the focus of analysis from individual actions to collective practices, viewing them as dynamic constellations of organized activities embedded within broader social contexts.

Shove et al., (2012) breaks down practices into three key elements: **materials**, **competencies**, and **meanings** (figure 1). *Materials* include the physical objects, tools, and infrastructures required to perform a practice. *Competencies* refers to the knowledge, skills, and techniques that practitioners need, while *meanings* encompass the socially shared conventions, expectations, and values that give significance to the practice. These three elements interact continuously, shaping and breaking practices over time.

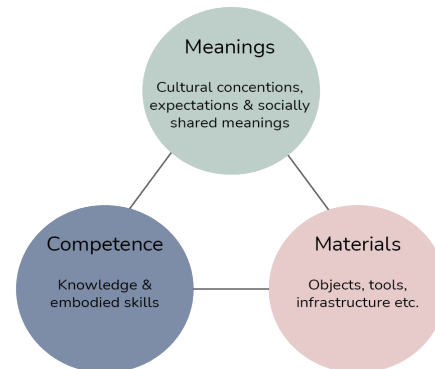


Figure 1: The three core elements of a practice (Markussen et al., 2021 based on Shove et al., 2012).

Within SPT, there is an analytical distinction between **practice-as-performance** and **practice-as-entity** (Shove et al., 2012). Practice-as-performance refers to the observable actions of individuals engaging in a practice while 'practice-as-entity' describes the norms and structures that sustain these actions. This distinction allows us to examine repair practices at two conceptual levels: as discrete, observable activities within the specific café (performance) and as enduring norms and structures that sustain the café's ecosystem (entity).

SPT also recognizes that practices are not isolated; they often interconnect and influence each other, forming what Shove et al. (2012) describe as "bundles" of practices. Shared elements across practices can bridge them, creating relationships that allow practices to evolve together or influence one another. This interconnectedness helps to explain how shifts in one practice can impact others, as shared elements like tools, skills, or cultural values circulate among practices.

SPT thus provides a structured framework to examine how practices emerge, persist, and evolve through the interplay of materials, competencies, and meanings (Shove et al., 2012). This study applies SPT to explore the interconnected practices within the ecosystem of Danish Repair Cafés. Specifically: What are the materials, competencies and meanings of participant practices at repair cafes and how are they interconnected? The aim is to

investigate how these practices and their elements collectively sustain the broader purpose of repair cafés in promoting a Danish circular economy.

Methodology

This study uses a qualitative approach to explore repair practices in Danish repair cafés, drawing on two datasets to uncover the social dynamics of these spaces.

A pilot study involved an ethnographic approach using participatory observations at six different repair cafés across Denmark, with 20 semi-structured interviews with volunteers. The data were transcribed and analyzed using a socio-material lens, focusing on emotional attachment in decision-making.

This study extends the focus to an examination of repair café practices in action, through a further analysis of four repair cafés in Copenhagen, Denmark. New data was collected through on-site participatory observation, focusing on real-time interactions between volunteers and visitors (bringers) to inform *competence* and *material* aspects. In addition, semi-structured interviews were conducted with 11 volunteers and 20 visitors. To ensure further participation, a small survey was distributed to all four cafés, enabling volunteers unable to engage during the field visits to provide further insights. The 10 survey responses complemented the interviews and expanded the dataset. These questions were concerned with understanding participants motivations for repair such as upbringings, political stance and/or economic situation informing the *meaning* and *competence* aspect of their practice.

The data highlights the interactions between volunteers and visitors, the specific nuances of repair processes, and the broader practices within the café environment.

Findings: Repair Cafés as Ecosystems

Within the repair cafés the diversity of participants ensures that new connections are continuously made, with bringers contributing

unique items and narratives about the product they bring, while volunteers bring diverse skills and expertise.

As these elements are linked, they coalesce into a **bundle of practices**, characterized by fluid interactions and mutual reinforcement. This bundle is not static; it evolves with every repair session, reflecting the dynamic nature of the café as a site of learning, innovation, and community building. Tools, tables, and items brought for repair create the material foundation of repair activities, while volunteers' skills in diagnostics, crafting, and assembling make repairs possible. It thus encompasses diverse repair elements (see table 1), that flourish within the café as practice-as-performance including:

- **Creative Repair:** Repurposing items using limited resources.
- **Diagnostic Repair:** Troubleshooting technical problems through systematic problem-solving.
- **Sentimental Repair:** Preserving emotional value by fixing cherished items.
- **Functional Repair:** Restoring everyday items to usability.
- **Social Repair:** Building relationships and community connections through shared repair experiences.
- **Educational Repair:** Empowering bringers by teaching them repair techniques and empowering volunteers by sharing experiences among them.
- **Aesthetic Repair:** Enhancing the visual appeal of repaired items.

Repair Type	Material	Competence	Meaning
Creative Repair	Unusual materials and spare parts such as; parts scavenged from old items, duct tape, wooden sticks, repurposed materials, sewing patches etc.	Improvisation, resourcefulness, "making do" with available resources.	Pride in ingenuity, resisting overconsumption, upcycling as creativity.
Diagnostic Repair	Diagnostic tools such as multimeter, torx screwdrivers, test lamps, small screwdrivers, etc. Complex products: often electronics.	Troubleshooting, circuit tracing, disassembly knowledge, system logic.	Intellectual satisfaction, solving a "puzzle", Technical mastery.
Sentimental Repair	Heirlooms and nostalgic items such as old sewing machines, childhood toys or items with family stories and delicate components.	Careful handling, empathy, restoration skills with emotional sensitivity.	Preserving memories, emotional attachment, honoring past generations.
Functional Repair	Tools and spare parts such as power cords, glue guns, zippers, plugs, screwdrivers etc. Broken products.	Fixing mechanical/electrical failures, basic soldering, cable replacements.	Reducing waste, cost-saving, practicality, valuing durability.
Social Repair	Tables, shared food/tools and café setup such as chairs for waiting.	Welcoming, conversation, active listening, cooperation, community hosting.	Belonging, shared identity, inter-generational exchange, enjoyment through helping.
Educational Repair	Shared work tables, labeled tools, tutorials on phones and YouTube, whiteboards, instructions.	Teaching others, breaking down tasks, inviting participation, simplifying steps.	Empowerment, democratizing repair, learning-by-doing, creating ripples.
Aesthetic Repair	Products and tools typically related to sewing tasks such as decorative fabrics, buttons, mending kits, thread, textile markers, scissors, clothing.	Craftsmanship, sewing, fitting, mending, color-matching, cosmetic enhancement.	Beauty, pride, self-expression, dignity of wear/use, visual taste.

Table 1: The elements of the 7 types of repairs.

These repair types are deeply interconnected and dynamic during the repair process. For instance, diagnostic repair may evolve into educational repair when volunteers teach bringers troubleshooting techniques, or creative repairs may incorporate aesthetic elements, transforming functional fixes into visually appealing outcomes. This interrelation between elements highlights how volunteer-driven, material-dominant practices often shift to value-oriented interactions, through the interplay between volunteers and bringers. For example, when a bringer describes their heirloom the meanings, such as emotional attachment or sustainability, get a more central role in the repair café practice.

Through the lens of SPT, this evolution reflects the interplay of elements. Materials and volunteers' competences initially drive the individual repairs, but the focus often shifts to the shared values sustaining the broader repair café entity. This dynamic interplay demonstrates how repair cafés not only restore objects but also foster cultural and social

learning. Thus, the interconnected elements within the café constitute the practice-as-entity (figure 2).

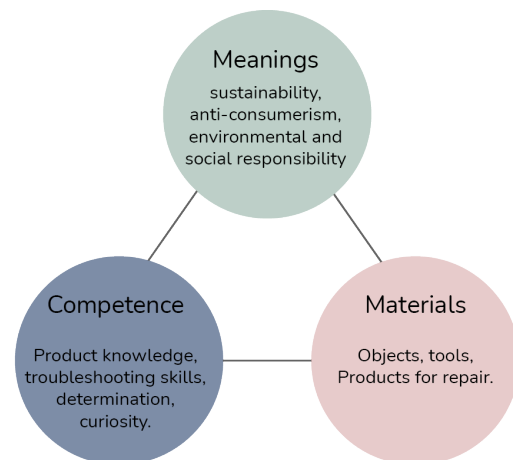


Figure 2: Practice-as-entity.

This entity represents the collective act of restoring broken items. It is shaped by the **materials** at hand, the **competencies** of volunteers, and the **meanings** associated with sustainability and resourcefulness.

Materials: The Backbone of Repair

At the conceptual level of *practice-as-performance*, materials in repair cafés, such as tools and the objects brought in for repair, play a crucial role in shaping repair practices. Volunteers interact directly with tools and items, often adapting them creatively to overcome specific challenges. One repairer noted, "I just cut a chord that I have at home; I could use the spare parts of it" demonstrating the improvisation and resourcefulness inherent in the act of repair.

Additionally, the items brought in for repair form a significant part of the material component, because the design, complexity, and condition of these objects influence the techniques required, prompting volunteers to adapt their skills to the specific challenges presented. For example, a complex electronic device might demand advanced troubleshooting, while a simpler item might prioritize precision and care. These interactions highlight how the characteristics of the products guide and shape the repair process in real time.

At the level of *practice-as-entity*, materials reflect the enduring norms and routines of the café. The shared use of tools, organized spaces, and communal resources demonstrates a structural commitment of resourcefulness and accessibility. These material arrangements stabilize repair practices over time, ensuring the availability for future sessions.

Materials thus act as both immediate enablers of repair and as structural components that reinforce the repair café's ongoing operation within a circular economy

Competencies: Skills and Learning in Action

Competencies within repair cafés span a wide and diverse spectrum; from formal technical expertise to informal, experience-based know-how. At the level of *practice-as-performance*, these skills become visible in the hands-on

actions of volunteers. Competences include electrical engineering, such as diagnosing faults in power circuits or soldering broken connections; mechanical skills, like fixing mixers, drills, or vacuum cleaners; and textile and sewing skills, essential for mending clothing, replacing zippers, or altering fits. One volunteer shared, "*I'm trying to run power through several parts of the system to locate which part is not responding*" a typical example of real-time, diagnostic thinking in action. Volunteers also frequently demonstrate digital competencies, such as searching online for manuals, disassembly instructions, or spare parts.

Beyond the execution of repairs, many volunteers take on the role of instructors, teaching visitors how to assess damage, handle tools, or even make simple repairs themselves. This collaborative knowledge exchange is a defining feature of repair café culture and supports a broader goal of enabling repair literacy in the local community.

At the level of *practice-as-entity*, these competencies are not just individual assets, they are collectively maintained through routine interactions, mentorship, and peer-to-peer learning. Volunteers often rely on one another's expertise to complete complex repairs, drawing on shared diagnostic logic, cross-disciplinary techniques, and accumulated local knowledge. For example, someone with sewing skills may consult a colleague with electrical experience to resolve a hybrid repair (e.g., a heated blanket or a battery-powered toy). In this way, individual competencies are interdependent and reinforced through the group dynamic, creating a shared reservoir of capabilities that transcends any single session or fixer.

This dynamic interplay between personal expertise and collective collaboration ensures that repair cafés remain adaptive learning environments, where technical proficiency, creative problem-solving, and mutual support evolve together to sustain the repair practice.

Meanings: Repair as a Symbolic Act

The meanings associated with repair practices also operate at both immediate and structural levels. At the level of *practice-as-performance*, meanings are expressed through the cultural and emotional value of individual repairs. For

example, one volunteer shared, "I like fixing trinkets; they remind me of my wife - she has a million small quirky things that sometimes need fixing" and another one said "I take pride in making things work" demonstrating how repair can embody personal significance by giving value to objects, revealing how meanings are enacted during repair sessions.

At the level of *practice-as-entity*, meanings are embedded in the collective purpose and values within the café. For instance, a shared commitment to sustainability is reflected in comments like, "We want to create ripples that inspire people to take better care of their things" and "Throwing away my 15-year-old drill felt like such a waste. The [repair] café offers a chance to preserve resources and learn new skills". These meanings are not confined to individual actions but are institutionalized within the café's ecosystem, shaping its role as a space that promotes care and reuse. The interplay between performance and entity highlights how meanings are both lived in specific moments of repair and stabilized as part of the café's identity.

Linking Elements Through Social Interactions

Each repair café thus represents a dynamic ecosystem where diverse elements interact to create a cohesive and functional environment. These spaces transcend the act of repairing objects, making them able to foster a broader network of sustainable consumption, skill-sharing, and community. Through the lens of SPT, the repair cafés emerge as sites where various elements are linked together through the interactions of volunteers and bringers, forming a bundle of interconnected practices that sustain the overarching practice-as-entity.

Repair café practices emerged from a rich historical tradition of mending and maintaining belongings, often driven by practical necessity. Many volunteers bring personal histories of repair that reflect earlier societal norms of resource conservation. One volunteer recalled fixing a sewing machine as a child because their family couldn't afford a replacement. Another shared memories of growing up in a household where repair was a regular activity, ingraining a lifelong commitment to fixing over discarding and a third mentioned his

grandfather as an "inventor type" inspiring him to acquire troubleshooting and functional repair skills.

Over time, these individual practices contributed to what we see as the ecosystem of repair cafés, taking on broader meanings tied to sustainability and resistance to consumerism. As one volunteer mentioned "I've always been passionate about sustainability. [Repair Café Denmark] has shifted the focus to something more positive where I can actively make a difference instead of just debating endlessly" showing how the repair cafés have institutionalized these habits, providing tools, spaces, and social support to sustain and expand the entity of the repair café practice.

The repair café ecosystem thus operates as a complex bundle of interconnected practices, sustained by the links between materials, competencies, and meanings. These practices do not exist in isolation but are embedded within broader social contexts. Stemming from practice elements formed before entering the ecosystem, but also from the dynamic development between elements within this space. For example, shared meals and informal gatherings within cafés create a supportive community that sustains repair practices over time. Highlighting how repair practices are strengthened through social bonds, a volunteer said "they bring us all together [around shared goals]". Another mentioned "I love the 'ping pong' of ideas between us volunteers. It's not just about fixing things. It's about working together to solve problems". The repair café thus transcends its immediate function as a space for fixing items. It emerges as a site where environmental stewardship, community building, and sustainable consumption converge, potentially influencing participants' behaviors and values beyond the café itself.

Conclusion

This study explores how cultural and social patterns constitutes practices within the ecosystem of Danish repair cafés. By analyzing their activities through SPT, repair cafés are seen as spaces where materials, competencies, and meanings come together into dynamic, interconnected practices.

The materials central to repair practices actively shape the strategies employed by volunteers, for example how complex items prompt diagnostic and creative problem-solving and simpler objects may lead to functional or aesthetic repairs. The interconnected nature of practices within repair cafés facilitates the circulation of skills and values within and among the cafés. Volunteers emphasize the importance of collaborative problem-solving and mutual learning, which is also where competencies evolve. Meanings associated with repair practices, such as resistance to the throwaway culture and sustainability, are reinforced through the interactions of various participants. One volunteer said: "Repair cafés function as a meeting point across age groups. It's a place for knowledge-sharing and to help the environment". Repair practices thus form a "bundle of practices" where elements work together to develop and sustain the repair café ecosystem, meanwhile the interactions between participants help scale repair culture into broader Danish societal contexts.

In this sense, scaling Danish repair cafés is less about increasing the volume of repaired items and more about embedding repair into cultural habits, making these spaces more accessible and thereby contribute to the national discourse about repairable and non-repairable products. Adjustments, such as extended opening hours, could encourage broader participation and support the integration of repair practices into more daily routines. By linking elements across immediate actions and enduring structures, repair cafés promote resource conservation and inspire a shift toward sustainable consumption.

Through the dual lens of practice-as-performance and practice-as-entity, this study reveals how repair cafés operate on multiple levels. Practice-as-performance captures the immediate, tangible acts of repair. Meanwhile, practice-as-entity encompasses the enduring norms, routines, and shared values that stabilize the café's ecosystem over time.

At the level of practice-as-entity, Danish repair cafés embed circular economy principles by institutionalizing norms and routines that prioritize repair over replacement. These

practices cultivate a shared commitment to the reduction of waste by creating a space where the value of repair is both celebrated and normalized. This makes Danish repair cafés challenge the prevailing throwaway culture and promote circular economy.

In conclusion, the SPT analysis of repair cafés reveals their significance as cultural hubs. The studied repair cafés enable participants to internalize sustainable values, which they then can carry into their personal and social networks, further enforcing the principles of circular economy and potentially ensuring that these practices persist and spread beyond the café itself. In this way, repair cafés can act as enablers of a circular economy in Denmark by creating the space for the repair elements to link and evolve.

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References

- Forti, V., Baldé, C. P., Kuehr, R., & Bel, G. (2020). *The Global E-waste Monitor 2020: Quantities, flows, and the circular economy potential*. United Nations University (UNU), United Nations Institute for Training and Research (UNITAR) & International Telecommunication Union (ITU), and International Solid Waste Association (ISWA). https://www.itu.int/en/ITU-D/Climate-Change/Documents/GEM_2020_def.pdf
- Hennies, L., & Stamminger, R. (2016). An empirical survey on the obsolescence of appliances in German households. *Resources, Conservation and Recycling*, 112, 73–82. <https://doi.org/10.1016/j.resconrec.2016.04.013>
- Hjorth Nielsen, A. S. A., & Laursen, L. N. (2023). *Love at first sight: Immediate emotional attachment of volunteers in repair cafés*. Paper presented at the 5th PLATE Conference, Espoo, Finland, 31 May–2

- June 2023. Retrieved from <https://www.researchgate.net/publication/371327675>
- Jaeger-Erben, M., Rückert-John, J., & Schäfer, M. (2021). Why do users (not) repair their devices? A study of the predictors of repair practices in Germany. *Journal of Cleaner Production*, 286, 125468. <https://doi.org/10.1016/j.jclepro.2020.125468>
- Lee, J., & Wakefield-Rann, R. (2021). Conspicuous and inconspicuous repair: Reconceptualising repair practices in a sustainability context. *Journal of Cleaner Production*, 280, 124291. <https://doi.org/10.1016/j.jclepro.2020.124291>
- Madon, J. (2022). Free repair against the consumer society: How repair cafés socialize people to a new relationship to objects. *Journal of Consumer Culture*, 22(2), 534–550. <https://doi.org/10.1177/1469540521990871>
- Markussen, T., Petersen, S. B., & Kronby, H. (2021). Moving Towards Individualized Work Models. Aalborg Universitet.
- McCollough, J. (2020). The impact of consumers' time constraint and conspicuous consumption behaviour on the throwaway society. *International Journal of Consumer Studies*, 44, 33–43. <https://doi.org/10.1111/ijcs.12545>
- McQueen, R. H., Jain, A., McNeill, L. S., & Kozlowski, A. (2022a). The role of resources in repair practice: Engagement with self, paid, and unpaid clothing repair by young consumers. *Textile Research Journal*. <https://doi.org/10.1177/00405175221123067>
- McQueen, R. H., McNeill, L. S., Huang, Q., & Potdar, B. (2022b). Unpicking the gender gap: Examining socio-demographic factors and repair resources in clothing repair practice. *Recycling*, 7(4), 53. <https://doi.org/10.3390/recycling7040053>
- Meißner, M. (2021). Repair is care? Dimensions of care within collaborative practices in repair cafés. *Journal of Cleaner Production*, 299, 126913. <https://doi.org/10.1016/j.jclepro.2021.126913>
- Moalem, R. M., & Mosgaard, M. A. (2021). A critical review of the role of repair cafés in a sustainable circular transition. *Sustainability*, 13(22), 12351. <https://doi.org/10.3390/su132212351>
- Repair Cafe Denmark. (2022, October 3). *Historie – Repair Cafe Denmark*. <https://repaircafedanmark.dk/om/historie/>
- Shove, E., Pantzar, M., & Watson, M. (2012). *The dynamics of social practice: Everyday life and how it changes*. SAGE Publications. <https://doi.org/10.4135/9781446250655>