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Fear and Falling in Love with the Future:

Field Notes from a Time-Travelling Educator

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Abstract

Explores the lived experience of facilitating speculative design (SD) workshops in entrepreneurship and sustainability education through a dialogic structure that moves between the internal monologue of an educator navigating fear, uncertainty, and self-doubt, and scholarly explanations of SD's history, methods, and pedagogical implications.

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My hands are sweaty, my heart wants to jump out of my chest. I'm terrified to travel into the future. Every single time. Although I know it's not 'real', I never stop wondering what would happen if I lose some of my participants in the future. The consequences of this would be fatal. Even though I am related to a prominent physicist, I can't say that I know anything remotely about quantum physics or the real dangers of timetravel. In retrospect, maybe the lawyers and media will scold me for being another ignorant scientist that irresponsibly risked the live of many students, educators and industry experts. What if I do not become the next Planck but Oppenheimer?

Encyclopedia Futura
I History of Speculative Design

Speculative Design as a concept was first introduced by the designers Anthony Dunne and Fiona Raby (2013) and James Auger (2013). As a critique of mainstream and commercialized design practices, mainly as developed in design thinking, Dunne and Raby seek to explore a more adversive, controversional and reflective practice of using design. Simply put, they define speculative design as "a means of speculating how things could be" (2011; 2). As a subfield of critical design (Auger, 2011) speculative design seeks to make the participants and audiences reflect on specific technological, economical, social or environmental thought experiments through provocation (Barendregt & Vaage, 2021). In this vein, James Auger defines SD outcomes as "tools for questioning" (Mitrovic et al., 2021, 73). With the goal to criticize mainstream (design) culture, SD often explores dystopian futures. Nevertheless, the ultimate goal of each SD project is to negotiate and reflect on preferable futures (Mitrovic et al., 2021, 74) even, or particularly when imagining dystopian ones. SD, as originally conceived, was criticizing capitalism and the representative commercialization of design through design thinking. Its opposition to 'A-Design' (Dunne & Raby, 2013) is not "Industry 'Imagineering'; e.g. Concept Cars" (Lukens & DiSalvo, 2012, 26), even though it has been used by design consultancies and corporates. By now, SD has been adopted by different disciplines besides design, such as human computer interaction, business, AI, urban planning and many more (see Cordova et al., 2025).

February 27th, 2056

I was introduced to speculative design in 2019, when the collective Ouishare (David Weingartner and Sarah Eisenmann) invited me to a set of futuring workshops to imagine the future of education. We wore scientist robes, travelled into the future with the stroboscopic flickering of discolights, congitively grappled with the multifaceted consequences of a signal that we chose (in my case 'the humanities will become more important again due to technological disruptions') and in the end picked from a rainbow of materials that were allocated according to colour and built prototypes from the futures we had imagined. During and after the workshop I felt extremely envigorated, energized by the methodology but also by the learning experience design that the facilitators put into the workshops. In a workshop about the future of education, I thought I saw my own future pedagogical practice so brightly as never before. This was what I would like education to be in the future.

Encyclopedia Futura
II Speculative Design in Higher Education Institutions

Since developed in the field of design, speculative design was intially mainly adopted by design education (Mitrović et al., Bendor & Lupetti, 2024). By now SD has been adopted in other disciplines, such as Human-Computer Interaction (Culén & Stevens, 2022),

entrepreneurship (Planck et al., 2023) or architecture (Nyka & Marczak, 2023). Cordova et al. argue that it is SD's dynamic mosaic of different processes, practices and methods that makes it remain "nebulous" and hinders the wide application: "establishing such a core is crucial for its application in research, where clarity and rigour are essential, and can also support its integration into education and industry" (2025, 8). Although listed in Gartner's hypecycle of innovation practices – although still in the phase of 'Innovation Trigger' (2025) – SD has not widely entered entrepreneurship or management education. What is more, educational research on the implications of SD on education are still underexplored. There is little empirical knowledge yet about how, for instance, SD develops competencies differently than other frameworks, how assessment can be conducted in such settings (Bendor & Lupetti, 2024; Helgason et al., 2019), how curriculum development progresses (Helgason et al., 2019), or how the educator role or teaching practices change in such environments. While research has offered several suggestions in how far SD develops competencies, for instance dealing with complexity, self-reflexivity, ethics (Bendor & Lupetti, 2023) or technological literacy (Lukens & DiSalvo, 2012), empirical evidence about how, why or to what extent these competencies are developed remains underdeveloped.

March 2nd, 2056

The first time I translated these insights, methods and processes to my own teaching was for an extracurricular program on social entrepreneurship and social innovation. It was right during COVID-19 that a new batch of 25 interdisciplinary participants started the program and I wanted to integrate speculative design into the program and experiment with the approach. The premise was: imagine a dystopian future where climate collapse has eroded everything we take for granted. In this somber scenerio, I was interested in learning how students would respond, if they would also give up hope or develop new opportunities from this crisis, and, most importantly: what they would learn for the present from this experience. I transferred the playful and immersive inspirations from the workshop I attended in 2019 and adapted it to the two requirements I was designing for: 1) everything had to be virtual 2) we imagined an apocalyptic scenario. In prepartion, I sent participants packages to their homes including canned ravioli, timetravel suits and research protocols when exploring their futures. We prepared all methods, tools and the entire process on Miro for them to cling to. Participants' reactions were almost univocally positive; they laughed (when I told them to go outside to explore the future with their suits on) but one participant also gave the feedback that she felt like being in kindergarten.

Encyclopedia Futura
III Methods of Speculative Design
III.I Futures Cone

The research and practice on SD offers different approaches to the SD process with some researchers lamenting the lack of a shared framework and lack of "a single unified methodology" (Cardova et al., 2025; p.2). In Cardova et al.'s systematic literature review, the

authors offer four main purposes of SD practices from the literature: a) selection for speculation, b) speculative exploration, c) speculative transformation and d) speculative provocation. Some methods have made it into common SD practice. The Future Cone or Cone of Possibilities (Taylor, 1993; Hancock & Bezold, 1994; Dunne & Raby, 2013; Gall et al., 2022) is a visual tool that projects a temporal axis that depicts different modalities of futures: the probable, the plausible, the possible, the impossible.

March 5th, 2056

"*What is the difference between plausible and probable?" This is a question I have heard several times during workshops. Participants struggle with the cognitive differentiation between the different modalities. What helps is to make them first map what they think is a plausible future, mapping different signals or trends that they think will make it into the future. Pushing them towards the outer realms of what is possible yet unlikely or even impossible (what they can't even imagine at the moment) remains a challenge but the most creatively satisfying, in my opinion. What can also be experimented with is the dystopian and utopian potential of these modalities. In Dunne and Raby's cone, there is a utopian and a dystopian dimension. Some participants prefer going into the dystopian direction, exploring the dark sides of technology, while more optimistic ones rather delve into the utopian ones. Reflecting on which direction they went is always helpful for group sensemaking.*

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III.II Method: Futures Wheel

Another method that finds more common usage is the 'Futures Wheel' (Park et al., 2025) or 'future ripples' method (Epp et al., 2022). Developed by Jerome C. Glenn in 1971, the Futures Wheel is a qualitative, normative and exploratory method (Glenn, 2003), which extrapolates different layers of consequences in relation to one chosen development. As a method to identify primary, secondary and tertiary orders of consequences of trends, events or issues (Glenn, 2009), this method has also been employed in more traditional foresight or scenario planning processes (Daffara, 2020) and unravels the systemic impacts of one trend, signal or event. By positioning one trend, event or signal in the center of a canvas, the method extrapolates different, interrelated levels of consequences focussing on this event. The main question that guides the method is "What then?".

March 9th, 2056

Making students understand the systemic impact of their or any idea is again not easy. While we sometimes use systems maps or other systems tools, I personally believe that the Futures Wheel is a more powerful tool for reflection. With systems maps, learners get easily lost in the complexity of a system. The Futures Wheel, while no less complex and cognitively demanding, follows a clear logic, by simply always asking 'And then what?'. I witnessed a lot of revelatory EUREKA moments, when participants mapped the primary, secondary or

tertiary consequences of a signal or event. One participant reflected that in the beginning it was difficult to start with imagining consequences, but when they got into the flow they couldn't stop thinking about indirect consequences. They started with the signal 'Oceans have been restored' and ended up imagining that in this future, there will be dolphin presidents that represent the maritime population.

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III.III Method: Probs

An essential component for SD consists in making the future a materiality. What Dunne and Raby call "probs" (2013; 90), which is based on Kendall Walton's theory of make-believe (1990). Probs act as triggers for imaginations. In contrast to foresight or scenario planning practices, SD emphasizes the materiality of the fictional worlds that it creates (Lukens & DiSalvo, 2013). In the literature and practice, there are several analogous terms for probs, such as prototypes (Bendor & Lupetti, 2024; Mitrovic et al., 2021), probes (Auger, 2013; Mandir & Groß,) fictions (Auger, 2013), artefacts (Auger, 2013) or hints (Dunne & Raby, 2013). The main purpose of these methods is to materialize the future to an audience for discussion, what Auger calls "bridging techniques" (2013; 2). Similar to art, as conceived in Walton's theory of representation, these materializations of diegetic futures evoke a world in the audience, which opens up ways of reflection, negotiation and dialogue.

March 13th, 2056

One of the most interesting reactions to speculative design is laughter. Laughter has a deep anthropological function and may be a harbinger that symbolizes fear, creates identity or defines community and is to me always a good cipher about how an intervention is processed by participants. Some start laughing because they are uncertain, incredulous towards the methods and the storytelling behind it. Like the student in my program that thought she was in kindergarten, they can't really believe we are donning timetravel suits (that clearly are just cheap painting suits) and dismiss it as child's play. This kind of laughter always slightly unsettles me and triggers self-consciousness and self-doubt: have I done something wrong, are the methods really helpful, did I overdo it this time?

But there is also another form of laughter: a more comfortable gurgle of curiosity and playfulness. It is accompanied by glittering eyes and a bodily warmth, maybe similar to when kids open the door of the living room and see all the presents magically laying on the floor. Most participants smile, take selfies and dance when they take on the time-travelling suits (even though they soon learn that it's getting hot in the suits). It is this kind of laughter that motivates me and even though never fully deplete of self-doubts, makes me continue to make people fall in love with the future. This laughter might be naïve about all of life's limitations, optimistic about the agency we have in shaping the future, curious about what will happen tomorrow and what we will learn that we don't know yet. Maybe it is the same laughter we laughed in kindergarten.

Guiding people into the future thus combines a physical risk (can I safely get them back), an ethical risk (what is a desireable or undesirable future), an emotional risk (being laughed at and ridiculed) but also a pedagogical risk (can we even teach to travel into the future?). I'm still deeply afraid of the future. But this is why I love it so much. Transformational education might require to stick with the fear, the uncertainty, the self-doubt, making myself vulnerable to others' laughter. Maybe as soon as a lose that fear and hope for laughter, the methodology stops working for me.

Encyclopedia Futura

VI Speculative Design and Social Innovation

The critical dimension of SD offers engaging ways for its use in social innovation contexts. Research has emphasized the participatory dimension of SD, particularly involving citizens and other civil society stakeholders in the process (Hohendanner et al., 2025) and shown how speculating through artefacts has been used in different social innovation projects (Celi et al. 2023) or for sustainability projects (Chopra et al., 2022). Particularly in contrast to Design Thinking, SD emphasizes the "social and ethical implications of design solutions" (Cordova et al., 2023; p.1). Wheras Design Thinking has been implemented in social innovation contexts (for instance Goi & Tan, 2021; Painter, 2024), there has also been criticism of colonial power relations of the design thinking implementation in social innovation contexts (Tunstall, 2020).

References:

Auger, J. (2013). Speculative design: Crafting the speculation. *Digital Creativity, 24*(1), 11–35. https://doi.org/10.1080/14626268.2013.767276

Bendor, R., & Lupetti, M. L. (2025). Teaching speculative design. *International Journal of Technology and Design Education, 35*, 403–425. https://doi.org/10.1007/s10798-024-09908-3

Celi, M., Rognoli, V., Ayala-Garcia, C. (2023). Prototypes for Speculative Design Research. In: Ferraris, S.D. (eds) The Role of Prototypes in Design Research. SpringerBriefs in Applied Sciences and Technology(). Springer, Cham. https://doi.org/10.1007/978-3-031-24549-7_4

Chopra, S., Clarke, R. E., Clear, A. K., Heitlinger, S., Dilaver, O., & Vasiliou, C. (2022, April). Negotiating sustainable futures in communities through participatory speculative design and experiments in living. In *Proceedings of the 2022 CHI conference on human factors in computing systems* (pp. 1-17).

Cordova, D. C., Kelly, N., & Rezayan, L. (2025). A systematic literature review of the speculative design process and a proposed framework for speculative design. *Design Science*, *11*, e38. Culén, A. L., &

Stevens, N. S. (2022). Speculative and critical approach to designing technological futures through HCI education. *Interaction Design & Architecture(s), 51*(51), 8–31.

Daffara, P. (2020). Applying the futures wheel and macrohistory to the COVID-19 global pandemic. *Journal of Futures Studies, 25*(2), 35–48. https://doi.org/10.6531/JFS.20200324(3).0002

Dunne, A., & Raby, F. (2013). *Speculative everything: Design, fiction, and social dreaming*. MIT Press.

Epp, F., Moesgen, T., Salovaara, A., Pouta, E., & Gaziulusoy, İ. (2022). Reinventing the wheel: The Future Ripples method for activating anticipatory capacities in innovation teams. In *Proceedings of the 2022 ACM Designing Interactive Systems Conference (DIS '22)* (pp. 387–399). Association for Computing Machinery. https://doi.org/10.1145/3532106.3534570

Gall, T., Vallet, F., & Yannou, B. (2023). How to visualise futures studies concepts: Revision of the futures cone. *Annual Review of Policy Design, 11*(1). https://ojs.unbc.ca/index.php/design/article/view/1936

Gartner, Hype Cycle for Innovation Practices, 2024, Peter Skyttegaard, et al, 8 July 2024

Glenn, J. C., & Gordon, T. J. (2003). *Futures research methodology*. American Council for the United Nations University.

Glenn, J. C. (2009). Introduction to the futures research methods series. In J. C. Glenn & T. J. Gordon (Eds.), *Futures research methodology* (Version 3.0). The Millennium Project.

Goi, H. C., & Tan, W. L. (2021). Design thinking as a means of citizen science for social innovation. *Frontiers in sociology*, *6*, 629808.

Hejazi, A. (2025). Addressing the limitations of the futures cone: Introducing the adaptive futures mesh. *Forsajt, 19*(2), 6–18.

Hohendanner, M., Ullstein, C., Onyekwelu, B. A., Katirai, A., Kuribayashi, J., Babalola, O., ... & Grossklags, J. (2025, April). Initiating the Global AI Dialogues: Laypeople Perspectives on the Future Role of genAI in Society from Nigeria, Germany and Japan. In *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems* (pp. 1-35).

Lukens, J., & DiSalvo, C. (2012). Speculative design and technological fluency. *International Journal of Learning and Media, 3*(4).

Mitrović, I., Auger, J., Hanna, J., & Helgason, I. (Eds.). (2021). *Beyond speculative design: Past – present – future*. University of Split.

Nyka, L., & Marczak, E. (2023). Frontier education for a sustainable future: Speculative design in architecture as a transdisciplinary experiment. *Global Journal of Engineering Education, 25*, 6–11.

Nooney, L., & Brain, T. (2019). A 'speculative pasts' pedagogy: Where speculative design meets historical thinking. *Digital Creativity, 30*(4), 218–234. https://doi.org/10.1080/14626268.2019.1683042

Painter, G. (2024). Design thinking for social innovation. *Handbook on Social Innovation and Social Policy*, 275-286.

Park, E. S., Kinch, S., & Shin, H. D. (2025). Speculative critical design for alternative futures: Challenges, benefits, and pedagogical strategies in Korean undergraduate curricula. *Prospects*. https://doi.org/10.1007/s11125-025-09729-9

Planck, S., Mandir, E., Groß, B. (2023) Entrepreneurship Futures, or: What Entrepreneurship Education can learn from Design Futuring. PDW workshop, 3E Conference, Aarhus.

Tsekleves, E., Lee, C. A. L., Yong, M. H., & Lau, S. L. (2022). Exploring the use of speculative design as a participatory approach to more inclusive policy identification and development in Malaysia. *Design Studies, 81*. https://doi.org/10.1016/j.destud.2022.101118

Tunstall, E. D. (2020). Decolonizing design innovation: Design anthropology, critical anthropology, and indigenous knowledge. In *Design anthropology* (pp. 232-250). Routledge.

Walton, K. L. (1990). *Mimesis as make-believe: On the foundations of the representational arts*. Harvard University Press.

Zhu, L., Chao, C., & Fu, Z. (2024). How HCI integrates speculative thinking to envision futures. *Journal of Futures Studies, 28*(4).