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Patrizia Bolzan
Department of Design, Politecnico di Milano, Italy

Massimo Bianchini
Department of Design, Politecnico di Milano, Italy

Stefano Maffei
Department of Design, Politecnico di Milano, Italy

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Learning from circularity manifestos: Crafting designerly circular approaches for the upholstered furniture sector

Patrizia Bolzan*, Massimo Bianchini, Stefano Maffei

Department of Design, Politecnico di Milano, Italy

*Corresponding e-mail: patrizia.bolzan@polimi.it

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Abstract: Product innovation progressively embraces a sustainable and systemic approach, known as Design for Sustainability, driven by economic, environmental, socio-cultural, and behavioral insights. Nevertheless, transitioning to circularity within upholstered furniture Product-Service Systems and fostering cultural awareness remains a complex endeavor. The paper focuses on the role of Circularity Manifestos as cultural drivers in creating public awareness and behavioral change. It begins by analyzing existing cases to uncover the manifestos' underlying meaning, logic, and communication strategies for promoting and implementing circular innovation practices. These findings are subsequently compared with established theories and approaches through a comprehensive literature review and case analysis, revealing potential links between conceptual frameworks and practical circular strategies. This investigation targets the upholstered furniture sector, characterized by significant circularity challenges. It demands a comprehensive design approach guided by designers' expertise in balancing proactive behavioral change with a systemic Design for Sustainability approach.

Keywords: Circular Design; Design for Sustainability; Designerly Approach; Design Manifesto

1. Introduction

Nowadays, product innovation increasingly embraces a sustainable and systemic approach, yet the circular transition in the upholstered furniture sector, as in other manufacturing sectors, necessitates heightened cultural awareness. This contribution explores Circularity Manifestos (CMs) as "drivers of behavioral change," examining how they are conceptualized and their contributions from cultural, communicative, and strategic perspectives in promoting circular innovation processes and practices in design and production.

The initial purpose of the paper is to explore the role of CMs, starting from the observation that they are increasingly cultural and design tools used to communicate, stimulate, engage, and activate the various stakeholders involved in the circular transition of product-service systems. The manifestos aim to present clearly and succinctly a set of principles, values, and

rules related to various themes - from product sustainability to object reparability - that can be easily understood, learned, and thus more readily adopted by businesses, designers, institutions, and citizens. This discourse is relevant to the upholstered furniture category, one of the most impactful in terms of circularity (EC, 2022), as the final product typically utilizes very diverse and almost always non-recyclable materials, along with non-reversible assembly systems and lacks a specific disposal chain (Europur, 2021; EEB, 2017). Just consider the environmental impact of materials such as expanded polyurethane.

The necessary circular renewal of upholstered furniture entails the implementation of new design solutions to reduce its impact, implementing a holistic approach (typical of design as a discipline) involving all constitutive elements and related construction and assembly processes. Consequently, competitiveness for companies in this sector relies not only on adopting sustainable strategies and practices but also on embracing circularity as a production and entrepreneurial culture (FS-E, 2021; Acerbi & Taisch, 2020).

This approach can catalyze promoting sustainable and innovative solutions from an economic, environmental, socio-cultural, and behavioral standpoint. Shifting the focus from sustainable design to the systemic circularity of Design for Sustainability (DfS) (Moreno et al., 2016) is crucial for an industry like upholstered furniture.

In the upholstered furniture sector, the challenge of an ecologically responsible and proactive transition can be seen as a design opportunity where the entire living space can become a place where responsibility towards the planet and its resources aligns with the needs and behaviors of consumers that manufacturers must address. This is also the most sensible and promising path for fostering innovation in a sector characterized by a strong presence of SMEs, historically with low innovation intensity.

The circular transition of an established product like upholstered furniture begins with the awareness that it is essential to act simultaneously on the design dimension, the production and distribution chain, and the messages communicated to the end customer. However, all these systematically developed elements require a long implementation time (Silvius et al., 2021; Van Dam et al., 2020; Den Hollander et al., 2017). Therefore, after their definition, the drafting of a CM can constitute the first step to articulate, implement, and monitor circularity strategies at the company level and among end users and stakeholders.

The paper proposes an initial and general framework on the principles of the Circular Economy (CE) to define the key elements of a CM designed for the wood-furniture sector, and more specifically, on Circular Design (CD) (Aguiar et al., 2022; De Los Rios & Charnley, 2017; Moreno et al., 2016). The second step concerns verifying the presence of these principles in manifestos, addressing related themes through an analysis of the state of the art of manifestos closely linked or relevant to the upholstered furniture industry.

The final scope of the paper, following the presented exploratory work, is to define a set of themes that, appropriately balanced and then customized, can form the basis for future

CMs. Specifically, by way of example, the foundational structure for a CM for the upholstered furniture sector will be proposed.

2. Literature review: Exploring the synergy of circular economy and circular design

It is widely recognized that human activities have increasingly impacted the environment since the onset of industrialization, and the natural world is now approaching, or may have already surpassed, a critical juncture where its capacity to sustain the biosphere indefinitely is at risk (Sariatli, 2017). Evidences of ecosystem degradation are becoming more apparent as the world's tolerance for human interventions diminishes (McQuaid et al., 2019).

As articulated by the Ellen MacArthur Foundation (2013; 2015), our industrial economy remains rooted in a fundamental characteristic dating back to the early days of industrialization: a linear resource utilization model characterized by a take-make-dispose approach. Companies utilize resources, energy, and labor to manufacture products sold to consumers, eventually discarded when they reach the end of their utility. This linear production paradigm, which has been prevalent since the third industrial revolution (Jiang et al., 2022), has undeniably fueled prosperity and improved living standards across the globe. However, it is equally responsible for unsustainable resource consumption and production patterns, significant contributors to contemporary sustainability challenges.

The linear economy, based on the take-make-dispose concept (Sariatli, 2017), entails the perpetual utilization of resources to create later discarded items. The necessity of transitioning to a regenerative system, where markets actively and systematically enhance local and global conditions, becomes evident (Greyson, 2016). In contrast to the linear economy, the CE aims to optimize the use of raw materials and resources, prioritize product and material reuse, and minimize waste and harmful emissions to close resource loops.

For instance, in the European context, the European Commission (EC, 2020) associates the shift toward a CE with strategies focused on improving recycling processes and reducing the wastage of valuable resources. This emphasis highlights the potential of innovative business models, sustainable design approaches, and industrial collaborations to steer Europe toward a zero-waste trajectory, concurrently reducing greenhouse gas emissions and mitigating environmental impacts (Bocken et al., 2016). As outlined in the 'Circular Economy Action Plan' (EC, 2020), developing the CE has become an essential strategy for nations and enterprises aspiring to achieve sustainable economic growth and enhanced global competitiveness in the long term. It is worth noting that the CE concept is not novel. It was initially conceived within industrial ecology in the early 1990s, notably when Robert Ayres (1994) introduced the notion of industrial metabolism. This concept encompasses a comprehensive set of interconnected physical processes responsible for converting raw materials, energy, and labor and generating finished products and waste within a relatively stable state. Building upon Ayres' foundation, subsequent research by McDonough and

Braungart (2010) emphasized the importance of closing both 'technical' and 'biological' loops within a 'cradle-to-cradle' or circular economic framework, in contrast to the linear 'cradle-to-grave' approach.

However, the terminology associated with the CE has evolved with diverse interpretations. Terms such as 'closed loop' and 'circular economy' are often used interchangeably, as highlighted by Bocken et al. (2016; 2014).

As elucidated within the realm of Industrial Ecology (Ayres, 1994; Stahel, 2010; Lifset & Graedel, 2002), the central objective within the CE framework is to retain the economic and environmental value of materials for as long as possible. This objective can be achieved by extending the lifespan of products made from these materials or reintegrating them into the economic system for reuse. It is crucial to emphasize that realizing a fully operational CE in its most ideal form remains formidable, and its feasibility is still being determined. The relevant issue is to recognize that the concept of a perfectly functioning CE represents an aspirational and challenging goal.

A more pragmatic interpretation of the CE, which acknowledges the inevitable dispersion of energy and/or materials during the endeavor to close resource loops, is presented by the Ellen MacArthur Foundation (2015). This perspective provides a more grounded understanding of the CE that aligns with real-world complexities. According to this perspective, the CE is best understood as a comprehensive framework built upon various specific approaches that revolve around a core set of fundamental principles (EMA, 2013). They named the '3R principles' (EMA, 2017), constituting the fundamental framework of practical CE guidelines. With time, the original 3R principles have evolved to encompass additional elements, including 'recover', giving rise to the broader 4R concept (reduce, reuse, recycle, and recover) (Yang et al., 2017). Moreover, additional principles like 'redesign' and 'remanufacturing' have been introduced, resulting in the comprehensive 6R framework (reduce, reuse, recycle, recover, redesign, and remanufacturing). This extended framework underpins sustainable manufacturing, offering a closed-loop, multi-product life-cycle system (Jawahir & Bradley, 2016).

However, as Ghisellini & Ulgiati (2020) pointed out, expanding these principles beyond the traditional '3R' framework has created some overlap between different elements and strategies (e.g., reuse and recover, redesign, and remanufacturing) (Dieterle et al., 2018; Urbinati et al., 2018; Jawahir & Bradley, 2016; Reichel et al., 2016).

The principles that underpin the CE concept can be seen as a natural evolution of the sustainability approach, as both are rooted in systemic characteristics rather than the specifics of individual system elements (Ceschin & Gaziulusoy, 2016). When considering these principles within the design domain, circularity represents a progressive advancement beyond Sustainability. Its objective extends beyond introducing systemic innovations for improved resource management; it aspires to close the loop in resource utilization. The CD emphasizes a transition from a sole focus on resource consumption to a greater emphasis on resource reutilization.

We will offer a concise overview of the natural progression towards CD aligned with the CE to gain a deeper insight into this evolution. This shift originates in DfS principles and has fostered innovative approaches within the circular framework. DfS has been pivotal in transitioning from a linear model to a more circular approach, as Moreno et al. (2016) pointed out. To delve deeper into the concept of DfS, Ceschin & Gaziulusoy's (2016) work provides a comprehensive framework outlining various innovation levels within this approach.

The literature highlights four distinctive DfS innovation levels that have emerged in recent decades:

- Product Innovation Level: This level focuses on design approaches to improve existing products or create entirely new ones. It includes subcategories like Green Design, Ecodesign, Emotionally Durable Design, Design for Sustainable Behavior, Cradle-to-Cradle Design, Biomimicry Design, and Design for the Base of the Pyramid.
- Product-Service System Innovation Level: Here, the focus extends beyond individual products to encompass integrated combinations of products and services, often involving the development of new business models, commonly referred to as Product-Service System Design.
- Spatio-Social Innovation Level: This level pertains to human settlements and the socio-spatial conditions of their communities, addressing different scales from neighborhoods to cities. It comprises two subcategories: Design for Social Innovation and Systemic Design.
- Socio-Technical Innovation Level: This level directs design approaches toward facilitating radical changes in how societal needs, such as nutrition and transport/mobility, are met. It primarily supports transitions to new socio-technical systems and can also be called Design for System Innovations and Transitions.

From an initial exploration of technical and scientific literature, Design's crucial and predominant role in the evolution towards Sustainability immediately emerges. Design enables the implementation of approaches that effectively transform how artifacts are conceived and produced sustainably and circularly. DfS indeed exhibits areas that overlap with the theme of the CE. Another area to be examined within an analysis of manifestos concerns the interaction between DfS approaches and the concept of the CE, which is considered a prospective solution for promoting environmental conservation while concurrently supporting economic growth (Stahel, 2016; Thomas et al., 2013). Furthermore, this literature review highlights how the field of design facilitates the achievement of circularity, not only by acting on the design and redesign of artifacts but also by reassessing production and distribution processes and strategies, along with the exploration and selection of new materials from post-consumer and waste processes. A less explored aspect concerns how Design can influence behavior change in various stakeholders along the supply

chain, not only manufacturers and policymakers but, most importantly, users, who represent the broader public.

In light of this final reflection, the analysis of CMs, aimed at promoting new sustainable behaviors within the furniture industry, underscores the role of design in explicating, visualizing, and narrating circularity processes.

3. Methodology

The study shifts its focus from scientifically established strategies for promoting circularity to understanding the communicative elements that facilitate the transition from a linear production model to a circular one. The primary interest lies in the communication manufacturers employ toward consumers and the broader public.

This investigation involves analyzing what falls under the definition of CMs. Within this category, manifestos are considered, defined as 'a public declaration of principles, policies, or intentions [...]' (Cooper, 2019), structured explicitly around the theme of circularity or containing statements related to its underlying principles. These principles can be summarized as the 6R approach (reduce, reuse, recycle, recover, redesign, and remanufacturing) (Yang et al., 2017) and the innovation levels at the core of DfS (Moreno et al., 2016).

The selection was carried out by querying major search engines using individual keywords such as 'manifesto', 'design', 'sustainability', and 'circularity', then refining the results by cross-referencing them. There were no limitations regarding the creation time frame, but only manifestos with potential relevance to product design, textile elements, or main design approaches were selected. The aim is to identify common and relevant elements within the domain of the upholstered furniture sector.

In a desk research phase (Juneja, 2022), 23 manifestos were chosen to represent the diversity of approaches and content in this type of communicative format that companies, collectives, institutions, and design studios adopt to engage with the public. The sources used to compile this systemic picture included organization and manufacturer websites, scientific articles, and other communication tools intended for a broader audience.

The 23 selected manifestos were initially analyzed for their content, structure, and format and subsequently clustered based on various parameters. Table 1 provides a list of the identified and analyzed CMs.

Table 1 General information about the 23 posters analyzed. The links listed were retrieved in November 2023.

Manifesto Title	Author(s)/Owner(s)	Release	Source/Link
British Furniture Confederation Manifesto	British Furniture Confederation	2017 2019	https://britishfurnitureconfederation.org.uk/manifestos/
Made in China, Designed in California, criticized in Europe: Amsterdam Design Manifesto	Mieke Gerritzen & Geert Lovink @Droog project	2019	https://networkcultures.org/blog/publication/amsterdam-design-manifesto/
Respect Design: Cassina manifesto	Cassina	2021	https://www.cassina.com/gb/en/company/manifesto.html
Design doesn't give up	B&B Italia, Bisazza, Boffi, Cappellini, Cassina, Flexform, Giorgetti, Gruppo Molteni, Poltrona Frau	2020	https://www.fuorisalone.it/en/magazine/focus/article/238/design-doesnt-give-up
European Furniture Industries Manifesto	EFIC - European Furniture Industries	2019	https://www.efic.eu/circular-economy
Circular Fashion Manifesto	Sustainability Lab / The Monitor for Circular Fashion	2021 2023	https://www.sdabocconi.it/upl/entities/attachment/Circular_Fashion_Manifesto_2023.pdf
Sustainability Manifesto	Foster + Partners	2019	https://fp-corporatewebsite-prod-umbraco.azurewebsites.net/api/media/getMediaFile?path=/media/uvmjpt4j/sustainability-manifesto-2019.pdf
Self-Repair Manifesto	IFixit	2010	https://it.ifixit.com/Manifesto
The IoT Design Manifesto	Afdeling Buitengewone Zaken, Beyond.io, FROLIC Studio, The Incredible Machine.	2015	https://www.iotmanifesto.org/
Kartell Loves the Planet	Kartell	2021	https://www.kartell.com/it/it/ktit/corporate/kartell-loves-the-planet
The Sustainability Manifesto and the SDGs	Lavazza	2021	https://www.lavazzagroup.com/en/how-we-work/the-sustainability-manifesto.html
Open Design Manifesto	Sahil Thappa	2017	https://ekprayogblog.wordpress.com/2017/07/13/open-design-manifesto/
Social Furniture Manifesto	EOOS	2016	https://www.eoos.com/cms/index.php?id=353
Fab City Manifesto	Fab City & Mairie de Paris	2017	https://fab.city/wp-content/uploads/2023/03/Fab-City_Manifesto.pdf
Pentatonic Manifesto	Pentatonic	2017	https://youtu.be/wql9rl2czNg
Stop Designing Chairs	Eero Yli-Vakkuri & Jesse Sipola	2012	https://www.fastcompany.com/1665569/a-new-designer-manifesto-stop-designing-chairs

Manifesto Title	Author(s)/Owner(s)	Release	Source/Link
1000 Words: A Manifesto for Sustainability in Design	Allan Chochinov	2007	https://designmanifestos.org/allan-chochinov-1000-words-a-manifesto-for-sustainability-in-design/
A circular manifesto for colour	Laura Perryman & Sarah Conway	2021	https://sarah-conway.medium.com/a-circular-manifesto-for-colour-c31ebab8767d
The TEN	Centre for Circular Design - UAL Social Design Institute	2021	https://www.circulardesign.org.uk/research/ten/
Beyond the new Manifesto	Hella Jongerius & Louise Schouwenberg	2015	http://beyondthenew.jongeriuslab.com/
Steelcase Marketing Manifesto	BravoEcho for Steelcase	2020	https://bravoechoinc.com/portfolio_page/steelcase_marketing/
A Manifesto to Deliver a Circular Economy In Textiles	EURATEX – European Apparel and Textile Confederation, Federation of the European Sporting Goods Industry (FESI), Global Fashion Agenda (GFA), International Apparel Federation (IAF), Sustainable Apparel Coalition (SAC)	2020	https://euratex.eu/circular-economy-manifesto/
Circular Design Guidelines	Diez Office	2021	https://www.diezoffice.com/circular-design-guidelines/

3.1. Manifestos critical reading and clustering

The collection of 23 manifestos was examined by first extracting general background information and then focusing on the following aspects: (i) manifesto objectives, (ii) manifesto principles and values, (iii) essential manifesto contents, and (iv) points of interest or takeaways.

The manifesto objectives (i) refer to the reasons that drove its authors/creators to disseminate the communicative product under analysis. This aspect also highlights the type of audience it targets and the design, social, cultural, environmental, and political aspects it intends to convey.

Manifesto principles and values (ii) pertain to the specific aspects of circularity on which it is based and should be communicated to its target audience.

In the section related to the main manifesto contents (iii), the attention was focused on the communicative structure of the output. In particular, it was essential to understand the number of points listed (generally ten) and the balance of content in the mix of CE principles as interpreted by the authors.

Lastly, the analysis of takeaways (iv) brought forth critical reflections on the relevant aspects of the manifesto in question and any weaknesses or less significant points.

Therefore, from the initial set of 23 manifestos analyzed, it was revealed that only thirteen carried elements of intrinsic interest concerning the upholstered furniture sector. Topics addressed, design approaches, and materials related to those in the sector under consideration are the factors determining the elements mentioned above of proximal relevance. All the manifestos are presented in Figure 1 in a clustering visualization based on a correlation and similarity filter, with the thirteen most significant ones concerning the upholstered furniture sector being highlighted.

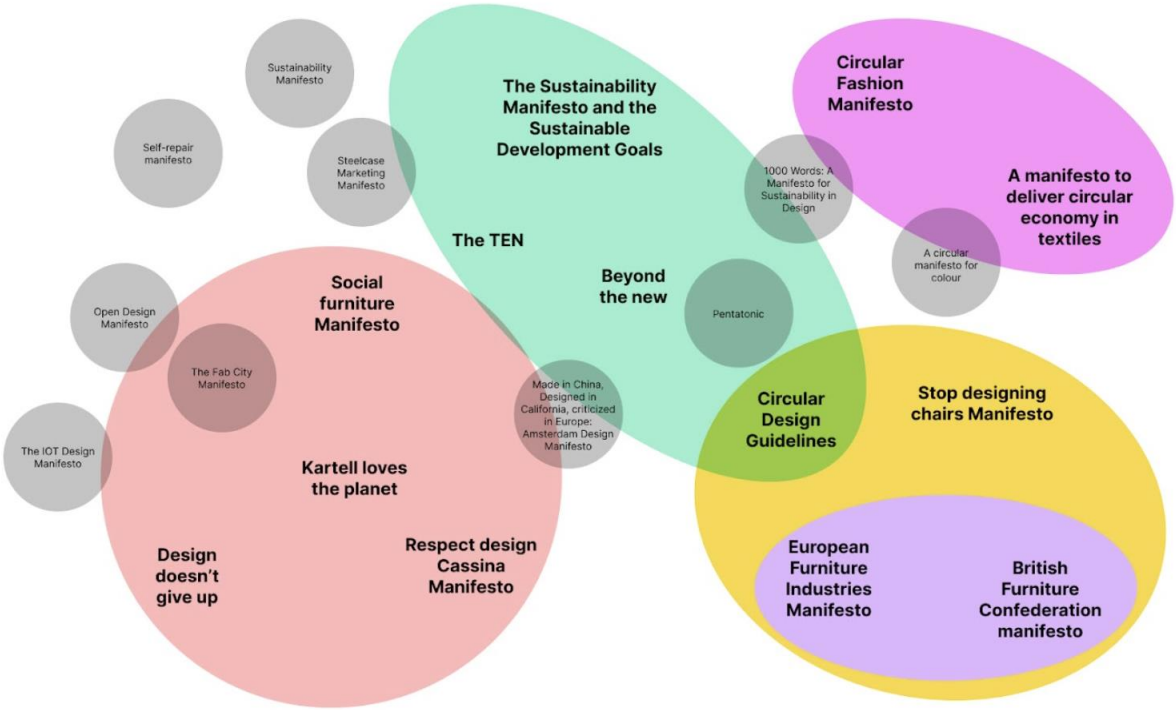

Figure 1 Diagram clustering the circularity posters analyzed highlighting the most significant ones concerning circularity in upholstered furniture.

3.2 Research questions and aims

This approach, involving the application of a critical interpretative filter to a collection of case studies gathered through desk research, has allowed for exploring the critical points for synthesizing a strategic narrative/communication on circularity. The urgency to create awareness among a broader audience, often with diverse backgrounds and levels of literacy regarding circularity, is unlikely to be achieved through theoretical concepts expressed in scientific language. This specialized terminology may introduce categorizations that need to be clarified or that are more impactful to non-specialist audiences.

The role of designers engaged in DfS extends beyond creating design outputs that align with the principles of the CE. It also involves contemplating the most appropriate means to engage a broad audience, ensuring that the proposed design solutions have a real impact.

Therefore, this exploration aims to understand how a shift in habits and behaviors can be conveyed through accessible language without diluting the communicative formula of its inherent value. This paper seeks to address the following questions:

- How can the principles of the CE be synthesized and made accessible through CD approaches while maintaining their substantive content and effectiveness?
- Can a CM be considered an effective communicative format for conveying awareness and encouraging its adoption among users, producers, and stakeholders?
- What balance and format should the elements conveying Design for Sustainability practices take in this communicative format aimed at promoting sustainable change?

4. Results

As previously mentioned, following the collection and interpretation of all the manifesto case studies related to circularity, several insights emerged, leading to further categorizations. Specifically, these manifestos could exhibit points of proximity, connection, or partial overlap depending on the perspective from which they are interpreted. Therefore, the 23 manifestos were systematically clustered based on (i.) typology, (ii.) the sector of reference concerning the approach to the green transition, and (iii.) the topics/arguments addressed.

4.1 The Typology Cluster

Regarding the typology aspect (i.), strategic manifestos related to circularity practices can take different angles, falling into three distinct types: political, projectual, and cultural manifestos.

By "political" manifestos, we refer to all communicative outputs encouraging reflection, consideration, or systemic and territorial actions regarding circularity. "Projectual" manifestos, on the other hand, focus on promoting proposals for approaches, ideas, or solutions to shape circularity. Lastly, "cultural" manifestos aim to inspire individuals and organizations to develop new sensibilities and behaviors concerning circularity.

While maintaining their specific argumentative typology, some of these manifestos can belong to two types simultaneously, and in general, some exhibit synergies that bring them closer together. The authors provide a visual summary to visualize the points of contact and proximity within the sample under examination. Figure 2 shows a Venn diagram summarizing the clustering by manifesto type.

It is noticeable that these typologies are not isolated categories, but there are overlaps among them. In particular, political manifestos, those communicative outputs encouraging reflection and systemic actions, often have a dual nature, falling into cultural and design clusters.

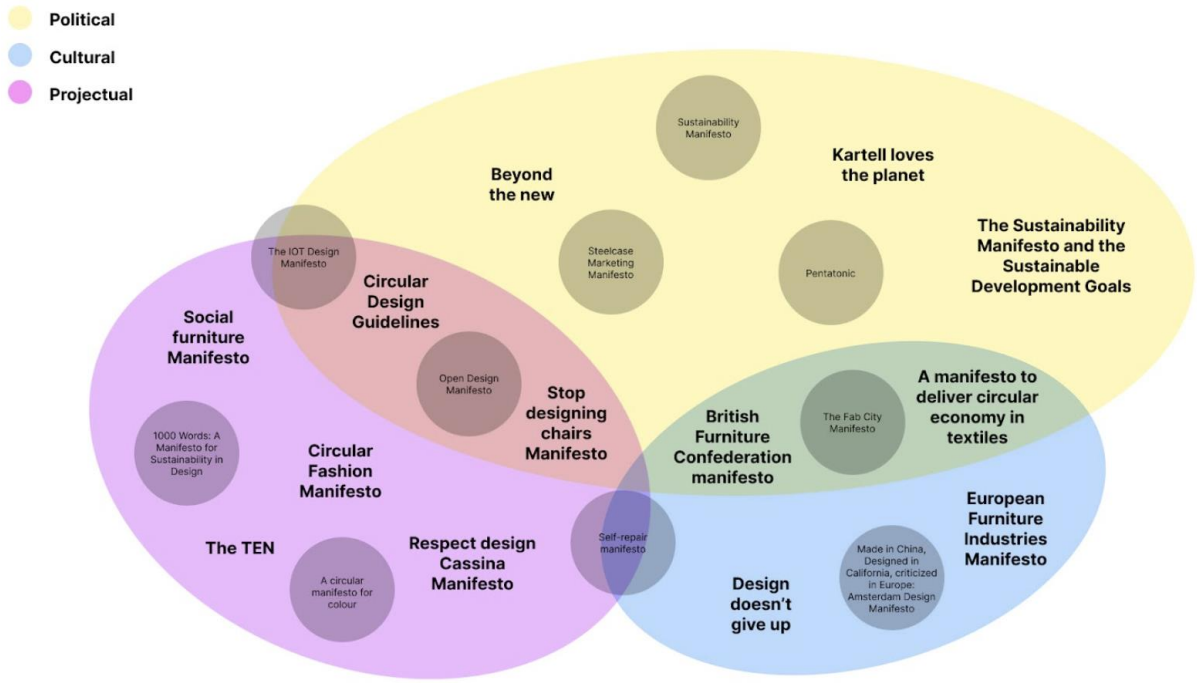

Figure 2 Venn diagram visualizing the clustering by typology.

4.2 The Sector and Green Transition Cluster

As this analysis aims to have implications for the upholstered furniture sector, it is essential to understand the sector to which these manifestos refer concerning their approach to green transition (ii.). In particular, the analyzed sample of 23 manifestos was filtered based on two main factors: their approach and the sector of reference. These manifestos may present content structured at a more general level, referring to sustainability or circularity. Alternatively, they may pertain to the furniture or textile sectors. Both sectors are relevant in the case of upholstered furniture since they typically involve structural materials used in furniture production and the textile materials used for upholstery.

It is worth noting (Figure 3) that the distribution of the manifestos studied showcases different overlaps and synergies compared to the previous visualization (Figure 2), once again through a Venn diagram.

It is essential to clarify that in this analysis, manifestos related to the textile sector have been considered relevant, not those in the fashion sector. Textiles can be considered semi-finished products that can be applied to upholstered furniture. In contrast, in a broader sense, fashion does not have a direct connection to furniture. For this reason, the number of cases in the textile sector is significantly lower than that in the furniture sector. Furthermore, thanks to the visualization presented in Figure 3, it can be appreciated that although the manifestos from the other three sets are numerically comparable, those considered most relevant for the analysis are located within the intersections. This evidence supports the idea that contextualizing the approach to the ecological transition within an application context is more effective.

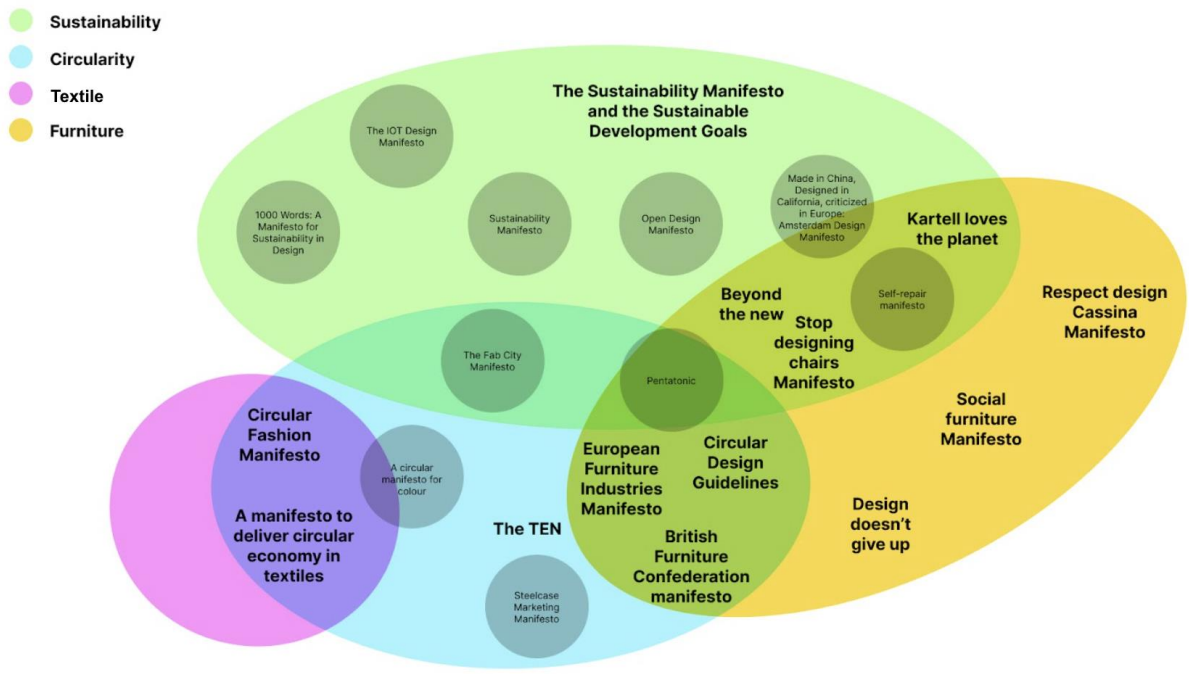

Figure 3 Venn diagram presents a clustering of the green transition approaches (sustainability and circularity) concerning the pertinent sectors for upholstered furniture.

4.3. The Topics/Arguments Cluster

Lastly, the final level of analysis focused on the arguments and themes addressed by these diverse manifestos. After a careful reading and text analysis, it was possible to identify common overarching themes addressed with different emphases in the manifestos. This type of analysis proved to be the most complex and required significant interpretation. Although the sample of case studies met shared criteria regarding typology and sector reference concerning the green transition, the syntactic structure and the communicative output used to present the content were highly heterogeneous. For this reason, greater attention was devoted to the thirteen manifestos considered more relevant to the upholstered furniture sector.

Consequently, common themes emerged in these thirteen manifestos, contributing to reconstructing a possible systemic circular communication trajectory. These themes can be synthesized and grouped into the following areas:

- Life Cycle
- Education
- Production
- Policies
- Materials
- Values

- Supply Chain / Stakeholders

To facilitate a better understanding of the theses related to these areas, Figure 4 provides an excerpt of some of the statements from the thirteen relevant manifestos, categorized according to these seven topics.

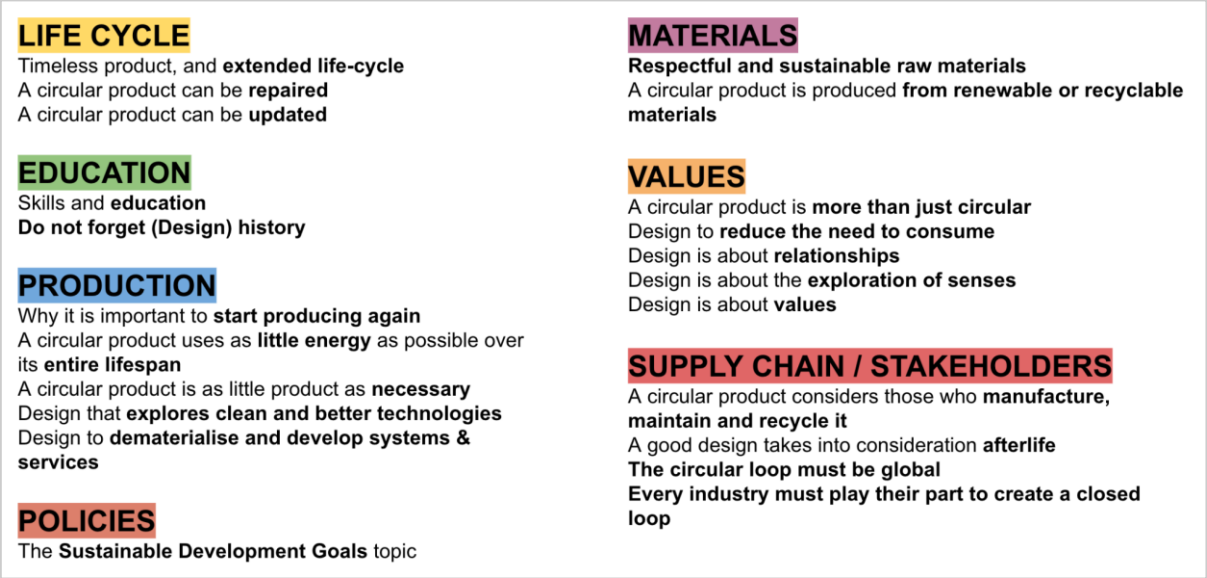

Figure 4 A collection of statements from the thirteen most relevant manifestos, organized into the seven categories introduced.

5. Discussion and critical reflections

This paper has explored the role of CMs, considering them as political, projectual, and cultural tools to stimulate the circular transition of product-service systems in contemporary society. Given the theme of the paper, the case studies collection's analysis has led to the definition of a core set of reflections that have been reinterpreted and applied to the topic of circularity for the upholstered furniture sector.

The authors used the analysis of the manifestos as a basis for 'prototyping' the 'Circular Future Manifesto' for a company in the upholstered furniture sector. Such a manifesto has served as a testbed for bridging the theoretical principles derived from the conducted analysis with their implementation in practice while adhering to the client's corporate principles. The outcome is a manifesto structured based on ten concise statements, each accompanied by brief descriptions of approximately 150 characters, which qualify and ground them within the territorial and cultural context. Additionally, the ten statements (or theses) have been divided with this balance about the clusters outlined in section 4.3: one for 'life cycle', one for 'education', two for 'production', one for 'policies' with a particular focus on community building aspect, two for 'materials', two for 'values', and finally one for 'supply chain/stakeholders'.

This work has taught us that the significant part does not solely lie in the output (the manifesto) but in its creation process, enabling multiple organizations to focus on circular

principles and values by reconsidering or modifying them in the direction of assuming greater and broader responsibilities (as required by systemic circularity).

At the same time, this work offers interesting reflections that can serve as a basis for developing other CMs, even for sectors other than the focus of the study. It is essential to specify that this analysis is based on the assumption that CMs can be valid communicative tools for promoting more sustainable and circular behaviors and practices. However, at the same time, they do not aspire to guide this type of change independently.

An original part of this work focused on shifting the focus from addressing the relationship between DfS and CE from a scientific standpoint to how to communicate these themes to the broader public. Furthermore, from the literature section, it is evident that even the most significant scientific contributions propose classifications on CD approaches and action levels (Bocken, 2016; Ceschin & Gaziulusoy, 2016) that do not directly correlate with the system of communicating and conveying circularity and may not be easily placed in a CM.

Developing the analysis work, we have verified some recurring logic (possibly also rules) in creating CMs. In particular, we have understood that constructing a CM through abduction and in a 'designerly' manner requires a typological positioning (political, projectual, cultural, or mixed) and the development of a structured point-based structure (at least seven, as the number of arguments that are supposed to be tackled) that takes into account both the different weight and hierarchy among the topics addressed and the possible need to contextualize the manifesto.

Thus, the analysis conducted directly focusing on the upholstered furniture industry has allowed us to outline a design approach that can be adapted to other sectors, considering the unique contribution different materials can offer in specific contexts. Similarly, this work could expand the pool of manifestos under analysis, including other reference sectors, to validate the results more robustly.

5.1 Possible answers to the questions raised above

In the latter part of this paper, we endeavor to provide insights into the questions posed in Section 3.2. These research queries were centered on understanding the role of the designer when faced with the multifaceted role of CD in achieving three distinct outcomes: (i.) simplifying and making CE principles comprehensible through CD without overly simplifying them or diluting their significance, (ii.) how to effectively promote circularity to truly resonate with individuals who can grasp and embrace new practices; (iii.) how to select and balance the topics to address to be effective with an audience that may vary widely in its understanding and needs. Some possible critical responses follow.

The manifesto as a multilayer and situated tool.

Circularity entails a set of fundamental principles and values, but its application always needs to consider the specificities of a context. The analysis work highlights that it is possible to develop a manifesto (in our case for upholstered furniture) that presents a set of themes

grounded at a primary or shared core level and then a level of themes that can be adapted according to the specificities of the territorial, productive, distributive, and consumption context in which the manifesto is situated or to which the manifesto is intended.

The manifesto as an aggregator of values and a value generator.

Circularity requires participation, networking, and collaboration. The manifesto is a tool capable of aggregating and connecting different stakeholders interested in developing economic, productive, cultural, and political circularity actions and initiatives in new ways.

The manifesto as an operational tool for monitoring and measuring circularity.

The manifesto is not just a container of statements but is a tool designed to produce effects in the context in which it is disseminated. These effects become attractive if they can also be measurable regarding the generated impact (social, productive, etc.).

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About the Authors:

Patrizia Bolzan, PhD in Design, Researcher and Assistant Professor at Politecnico di Milano, Department of Design, she focuses on studying the relationship between digital fabrication and Design in its practices and processes. She deals with product design system with particular attention to sustainability and circularity.

Massimo Bianchini, PhD in Design, Associate Professor at the Department of Design and Lab Manager at Polifactory, the Makerspace, Fab Lab of the Politecnico di Milano. His research interests design and open and distributed, user-driven innovation, and circular innovation.

Stefano Maffei, architect and PhD in Design. Full Professor at the Department of Design of Politecnico di Milano and Rector's Delegate for Social Innovation. He is the Director of Polifactory, the Fab Lab and Makerspace of Politecnico di Milano.