NORDES 2021

THE DESIGN FICTION MATRIX— A SYNTHESIS TOOL FOR GROUNDING FICTION SCENARIOS IN REAL FACTS

PETER VISTISEN
AALBORG UNIVERSITY
VISTISEN@ID.AAU.DK

ABSTRACT

This explorative paper presents a didactic synthesis tool to support designers and design students in adopting design fiction as a method for speculative design. We present the theoretical underpinnings behind the development of the framework and the logic of the tool itself while situating the tool among the current discourse on design fiction. Finally, we present a series of reflections upon the recent year's application of the tool in a design educational setting, showing the different ways the tool can be applied and represented in practice.

INTRODUCTION

Up until the point of its actual implementation, any design can be seen as fiction—a functional story that speculates about a possible future state of the world, an abductive synthesis of "what if" (Kolko, 2009). In recent years, design fiction has become an intriguing new conceptual tool with which to examine the usability, utility, and desirability of such design concepts, especially in regard to possible consequences of advances in new emerging technologies. Design fiction is defined by Sterling (2012) as "...the deliberate use of diegetic prototypes to suspend disbelief about change". This deliberate element tells us that the narrative construction is different from that of traditional storytelling: It has a functional focus on actively doing something other than "just" telling a story or giving its audience an experience. This functional purpose is stated in the next section of the Sterling's definition using so-called "diegetic prototypes" to suspend disbelief about change for stakeholders. A prototype is "diegetic" when it is ontologically coherent and true inside the premises of a given narrative. In other words, rather than being "real", the prototype is "being told" as part of a story and thus becomes a "performative object" (Kirby, 2010). This performative nature of design fiction enables the designer to create a discursive space in which the proposed design concept can gain meaning, context, and explain the currently unknown to future consumers and users. It is by creating this discursive space that the design fiction aims to suspend our disbelief for a moment and invites us to speculate within the frame of how the fictional scenario applies its "what if" question to a future design concept. Thus, this shows a diegetic prototype in use, in a specific context, and with an imagined user experience for a proposed user.

As highlighted by Vistisen et al. (2015), a narrative opens for possibilities, and engages the reader, viewer, listener. And with engagement comes participation and empathy. A deeper understanding of the design and its purpose and possibilities within the world. This exploration is not based on some far-future utopia or dystopia, but on how we make the most responsible user experiences in the near-future. To achieve this, the design fiction discourse needs to not only acknowledge its roots in narrative theories and methods but also ground itself in the facts of the current reality of our here and now. This is further stressed by Dunne and Raby (2009): "Rather than thinking about architecture, products and the environment, we start with laws, ethics, political systems, social beliefs, values, fears, and hopes, and how these can be translated into material expressions." This is to say, that even though it can be intriguing and valuable to "just" speculate about the future possibilities of a technology or technological practice, if the design fiction scenarios are not grounded in either actual facts and data or at least indications or misconceptions existing here and now, the design fiction scenarios will be at risk of drifting into the domain of pure science fiction and thus not be able to guide or

https://doi.org/10.21606/nordes.2021.11

provoke design in practice. Achieving this balance between the here and now and the future scenarios of design fiction without becoming "too speculative" is difficult, especially for designers not used to apply narrative thinking and storytelling in their design practice. From our own academic context of educating designers from a multitude of fields, ranging from interaction design, experience design, and service design to design engineering, we have observed this challenge of speculation as one of the primary issues in applying design fiction as a feasible method in practice. We believe this is an important methodological problem with the aim of investigating how to support designers in grounding speculative future scenarios in facts and issues present or indicated in our here and now.

BALANCING BETWEEN DESIGNING AND STORYTELLING

The point of venture for most design fictions are some kind of materialized storytelling—either in the form of classical narratives or through speculative artefacts that promote or provoke discourse about form, function, and context of use.

Applied approaches have varied from traditional storytelling frameworks, such as the dramatic narrative curve (Genette 1983), the actantial model (Greimas, 1987), and the hero's journey (Vogler, 1998), to more user-centered, design-oriented attempts at narrative design, such as personas and use cases (Nielsen, 2012) as well as user scenarios (Carrol, 2000). Such frameworks work well in terms of how to plan and structure the design fiction scenario from a storytelling perspective and have shown to also be easily translated into the context of speculation regarding emerging technology, e.g., when using the "helper" actant in the actantial model as a placeholder for the proposed diegetic prototype rather than as the traditional helper archetype from storytelling fiction. However, even though these approaches make it easier and more manageable for the designer to structure the components of the design fiction as a narrative scenario, they do little in terms of ensuring that the design fiction is actually grounded in some kind of contextual setting or socio-economic situation that is based on facts about reality, misconceptions held by current stakeholders, or signals indicating future developments. To some extent, this is not a problem, if the aim of design fiction is to make us reflect critically and question our current design ethos through fictional "what if scenarios", such as Mark Blythe's (2006) emphasis on how "pastiche scenarios" do not necessarily need to be assessed in terms of their plausibility or, as Markussen and Knutz (2013) label it, their "accessibility" as a possible future world. On the other hand, this also presents the challenge of balancing between storytelling and design to ensure that the design fiction actually becomes a functional vehicle for creating discourse rather than "just" speculative science fiction. This issue has previously also been raised through Auger's (2013) notion of "perceptual bridges" to reality as a necessity for rooting speculation in the real world. This challenge adheres to the storytelling subject—the designer investigating the "what if" scenario through storytelling. However, most designers are not educated authors or critical philosophers well-versed in the literature tropes from the broad range of critical theories. Especially for design students, the "leap" towards using speculative design methods and storytelling can be daunting. In academic design schools, there have been instances of students' tendencies to adhere to normative and pragmatic design spaces rather than explore the full design space due to the "risk" of becoming too speculative. Thus, design fiction, while intriguing and valuable, is still in need of tools to more easily instill a speculative- and narrative-driven mindset in unfamiliar designers, while supporting them in retaining a perceptual bridge to reality.

THE DESIGN FICTION MATRIX—BUILDING FICTION THROUGH MAPPING FACTS

Bleecker (2009) saw the link between design and fiction originating as an integration of three different paths (technology, art, science fiction) to find opportunities for design "to re-imagine how the world may be in the future". The important issue here is deciding upon this mix of paths in contextualizing the diegetic prototypes of design fiction. Auger (2013) states that it is important for the designer to understand and decide upon in what contextual space the existence of a design fiction would be plausible. Examples of such environments could include the home or office as well as a cultural or political situation. This is what is referred to as "the ecological approach to speculative design." This supports the concept and provides a foundation of understanding in a familiar or logical reality. Furthermore, Auger argues that the concept of design fiction is, in a sense, loaded with associations, e.g., jetpacks and flying cars, because it has etymological baggage. One of the key factors of this approach is that a designer must not present a concept that is too futuristic, because this will be perceived as implausible. These important points are also what we have seen as a challenge among design students engaging in design fiction. If we asked to propose diegetic prototypes of future concepts, how do we then avoid being too futuristic or too conservative? Here, we might lean towards Gert Pasman (2016) and his notion of design fiction as: "storytelling through and with designed objects [...] Design fiction is mostly firmly rooted in the here and now but adds a layer of (near) future to that, thus blurring the boundaries between realism and

fiction". From here, we could argue that design fiction is not assuming the future but looking at different possible futures and must thus take an analytical approach to fact and fiction not just based on future speculation but also on the past and present upon which we build our reflections about the future.

Based on the latest decade of intriguing contributions within the field of design fiction, we have sought to experiment with different frameworks and approaches to ground speculative design in narrative scenarios in various design education programs. We have also sought to experiment with constructing a new framework aimed at newcomers in the domain of working with diegetic prototypes for design fiction by focusing on grounding speculative design fictions about the future in plausible ontologies based on the past, present, and informed projections about the future. This framework, called "the design fiction matrix", spans between a vertical "fact/fiction" axis and a horizontal "past/future" axis, creating four quadrants, each promoting different considerations that can be made in the exploration of a future scenario.

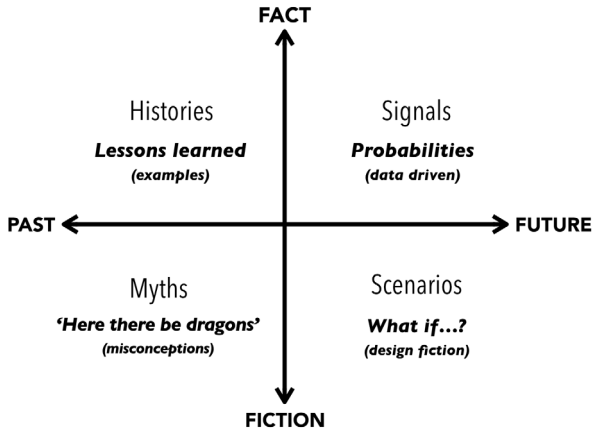

Figure 1: The design fiction matrix comprised of the fact/fiction and past/future axes with the four areas to map in order to qualify what if scenarios through both past and future knowledge.

This simplistic framing aims to ensure that, before speculating about of a future scenario (the fiction/future quadrant), its plausibility is to be rooted in both a reference to previous lessons learned or the current state of art in its field (the fact/past quadrant), current myths and misunderstandings that can be argued to affect how we might engage in the field in the future (the fiction/past quadrant), and which actual data-based projections exist within the field (the fact/future quadrant).

The hypothesis is that mapping these three quadrants makes the design fiction scenario more substantiated and rigorous while also supporting the accessibility of the future ontology of the scenario. The pedagogy here is that the matrix forces us to both explore the facts of the present and past through, e.g., state-of-the-art analysis of technologies, user cultures, and case studies, while also challenging us to question and reflect upon possible blind spots, misconceptions, and prejudices inherent in our present understanding of a given design field. This section, called "myths" in the framework, shows us that even our present and past are constituted by functional stories we tell each other in various social constellations, e.g., when opposing a given change based on an biased or ill-informed opinion (like much organizational change) or when being afraid of a technological change due to a bias based on how a technology has been portrayed in, for instance, popular culture (like recent years' debates on climate change, artificial intelligence, and fake news).

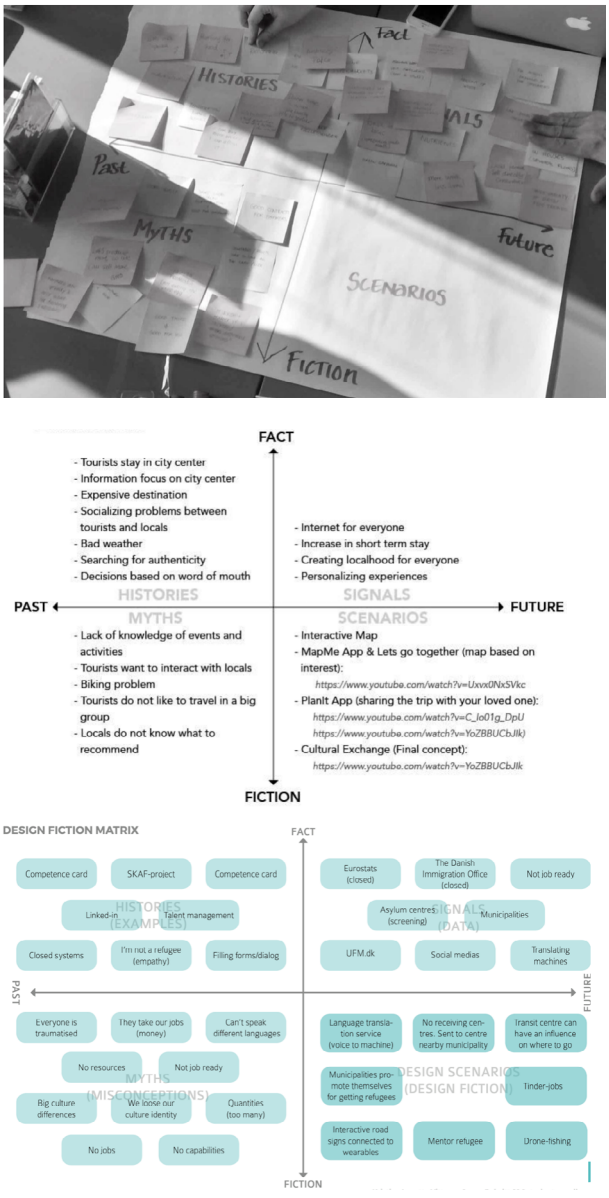

Figure 2: Three different visual styles of students' mapping of design spaces within the design fiction matrix. As seen in the top image, the common trait among all the mappings is to start by mapping the past/fact, past/fiction, and future/fact quadrants based on research before using it as an ontological frame for speculation in the future/fiction quadrant. A broader overview of the mappings can be found in Appendix 1.

EXAMPLES OF DESIGN STUDENTS APPLYING THE DESIGN FICTION MATRIX

In the period of 2013–2020, we have applied the framework in various design education settings concerning the exploration of possible futures within different service sectors. Here, we have applied, reflected upon, and gradually refined the framework and observed how the workshop participants applied the framework to ground their future speculation in plausible ontological structures based on both the past, present, and projections of the near future. The uses of the matrix framework varied considerably; some design students chose to use it as a canvas on which to experiment with different setups through, e.g., post-it notes of their prior desk research and empirical data, merging them into design fiction scenarios (Figure 2). Others chose a more reverse engineering analytical approach, brainstorming various design fiction scenarios and adjusting them via back-tracing towards either the lessons learned, myths, or signals quadrants. A third approach arose in 2020 during the Covid-19 pandemic, during which students worked remotely using online tools to collaboratively create digital design fiction matrixes by negotiating the formulation and placement of virtual post-its in a digital template of the framework (see examples in Figure 2).

The output from the proposed scenarios are often materialized through some kind of storytelling medium. Often, the methods of video- and animation-based sketching (Löwgren, 2004, Vistisen, 2016) have been applied to tell a story through a medium often associated with storytelling and thus with the easily applicable visual language of placing a diegetic prototype in a proposed future use case and context (Figure 3).

Figure 3: Stills from two video- and animation-based design fiction scenarios in which students took past empirical experiences, preconceptions, and myths as well as data-based future predictions into account about two different design spaces: future migration and integration (top) and air polution in citites (bottom).

However, an increasing number of design fiction scenarios are also moving beyond the medium of film, video, and photography towards the materialization of, for example, physical props, models, and prototypes used in different performative ways than the traditional usability and contextual inquiry methods of prototypes. Here, the props and prototypes are seen more as a creative provocation, telling a story through the friction and articulations of surprising user reactions, which is similar to what is also achieved when watching a design fiction scenario play out through film or animation.

DISCUSSION & FURTHER PERSPECTIVES

Our accumulated findings from this application show that frameworks like the design fiction matrix can be a simple way to ensure that design fiction scenarios are not just speculation about the future but also explore plausible futures for us to assess the design fiction scenario's viability, feasibility, and desirability by extrapolating from the past and present. As such, we argue this positions the results in established future studies (e.g., van Duin, 2016; Buehring & Bishop, 2020), and interweaves design fiction with traditional design thinking, which is also concerned with going from "what is" to "what might be".

In this sense, all design can essentially be considered fictitious until the moment of realization, with the difference being design fictions have the liberty to speculate a bit further, and we can deliberately use their diegetic prototypes to open discussions about change rather than necessarily prototyping a specific testable function in the here and now. Thus, the design fiction matrix also emphasizes the future scope of design fiction: it tells stories through performative objects and aims not to be as specific and realizable as design thinking but rather to create a direction for the design process to take. This is where the design fiction matrix diverges from frameworks like Auger's (2013) in asking explicitly to address the plausibility of the fiction scenario by tracing both the conceptual "what if" as well as contextual grounding in either the lessons learned or misconceptions of the past or data-based signals for the future. Mapping out a design space in the matrix thus supports assessing and evolving the plausibility of future scenarios in design by grounding the design fiction in established ontologies of reality. A critical issue that is yet to be resolved is how to ensure that the unfamiliar designer or design student finds the right balance when choosing or merging different scenarios ideas from the future/fiction quadrant of the matrix. Often, a balance has to be struck between the very speculative and scenarios bordering on the normative. Here, we propose that future revisions of the design fiction matrix take into account poetic guidelines, such as those proposed by Markussen and Knutz (2013), and focus on making the storyworld a true speculative vapourworld, as proposed by Coulton and Lindley (2017).

In the end, design fiction, which is not much more than 15 years old (Lindley & Coulton, 2015), is still a discipline in its infancy, with many more nuances still to be explored. Our framework represents an attempt to "get started" and overcome the barrier of "speculation" often seen among novice designers across the fields. By grounding design fiction in both facts and fiction from the past and present along with data-backed indications of the near future, we argue the design fiction matrix is on the path to enable more designers, especially design students, to take the "jump" and scale up their design skills from the normative and pragmatic to the speculative and evocative practices of design.

REFERENCES

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

Bleecker, J. (2009). Design Fiction: A Short Essay on Design, Science, Fact and Fiction | Near Future Laboratory. http://blog.nearfuturelaboratory.com/2009/03/17/design-fiction-a-short-essay-on-design-science-fact-and-fiction/

Blythe, M. A., & Wright, P. C. (2006). Pastiche Scenarios: Fiction As a Resource for User Centred Design. Interact. Comput., 18(5), 1139–1164. https://doi.org/10.1016/j.intcom.2006.02.001

Buehring, J., & Bishop, P. C. (2020). Foresight and Design: New Support for Strategic Decision Making. She Ji: The Journal of Design, Economics, and Innovation, 6(3), 408–432. https://doi.org/10.1016/j.sheji.2020.07.002

Carroll, J. M. (2000). Five reasons for scenario-based design. Interacting with computers, 13(1), 43–60.

Coulton, P., & Lindley, J. (2017). Vapourworlds and Design Fiction: The Role of Intentionality. The Design Journal, 20(sup1), S4632–S4642. https://doi.org/10.1080/14606925.2017.1352960

Dunne, A., & Raby, F. (2013). Speculative Everything: Design, Fiction, and Social Dreaming. MIT Press.

Genette, G. (1983). Narrative Discourse: An Essay in Method. Cornell University Press.

Greimas, A. J. (1987). On meaning. Selected writings in semiotic theory. Overs. af Paul J. Perron & Frank H. Collins; indled. ved Paul J. Perron. Minneapolis, Minn.: University of Minnesota Press

Kirby, D. (2010). The Future is Now Diegetic Prototypes and the Role of Popular Films in Generating Real-world Technological Development. Social Studies of Science, 40(1), 41–70. https://doi.org/10.1177/0306312709338325

Kolko, J. (2009). Abductive Thinking and Sensemaking: The Drivers of Design Synthesis. Design Issues, 26(1), 15–28. https://doi.org/10.1162/desi.2010.26.1.15

Lindley, J., & Coulton, P. (2015). Back to the Future: 10 Years of Design Fiction. Proceedings of the 2015 British HCI Conference, 210–211. https://doi.org/10.1145/2783446.2783592

Löwgren, J. (2004). Animated use sketches as design representations. interactions, 11(6), 22. https://doi.org/10.1145/1029036.1029048

Markussen, T., & Knutz, E. (2013). The Poetics of Design Fiction. Proceedings of the 6th International Conference on Designing Pleasurable Products and Interfaces, 231–240. https://doi.org/10.1145/2513506.2513531

Nielsen, L. (2012). Personas—User Focused Design. Springer Science & Business Media.

Pasman, G. (2016). Design Fiction as a service design approach. Service Design Geographies: Proceedings of the ServDes.2016 Conference, 511–515. https://pure.tudelft.nl/portal/en/publications/design-fiction-as-a-service-design-approach(782309ec-2a88-4a4a-8109-0591243939e5)/export.html

Sterling, B. (2009). Design fiction. Interactions, 16(3), 20. https://doi.org/10.1145/1516016.1516021

van Duin, P. (u.å.). Foresight in Organizations: Methods and Tools. Routledge & CRC Press. Hentet 27. januar 2021, fra https://www.routledge.com/Foresight-in-Organizations-Methods-and-Tools/Duin/p/book/9781138692862

Vistisen, P. (2016). Sketching with animation: Using animation to portray fictional realities – aimed at becoming Factual. Aalborg Universitetsforlag.

Vistisen, P., Jensen, T. & Poulsen, S. B. (2015). Animating the ethical demand – exploring user dispositions in industry innovation cases through animation-based sketching. SIGCAS Computers & Society, Vol. 45 No. 3.

Vogler, C. (1998). The Writer's Journey: Mythic Structure for Writers. M. Wiese Productions.

APPENDIX

Appendix 1: Examples of student uses of the Design Fiction Matrix usages (accessed 27.1.2021) https://docs.google.com/presentation/d/1vrjx2K9G7WlCxzRFA41-dP-8G9zed6x0xJ_yd3aFVh8/edit?usp=sharingColumns on the final pAge should be of equal length