



Circularity and Fashion: assessing the potential of a circular transition to promote sustainable development in the industry

Lia Da Giau

Supervisor: Dr Patrick O'Hare

Laidlaw Undergraduate Leadership and Research Programme

Acknowledgements The realisation of this project would have not been possible without the precious support of the Laidlaw Foundation, Lord Laidlaw and the University of St Andrews. Thank you also to my supervisor, Dr Patrick O'Hare, and all the participants to my study.

Acronyms

CE: Circular Economy

FR: Fashion Revolution

EU: European Union

SD: Sustainable Development

SF: Sustainable Fashion

SD: Sustainable Fashion Scotland

ZWS: Zero Waste Scotland

Introduction

Sustainable fashion and circular economy are newly introduced concepts that are still hard to define and understand, despite their rising popularity. Circular economy (CE) is an alternative approach to production and consumption, proposing to couple economic growth with the efficiency of (re)circulating materials to produce at once economic *and* environmental benefits¹. Production and consumption patterns of the fashion industry are characterised by the phenomenon of ‘fast fashion’, which describes a quick response of mass production to seasonal fashion trends fuelled by a consumer culture that relies on cheap and readily available products². Such patterns are depleting natural resources, whilst producing waste and pollution at each stage of the product life cycle³. Increasing competition for resources and rising concerns about the negative environmental impacts of the take-make-waste approach sparked interest in the potential of circular models to address the sustainability challenges in the industry. However, CE is no guarantee of sustainable development, unless all three dimensions of sustainability – economy, environment and society- find their space in the conceptualisation, planning and implementation of the circular transition⁸. Sustainable development (SD) is an approach to development that recognises the interconnectedness between social, environmental and economic systems, and is grounded in the principle of ‘leaving no one behind’⁹ and promoting wellbeing for present and future generations in respect of planetary boundaries. This essay explores the intersection between CE and the sustainable fashion (SF) framework, encompassing individuals, organisations and initiatives that promote systemic change in the

¹ Peter Lacy, Jessica Long, and Wesley Spindler, “Fashion Industry Profile,” in *The Circular Economy Handbook: Realizing the Circular Advantage* (London: Palgrave Macmillan, 2020), pp. 185-195, https://doi.org/10.1057/978-1-349-95968-6_14., Ellen MacArthur Foundation, “CIRCULAR BUSINESS MODELS Redefining Growth for a Thriving Fashion Industry,” 2021, <https://emf.thirdlight.com/link/circular-business-models-exec-summ/@/preview/1?o>.

² Vertica Bhardwaj and Ann Fairhurst, “Fast Fashion: Response to Changes in the Fashion Industry,” *The International Review of Retail, Distribution and Consumer Research* 20, no. 1 (2010): pp. 165-173, <https://doi.org/10.1080/09593960903498300>.

³ Ellen MacArthur Foundation, “Vision of a Circular Economy for Fashion” (Ellen MacArthur Foundation, 2020), <https://emf.thirdlight.com/link/nbwff6ugh01m-y15u3p/@/preview/1?o>.

⁸ Alan Murray, Keith Skene, and Kathryn Haynes, “The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context,” *Journal of Business Ethics* 140, no. 3 (February 2017): pp. 369-380, <https://doi.org/10.1007/s10551-015-2693-2>.

⁹ UN Sustainable Development Group, ‘Universal Values Principle Two: Leave No One Behind,’ 2022, <https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind>.

industry against the unsustainability of fast fashion. At first, the essay presents some critical opinions from the literature which highlight the potential of CE to hinder rather than promoting SD (I). Section II analyses the relationship between CE and SF, ultimately proposing means for a sustainable circular transition.

I. The current picture

Most supporters of CE adopt a business-centred approach to incentivise business and policymaking to actively contribute to a circular transition, yet academics recognised the need to further analyse the implications of CE beyond the mainstream focus on environmental and economic sustainability¹⁰. CE is presented as a way to acquire competitive advantage and achieve economic and environmental benefits through efficiency and innovation¹³, reducing production costs and maximising unused potential¹⁴. This narrative attributes to circular models a value described in terms of what is acceptable and desirable in the current system¹⁷, which may lead to implementations that are only “optimization of the status quo”¹⁸ and overlook the social dimension of sustainability¹⁹. In practice, this is translated in the popularity of circular business models that do not directly tackle the issues of excessive resource use and accumulation of goods and waste²¹, for example resale models (second-hand/vintage shops). To separate economic growth from the exploitation of resources and creation of waste, the success of businesses should be measured also in

¹⁰ Jouni Korhonen, Antero Honkasalo, and Jyri Seppälä, “Circular Economy: The Concept and Its Limitations,” *Ecological Economics* 143 (2018): pp. 37-46, <https://doi.org/10.1016/j.ecolecon.2017.06.041>.

¹³ Lacy, Long and Spindler, “Fashion Industry Profile”, 185-195.

¹⁴ Mika Sillanpää and Chaker Ncibi, “Circular Economy in Action: Case Studies about the Transition from the Linear Economy in the Chemical, Mining, Textile, Agriculture, and Water Treatment Industries,” in *The Circular Economy: Case Studies about the Transition from the Linear Economy* (London: Elsevier AP Academic Press, an imprint of Elsevier, 2019), pp. 111-206.

¹⁷ Kersty Hobson, “‘Small Stories of Closing Loops’: Social Circularity and the Everyday Circular Economy,” *Climatic Change* 163, no. 1 (June 2019): pp. 99-116, <https://doi.org/10.1007/s10584-019-02480-z>.

¹⁸ Sophie Buchel et al., “Disrupting the Status Quo: A Sustainability Transitions Analysis of the Fashion System,” *Sustainability: Science, Practice and Policy* 18, no. 1 (2022): pp. 231-246, <https://doi.org/10.1080/15487733.2022.2040231>.

¹⁹ Kersty Hobson, “The Limits of the Loops: Critical Environmental Politics and the Circular Economy,” *Environmental Politics* 30, no. 1-2 (October 2020): pp. 161-179, <https://doi.org/10.1080/09644016.2020.1816052>.

²¹ Ibid.

terms of social, environmental and cultural impact²⁴. As a representative of Fashion Revolution (FR) Italy pointed out, “Brands must address many other aspects before thinking about circularity. Social and environmental aspects have to be monitored before implementing circularity, otherwise it lacks structure.”²⁵

So far, CE has been centred on developing processes to sustain the circular transition in the fashion industry, with the supply chain expanding to include activities of collection and sorting of textile waste, and reuse, repair, recycling, resale, and rental services. This is a weak structure, characterised by unpredictability of inputs and outputs. A challenge to the implementation of circularity is the lack of appropriate technologies in the first place²⁶, and design for circularity is a new evolving field which requires a knowledge of technologies and manufacturing processes that designers do not necessarily have²⁷. In addition, it is almost impossible to understand the waste stream that CE works with due to insufficient statistical data on the amount of textiles waste and the processes of collection, sorting and recycling²⁸. From a sustainability perspective, it is concerning that policies to enforce circular practices are already being implemented in a system that is apparently not ready to support and adapt to them, which might result in a backlash for economy, environment and people involved. Whilst economic and environmental benefits of a circular transition are clear, there is little consideration of “where policies or models may disproportionately affect particular groups”²⁹, and particularly communities that do not have a direct say

²⁴ Centre for Sustainable Fashion et al., “FOSTERING SUSTAINABLE PRACTICES IN MICRO AND SMALL FASHION ENTERPRISES (MSEs) SUPPORT FOR SUSTAINABLE PROSPERITY,” 2021, https://4729094a-0579-4782-9b3d-914e8ce2e0c6.filesusr.com/ugd/9dbc3c_c6ac51e2fded4d108bb2ce4a837cbb14.pdf?index=true.

²⁵ Chiara Ferrero. Interview with Fashion Revolution Italy. Personal, July 12, 2022.

²⁶ Chunguang Bai et al., “Analyzing the Interactions among the Challenges to Circular Economy Practices,” *IEEE Access* 9 (2021): pp. 63199-63212, <https://doi.org/10.1109/access.2021.3074931>.

²⁷ Kirsi Niinimäki and Essi Karell, “Closing the Loop: Intentional Fashion Design Defined by Recycling Technologies,” *Technology-Driven Sustainability*, 2019, pp. 7-25, https://doi.org/10.1007/978-3-030-15483-7_2.

²⁸ Hanna Ljungkvist, David Watson, and Maria Elander, “Developments in Global Markets for Used Textiles and Implications for Reuse and Recycling” (IVL Swedish Environmental Research Institute, PlanMiljø, 2018), <http://mistrafuturefashion.com/wp-content/uploads/2018/05/Mistra-Future-Fashion-2018-4H.-Ljungkvist-D.3.3.4.1.pdf>.

²⁹ BRS and Laudes Foundation, “Taking a People-Centered Approach to a Circular Fashion Economy,” September 2020, <https://www.bsr.org/en/our-insights/report-view/taking-a-people-centered-approach-to-a-circular-fashion-economy>.

in the decision-making yet are largely impacted by the transition. What will happen to all the low-skilled workers employed by the fast fashion industry? Are there tools for training them, and is there a place for them in the circular economy? The CE relies on digital tools: how can we include those who does not have access to them in the transition? These are issues addressed in relation to EU countries³⁰, but guidelines do not necessarily mention production countries in the Global South. In the past years, there has been a change in drivers of CE towards a more CSR approach³¹. In fact, the recently published Scottish Circular Textiles Fund³² included as criteria for applicants an attention to producing socioeconomic benefits and being Living Wage Employers. Applicants are incentivised to adopt a collaborative approach to skill and resource sharing, acknowledging the importance of networks and synergy in the circular transition. What CE is still missing, however, is a shift from the mainstream business-oriented and material-focused approach towards an increased understanding of the relationship between natural systems, societies and economic activities³³.

II. Designing new value for circularity

The main difference between traditional patternmaking and zero-waste design is the order of the processes. In traditional design you sketch something and make a pattern which will match it exactly, and you don't care about the textile waste because it's impossible to do a pattern which will perfectly match your sketch without having waste. In zero-waste design these two processes happen in parallel: you're designing the final product and the pattern in the same time, and your pattern influences your final design.⁴¹

³⁰ European Commission, "COMMISSION STAFF WORKING DOCUMENT Scenarios towards Co-Creation of a Transition Pathway for a More Resilient, Sustainable and Digital Textiles Ecosystem" (Brussels, 2022), <https://ec.europa.eu/docsroom/documents/49360>.

³¹ Jayne Stirling. Interview with Zero Waste Scotland. Personal, August 3, 2022.

³² Zero Waste Scotland, "Circular Textiles Fund," Zero Waste Scotland, August 5, 2022, <https://www.zerowastescotland.org.uk/content/circular-textiles-fund>.

³³ Bill Reed, "Shifting from 'Sustainability' to Regeneration," *Building Research & Information* 35, no. 6 (2007): pp. 674-680, <https://doi.org/10.1080/0961321070147575>.

⁴¹ Ecatarina Verbițcaia. Interview with Ecatarina Verbițcaia . Personal, June 29, 2022.

This excerpt from the interview with the activist and designer Ecatarina Verbițcaia highlights aspects of design for circularity which apply not only to product design, but to the process of re-designing the fashion system as a whole. Firstly, design for circularity implies a clean break with how fashion is currently made and consumed. A circular transition entails the design of economic and production systems so that they are suitable for recirculation of materials, and it is dependent on re-designing the values system around fashion production and consumption. The other crucial message is that design for circularity is characterised by simultaneousness of action and interconnection between processes. In the circular transition planning and execution are happening at once, together with the conceptualisation of circularity itself. Coordinating efforts in this intricate landscape of evolving ideas, long-term planning, and short-term action is more likely result in unforeseen, undesired outcomes from a SD perspective⁴². Value-creation in circular fashion is 'led by design', as the decisions made in this stage concern the sustainability of the materials used and the properties of garments that could enable them to be reused, recycled and repurposed⁴³. Similarly, the contribution of CE to SD depends on the integration of sustainability in the design of circular models. In the fashion industry, such integration is facilitated by the presence of an established sustainable fashion (SF) framework which already includes, but is not limited to, circular models and principles. Like circularity, SF has a simultaneous focus on "pragmatic change" and "radical change"⁴⁴, and shares with CE some challenges related to conceptualisation and implementation⁴⁵. However, while CE often fails to include the social pillar of sustainability, the SF discourse scarcely addresses the economic dimension of market relationships⁴⁶. Circular thinking has been identified as the "core of many leading

⁴² Murray, Skene, and Haynes, "An Interdisciplinary Exploration".

⁴³ Ellen MacArthur Foundation, "Circular Economy for Fashion".

⁴⁴ Amira Mukendi et al., "Sustainable Fashion: Current and Future Research Directions," *European Journal of Marketing* 54, no. 11 (2020): pp. 2873-2909, <https://doi.org/10.1108/ejm-02-2019-0132>.

⁴⁵ Eunsuk Hur and Tom Cassidy, "Perceptions and Attitudes towards Sustainable Fashion Design: Challenges and Opportunities for Implementing Sustainability in Fashion," *International Journal of Fashion Design, Technology and Education* 12, no. 2 (April 2019): pp. 208-217, <https://doi.org/10.1080/17543266.2019.1572789>.

⁴⁶ Henny Puspita and Heeju Chae, "An Explorative Study and Comparison between Companies' and Customers' Perspectives in the Sustainable Fashion Industry," *Journal of Global Fashion Marketing* 12, no. 2 (May 2021): pp. 133-145, <https://doi.org/10.1080/20932685.2020.1853584>.

business approaches to sustainability” in the SF framework⁴⁷, suggesting that CE and SF are complementary approaches in designing a successful, sustainable alternative to fast fashion. CE provides a solid economic framework of incentives, financial support, and business models, whilst SF plays the even more crucial role of promoting inclusive processes of value-creation in the circular transition. To assess the validity of this claim, interviews were carried out with designers and representatives of brands and organisations operating in the sustainable fashion framework. Tailored questions based on themes emerged in the literature were elaborated to discuss (a) how value-creation is used to integrate sustainability on multiple levels (product, individual, organisational, systemic), and (b) the dynamics of a systemic-thinking approach in a multistakeholder environment.

Table 1: List of participants

PARTICIPANT	CATEGORY	COUNTRY
Bennu	Fashion brand	Italy
Ecatarina Verbiţcaia	Designer (zero-waste)	Moldova
Jwolfschmidt	Designer (upcycling)	USA
European Creative Hubs Network (ECHN)	Peer-led network giving visibility to creative hubs and supporting them in maximising their impact.	EU
Fashion Revolution (FR) Italy	Italian branch of the largest fashion activism movement worldwide	Italy
Progetto Quid	Fashion brand	Italy
Rifò	Fashion brand	Italy
Sustainable Fashion Scotland (SFS)	Community-led nonprofit connecting the SF community in Scotland	Scotland

⁴⁷ Sarah Margaretha Jastram and Anna-Maria Schneider, “New Business and Governance Approaches to Sustainable Fashion: Learning from the Experts,” *Management for Professionals*, 2018, pp. 163-166, https://doi.org/10.1007/978-3-319-74367-7_14.

S4Fashion	3-year project by ECHN supporting medium-sized enterprises in the circular transition	EU
Zero Waste Scotland (ZWS)	Not-for-profit environmental organisation, funded by the Scottish Government and European Regional Development Fund ⁴⁸	Scotland

Creating meaning

What does value-creation look like in SF, and how is it functional to promoting sustainability in the circular transition? First, the concept of ‘value’ is used holistically, referring to value intrinsic to material aspects of garments (use value), individual and cultural value, and value systems in fashion overall⁴⁹. The value of products in CE is measured according to their potential to be kept in the production-consumption system for as long as possible. Therefore, processes of value-creation prioritise material quality for physical durability, structural elements of products that facilitate recycling and remaking, and emotional durability⁵⁰. Emotional durability refers to the personal attachment of users to a garment, which results in a desire to keep it in good conditions and repair it⁵¹. The definition of value from a SF perspective adds an additional element to the CE value system, as clarified by the founder and CEO of Rifò: “It is very important to understand *how* a garment is made. Who made it? In which work conditions? On one side there is slow fashion, which is about slowing down the pace of production and consumption, and on the other CE, which is about producing materials that are made to be recycled or are recycled.”⁵² Two key features of SF emerge: the ethical⁵³ and human dimension of fashion constitutes its backbone, and decreasing the pace

⁴⁸ Zero Waste Scotland, “Who We Are,” Zero Waste Scotland, June 9, 2021, <https://www.zerowastescotland.org.uk/content/who-we->.

⁴⁹ Niinimäki Kirsi, *From Disposable to Sustainable: The Complex Interplay between Design and Consumption of Textiles and Clothing*, (Helsinki, Finland: Aalto University, School of Art and Design, 2011), 56-62.

⁵⁰ Ellen MacArthur Foundation, “Circular Economy for Fashion”.

⁵¹ Niinimäki, *From Disposable to sustainable*, 58.

⁵² Niccolò Cipriani. Interview with Rifò. Personal, June 24, 2022.

⁵³ Fashion is ethical when it safeguards human rights and safety of the people involved, along with respecting and protecting natural environments. Fashion cannot be sustainable if it isn’t ethical.

of the industry is a prerogative in the promotion of systemic change. When circularity is implemented within the SF value system, all three pillars of sustainability are accounted for by default. Moreover, the risk that an excessive focus on circularity of materials might outclass the need for a drastic change in industry practices is minimised, as slowing down the pace of production and consumption is a core commitment in the SF value system regardless of circularity. The solidity of the SF value system is translated into action with purpose, which was identified as a driver for successful implementation of sustainable circularity. As the co-founder of Sustainable Fashion Scotland (SFS) explains,

To fight fast fashion, a very competitive, opaque side of the industry, you need to have strong values to set all of your work onto, and practice them on a constant basis. If the values are really integral to your organization people will see it, which helped us to feel quite confident with what we do. Even if not all the directions are always clear, the values on which we are basing our work are. That makes us more understanding of the fact that we are doing the right thing.⁵⁴

The approach of SF to planning and execution can be summarised as sustainability-thinking, describing processes of participatory decision-making driven by firm values and mindful of the interconnected impacts on people, environment, and economy. It is hard to predict the outcome of newly implemented circular models on SD, and the SF approach to decision-making applied to CE would help to evaluate possible future scenarios and negative impacts of the transition on a systemic level.⁵⁵ Moreover, the integration of sustainability-thinking in the design of the circular transition would give it structure, contributing to creating “a robust concept of a CE-driven systemic transition towards sustainability”⁵⁷.

Sustainable circularity in practice

The fashion industry is comprised of numerous actors with different expertise and areas of influence. In order to have an actual impact on industry practices, cultural change from both producers and consumers

⁵⁴ Liisa Lehtinen. Interview with Sustainable Fashion Scotland. Personal, June 23, 2022.

⁵⁵ BRS and Laudes Foundation, “People-Centered Approach”.

⁵⁷ Jakob Zwiers, Melanie Jaeger-Erben, and Florian Hofmann, “Circular Literacy. A Knowledge-Based Approach to the Circular Economy,” *Culture and Organization* 26, no. 2 (July 2020): pp. 121-141, <https://doi.org/10.1080/14759551.2019.1709065>.

needs to be paired with a more practical effort in terms of establishing systems of co-production and industrial symbiosis⁶⁰, while the value system should respond to people and market's actual needs rather than wants (Kluckhohn, 1951)⁶¹. As shown in the examples below, inclusive and participatory sustainability-thinking as promoted in SF environments could help to effectively coordinate the multiplicity of action, surpass the business-centred approach, and address gaps in knowledge that challenge the circular transition.

From competition to collaboration

Design for sustainable circularity requires a collaborative approach based on constant communication between designers, manufacturers, sorters and recyclers⁶². Dialogue with end-users is equally important to understanding how fashion can respond to their needs and, more importantly, make consumers understand the need for a sustainable shift in the industry.⁶³ The complex web of actors that comprises the industry is a sign of its fragmentation. This fragmentation is often identified as inhibitor of change⁶⁴, yet diversity of perspectives favours the identification of more opportunities and solutions for sustainability⁶⁵. The SF framework is characterised by multiplicity of action, thus the development of future strategies starts from mapping exercises to avoid duplicating efforts and facilitate collaboration (SFS), give visibility to existing initiatives and opportunities for consumers (FR), and identify pockets of circularity that need support (S4Fashion). In most cases, research in this regard is geographically fragmented and tailored to the specific policy or project it aims to support, making it harder to assess the overall implications of a circular transition. Nevertheless, an analysis of cases study from the Italian fashion industry shows how a context-

⁶⁰ Francesca Mazzoni, "Circular Economy and Eco-Innovation in Italian Industrial Clusters. Best Practices from Prato Textile Cluster," *Insights into Regional Development* 2, no. 3 (January 2020): pp. 661-676, [https://doi.org/10.9770/ird.2020.2.3\(4\)](https://doi.org/10.9770/ird.2020.2.3(4)).

⁶¹ David Graeber, "Three Ways of Talking about Value," chapter 1 in *TOWARD AN ANTHROPOLOGICAL THEORY OF VALUE* (New York: PALGRAVE, 2001), pp. 2-4.

⁶² Kirsi Niinimäki and Essi Karell, "Closing the Loop".

⁶³ Reed, "'Sustainability' to Regeneration".

⁶⁴ Buchel et al., "Sustainability Transitions Analysis".

⁶⁵ Vanessa Cento. Interview with Progetto Quid. Personal, July 6, 2022.

specific approach is a determinant factor for successful implementations of sustainable circularity. The importance of “rediscovering the human side of fashion”⁶⁶ is a common denominator amongst the interviewees, as a thorough understanding of what local communities need and have to offer allows for the maximisation of positive economic and social impacts within the regenerative capacity of regional natural systems. Local and small-scale productions allow brands and designers to establish an in-person relationship with suppliers and manufacturers. This is functional to monitoring sustainability throughout the supply chain, and acquiring and communicating information from suppliers more transparently. It emerged that applying CE for sustainability on an industrial scale is not about economies of scale; it refers to a cultural change in how we perceive relationships between stakeholders, promoting a collaborative rather than competitive effort. SF brands share the same limitations as brands on the path to circularity in regard to lack of economies of scale⁶⁸ and unfair competition with fast fashion as small and slower supply chains struggle to keep up with the pace of demand⁶⁹. However, being value-driven empowers individuals and organisation in SF to collaborate with other stakeholders in a way that actually creates a sustainable win-win situation. In fact, these partnerships entail processes of co-design of the project/product according to some shared values between the parts involved.

Gaps in knowledge

Young interviewees experimenting with upcycling and zero-waste design outlined a lack of theoretical and technical support regarding sustainable fashion in education⁷⁰, which is mirrored by gaps in consumer

⁶⁶ Niccolò Chiappesi. Interview with BENNU. Personal, June 22, 2022.

⁶⁸ Business of Fashion and McKinsey&Company, “The State of Fashion 2022,” 2022, https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2022.pdf.

⁶⁹ European Commission and Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, “Support Report Mapping Sustainable Fashion Opportunities for SMES : Annex 3: Case Studies” (Publications Office, 2019), <https://op.europa.eu/en/publication-detail/-/publication/6e54bb21-b98b-11e9-9d01-01aa75ed71a1>.

⁷⁰ Jacqueline Schmidt. Interview with Jwolfschmidt. Personal, July 24, 2022. Verbițcaia, Interview.

awareness and understanding of CE and SF⁷¹. This general confusion not only slows down the transition, but it also poses a threat to sustainability, as access to innovation and information is intrinsically connected to socio-economic factors. For example, knowledge of sustainability and circularity in Eastern Europe is more limited than in the West. This is translated in a lack of opportunities for professionals to learn about circular design methods and have access to information in their own language⁷². Moreover, for circular brands it is harder to appeal to customers who do not see the value of alternatives to the status quo, beside the evident higher price of the product. In the CE framework, there are many initiatives in support of businesses implementing circularity in their supply chain (S4Fashion, Scottish Circular Textile Fund) and platforms for exchange of skills and ideas in circular professional circles, like Zero Waste Design online. On the other hand, the SF community is largely focused on improving consumers' understanding of sustainability ideas and options in the industry. Most of the organisations and brands interviewed present an educational and/or activist component in their work, with the aim of listening to and representing the voices of communities, consumers, and manufacturers in decision-making. Providing producers and consumers with the tools to intentionally choose circularity and sustainability over the more accessible fast fashion options enacts the cultural change necessary to sustain the circular transition. This further shows how the participatory and inclusive SF approach could help overcoming challenges to the implementation of CE.

Conclusion

The essay outlines some significant gaps in how sustainability is integrated in CE. An incomplete understanding of circularity and its value system was identified as a threat not only to SD, but also to the more specific goal of CE to re-design the system to achieve complete circularity. However, the circular

⁷¹ Bai et al., "Challenges to Circular Economy", ⁷¹ European Commission and Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, "Annex 3: Case Studies".

⁷² Verbițcaia, interview.

transition is still at an embryonal stage, leaving room for sustainability to be inserted in the picture. Currently, there are few examples of fully circular supply chains in the industry, but circularity models and thinking are often used in the field of SF in combination with other approaches. A comparison between processes of value-creation in CE and SF highlighted how the strong value system of SF, grounded in sustainability principles, has the potential to fill the gaps in the material-focused value system of CE. Ideas discussed in interviews with different actors in the SF community confirmed how circular models have the potential to be an effective tool for SD if we re-define what competitive advantage means beyond monetary value and volume of sales, looking at the socio-ecological intersections and cultural significance of fashion. The solution to make circularity sustainable lies in its very own principles: rather than extracting new resources, let us work with what is already there and use the value system and expertise of the SF community to design a circular transition that promotes sustainable development by definition.

Bibliography

- Bai, Chunguang, Hadi Badri Ahmadi, Md. Abdul Moktadir, Simonov Kusi-Sarpong, and James J. Liou. "Analyzing the Interactions among the Challenges to Circular Economy Practices." *IEEE Access* 9 (2021): 63199–212. <https://doi.org/10.1109/access.2021.3074931>.
- Bhardwaj, Vertica, and Ann Fairhurst. "Fast Fashion: Response to Changes in the Fashion Industry." *The International Review of Retail, Distribution and Consumer Research* 20, no. 1 (2010): 165–73. <https://doi.org/10.1080/09593960903498300>.
- BRS, and Laudes Foundation. Rep. Taking a People-Centered Approach to a Circular Fashion Economy, September 2020. <https://www.bsr.org/en/our-insights/report-view/taking-a-people-centered-approach-to-a-circular-fashion-economy>.
- Buchel, Sophie, Aniek Hebinck, Mariangela Lavanga, and Derk Loorbach. "Disrupting the Status Quo: A Sustainability Transitions Analysis of the Fashion System." *Sustainability: Science, Practice and Policy* 18, no. 1 (2022): 231–46. <https://doi.org/10.1080/15487733.2022.2040231>.
- Business of Fashion, and McKinsey&Company. Rep. The State of Fashion 2022, 2022. https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2022.pdf.
- Cento, Vanessa. Interview with Progetto Quid. Personal, July 6, 2022.
- Centre for Sustainable Fashion, Centre for Enterprise and Economic Development Research, Middlesex University, and The Open University. FOSTERING SUSTAINABLE PRACTICES IN MICRO AND SMALL FASHION ENTERPRISES (MSEs) SUPPORT FOR SUSTAINABLE PROSPERITY, 2021. https://4729094a-0579-4782-9b3d-914e8ce2e0c6.filesusr.com/ugd/9dbc3c_c6ac51e2fded4d108bb2ce4a837cbb14.pdf?index=true.
- Chiappesi, Niccolò. Interview with BENNU. Personal, June 22, 2022.
- Cipriani, Niccolò. Interview with Rifò. Personal, June 24, 2022.
- Ellen MacArthur Foundation. Rep. Vision of a Circular Economy for Fashion. Ellen MacArthur Foundation, 2020. <https://emf.thirdlight.com/link/nbwff6ugh01m-y15u3p/@/preview/1?o>.
- Ellen MacArthur Foundation. Publication. CIRCULAR BUSINESS MODELS Redefining Growth for a Thriving Fashion Industry, 2021. <https://emf.thirdlight.com/link/circular-business-models-exec-summ/@/preview/1?o>.
- European Commission, and Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. Rep. Support Report Mapping Sustainable Fashion Opportunities for SMES : Annex 3: Case Studies. Publications Office, 2019. <https://op.europa.eu/en/publication-detail/-/publication/6e54bb21-b98b-11e9-9d01-01aa75ed71a1>.
- European Commission. Working paper. COMMISSION STAFF WORKING DOCUMENT Scenarios towards Co-Creation of a Transition Pathway for a More Resilient, Sustainable and Digital Textiles Ecosystem. Brussels, 2022. <https://ec.europa.eu/docsroom/documents/49360>.
- Ferrero, Chiara. Interview with Fashion Revolution Italy. Personal, July 12, 2022.
- Graeber, David. "Three Ways of Talking about Value." Essay. In TOWARD AN ANTHROPOLOGICAL THEORY OF VALUE, 2–4. New York: PALGRAVE, 2001.
- Hobson, Kersty. "The Limits of the Loops: Critical Environmental Politics and the Circular Economy." *Environmental Politics* 30, no. 1-2 (2020): 161–79. <https://doi.org/10.1080/09644016.2020.1816052>.
- Hobson, Kersty. "'Small Stories of Closing Loops': Social Circularity and the Everyday Circular Economy." *Climatic Change* 163, no. 1 (2019): 99–116. <https://doi.org/10.1007/s10584-019-02480-z>.
- Hur, Eunsuk, and Tom Cassidy. "Perceptions and Attitudes towards Sustainable Fashion Design: Challenges and Opportunities for Implementing Sustainability in Fashion." *International Journal of*

- Fashion Design, Technology and Education 12, no. 2 (2019): 208–17.
<https://doi.org/10.1080/17543266.2019.1572789>.
- Jastram, Sarah Margaretha, and Anna-Maria Schneider. “New Business and Governance Approaches to Sustainable Fashion: Learning from the Experts.” *Management for Professionals*, 2018, 163–66.
https://doi.org/10.1007/978-3-319-74367-7_14.
- Korhonen, Jouni, Antero Honkasalo, and Jyri Seppälä. “Circular Economy: The Concept and Its Limitations.” *Ecological Economics* 143 (2018): 37–46.
<https://doi.org/10.1016/j.ecolecon.2017.06.041>.
- Lacy, Peter, Jessica Long, and Wesley Spindler. “Fashion Industry Profile.” Essay. In *The Circular Economy Handbook: Realizing the Circular Advantage*, 185–95. London: Palgrave Macmillan, 2020.
https://doi.org/10.1057/978-1-349-95968-6_14.
- Lehtinen, Liisa. Interview with Sustainable Fashion Scotland. Personal, June 23, 2022.
- Ljungkvist, Hanna, David Watson, and Maria Elander. Rep. *Developments in Global Markets for Used Textiles and Implications for Reuse and Recycling*. IVL Swedish Environmental Research Institute, PlanMiljø, 2018. <http://mistrafuturefashion.com/wp-content/uploads/2018/05/Mistra-Future-Fashion-2018-4H.-Ljungkvist-D.3.3.4.1.pdf>.
- Mazzoni, Francesca. “Circular Economy and Eco-Innovation in Italian Industrial Clusters. Best Practices from Prato Textile Cluster.” *Insights into Regional Development* 2, no. 3 (2020): 661–76.
[https://doi.org/10.9770/ird.2020.2.3\(4\)](https://doi.org/10.9770/ird.2020.2.3(4)).
- Mukendi, Amira, Iain Davies, Sarah Glozer, and Pierre McDonagh. “Sustainable Fashion: Current and Future Research Directions.” *European Journal of Marketing* 54, no. 11 (2020): 2873–2909.
<https://doi.org/10.1108/ejm-02-2019-0132>.
- Murray, Alan, Keith Skene, and Kathryn Haynes. “The Circular Economy: An Interdisciplinary Exploration of the Concept and Application in a Global Context.” *Journal of Business Ethics* 140, no. 3 (February 2017): 369–80. <https://doi.org/10.1007/s10551-015-2693-2>.
- Niinimäki Kirsi. *From Disposable to Sustainable: The Complex Interplay between Design and Consumption of Textiles and Clothing*. Helsinki, Finland: Aalto University, School of Art and Design, 2011.
- Niinimäki, Kirsi, and Essi Karell. “Closing the Loop: Intentional Fashion Design Defined by Recycling Technologies.” *Technology-Driven Sustainability*, 2019, 7–25. https://doi.org/10.1007/978-3-030-15483-7_2.
- Puspita, Henny, and Heeju Chae. “An Explorative Study and Comparison between Companies’ and Customers’ Perspectives in the Sustainable Fashion Industry.” *Journal of Global Fashion Marketing* 12, no. 2 (2021): 133–45. <https://doi.org/10.1080/20932685.2020.1853584>.
- Reed, Bill. “Shifting from ‘Sustainability’ to Regeneration.” *Building Research & Information* 35, no. 6 (2007): 674–80. <https://doi.org/10.1080/09613210701475753>.
- Schmidt, Jacqueline. Interview with Jwolfschmidt. Personal, July 24, 2022.
- Sillanpää, Mika, and Chaker Ncibi. “Circular Economy in Action: Case Studies about the Transition from the Linear Economy in the Chemical, Mining, Textile, Agriculture, and Water Treatment Industries.” Essay. In *The Circular Economy: Case Studies about the Transition from the Linear Economy*, 111–206. London: Elsevier AP Academic Press, an imprint of Elsevier, 2019.
- Stirling, Jayne. Interview with Zero Waste Scotland. Personal, August 3, 2022.
- UN Sustainable Development Group. “Universal Values Principle Two: Leave No One Behind.” 2022. <https://unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind>.
- Verbițcaia, Ecatarina. Interview with Ecatarina Verbițcaia. Personal, June 29, 2022.
- Zero Waste Scotland. “Circular Textiles Fund.” Zero Waste Scotland, August 5, 2022.
<https://www.zerowastescotland.org.uk/content/circular-textiles-fund>.
- Zero Waste Scotland. “Who We Are.” Zero Waste Scotland, June 9, 2021.
<https://www.zerowastescotland.org.uk/content/who-we-are>.

Zwiers, Jakob, Melanie Jaeger-Erben, and Florian Hofmann. "Circular Literacy. A Knowledge-Based Approach to the Circular Economy." *Culture and Organization* 26, no. 2 (2020): 121–41. <https://doi.org/10.1080/14759551.2019.1709065>.