Editors:
Nithikul Nimkulrat
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cumulus

creative linking

Soft Landing

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Table 6.1. Approaches to textile material development in current material research.

Contributors

Paola Bertola

Paola Bertola graduated in Architecture, Ph.D. in Industrial Design and Multimedia Communication at Politecnico di Milano (Polimi). Previously a scholar researcher at the IIT Chicago, Paola is now Full Professor at Polimi, where she teaches Design Processes and Methods. She is also the coordinator of the Ph.D. Program in Design and a deputy for the School of Design's international programs with northern American countries (e.g., FIT New York and Philadelphia University). She is a co-founder of the research collective "Fashion in Process". She is expert in creative processes and design management within culture intensive industries, with a specific focus on fashion. She has authored more than 80 publications including books, essays, articles, and exhibition catalogues. In 2011, she was awarded the ADI Compasso d'Oro Prize for Research.

Vandana Bhandari

Vandana Bhandari is a Professor at the National Institute of Fashion Technology (NIFT), India, and is the Institute's former Dean of Academics. Extensively published in journals and magazines, Dr. Bhandari has also authored and compiled books on Fashion and Textiles. Her work includes *Celebrating Dreams: Weddings in India* (1998); *Textiles and Crafts of India: Arunachal Pradesh, Assam and Manipur* (1998); the NIFT Millennium Document titled *Evolving Trends in Fashion* (2000); *Costume, Textiles and Jewellery of India: Traditions in Rajasthan* (2005); and *Jewelled Textiles: Gold and Silver embellished Cloth of India* (2015). Along with teaching and research, Dr. Bhandari has been involved in the development of curricula, professional design projects for Industry, and craft-based projects, such as SGSY and Languishing Crafts of India. Currently, she is Project Coordinator of a national project titled "USTTAD."

Carole Collet

Carole Collet is a Professor in Design for Sustainable Futures at Central Saint Martins, University of the Arts London where she has recently been appointed CSM-LVMH Director of Sustainable Innovation to grow creative-led sustainable intelligence across the partnership. She is also Director of the Design & Living Systems Lab, a research initiative that explores the interface of biological sciences and design to propose new sustainable models of biofabrication.

Delia Dumitrescu

Delia Dumitrescu is a Professor in Textile Design at The Swedish School of Textiles. With a background in architecture and textile design, her research focuses on the development of cross-disciplinary design methods for smart materials and surfaces. Using practice-based methodology, her research explores how textile design methodology can be translated to the related design fields, e.g., product design, interiors, and architecture. Central notions of her research are patterns and transformability as a method to design interactive textile surfaces for body and space. Delia teaches courses in form and material, research methodology, and supervises at the graduate level.

Icaro Ibanez-Arricivita
www.icaroibanez.com

Icaro Ibanez-Arricivita is a fashion designer and academic. His studies and industry work have expanded to Barcelona, Buenos Aires, Antwerp, Brussels, Berlin, and Paris. His work has been showcased in prestigious publications such as British Vogue. Since 2015, he has relocated to Australia to work as a practitioner and a design lecturer at Queensland University of Technology in Brisbane. Despite being "design oriented," Icaro embraces practical and theoretical research as a way to enrich both his design and teaching methodologies. Some of his research interests are, but not limited to, cross-cultural collaboration with fashion as a language, industry & community engagement.

Marjan Kooroshnia

Marjan Kooroshnia is a textile designer and Senior Lecturer at The Swedish School of Textiles, University of Borås. Much of her time as a master's student in Textile Design was spent at the printing lab, learning about thermochromic inks behavior when printed on textiles and designing dynamic surface patterns. In her Ph.D. research, Marjan explored the design properties and potentials of leuco dye-based thermochromic inks when printed on textiles, in order to expand the range of color-changing effects offered by thermochromic inks on textiles and to facilitate communication regarding the understanding of, and design with, thermochromic inks. Marjan teaches the basic textile printing courses and color theory; she also supervises at undergraduate and graduate levels.

Kristi Kuusk
www.kristikuusk.com

Kristi Kuusk is a designer-researcher working on the direction of crafting sustainable smart textile services. She is looking for new ways for textiles and fashion to be more sustainable through the implementation of technology. In 2016, Kristi defended her Ph.D. project (part of CRISP) on craft and sustainability qualities in smart textile services at Eindhoven University of Technology. Her related collaborative design work has been presented in various international exhibitions, shows, and conferences. Since 2016, she has worked as Associate Professor (0.5) in Textile Futures at Estonian Academy of Arts.

Pirjo Kääriäinen

Pirjo Kääriäinen is a Finnish textile specialist and practitioner, currently developing interdisciplinary collaboration between design and science at Aalto University, where she worked as Professor in Textile Art and Design and Head of Textile and Fashion degree programs (2008–2014). Pirjo has actively developed higher education studies in Finland in the field of textiles and design towards new frontiers including materials research, wearable electronics, and novel production methods. Before her career in academia, she worked 18 years in the Scandinavian textile industry and also gained experience as an entrepreneur and consultant.

Hanna Landin

Hanna Landin is a Senior Lecturer in Interaction Design at The Swedish School of Textiles and has been Program Leader of M.A. in Fashion and Textile Design since 2011. She is Chair of the Board of Artistic Research and Education at the University of Borås, Sweden. Hanna teaches design methods and defended her Ph.D. thesis on anxiety and trust on form and aesthetics within interaction design at Chalmers University of Technology in 2009. She is interested in how people are led to interact with things and how their perception of themselves, others, and the world is affected by such interaction.

Kirsi Niinimäki

Kirsi Niinimäki is Associate Professor in Design, especially Fashion Research, at Aalto University School of Arts, Design and Architecture. Her research focuses on a holistic understanding of sustainable fashion and textile fields and connections between design, manu-facturing, business models, and consumption. Currently, she is build-ing new knowledge for design strategies in the circular economy and systems thinking. She runs the Fashion/Textile Futures research group. Kirsi has gained significant expertise in the textile indus-try as an in-house textile designer and further as entrepreneur in Designstudio TRIARTE. She has been working internationally as a designer, teacher, and researcher.

Nithikul Nimkulrat

is a practitioner-researcher who intertwines research with textile practice, focusing on experiential knowledge in craft processes in the context of design research. Nithikul has worked at Aalto University (FI, 2004–2010), where she earned a doctorate in 2009, and Loughborough University (UK, 2011–2013), and is currently Professor and Head of Department of Textile Design at Estonian Academy of Arts (EE, 2013–present). Nithikul is an editor of *Crafting Textiles in the Digital Age* (Bloomsbury, 2016). She is an elected council member of Design Research Society (DRS) and Convener of DRS Special Interest Group on Experiential Knowledge.

Katya Oicherman

Katya Oicherman is a textile lecturer, researcher, and artist, currently living in the United States. She studied Textile Design and Art in Israel and the UK, and Modern Jewish Culture in Leeds, UK. Her practice-based Ph.D. dealing with Jewish ceremonial textiles was completed at Goldsmiths College, London. She is interested in craft and identity politics, more recently she explores the link of textiles and architecture in Islamic art. She worked in the textile industry, and produced conceptual textile work and mixed-media installa-tions. Katya taught textile practice and history of craft at Shenkar College of Engineering, Design and Art in Israel, where she was also Head of the Department of Textile Design.

Thomai Papathanasiou

Thomai Papathanasiou studied Accounting and Finance at Athens University of Economics and Business. She obtained her Master of Science in International Fashion Marketing from Heriot-Watt University in Edinburgh, Scotland. She has also taken classes in Fashion Illustration and Fashion Styling at Istituto di Moda Burgo and Fashion Journalism at London College of Fashion. Since 2013, she has been a full-time Professor of Textile and Fashion Design at University of Monterrey, teaching Fashion Marketing, Visual Merchandising, Fashion Strategy, Fashion Buying, and Merchandising and supervising thesis projects. In Spring 2017, she was a guest lec-turer at Lahti University of Applied Sciences in Finland.

Laura Pavilonytė-Ežerskienė

Laura Pavilonytė-Ežerskienė, as a member of the artists group "Baltos Kandys" [White Moths] (1998–present) and as an indepen-dent artist, participates actively in the organization of exhibitions, symposiums, and educational initiatives, helping to create the image of the innovative and interdisciplinary Lithuanian textile scene for worldwide audiences. Laura has gained an Art Licentiate Diploma from Vilnius Academy of Arts in 2009 with her thesis titled *Textile Art School in Lithuania: Traditions and Transformations (1940–2005)*. She is currently Associate Professor and Head of Department of Textile Art and Design at Vilnius Academy of Arts (2011–present) and a member of Lithuanian Artists Association (2002–present).

Alice Payne

Alice Payne is a designer and Senior Lecturer in Fashion in the School of Design, Queensland University of Technology (QUT). Her research interests include the fashion design process, the Australian mass-market fashion industry, and the problem of design for sus-tainability within the fashion context. Alice is an award-winning designer and has exhibited in Australia and overseas.

Lydia Pearson

Lydia Pearson in 1989 after a decade of independent design, founded the eponymous Easton Pearson label. Over 25 years, it became an international brand, known for artisanal, original, and highly detailed clothing, sold in prestigious stores including Browns London, Bergdorf Goodman NYC, and Lane Crawford Hong Kong. When the label closed in 2016, the Easton Pearson Archive of over 3,000 garments was donated to the Museum of Brisbane to be turned into a teaching archive. Lydia is now a lecturer in Fashion at Queensland University of Technology in Brisbane, and consultant curator at Museum of Brisbane, working on innovative ways to teach modern collaborative artisanal practice.

Alessandra Perlatti

Alessandra Perlatti is a fashion designer, specializing in Marketing and Fashion Business with a postgraduate degree in Fashion Retail Management. She worked as a designer for several brands in Brazil for more than 10 years. As an educator, Alessandra has worked at Istituto Europeo di Design (IED) in São Paulo, Brazil, and CEDIM in Monterrey, Mexico, where she directs the Fashion Program. Since 2015, she has been Head of Textiles and Fashion Design Department at University of Monterrey in Mexico. She is also Brazil's and Mexico's Deputy Director for Strategy and Development of the Arts of Fashion Foundation.

Anna Piper

Anna Piper is a postgraduate researcher, textile designer, and lecturer. She is currently undertaking practice-led Ph.D. research into 3D and composite garment weaving, integrating hand and digital weaving technologies, at Nottingham Trent University (NTU). Her research and design interests include traditional hand weaving practices, digital weaving techniques, sustainable and zero-waste design, functional textiles, embodied knowledge, and design innovation. Anna is a lecturer at NTU teaching textile design, specializing in weave and CAD. She is an associate lecturer at Sheffield Hallam University teaching contextual studies for fashion design at undergraduate level. In addition, Anna has collaborated with NTU's Advanced Textiles Research Group and has experience of delivering smart and e-textiles workshops

Ulla Ræbild

Ulla Ræbild is Assistant Professor and Head of MA Program PLANET – design for sustainable development at Design School Kolding. She has a background in fashion design and began working with fashion educational development in 1999. She earned a Ph.D. degree in 2015 with the thesis *Uncovering Fashion Design Method Practice—The Influence of Body, Time and Collection*. Her research interests lie at the intersection between fashion design practice and methodology, sustainability, and design pedagogy. Ulla has been a practical and theoretical supervisor at B.A. and M.A. levels for the past 10 years.

Maarit Salolainen

Maarit Salolainen is Adjunct Professor for 3D Surface Design and Textile Design at Aalto University. She is an experienced international textile design professional with a passion for bringing textile knowledge to multidisciplinary platforms. Maarit has developed higher education in the field of textile and surface design, focusing on renewing textile studio pedagogy and linking textile studies to fashion education. She has expanded experimental pedagogy for multidisciplinary courses exposing engineering students to design processes. In addition to her academic work, she works globally as a creative director advising textile manufacturers and interior textile editors.

Riikka Talman

Riikka Talman is a Ph.D. student in Textile Design at Smart Textiles Design Lab at The Swedish School of Textiles in Borås, Sweden. With a background in textile design, she has an interest in how different materials can be combined with textile structures to create expressions that evolve over time. Her research focuses on how inherent changeable qualities could be embedded into textiles to create materials that change irreversibly over different time spans, and how these changes could look like. Riikka teaches form and material, and weaving courses; she also supervises at undergraduate level.
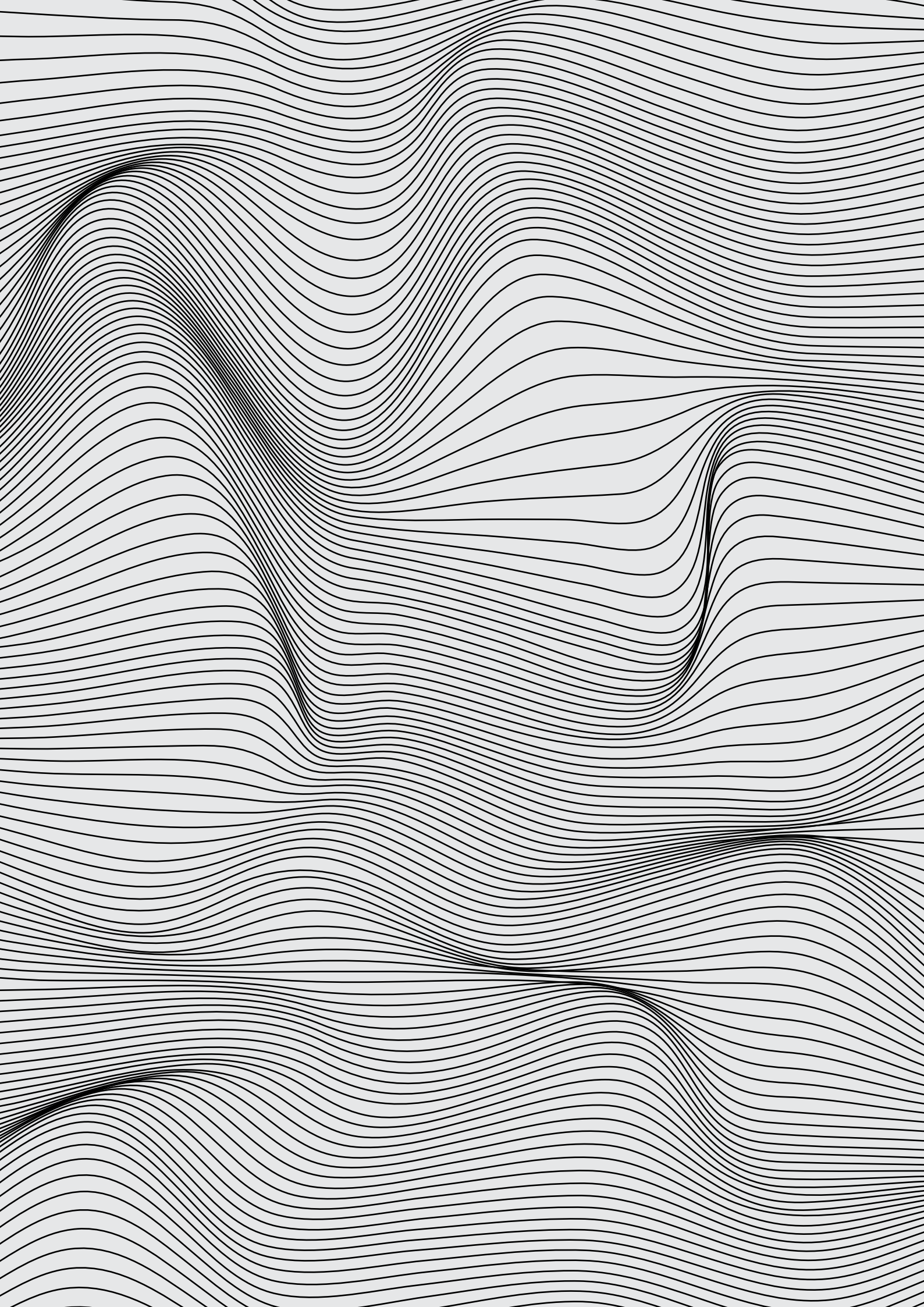
2 Reshaping Fashion Education for the 21ˢᵗ Century World

Paola Bertola

Introduction

Universities are among the oldest and most endur-ing institutions in Western history. They belong to the vision of opening knowledge to a community—*universitas* in the Latin term—through open lessons and lectures in churches and cloisters during the early 11ᵗʰ century. In fact, they were originally medieval institu-tions, but were reimagined during the Enlightenment to serve the industrial era to come. While the indus-trial revolution has passed and our current world is dramatically different from that time, what we know today is that higher education is still informed by that concept. Therefore, attempts to transform its model to better answer our present scientific, cultural, and societal challenges are increasingly growing, and signs of change are already in place. Within this perspec-tive, design education has been at the very center of this transformation, where design thinking skills have been identified as one of the key attributes of millen-nial leaders. In spite of this, by purpose or by lack of interest, fashion has always been a peripheral subject within design scientific debate. Fashion design educa-tion itself has been a small self-referential niche within the whole system. This isolation is possibly coming to

an end, given the acknowledged impact of fashion on global economies and society, and the need for it to engage, as for all other sectors, in supporting a consistent transition of our world towards more sus-tainable paradigms.

Starting from this assumption and looking at the evolution of fashion and at the opportunities and threats it is facing, the following sections will try to show some guidelines to shape fashion design edu-cation for the 21ˢᵗ century.

Fashion Industry Between Opportunities and Threats

Fashion is one of the most relevant phenomena to describe contemporary cultures and societies. It was rooted in the history of humankind within the search for identity and personal development, whereby cos-tumes were a fundamental brick of any social system. Since then, weaving and clothing habits have followed our evolution. They played a crucial role within the transition into modernity, where the textile industry was one of the major engines of the first industrial revolution. More recently, fashion has been at the

very center of mass production and globalization as a fully mature industrial field, globally spreading both in advanced and emerging countries. For these reasons, it has been going through a process of turbulent transformation, affected by endogenous and exogenous factors, which present both opportunities and threats for the future of the fashion industry.

It started from an original designer-centered business model, where creativity was the leading engine for the establishment of the first brands. This peculiar path began its development in the late 19th century, around the role of the fashion designer, and ended with a very specific governance system, which still characterizes the fashion industry: a dual leadership of management and design, embodied by the CEO and Creative Director couple. This is, in fact, the unique formula of the fashion business which, for a long time, has been looked at as an eccentric attribute of a sector in-between industry and cultural production, but is today a real opportunity for its future survival (Saviolo & Testa, 2001; Bertola & Colombi, 2014; Bertola, Vacca, Colombi, Iannilli, & Augello, 2016). This hybridization between organizational and creative competences found an ideal context in fashion and is now reflected across the processes and functions of brands and companies. In fact, those able to survive the recurrent economic crisis found an answer for transforming themselves in this recipe. The old concentration of responsibility and tasks on a few professionals was left in favor of a wider spread of functions and activities without losing the integration of processes. Many connecting roles were created, such as brand managers, fashion coordinators, merchandisers, product managers, and line builders, with the aim of guaranteeing the typical interaction between management and creativity.

Therefore, the fashion organizational model appears to be already advanced, given the current debate on organizational change management, where multidisciplinarity is drawn as a key attribute for leaders of the new millennium. The shift from industrial economy to knowledge economy already underlines the necessity for a new vision of organizations' hierarchy and process management (Rifkin, 1995; 2011). More and more parallel, transversal and open processes are characterizing the most innovative companies that offer opportunities to new professionals holding multidisciplinary competences, often merging technical and design skills with managerial skills (Luski, 2001; Florida & Goodnight, 2005). Reorganizational processes occurring in big companies to foster innovation have often reshaped relationships among different roles and functions, promoting design activities to a strategic level. Once

seen only as a technical function, design has become a key factor in a decision making process, scaling the hierarchy of companies and often becoming a shared attribute among top leaders (Souter, 2007). This is demonstrated by the growing debate on "design thinking" as a major requirement in innovation management. It is intended as a creative and proactive attitude to filter, transfer, and connect different bodies of knowledge in order to shape innovative solutions (Brown, 2009; Martin, 2009; Kolko, 2015). Given this premise, fashion and its dual leadership model with creative professionals at the top of the organizational hierarchy could be possibly considered an advanced context informed by "design thinking."

Despite this potential opportunity of being already design-centered, as a mature and historical context, fashion has also been deeply transformed by the impact of globalization processes. Looking at its present organization, it is one of the most internationalized sectors, both on the side of supply chain networks and target markets. It has generated multiple systems of different organizational models and approaches to markets and has culminated in the rise of the fast-fashion paradigm that has deeply affected the whole sector, pushing all companies, from luxury and premium to mass market, to reengineer their design management and product development processes.

During the first decades of the new century, major fashion companies have adopted outsourcing and delocalization strategies that follow the supposed advantages of globalization and looking for low-cost production. Despite the expected short-term advantages, this process is now seen as very controversial for many different reasons. Facing the impossibility of controlling product quality and reliability, many luxury and premium product companies have already started extensive and complex reshoring operations. In the meantime, the Western regions, originally expert in fashion and textile manufacturing, have been impoverished and disconnected from their traditional material and industrial culture. In many cases, all types of companies, with a major involvement of mass market ones, have faced dramatic environmental and social costs in the countries of their operations, for example, the incident of Rana Plaza in Bangladesh in 2013 which shocked the public. This is feeding a general change in the attitudes of customers, who are increasingly looking for "authentic quality," intended as a transparent perception not only of tangible qualities of goods, but also of their intangible attributes, such as being informed of the context, the people, and the process behind them.

Given the scenario described above, fashion carries both opportunities and threats that should be carefully considered in reshaping education to fit into emerging professional profiles and to face future challenges.

The New Challenges for Universities' Education Model

The start of the new millennium has been accompanied by a growing focus on universities and the need to reshape their role and nature. This is observed in all Western countries, both in the North American system where highly expensive private education is no longer paid back by professional achievements and knowledge advancements, and in European countries where the heritage and bureaucratization of university institutions have slowed down any process of reform. Today, dramatic transformation happens in global economies and societies. The consequent changes that characterize organizations and companies and the complexity of problems from a social and environmental point of view put education in the need for a transformation itself. In fact, a large majority of universities around the globe are still based on educational models developed under the Enlightenment, where an efficient and rational organization of bodies of knowledge into distinguished silos is the red thread that rules academies. They emphasize the machine age's ideals such as efficiency, hierarchy, standardization, punctuality, quantitatively measurable productivity, scientific management, and the compartmentalization of knowledge.

Between the late 19th century and the first quarter of the 20th century, functions were specifically created to serve this model and were institutionalized in higher education: templates for research universities, standardized rules for accreditation, schools serving clearly delineated professions recognized by associations and governments, rigid systems of grading and multiple-choice tests, the unit of credits and the quantitative measurement of the "work" of students and professors, and highly structured degree requirements (Davidson, 2011, Bertola, Hillen, & Swearer, 2016).

Therefore, a rich debate on how to drive academia into new paradigms has been fed with the aim of giving universities the capacity to train new generations to be able to face the complexity of future problems and challenges. Within this discussion, multidisciplinarity is at the very center as a key requirement for future leaders who should be able to

embrace complexity as the inner nature of our world. The concept of multidisciplinary study and research was first approached in the context of sciences such as medicine and microbiology. Within these fields, the traditional scientific methods of simplifying problems into sub-problems and systems into sub-systems failed, not giving the capacity of envisioning the impacts of actions into the full "organism". This awareness is now spreading to all fields of knowledge and contemporary problems at all scales. Social communities, companies, and institutions are too broad to be faced by a single discipline or profession (Hübenthal, 1994; Klein & Newell, 1997; Newell, 2001). Acknowledging this evidence, the traditional Western approach of organizing knowledge into bounded silos is showing its inefficacy, and we are in need of a new holistic vision of cognitive processes (Stember, 1991).

Many scholars have been working on studying processes of exchanging knowledge, trying to codify frameworks and practice to support multidisciplinary cooperation (Pirrie et al., 1998; Graybill, Dooling, Vivek, & John, 2006; Lotrecchiano, 2011). But even more challenging is to understand how to teach future professionals to be able to apply those practices and become "agents" of innovation (Banerjee & Ceri, 2016; Bertola, Ceri, & Vacca, 2016). They need to be trained to create bridges between different disciplines, and to understand any problem from their expertise perspective and at the same time be able to connect it in a dialogue with other skills and competences.

Overcoming Disciplinary Boundaries Within a New University Paradigm

The most recent pedagogical studies are challenging the traditional educational model based on vertical specialization in favor of new hybrid paths of education that can merge vertical focus together with horizontal skills. A metaphor of the "T Shaped" professional given by Tim Brown (2005), the CEO of IDEO, a global leading design firm based in Silicon Valley, perfectly describes this direction to educational institutions.

> We look for people who are so inquisitive about the world [...]. We call them T-shaped people. They have a principal skill that describes the vertical leg of the T—they're mechanical engineers or industrial designers. But they are so empathetic that they can branch out into other skills, such as anthropology, and do them as well. They

are able to explore insights from many different perspectives and recognize patterns of behavior that point to a universal human need.

But beyond promoting new multidisciplinary organizational models and learning processes, a second big challenge is emerging for universities. Looking at the Silicon Valley as an excellent example, academic institutions have to not only break their own boundaries, within disciplines, schools, and departments, but also open up their external borders to all actors of economy, culture, and the civil society. This push comes from the evidence that contemporary contexts are too complex to be faced by a single discipline and that innovation can no longer be isolated within the R&D departments of companies or university laboratories. The nature of innovation is radically different from the past; innovation today arises from actors interacting with one another in their knowledge networks, which are open and broadly accessible, hence

breaking the paradigm of the "black box" (Rosenberg, 1984; Flichy, 2008; Rifkin, 2001). This peculiarity of our interconnected world is finally enabling external users and experts to take part in innovation processes, often driving them in a more effective way and blurring the boundaries between companies, institutions, and their environment. Therefore, "open innovation" is a goal currently pursued by organizations in search for effective models to react to the maturity and turbulences of contemporary markets, and to increase awareness of their impact on a larger social, cultural, and environmental scale (Peters, 1999; Weik, 1995; Chesbrough, 2005). With reference to this transformation, many studies have been focusing on the impacts of universities on their surrounding contexts, showing the relevance and positive feedback on the growth of regional and even national systems, whereby academies are able to build connections and interact with their external environment (Saxenian, 1995). A vision is clearly emerging underlining the need for:
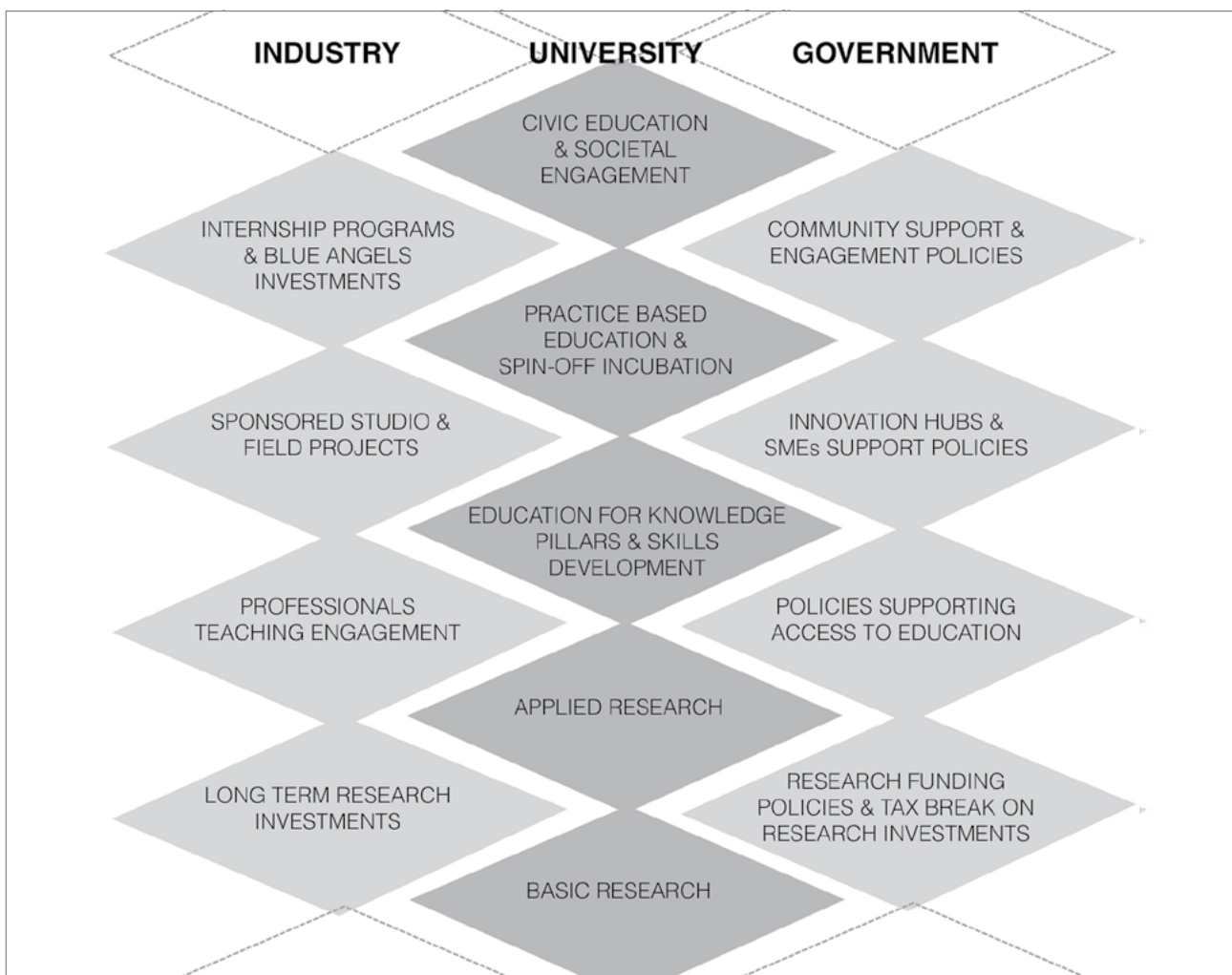

Figure 2.1. The diagram is inspired by the "Triple Helix" concept introduced by Etzkowitz and Leydesdorff (2000), as an effective model for reshaping universities. It consists of three strands representing university, industry, and government. Diagram: Paola Bertola. © Paola Bertola.

a shift from innovation sources confined to a single institutional sphere, whether new product development in industry, policy making in government or the creation and dissemination of knowledge in academia, to the interaction among these three institutional spheres as the source of new and innovative organizational designs and social interactions. (Ranga & Etzkowitz, 2013, p. 238)

Etzkowitz and Leydesdorff (2000) offer an effective model for reshaping university as a dynamic protagonist of a larger ecosystem. They propose a metaphor coming from biology to draw their Triple Helix scheme, which resembles the form of DNA molecules, to carry genetic instructions used in the growth, development, functioning, and reproduction of all known living organisms. In their Triple Helix, university is the third additional strand to the common form of DNA, where the other two represent industry and government (Figure 2.1). In this way, they reject the traditional path followed by Western modernization in separating applied and unapplied forms of knowledge (Etzkowitz & Leydesdorff, 2000; Etzkowitz et al., 2008). The model aims to encourage higher education institutions to incorporate multidisciplinary research questions and problems coming from the real world, interacting in a dynamic balance with all external actors, such as companies, policy makers, and the social community as a whole. The rich business and research relationship that interlaces Stanford University with the surrounding Silicon Valley and the Boston-Cambridge region with Harvard and MIT are excellent examples of Triple Helix ecosystems. They already represent universities repositioning themselves within a system where they are no longer producers of knowledge to be passed to industry and governments to be applied, but active agents of innovation, interlinked with all other actors in a continuous exchange.

It is clear that future generations of professionals need to be exposed to different disciplinary domains, through learning processes and environments which overcome the boundaries of academies themselves to become nodes of large constellations of knowledge and innovation centers. Higher education institutions in post-industrial economies are therefore experiencing a general crisis, expressed in their lack of flexibility to address these needs. But the most advanced among them are clearly engaging in facing two major challenges related firstly to support a shift towards the integration of traditional disciplinary fields, and secondly to reshape their organizational model to interact with a larger system of actors (Bertola, Harfoush, & Vacca, 2016).

Transforming the Fashion Education System

In consideration of what is explained above, a deep transformation of education is needed. This transformation is actually already in place in some advanced institutions, and it can be described as a process of transition (Bertola, Hillen, & Swearer, 2016; Bertola, Ceri, & Vacca, 2016):

- *From educating experts to growing knowledge brokers*. Higher education should embrace the goal of growing individuals intended not as "experts" within a specific context, but as "knowledge brokers" able to promote knowledge exchange, interacting with other functions in a multidisciplinary context and the external eco-system.
- *From being knowledge centered to becoming problem centered*. Higher education should be pushed to loosen disciplinary boundaries to be able to face systemic, complex, and super wicked problems characterizing the contemporary societies.
- *From "hard" body of knowledge to "soft" skills*. Traditional knowledge domains are openly accessible by alternative sources (i.e., MOOCs) and can be increasingly taken for granted while higher education institutions should additionally provide soft/horizontal skills, exploring trans-disciplinary domains of knowledge (e.g., decision making, systemic thinking, team-working, and management, etc.), and feeding new cognitive approaches.
- *From passive teaching and learning to active interaction*. Universities are increasingly meant to shift from "teaching centered processes" to "learning centered processes" designed by students themselves within a context of open-source knowledge resources and interactive/enabling learning environments and experiences.
- *From producing knowledge to becoming learning organizations*. Universities should become learning organisms themselves, building a new balance with companies, governments, and civil communities to continuously adapt in a homeostatic equilibrium to the need of society.

This dramatic paradigmatic shift does not seem to be reflected in fashion education practices, where institutions and universities are still anchored to obsolete models, and anachronistic approaches are widely

diffused. A large majority of design and applied art institutions, in fact, focus on the old concept of product-centered education, feeding an enduring demand in prospective students, who are usually fascinated by fashion for its media and social impact, driven by individualism and not pragmatically informed by the professional context of designing and developing real products in a dramatically changing world.

But given the depicted scenario for the evolution of fashion and its opportunities and threats, we can start to reshape curricula from two important assumptions. Firstly, fashion is a complex and multi-layered phenomenon, connecting Western traditional material culture with its contemporary identity, as well as its social and economic organization. It has an inner complex nature that needs to be addressed within a multidisciplinary teaching and learning environment. Secondly, design is a complex process not isolated in its own creative attitude but partaking of brands and companies strategic planning, and being involved at all levels of organization. It can enable the whole cycle of research, creation, and distribution of fashion products, fully considering its potential cultural, social, and economic impact within a design thinking vision. This means that design should be strongly integrated with all key processes and functions into reshaped models of design management and planning.

Within this cultural model, design education should be oriented towards growing professionals who are able to guide fashion into a new paradigm, centered on principles harmonized with the collective aim of pursuing a sustainable development, on a social, cultural, and economic point of view. That is to say, future generations of designers should participate in a transition into new business models, shifting from being centered on "products and designer" to focusing on "values and design process," where the phenomenon of the "mythopoeia of the designer" leaves place to the concept of a system of creative professionals. They should be able to promote design process innovation, re-linking creative and implementation phases into a new value chain. They should pursue processes' transparency, supported by new corporate social responsibility policies, in which design could play a strategic role. They should consider products' authenticity as a central value, intended as the clear and perceived connection among artifacts, the processes underneath their development, and the socio-cultural context that enabled their creation.

Such vision can only be implemented within the context of a multidisciplinary and project-based education system, with an extensive involvement of non-design disciplines and non-academic actors, as well as novel pedagogical approaches and

environments. It will aim to train highly qualified professionals who are capable of reshaping and leading design processes within a reformed fashion business model. These highly qualified profiles should be able to:

- integrate socially responsible principles and practices into design and product development strategies and processes;
- plan and perform advanced and creative research activities, sourced from a multidisciplinary set of disciplines, from social science to forecasting, to visual and stylistic research;
- synthesize research outcomes into visual and material artifacts, mix different tools and technologies, and clearly define possible innovation scenarios and creative products/services development guidelines;
- synthesize design strategies and objectives (short, medium, and long terms) into brief charts and multimedia artifacts, merging qualitative and quantitative requirements and goals;
- understand brands/labels portfolio strategies reaching different customers groups and be able to translate brand identity into an appropriate product portfolio;
- plan and manage design processes coherently with product development phases, fulfill strict timing and balance daily market-driven processes with research oriented ones, and feed future innovation trajectories;
- plan and manage product portfolio strategies to enhance markets' potential while properly dimensioning the brand offer;
- link design and product development processes with production management and enable supply chain innovation through innovative solution, such as finding new ways of integrating craft and advanced manufacturing;
- be able to connect design processes with all key functions of the organization such as production, retail, and communication; and
- investigate and apply advanced technologies such as 3D manufacturing, PLM systems, social media, etc. to innovate and to lean the design process.

The new complexity of knowledge, skills, and soft attributes required by future professionals gives rise to the need to reconsider different cycles of education and their reciprocal roles. Given its traditional "product-designer" focus, fashion design education has been for too long bachelor-centered, without real innovation developed in the few M.A. and M.Sc. curricula, offering a very poor attention to postgraduate

education. These will probably be the ideal contexts to experiment and implement ideas for the future of teaching and learning where design can be applied as a strategic function integrated across the cycle of research, design, development, and distribution. Moreover, the efforts in improving and innovating our models and approaches will result in better integrating fashion education, from its peripheral positioning, into the most advanced experiences of design education.

Only within this framework can fashion education succeed in growing professionals for the 21st century, nurturing this relevant culture-intensive industry and its highly globalized organization with rich contributions, to foster its potential evolution towards more consistent, sustainable, and efficient products and processes.

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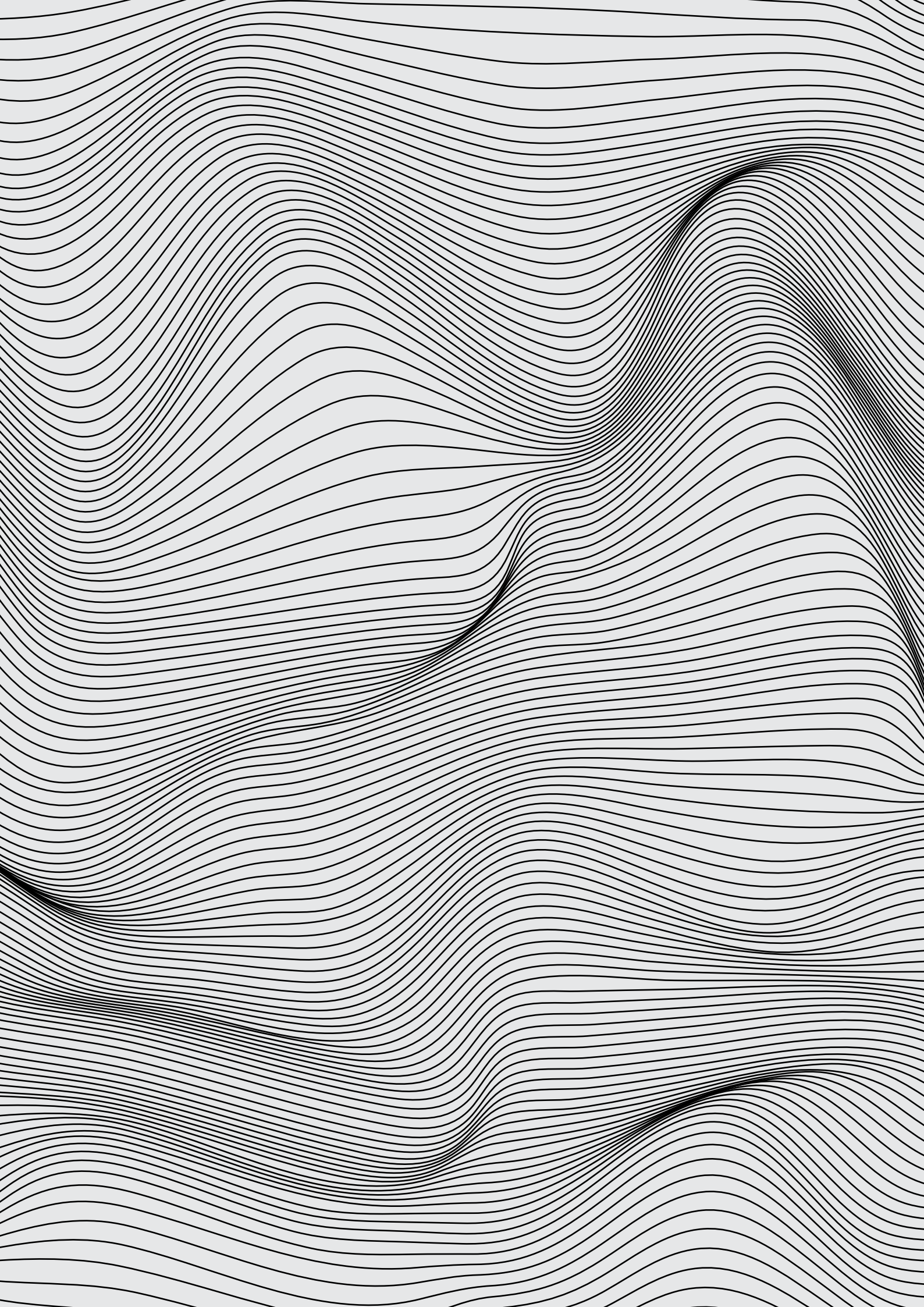
Soft Landing is a collection of essays that pinpoints where fashion and textile education is today and where it may shift in the future. Initiated by Cumulus's Fashion and Textile Working Group, the essays in this volume address critical questions for fashion and textiles. They shed light on different ideas, approaches, problems, and solutions from teaching and research, as well as contemplating the future trajectory and evolution of fashion and textile education. *Will the landing be soft or with turbulence?*