



Integrating Forecast and Foresight in Fashion Education: A Methodological Framework for Futures Literacy

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Abstract

In a world shaped by rapid cultural, technological, and economic transformations, futures literacy—the capacity to imagine and prepare for multiple possible futures—has emerged as a critical competency, recognized by UNESCO as essential for navigating 21st-century challenges. Fashion education provides a unique opportunity to cultivate this skill, offering a fertile ground for the integration of forecasting and foresight methodologies. The field's dual reliance on data-driven analysis and speculative creativity makes it an ideal platform to prepare students for uncertainty while fostering innovation.

This study explores the intersection of these methodologies through a case study, guided by the theoretical framework developed by researcher Arianna Mereu. The project demonstrates how combining predictive analysis (forecast) with strategic exploration of alternative futures (foresight) and speculative design methods (including generative AI), equips learners to anticipate shifts in cultural, technological, and consumer behavior. This multi-methodological approach is aimed at fostering critical thinking and creative problem-solving within the dynamic landscape of fashion.

The findings suggest that embedding futures literacy into fashion education enhances students' ability to navigate and shape emerging trends, aligning with industry demands for adaptability and visionary leadership. By bridging the gap between theoretical models and practical applications, this framework empowers educators to rethink pedagogy, fostering a forward-thinking mindset that combines data analysis, creativity, and strategy.

This presentation offers a methodological blueprint for applying forecast and foresight in education, with implications for curriculum design, student engagement, and industry collaboration. As fashion continues to evolve at the crossroads of culture and innovation, this approach positions education as a driver of change, equipping the next generation of fashion professionals to lead with foresight and agility.

Keywords: *Futures literacy, forecast, foresight, fashion education, trend analysis, speculative design, scenario planning, cultural shifts, generative AI*

1. Introduction

Futures literacy—the capacity to imagine and prepare for multiple possible futures—has emerged as a critical competency, recognized by UNESCO as essential for navigating 21st-century challenges.[1] No longer confined to policy-making or scientific foresight, this competency is becoming increasingly relevant in creative fields such as fashion, where the ability to anticipate and interpret change is vital to staying culturally resonant and ethically grounded.

Futures literacy enables individuals and organisations to move beyond reactive thinking and embrace uncertainty as a resource for creativity and resilience. It cultivates the skills to detect weak signals, question dominant narratives, and construct alternative scenarios that reveal blind spots and untapped possibilities. As such, it represents a profound shift in mindset: from predicting one probable future to actively engaging with a plurality of futures, each shaped by different values, choices and worldviews. In the context of fashion education, fostering this literacy means equipping the next generation of creatives not only with tools to read trends, but with frameworks to understand their cultural implications and imagine responsible paths forward.

This study explores futures literacy in education focusing on the integration of forecasting and foresight methodologies in fashion education, an evolving sector that requires innovative and anticipatory approaches. Fashion, like other creative sectors, is particularly exposed to dynamics of continuous transformation, influenced by technological changes, evolutions in consumer behaviour and new cultural trends. The main objective is to explore how the fusion of predictive analysis with

strategic explorations of alternative long-term futures, combined with visual and speculative methods, can be an effective response to the needs of a rapidly changing cultural and industrial landscape.

The Emerging Futures framework, proposed here, offers a model that paves the way for a more creative, visual and speculative approach to designing and planning alternative futures. Although in this case applied to the fashion industry, we believe that the proposed framework offers a flexible methodological basis that can also be adapted to other fields, implementing the ability to innovate with the help of a framework that is both analytical, creative and visionary.

2. Futurisation and De-futurisation: Opposing or Complementary Approaches?

Sociological approaches to the future have mainly developed around two contrasting visions: futurisation and de-futurisation [2]. Futurisation, a concept closely related to foresight, argues that the future is inherently uncertain and unpredictable, prompting the need to explore a wide range of possibilities in order to improve preparedness and responsiveness.

This approach is characterised by the exploration of a multiplicity of scenarios, rather than the definition of a single predetermined trajectory: models of futures are based on different scenarios, each of which presents different possibilities for development. The strategy of multiplication of options focuses on the consideration of multiple directions, which respond to different conditions, variables and contingencies. The objective is, therefore, to explore possibilities, highlighting a plurality of responses to changes and challenges that may arise in the future, without necessarily worrying about the feasibility. [3]

In the context of futurisation, questions multiply as much as answers, in a process in which there are no absolute certainties, but a wide range of possibilities. This approach is particularly useful when it comes to analysing complex and constantly evolving sectors, such as fashion — a field in which, as we shall see, the method of de-futurisation prevails.

Foresight clearly takes the form of an exploratory process of futurisation, which aims to identify not only opportunities, but also risks and challenges that could arise in multiple possible futures. It is an interdisciplinary and participatory approach that uses tools such as scenario planning, environmental scanning and the analysis of weak signals. These methods are often combined with visual and creative processes, aimed at communicating scenarios and triggering strategic, political or cultural reflections and actions.

De-futurisation, on the other hand, is not intended to explore a broad range of possibilities, but rather to identify the preferable solution based on current factors and recognised trends. This approach is therefore particularly common when decisions need to be quick and concrete, as in the case of forecasts in the fashion industry or other sectors that require a certain stability and certainty for the implementation of short-term strategies and the rapid creation of seasonal products. [4].

Although de-futurisation is less exploratory than futurisation, in fashion it responds to a need for practicality, as well as to market logic and work habits.

In the fashion industry, trend forecasting has a predominant position, representing the main approach for forecasting trends. This predictive approach is based on the analysis of past and present data, which is used to identify recurring patterns and trend cycles and to gather market insights. The most influential forecasting agencies, often regarded as industry gurus, play a crucial role in guiding the forecasting of future trends [5]. To name but a few of the most prominent: WGSN, an online platform founded in 1998, uses big data and creative expertise to forecast trends in various sectors; Trend Union, founded in 1986 by Lidewij Edelkoort, adopts a sensory and anthropological approach to forecasting; The Future Laboratory, founded by Martin Raymond in 2000, known for its consultancy in various sectors and for its integrated approach between qualitative and quantitative analysis; Fashion Snoops, launched in 2001, appreciated for its accessible and immediate online reports in the fashion industry.

Well-established for decades, the agencies specialising in trend analysis and forecasting are well represented in the commercial fabric of the industry at events such as international trade fairs, in specialised publishing and widespread in the consultancy field.

The time horizon on which these forecasts are based generally varies between six months and two years, a period that allows for the delineation of a near future, but still considered logical, predictable and aligned with the production needs typical of the industry's calendar, thus able to support business decisions in the process of product and collection development.

The dichotomy between the approaches of futurisation (foresight) and de-futurisation (forecast), although based on opposing visions, is also found in many other disciplines, including the fields of

strategic planning and design. The tension between these two modes of thinking — exploration of possibilities and verification of feasibility — is a defining characteristic of futuristic design [6].

3. Designing the Future in the Fashion Sector

In his work *Design Futuring: Sustainability, Ethics and New Practice* (1999), Tony Fry develops the concept of "futuristic design" as an approach to design that goes beyond the simple creation of immediately useful objects and solutions. "Futuristic design" focuses on the ability of design to influence and shape the future by considering the long-term implications of design choices. Fry argues that design should address the future not just as a series of contingent possibilities, but as a terrain in which the designer has a responsibility to make ethical and sustainable decisions that will impact future generations.

Futuristic design, according to Fry, implies analysis and design that extends in time and space, addressing not only immediate needs, but also environmental, social and cultural challenges that may emerge in the long term. It rejects the traditional approach that tends to focus on the present and short-term innovation, in favour of a vision that integrates sustainability, ethics and social responsibility as central elements of the design process.

The "futuristic" is not limited to predicting or trying to determine a predetermined future, but focuses on how design can contribute to actively constructing and negotiating the future, exploring different possibilities through design and promoting solutions that are not only useful, but also responsible and sustainable.

Since 2020, following the global impacts of COVID-19, there has been a growing interest in foresight, also in the context of fashion. This phenomenon has given impetus to the adoption of more exploratory approaches, moving away from traditional forecasting based on predictive models [7]. The creation of "foresight teams" within companies, the appointment of "foresight directors" and the adoption of foresight and speculative design methods have favoured a broadening of the time horizon, moving beyond the usual six months/two years typical of trend forecasting. In particular, the more careful analysis of weak signals has gained attention, as it provides clues on potential developments that are still not very evident, but relevant for imagining a more resilient fashion industry capable of responding to future challenges.

This study proposes that fashion, with its deep cultural resonance and constant negotiation between past, present, and future, offers an ideal ground for cultivating futures-oriented thinking within design education. Specifically, it argues for the integration of two complementary approaches: the exploratory dimension of futurisation (foresight), which encourages students to question the status quo and envision transformative long-term scenarios, and the predictive lens of de-futurisation (forecast), which helps identify and interpret signals of emerging change. Within the educational context, particularly in fashion schools, this dual approach becomes crucial: it not only expands students' critical and creative capacities, but also equips them to understand the broader social, cultural, technological and environmental implications of their practice.

In the following chapters, we introduce the Emerging Futures Framework — a flexible methodological tool designed to be embedded within existing design or trend forecasting curricula — as a way to foster more strategic, anticipatory and responsible thinking in future professionals.

4. The Emerging Futures Framework

The Emerging Futures framework is a methodology that integrates elements from both trend forecasting and foresight. It was developed by the Author within the Master in Fashion Trend Forecasting of Polimoda, Florence (Italy), and has been regularly tested in an educational context. The method offers a structured but flexible process that can be adapted depending on different project goals. It was designed to foster speculative thinking while ensuring a solid understanding of signals, macro-drivers and system dynamics. It seeks to bridge the creative potential of speculative and narrative design with the analytical discipline of research and synthesis.

Emerging Futures is structured around four phases, which correspond to the research, interpretation, creation and finalisation of a future scenario. The theoretical framework partly follows the steps of a futures exercise as set out by Poli [8]. Each of the steps includes a series of recommended tools and techniques that support the learning process. The objective is not to arrive at a "true" future, but to train students to build a credible vision of a plausible future context for which a collection, product or strategy can be designed. The four phases are: documentation and definition of the core, creation of the emerging futures, visualization, speculation.

4.1 Documentation and Definition Of The Core

The first phase of the Emerging Futures method is documentation. Unlike traditional methods where the research focus is set in advance, here the scope is shaped through the research process itself, culminating in the definition of the core—the central theme that guides the inquiry.

This phase begins with identifying drivers of change—social, technological, environmental, and cultural forces, as well as long-term megatrends—that influence the fashion context. These drivers, drawn from tools such as data mining, trend analysis, and literature review, must be both relevant and preferable for exploring future scenarios [9].

A distinguishing feature of this method is the inclusion of weak signals: subtle, often ambiguous signs of emerging change that may foreshadow significant shifts [10]. Though frequently overlooked in short-term forecasting, these signals are essential here, offering early insights and sparking speculative thinking.

Another key component is iconographic research, which analyses visual materials—photos, videos, artworks—to detect aesthetic and cultural shifts. This visual layer enhances sensitivity to new forms, colours, textures, and practices not yet captured by data [11].

The phase concludes with defining the core—a theme that emerges from the intersection of drivers, signals, and images. The core is not a predefined topic but the result of a structured exploration. It serves as the interpretive lens for the entire process, ensuring coherence while opening space for strategic, culturally grounded, and future-facing design work.

4.2 Creation of the Emerging Futures

The second step of the methodology is the identification of the three main drivers in relation to the 'core' of the research topic. These drivers, which may be trends, megatrends or other relevant forces of change, are chosen not only on the basis of a thorough analysis of existing documentation, but also for their visual potential to inspire the imagination. The selection of drivers, therefore, is geared towards generating a complex and dynamic vision, capable of capturing the different dimensions of the future through rich inspirational symbolism.

The emerging futures (EF) that give the method its name are derived from the combination of these drivers (fig.1).

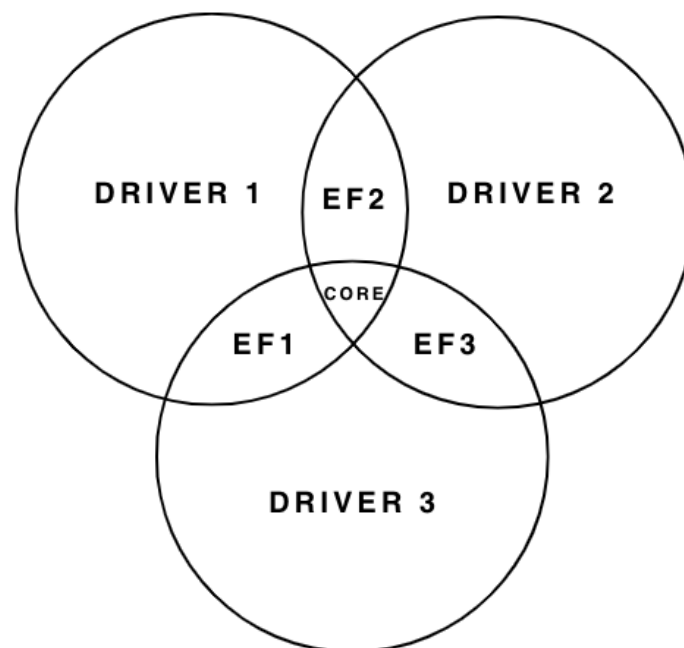


Fig.1. Emerging Futures matrix

Before arriving at the visual phase of emerging futures, there is a descriptive phase that is as concise as it is fundamental. In this phase, each EF is outlined using keywords and a concise description that includes the concepts and elements identified during the documentation phase. A short poetic text, an



evocative phrase, a quote from a future personas [12] are all possible examples of this descriptive element. This phase is the result of an in-depth analysis of the selected drivers and weak signals that emerged from the research, and provides a solid basis for the subsequent visualisation of the scenarios.

The key words capture the main and distinctive aspects of each emerging future, while the general description provides a conceptual framework that makes it clear how the various drivers and weak signals combine to form a possible future. It is only once this descriptive framework is completed that we move to the visual phase, where ideas take shape through the use of images, symbols and other visual representations, which enrich and amplify the insights that emerge. The descriptive approach precedes the aesthetic dimension, providing a theoretical foundation that guides the subsequent visual elaboration, making the interpretation of emerging futures a comprehensive exercise that combines analysis and creativity.

4.3 Visualization

Unlike traditional scenario methods that are primarily analytical and descriptive, the Emerging Futures approach seeks a more evocative and suggestive dimension, employing visual techniques that expand how future possibilities are perceived and felt. Instead of offering fixed predictions, it uses the visual language of fashion to express uncertainty and multiplicity, encouraging reflection through aesthetics. Images and symbols not only enrich understanding of future contexts but also stimulate emotional engagement and critical dialogue about how selected drivers may evolve.

The visualisation phase is where Emerging Futures are translated into tangible visual and material elements, adopting an approach that aligns with fashion trend forecasting practices (Holland & Jones, 2017). This phase begins with the creation of visual atmospheres based on the identified drivers, keywords, and narrative contexts, using images, textures, and symbols to evoke the essence of each future scenario.

A key part of this process is the development of colour ranges, an essential tool in fashion design that helps convey atmosphere, communicate conceptual depth, and guide aesthetic choices. This is followed by materials research, which adds a tactile, concrete layer to the speculative work. This research explores not only traditional textiles but also technological, sustainable, or experimental innovations, in alignment with the weak signals identified earlier. The result is a synthesis of the documentation phase into a highly visual and operational tool, similar to a trendbook, that supports both imaginative thinking and practical decision-making in the short and medium term.

4.4 Speculation

The speculation phase constitutes the critical and creative core of the Emerging Futures framework, introducing a long-term foresight perspective into the methodology. Distinct for its visionary and imaginative character, this phase explores future objects, solutions, and experiences derived from the drivers, weak signals, and visual material developed in earlier steps.

It begins with collaborative brainstorming, a process that encourages the free generation and exchange of ideas, fostering radical thinking and mitigating individual bias through shared reflection. This phase invites participants to imagine unconventional scenarios that challenge existing paradigms in fashion, promoting an open-ended exploration of what might emerge.

A key innovation in this phase is the integration of generative AI, which supports speculative design by transforming research keywords and imagery into visual or conceptual prototypes. Prompt engineering allows AI tools to develop radical artefacts and alternative solutions, helping envision futures that might be difficult to access through conventional design processes.

Simultaneously, the method draws on cross-disciplinary references—from within and beyond the fashion industry—that are recontextualised to construct speculative visions. These references serve not as templates but as catalysts for critical re-interpretation, often blending different cultural or technological domains.

The goal of this phase is not solely to produce feasible designs, but to stimulate critical thinking and open up new directions for the fashion field. The speculative proposals and prototypes developed here offer insight into how the industry might evolve, pushing boundaries and prompting reflection on long-term possibilities. As the final step in the Emerging Futures cycle, speculation synthesises documentation, design, and visualisation into an exploratory and future-facing creative act.

5. Conclusions



In conclusion, this study highlights not only the possibility, but also the effectiveness of integrating methodologies that combine forecasting and foresight, with a focus in the field of fashion education, an ever-changing sector that requires innovative and anticipatory approaches. The fusion of predictive analysis with strategic explorations of alternative futures, combined with visual and speculative methods, is an effective response to the cultural, technological and economic challenges that characterise the contemporary landscape.

One of the main limitations of this research concerns the difficulty of generalising the results outside the fashion industry. However, we believe that, with due modifications dictated by different contexts, the Emerging Futures framework proposed here demonstrates how the integration of these methodologies not only enriches the understanding of emerging trends, but also paves the way for a more creative, visual and speculative approach to designing and planning futures. The emphasis on the visual aspect and the adoption of speculative and inspirational methods, such as generative design and artificial intelligence, allow for the exploration of novel scenarios, stimulating innovation and offering new perspectives.

The research offers numerous opportunities for expansion and deepening. One of the main opportunities concerns the extension of the Emerging Futures framework to sectors other than fashion, to explore future scenarios and stimulate innovation. Understanding and testing how this method can be adapted to other contexts would open new frontiers for its use in interconnected fields, fostering greater transversality of competences.

Another interesting opportunity concerns the further development of the speculative part of Emerging Futures. More interactive and participative application alternatives could be created, based on simulations, role-plays or collaborative projects. These approaches, which mix strategic vision and creativity, could stimulate greater user interest and engagement, making learning more practical and immediate.

The integration of emerging technologies represents another significant opportunity. In addition to the use of artificial intelligence, more immersive technologies could be used to create experiences that allow users to explore emerging futures first-hand.

This study therefore suggests the importance of rethinking curricula and educational practices, but also foresight practices of a consultative and laboratory type, in order to respond in a documented, agile and visionary manner to the rapid transformations that characterises our time.

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