

About utopias, apocalypses, respawning and zombies and how understanding images of space and time may inform Ddesign for sustainable behaviour

Ariel Guersenzvaig¹, David Casacuberta²

¹Elisava Barcelona School of Design and Engineering
aguersenzvaig@elisava.net

²Autonomous University of Barcelona
david.casacuberta@uab.cat

Abstract

This paper presents justification for, and experimentation with an artistic method designed to help designers better understand how people imagine time, and connect this consciously or subconsciously to their norms, values and intentions which ultimately shape their behaviour. Four monologues were created, put on video, and a pilot experiment suggest high potential for further development of this artistic method, extending the designer's toolbox to identify points of interventions when designing for sustainable behaviour.

Author keywords

Sustainable behaviour; narratives; temporality; artistic research; performative research.

Introduction

Fuelled by a desire to expand the toolkit of design researchers beyond conventional approaches in design for sustainable behaviour, an interdisciplinary 3-year project 'Narrating Sustainability' was initiated early 2022. This project brought together researchers from design, psychology and literature studies. Internally funded with three full time researchers and three supervising professors, the project allows for, and sets out to explore interdisciplinary avenues of inquiry which may challenge more conventional disciplinary approaches. The aim of this paper is to introduce our motivations and rationale for using unconventional methods of inquiry, and provides one example of doing so.

Background

Design research is occupied with equipping designers with tools to understand complex contexts, in order to identify opportunities for interventions which can change undesirable situations into desirable ones. It draws on a range of disciplines from engineering, social, business and natural sciences as well as the humanities (e.g., Lockton et al. 2010, Zachrisson & Boks, 2012). In the past 15 years, design research has increasingly focused on sustainable behaviour and practices, applying psychological and sociological understanding of what enables or prevents users from behaving in sustainable

ways, in exploration of solution spaces and design of interventions. Behaviour is shaped by normative, habitual, intentional and situational processes (Klöckner & Blöbaum, 2012), and design interventions have mostly been focused on the situational and habitual context, as these are most likely to provide concrete, hands-on and well-defined design challenges. For example, to support reducing food waste, design interventions are typically aimed at providing recipes for leftovers, designing appropriate storage units, designing apps for more conscious food purchases, and so on. However, research demonstrates quite clearly that norms and values heavily influence our intentions to behave responsibly and to make use of opportunities which facilitate interventions such as these (Pahl et al., 2014; Slovic, 2020). As Paul Slovic, preeminent researcher of risk perception in the public, has said, the strongest predictor of what someone perceives as a meaningful risk is the extent to which it stirs up emotions in them—not any quantitative markers of the extremity of said risk. In his words, "the public is influenced by worldviews, political ideologies, and values." This makes it likely (and environmental research bears out) that people often intend to act in environmentally friendly ways, but then do not always act in accordance with these beliefs. That is, they may theoretically agree that climate risk is great enough to motivate action, but in their daily life, the perception of this risk remains theoretical, and therefore does not motivate environmentally sustainable behaviours. Indeed, this constellation of norms, values, and emotions surrounding them are well-known to have impacts on human behaviour, especially when it relates to controversial, politicized topics (Kahan et al., 2012). Yet, uncovering norms and values, in particular when elements of awkwardness, embarrassment and even shame may play a role, is understudied in design research (Trondsen & Boks, 2022). Sustainability design studies in particular could benefit from such research, as it is subject to narratives about who and what is responsible, which informs and is informed by norms and values (Fausey et al., 2010). For instance, while the belief-action gap has been widely researched in environmental studies, the role of the aforementioned values, norms, and worldviews (including specific social desirability biases



which may limit the extent to which participants are able or willing to be frank about such values) has not been addressed to a large extent, in particular not in design research. In this study we intend to adhere to norms and values that we think we can or at least should be able to manage, in particular the ways we all justify non-politically correct, or unpopular opinions or actions with narrative explanations that ease the cognitive dissonance mentioned by Festinger. Festinger's famous dissonance theory (1962), has led later scholars to urge for "application of belief-system theory," via a "self-confrontation strategy to make inconsistencies between values a person holds and their behaviour visible" (Grube et al., 1994, qtd. In Klöckner 2022, p. 6). Festinger famously theorized that most people will find some sort of way to bridge the gap between their actions and their beliefs, if they are misaligned. Pairing his findings with those of narratology, we theorize that people most likely use brief, aphoristic narratives to justify or explain away moments when they are doing something that does not align with their beliefs, or which may be seen as shameful or unpopular by others. We also theorize that people draw from the logic in infrastructures around them to develop these aphoristic narratives (of which, more directly). Aphorisms are short statements which attempt to package a general truth in a brief statement. Work in management theory has confirmed that a two-fold process of reflection and cognitive reframing can affect how people consider their own motivations for tasks or behaviours (Hewett, 2023). For instance, we may know it is best to sort plastics for recycling or to avoid buying unnecessary clothing items or air travel tickets. But nearly everyone at some point does not properly sort recyclable goods and does indulge in unnecessary purchases. Per Festinger, people will seek to resolve these dissonances. People may say, for instance, 'one contaminated recycling load does not affect so much', or 'no one can live without any indulgences', and consciously or subconsciously justify taking that sun-and-beach filled holiday after all.

As stated, researching norms, values, and behavioural intentions which may modulate the efficacy of sustainability design solutions, has received little attention in design research; the question whether design research can contribute to re-designing norms, values and resulting intentions seems more distant from common design research and practice – perhaps for obvious reasons. Yet, per Hewett 2023, it is the same tool of narrative which individuals appear to use to adjust their behaviours and beliefs, and find greater determination to change such behaviours. Admittedly, both the complexity and the morality connected to such topics adds a layer of complexity to any research design initiative, because not only is it hard to make change or receptiveness to information happen, but also because researchers may be limited by participants' Social Desirability Bias, or other elements of shame or embarrassment, "should-ought" thinking that may limit self-report-based investigations. Thus, while there are many limiting factors to sustainable behaviour, one that has been largely ignored so far, are the norms and values that make it difficult for people to admit—even to themselves—how they actually think, feel, or believe information regarding climate change, sustainability, and the future. This prevents change-makers such as design researchers to become informed about essential parts of behaviour-influencing factors, which compromises ideation and testing of design inter-

ventions. In short: if users will not admit that they 'cheat', are lazy, or cannot be bothered, and neither can articulate why, or why they think it is OK, designers will be ill- or even misinformed and misled when designing for sustainable behaviour.

Less conventional approaches towards user insights

Partly inspired by acknowledgement that conventional user-centred design methods may not provide a full picture, designers have in the past decade stepped away from solely using conventional product and service design, and more recently explored approaches including design futuring, design fiction (Hebrok & Mainsah, 2022), design activism (Julier, 2013), speculative design (Dunne & Raby, 2013), (norm-)critical design, and norm-creative design. (But how to see narratives explicitly as both an element of the toolbox and/or as part of solution spaces is still ill-explored. Literature (both within and outside design research) reports on many physical and digital experiments where narratives are used to create awareness, reflection and action. Such experiments contribute to expanding design for sustainable behaviour research and thereby extend the designer's toolbox by using narratives about sustainability to enable, facilitate, nudge, tempt and seduce towards desirable behaviour. But they mostly conceptualize narratives as an instrumental tool for changing behaviour, instead of an existing, given phenomenon which may have influenced more static worldviews or zeitgeists, which are in fact (as research verifies) quite difficult to shift. They may, for instance, change over time and not through a single design intervention. Thus, we argue that such impacts need to be studied as a determining, independent variable. Another common research design modality is asking participants to imagine a future they want, or to imagine the future differently. Our rationale would see such interventions as short-sighted because they do not consider that the imagination is necessarily an extrapolative force, expanding upon that what we have already been given or exposed to, and thus unlikely to bear fruitful new ideas or truly cosmologically innovative imaginings. Indeed, Cultivation Theory, long used as a standard in media studies, holds that "exposure to media messages over time fosters homogenous attitudes and beliefs about the world among frequent viewers," lending credence to the notion that asking participants to imagine futures is somewhat circular reasoning (Giacacardi, et al., 2016).

Zooming in on the temporal element in sustainability narratives

If behaviours and values are impacted by our world views, these same are impacted—indeed, limited in many ways—by the worldviews we are surrounded with in media and society. Indeed, media studies scholars, a derivative field of narrative and literary studies agree that media is a form of collective memory, and a means of renegotiating or re-shaping cultural memories (Gambarato, et al., 2022). Narrative theory would suggest, in addition, that the possible futures we can imagine are shaped greatly by the possible futures we have been shown in media. We then decided to focus on the concept of time and temporality, since imagining is, first and foremost, always a temporal exercise—whether imagining the future, or re-imagining one's past, or even imagining a completely random series of events, one is necessarily envisioning a timeline different than the one actually inhabited. Risk-analysis, too,

involves imaging consequences and outcomes in a future space based on present conditions. Since sustainability, even at an etymological level, indicates a concern with the feasibility of a set of conditions to continue safely over time—a question of risk which involves extrapolative (e.g., future imagining) considerations, we opted to explore the interaction of narratives about time upon sustainability beliefs.

Studies of climate change focusing on addressing the belief-actions gap widely acknowledge the problematics of time as a complicating factor in communicating the urgency of a problem, which is, by definition, slowly evolving—at least as far as the scalability of the human extrapolative imagination is concerned. Thus, how people perceive time plays an important role in influencing individuals' attitudes and behaviours towards climate change and other sustainability issues (Milfont et al., 2012). Perhaps the most often-mentioned temporal dimension of climate change is its extension into the future. That is, while impacts are already happening, the most significant and far-reaching impacts of climate change lie in the future, creating a distance between our lives now and these future climate change impacts (Pahl et al., 2014). This is considered to be the primary hinderance to pro-environmental behaviours in the here and now (Gifford et al., 2009). The way this distance is perceived and framed in individuals' minds is likely to vary across people (Pitt and Casasanto, 2021; Nicholson-Cole, 2005), and it can be presumed that few consciously understand how images of past, present and future affect their behaviour. Moreover, even fewer will consciously understand how they end up with such images in their heads. Researchers themselves lack specific understandings of how timescapes are constructed as spatiotemporal cognitive models (Pitt and Casasanto, 2021).

From a Design for Sustainable Behaviour perspective, it would be valuable to obtain insights on how these images come about and how they, consciously or subconsciously, affect everyday choices people make. Preliminary work has explored how individual differences in media exposure impacts pro-environmental beliefs and behaviour through interaction with the variable of future-oriented thinking (Nicholson-Cole, 2005). Because semi-structured interview design alone is subject to demand characteristic bias and social desirability bias, we believe it would be useful to study how media influence could be used to allow participants a face-saving means of pivoting or shifting their environmental beliefs. Per the scholars cited above, this would theoretically allow participants the chance to reflect upon and change spaces of cognitive dissonance causing a belief-action gap in their sustainable behaviours, and which may be embarrassing to admit or perhaps even unrecognized. This, we propose, would be foregrounded on an initial study design which further explores the correlation between such media consumption and belief formation in the first place. With such insights, designers could create interventions that potentially unlock thought and value patterns in users' minds, and thus open up for design strategies which stimulate sustainable behaviour or avoid unsustainable ones.

Introducing our experimental approach

This article proposes an approach which explores if and how explicit visualisations and interpretations of how 'time works'

can make people realise how their own conscious and, so far, subconscious perceptions of time and space affect their beliefs and the choices they make. What if people subconsciously believe that utopian or dystopian futures, or futures based on disconnected, alternative realities are unavoidable and behave accordingly? If a utopian future is to happen anyway, but to be preceded by an apocalyptic event, why would one behave sustainably now? What if the popular video game notion of respawning subconsciously enables people to believe in the infinite restorability of the coral reefs, rainforests, and the ozone layer, and belief that any climate crisis can be "fixed" by starting over from a safe back-up? These questions are explored by linking a typology of space and time interpretations to personas which will help people to identify their mental models of space and time and how they affect their behaviour in relation to everyday choices and their effect on sustainability. Using a conventional design research approach would imply using for example interviews, focus groups, cultural probes and diary studies to probe and identify temporality aspects of sustainability narratives 'that people think are out there and may have an impact on them'. Then, it may be followed by developing personas to help respondents recognize which one they identify with and what temporal understanding of the world they have in relation to sustainability challenges. But because of the above explained expected lack of imaginative capabilities, we wanted to approach the problem from a more performative, artistic, and retro-engineered perspective. We decided to ask, not what participants can imagine on their own, but to enable them to reflect on how their imaginative processes may have already been shaped by the imaginative possibilities afforded by the media diet around them. So, rather than asking participants to draw on their own, by-definition limited imaginative capacity, or extracting new imaginative possibilities from already marginalized groups, we sought an approach which allowed experimentation with exploring, as others have sought to do, how scalar (in temporal, spatial, and personal realms) imaginaries are limited by narrative affordances in the environment, which we hypothesize make up a large proportion of the cultural zeitgeist which people are influenced by and add influence to. We hypothesize that streaming media today, which has become a nearly ubiquitous pipeline of TikTok filters, binge-worthy fantasy-scapes, and competing narratives of "fake news", must have an effect on what, how, and how far people can take their imaginings. So, in seeking an ethical means of testing these narrative bounds at their limits, and find out what humans are capable of imagining (or are limited in their imagination), we turned to a readily available reality-pushing-but-hegemonic discourse: science fiction and fantasy tales on streaming media.

Developing monologues of temporality

So, instead of using conventional user research to collect potential ingredients for 'sci-fi and fantasy-based narratives of temporality in relation to sustainability crises', we used a more artistic approach to create these. Using our expertise in media studies, social narratives and sustainability research, we co-wrote four different monologues, and recorded videos with the same actor speaking out these monologues in an informal kitchen setting: The Matrix video, The Star Trek video, The Groundhog Day video, and The Zombie video, each incorporating two different ingredients: aspects of temporality, and emotions (Figure 1).

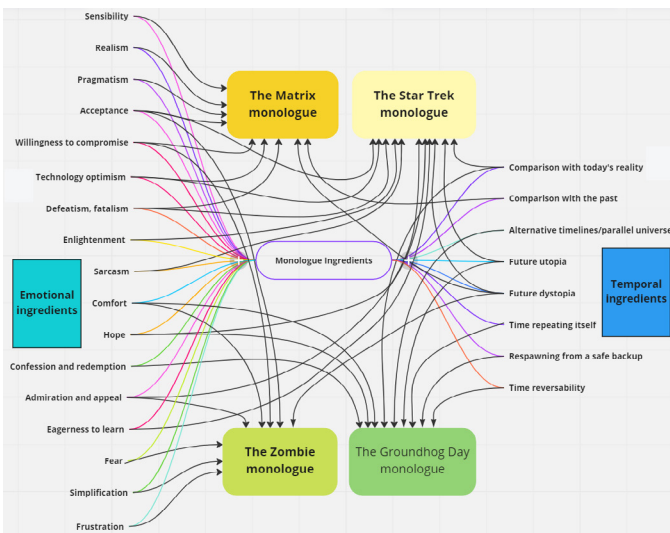


Figure 1. Emotional and temporal ingredients for our four monologues

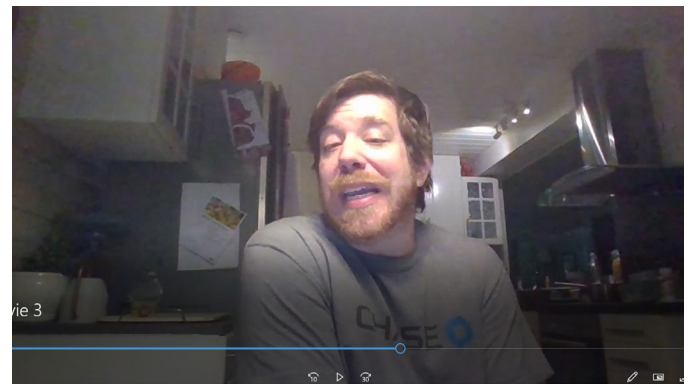


Figure 2. Still from a video

Each monologue also contained an element of self-criticism, like *'I know I probably sound weird'*, a fallacy or element of cognitive dissonance *'I know it doesn't make sense, but still, if you think about it...'*, as well as a comment in the vein of *'I think many people think like me'*. Dramaturgical clues in the scripts helped the actor to act in the exact intended informal style, resulting in 4 videos in which an 'average Joe' casually yet somewhat embarrassed 'admits' his personal views, and reflects a bit on what other might think of that (Figure 2). A questionnaire was developed to measure the impact of the videos on the audience, and to assess the validity of this sort of research design. Thus, the questions asked about how participants felt during and after viewing the videos, and framed quantitatively and qualitatively in tandem, for each question. Next, In a pilot experiment, a small sample (n=12) of master students in the Department's Sustainability Transitions course were shown the 4 videos and then asked to fill out the questionnaire. The results revealed several interesting avenues for further study and further iteration of our research design. Very few differences were seen between discourse analysis of qualitative versus quantitative responses in the survey. Similar levels of irritation or frustration were shown in response to each video, as was true for feelings of solidarity (i.e., feeling agreement with the perspective shown), vicarious embarrassment for the speaker, and reassurance. The main difference in reactions was shown in terms of what opinions viewers felt recognition in relation to (i.e., having seen others with these opinions), which was quite high for two of the videos. The Matrix-inspired video, which emphasized a future-scape in which alternate reality technologies provide simulated satisfaction with life but also emphasized trust in such technology to help us accepting effects of climate change. The second video which was highly rated as a "recognizable" perspective involved influence from video games such as Minecraft, and partly inspired by the movie Groundhog Day. This video emphasized the notion that we can redeem the errors of the past with "do-overs," much like respawning or reloading from save points in video games, where an element of forgiveness or a clean slate is built into platform modalities.

While viewers did not rank The Matrix video as indicative of their own beliefs the majority of the time, instead labelling this a view they had seen in others, they also frequently la-

belled it as "what would be best for the planet," and "what would be best for mankind," as well as "what would be most moral (according to your own values)". This may suggest that while viewers do not necessarily consciously recognize their own beliefs in a narrative (and are instead more likely to say "others" have that belief, or that it is familiar but not personally held) they nevertheless reveal subconscious alignment with these beliefs, but a lack of awareness that they themselves ascribe to it. This is shown by the divergence in "solidarity" (I have felt this way) responses with the "this would be best for..." series of responses. Intriguingly, this majority selection of The Matrix video as the top choice in the "this would be best for..." series itself diverged only when participants were asked what they felt would be personally best for them and their families, in which case they chose The Star Trek narrative about working together to build utopias. At the very least, this suggests further cognitive dissonance and directions for further research, as there seems to be a distancing of what participants feel is their personally held belief and what they deem to be the most positive narrative for them.

Conclusions

Our pilot experiment suggests that exposing respondents to these videos allows for new ways of inquiry which may uncover new insights relevant for Design for Sustainable Behaviour. Colleagues and friends from a wide variety of disciplinary backgrounds also enthusiastically responded to the videos. They saw immediately the potential of having an anonymous person articulate narratives and using this to evoke responses and reflections from respondents, once they are shown these videos. They intuitively seem to "get" that these videos addressed a wide variety of research design "blind spots" necessitated by the norms of each of our disciplines. Seeing another person 'somewhat inarticulately' articulate thoughts and opinions, which may or may not reflect an informant's own responses, may contribute to probing and understanding how people create images of how 'things work', and where those images come from. Supported by these positive responses, we see several future research opportunities, including:

- » Using larger sample sizes to allow for statistically significant results based on analysis of both qualitative and quantitative responses to the survey.
- » Creating new sets of monologues addressing other elements of sustainability narratives beyond the time aspect, and/or focused on specific themes such as climate crises, resource efficiency or consumerism. Pending further investigation, monologues such as

these could be an increasingly large “toolbox” for designers to implement in exploration of a range of topics.

- » Experimentation with different formats of exposing respondents to monologues, such as using social media, public interventions and/or theatre settings), and with different forms of collecting feedback (surveys, interviews, group discussions).
- » Using larger sample sizes would allow us to better assess this homogeneity of variance and parse out the relationships between self-recognition or lack thereof in viewers.

It is our hope (and expectation) that our unconventional, partly artistic and performative research design may, once refined, extend the (design) researcher’s toolbox and reveal new possibilities to identify intervention points towards designing for sustainable behaviour.

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