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Paving the way for social change: Concrete utopias affect people's attitudes towards and intentions for change

The London School of Economics and Political Science

Department of Psychological and Behavioural Science

MSc Psychology of Economic Life

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Abstract

In times of an accelerating climate crisis and apparent signs of failure of the current economic system, utopias are more relevant than ever. Rather than abstract ideals of an alternative system, however, calls have been made for the realisation of concrete utopias in the hope that their existence leads to social change. While often claimed, this effect has barely been researched. In two studies, the present dissertation aimed to address this research gap. The first qualitative study explored lay people's utopias and found them to differ in goal, approach and area. On the basis of this taxonomy, the second experimental study tested the effects of concrete utopias on people's attitudes towards the utopia and intentions for change. Results suggest that people are indeed affected by concrete utopias with effects differing with regards to the utopian approach and individual differences in utopian thinking.

Keywords: concrete utopia, real utopia, social change, attitudes, intentions

1. Introduction

A few weeks into the 2020 COVID19 epidemic and the subsequent global lockdowns, newspapers, magazines and other outlets were full of articles describing a bright post-COVID19 world (e.g. Fairs, 2020; Horx, 2020). In these pieces, the authors essentially laid out their utopias, i.e. "an ideal or best possible society which is hoped or wished for" (Fernando et al., 2019b, p. 2). The futures described were notably based on already existent practices, albeit still on the fringes of society (e.g. conscious consumption) and diverged from what has traditionally been conceived as a utopia: Etymologically, the word "Utopia" itself, coined by Thomas More (2001) in 1561 with his book of the same title, highlights the central tension inherent in the concept: The word is a pun as it combines "eutopia", the good place, and "outopia", the no place (Claeys & Sargent, 1999). Utopias have long been considered abstract, ideal scenarios defined by perfection, wishful thinking and unattainability (Sargent, 1994; Basso & Krpan, 2020).

In contrast, the post-COVID19 utopias are emblematic for a recent shift in the perspective on utopias, away from notions of perfection and wishful thinking towards an understanding grounded in what Wright (2012) calls "real utopias", i.e. concrete and viable alternatives to current practices and institutions. This shift can be observed in the academic (e.g. Wright, 2012) and public (e.g. Bregman, 2018) discourse, where the idea of real utopias has received more attention lately.

In times of an accelerating climate crisis and apparent signs of failure of the current economic system, utopias are more relevant than ever. Rather than abstract ideals of an alternative system, however, calls have been made for the realisation of concrete real utopias[1] (Wright, 2012). These are considered a potential way to realise change through a process of experimentation, multiplication and greater adoption, in particular in the fields of urban and planning studies and sociology (Frantzeskaki et al., 2016; Gernert et al., 2018).

For all the hope placed in this mechanism of change, surprisingly little is known about the effects of concrete utopias and the assumed process of change it facilitates (e.g. Fernando et al., 2019b); existing studies on utopia in psychology have focused on the process of utopian

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[1] The term "concrete utopia" encompasses both utopias already turned into practice ("realised/real utopias") and *specific* utopias yet to be realised. Rather than their existence or non-existence in the present, what is of interest in this thesis is their specificity and potential to be materialised. In this sense, the present use is similar to but slightly broader than Bloch's (1986) and Levitas' (1990b) understanding of the term. Hence, no distinction is made in the following.

thinking rather than its transformational potential. It is thus the aim of this study to illuminate the effect of concrete utopias for the process of change.

2.   Literature Review

2.1   General Academic Study of Utopias

Traditionally, utopia has been addressed from three perspectives: Firstly, literary scholars have taken interest in utopias as many, in particular early, utopias were composed in literary formats. These texts typically described a whole society from a macro perspective and served various purposes, almost all based on contrasting the utopia with current reality (Levitas, 2013; Sargent, 2010). Secondly, social theorist like Bloch (1986), Chomsky (1999) or Mannheim (1985) have examined utopianism for its relevance to social macro level change (Badaan et al., 2020; Sargent, 2010) and have highlighted the importance of utopias as means to provide an alternative process of change (Kashima & Fernando, 2020). Thirdly, by researching intentional communities like communes or monasteries, scholars have studied utopian thinking turned into practice, mostly focussing on the demonstrational purpose of these communities (Levitas, 2013; Sargent, 2010). In sum, it appears that in academic fields traditionally concerned with utopia, the focus has broadened from the literary imaginative to include its concrete manifestations like intentional communities.

2.2   Concrete Utopias from the Perspective of Urban and Environmental Sciences

This focus has in fact widened further both with regards to the academic disciplines taking interest in utopias as well as their scope. Beyond intentional communities, researchers have now started to study all forms of utopias in practice, in particular in urban and planning studies and the environmental sciences: Here, works range from analyses of individual realised utopias like the Universal Basic Income (Van Parijs, 2013), the Bristol Pound (Marshall & O'Neill, 2018) or renewable energy cooperatives (David & Schönborn, 2018) to global reviews of utopian civil society initiatives (Frantzeskaki et al., 2016), to papers examining the presumed mechanisms and effects of concrete utopias (e.g. Gernert et al., 2018; Pesch et al., 2019). Echoing Wright's (2012) suggested approach, a common thread running through these publications is the belief and claim that pioneering utopias locally will have an effect beyond the individual utopia by "demonstrating their feasibility" (Frantzeskaki et al., 2016, p. 44), providing a model to be replicated by more people (Mardache, 2016) and "challenging the status quo" (Gernert et al., 2018, p. 5). Moreover, realised utopias are expected to have a "multiplier effect that may lead to behaviour change on a societal level" (Gernert et al., 2018, p. 6). Thus, it appears that great hopes are placed in the actual realisation of utopias to propel

change[2]. In this way, rather than grand visions of another society, utopias are conceptualised more concretely, being located in a concrete space and time.

2.3 Utopian (Social) Psychology

Although these claims call for scientific scrutiny, social psychology has been notably absent in the academic discourse on utopias and their effect, which is surprising given the field's interest in social change (Basso & Krpan, 2020). While the small set of existing studies in the field has established that out of the three hypothesised functions of utopias – criticism of society, desire and action for changing society, and escaping society as compensation (Levitas, 1990a) – the change function seems to be the most relevant (Fernando et al., 2018), little is known about its workings. The literature offers several hypothesised and (partially) tested mechanisms:

- Lending from self-discrepancy theory (Higgins, 1987, 1989) and its extension to groups (Sassenberg & Woltin, 2008), Fernando et al. (2018) and Kashima and Fernando (2020) hypothesise that similar to individuals self-regulating their behaviour in accordance with their ideal selves, utopias can instigate collective self-regulation in direction of the utopia.

- Developing a complex theoretical model of utopian thinking, which they define broadly as the process of "imaging better societies" (p. 2), Badaan et al. (2020) suggest two routes that link utopian thinking to social change: While the affective route is based on hope as a precursor of collective action, the cognitive-motivational route relies on mental abstraction to reduce the psychological distance between reality and utopia. Both routes are theorised to affect social change by themselves and through a reduction of system justification (Jost, 2019).

- Fernando et al. (2019a) found participative efficacy, i.e. "the capacity for ordinary people to make a difference in changing their society" (p. 281), to be a mediator of the effect of various utopias on social change intentions, suggesting it to be relevant for individuals' decisions to partake in utopia-instigated social change.

- Taking an individual differences approach, Basso and Krpan (2020) developed and validated the Utopian Impulse, "a psychological construct, defined as the propensity to

[2] In order to avoid ambiguity with the experimental social change condition, rather than "social change", the term "change" is used to refer to developments fundamentally altering current practices regardless of their nature. "Social change" is employed to specifically delineates changes to norms, behaviours, institutions or relations (Haferkamp & Smelser, 1992).

have thoughts and engage in actions whose purpose is to transform the current society into a better one in the future" (p. 2). They show that differences in the Utopian Impulse predict and moderate the experimental effects on a variety of social change variables.

As the number and diversity of proposed mechanisms of the relationship between utopia and change suggests, the literature is still inconclusive in this regard. What academics agree on, however, is that the content of utopias matters greatly for their effect on change (e.g. Badaan et al., 2020; Fernando et al., 2019a). Yet, very few studies have considered the content in their research design: Examining rather general utopias, Fernando et al. (2019a) compared two prototypical utopias (sufficient ecological "Green" utopia vs. abundant science and technology based "Sci-fi" utopia) and showed the "Green" utopia to be superior in its evaluation as well as elicited social change intentions and behaviour. Allowing for more nuanced distinctions between utopias, Bain and colleagues (2013) attempted to establish features of desirable collective futures by testing eight different forms of utopias from climate change mitigation to marijuana legalisation; they found societal benevolence to be the only consistent predictor of social change attitudes and intentions. On a similar level of concreteness, Krpan and Basso (2020) investigated various framings of the degrowth economy, an alternative utopian social-economic model, and their effect on social change towards this utopia. In a mixed-methods study as close to concrete utopias as there has been, Judge and Wilson (2015) presented participants with four different visions of a plant-based/vegetarian/vegan/no change New Zealand, asked them to briefly summarise their thoughts and to then respond to Bain et al.'s (2013) collective future dimensions scale as well as items about policy support for the respective diets. They showed participants to see a range of consequences of the respective plant-based utopias, both positive and negative. Beyond these studies, social psychology has not explicitly considered the content of utopias, despite its prominence in the form of concrete utopias in other academic fields.

On the whole, while there has been a move to study concrete utopias, the majority of studies have produced assumptions about the relationship and process of utopias and change and have remained on macro and meso levels. The few existing studies in psychology either lack consideration of the content or have barely examined concrete utopias.

3.   Research Question

Stemming from the prevalent claims about the effects of concrete utopias for change and the lack of social psychological research on said issue, this dissertation aims to answer the following general research question: What is the effect of concrete utopias on people's desire to engage in change behaviour?

4.   Overview of Studies

With the importance of the content of utopias established by scholars in the field, selecting appropriate concrete utopias is very relevant for answering the research question. However, while some collections of utopias-in-practice exist (Frantzeskaki et al., 2016; Bennett et al., 2016), it is still unclear what lay people consider utopian. In fact, some authors have pointed out this gap in the research and called for "a typology of ordinary people's utopian visions" (Fernando et al., 2019a, p. 288). Thus, before examining the effects on change, a systematic analysis of lay people's conceptions of utopias is sensible. Hence, with the first exploratory qualitative study, this dissertation intends to explore people's utopias and to lay the foundation for the following experimental study (Rowan & Wulff, 2007). Informed by these results, the second study addresses the research question by testing the effects of two sustainable utopian conditions on attitudes and change intentions.

5. Study 1

The aim of this study was to explore ordinary people's utopian visions in order to, one, fill the research gap concerning lay people's utopias and, two, gather concrete utopias to be used in the experimental study. Thus, it attempted to address the following research question: How do ordinary people envision an ideal future? The study was performed in collaboration with the organisation 50YH[3], which provided the funds and was also granted access to the data.

5.1   Methods

5.1.1 Data Collection

Participants

34 UK citizens (Males = 8, Females = 26, Other = 0, M_{Age} = 31.33, SD_{Age} = 12.13) completed the study on Prolific.ac and were payed £2.00. Excluding faulty time measurements by four participants, it took the participants on average 35.70 minutes (SD_{Time} = 11.20 mins) to complete the study.

Procedures and Measures

After informing participants about the goal of the study and ensuring their consent, they were asked to imagine what life would ideally look like 50 years from now. Following this, they were asked to respond to six open-ended questions about particular aspects of their futures in at least 500 characters:

- How do we organise supply in fifty years?
- How do we structure society in fifty years?
- How do we relate to people in fifty years?
- How do we nurture the body in fifty years?
- How do we manage knowledge in fifty years?
- How do we mind the spirit in fifty years?

In an attempt to use a comprehensive framework to account for human activity in society in its totality, the questions were taken over from Schindler (2019) and the organisation 50YH. As timeframe for the participants' utopian visions, 50 years has been found to be appropriate as it is "long enough for significant societal change to occur, but short enough to feel that [people] have a reasonable idea of what society would be like" (Bain et al., 2013, p. 525). Following the

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[3] 50YH aims to bring people together to collectively envision desirable futures and then develop pathways to realise them. It was established by software company delodi UG.

questions, participants were asked to transfer their answers to 50yh.org as the data was agreed to be made available to the organisation as well. Finally, participants completed demographic questions and the Utopian Impulse scale by Basso and Krpan (2020). This data was collected for potential exploratory analysis but was not analysed as part of the present study.

5.1.2   Data Analysis

Given that the data was homogenous and similar to an interview transcript in terms of its format, thematic analysis was deemed the appropriate technique of data analysis (Flick, 2014), with the aim of distilling central themes and patterns (Braun & Clarke, 2006). The data set consisted of 34 responses to six questions each; response lengths ranged from 78 to 263 words (M_{Length} = 103.00 words, SD_{Length} = 27.90 words); one response to a question was discarded as it only contained 5 words.

Following Braun and Clarke's (2006, 2013) suggested process, the analysis began by reading through the complete data set and noting initial observations. Then, the data was imported into the qualitative software MAXQDA2020 and systematically coded for interesting segments inductively (Thomas, 2003). Codes were created irrespective of the question participants responded to as the six questions were only meant to provide a rough frame for the participant's utopian visions. In total, 691 segments were coded. With the complete data set coded, individual codes were allocated into potential themes in a recursive process of re-coding and re-allocating. Having created initial themes, it became apparent that they involved both the content of the utopian visions as well as various parameters of the way the visions were described. Thus, a distinction was made between *themes* (e.g. equality, technology) and three *parameters* (specificity, valence, novelty) of the responses. A total of 17 themes were then compiled into four larger organising themes. Finally, the analysis culminated in the formulation of a global theme as answer to the research question.

5.2   Results

This qualitative study set out to explore the question of how ordinary people envision an ideal future. On a general level, participants desired a sustainable world that is equitable in the global and the local, offers a high quality of life and is enabled by technological progress and social change (global theme). Four organising themes were singled out to provide a more detailed analysis of the participants' responses: While the *utopian goals* address the overarching focus of the utopian visions, the *utopian approaches* are concerned with the way

of realising these visions in a number of *utopian areas* where concrete changes are suggested. Lastly, the *utopia-affected* describe three areas which are expected to see consequences of utopian developments. As an additional organising theme, *concrete utopias* was added to account for the numerous descriptions of how the desired futures would manifest in detail.

The organising themes are examined in detail in the following sub-sections. The parameters of the respondents' visions are not addressed specifically as they do not pertain to the research question directly. However, they become apparent in the selected excerpts from the data. The complete coding book can be found in the Appendix.

5.2.1 Utopian Goals

Respondents' visions of ideal futures in 2070 were defined by three main goals: equality, sustainability and quality of life. Almost all suggested utopian developments revolved around moving towards realising one or several of these goals. To begin with, people's envisioned futures are defined by a deep-seated desire for *equality* in all areas of life, which can be regarded as a response to the prevalent perception of a divide between the rich and the poor. Respondents have broad ideas of how to achieve equality and are able to specify in which areas of society they expect change (e.g. access to resources) but seldomly describe concrete measures. If they do, they seem to be informed by today's proposals like the Universal Basic Income:

> Society will be much more equal with every adult given a basic wage, no matter of their age, colour, disabilities etc. (Female, 51)

The second utopian goal, *sustainability*, which participants understood rather broadly as acting consciously with regards to environmental resources, appeared to be an explicitly voiced goal as well as a secondary motivating force for other goals, for instance, regarding the re-organisation of national supply:

> Overall, supply will be more concentrated in each nation and there will be less global trade, helping the environment and the employment situations in many nations. (Female, 28)

As a third goal, respondents expect and desire a higher *quality of life*. They suggest this requires a redefinition of what a good life is and concrete developments with regards to their health, money and time affluence, work and sociality. High hopes are particularly placed in the advancement of medical procedures to realise this desired living quality:

I believe in fifty years time [sic], medical research currently on the fringe of approval, will come to fruition, i.e. stem cell research. The use of this life changing treatment will cause many diseases (such as ALS) to be manageable, if not curable, and will see an increase in the quality of life for many people born with degenerative/life altering diseases/conditions. (Female, 24)

5.2.2 Utopian Approaches and Areas

In order to realise the utopian goals outlined above, participants suggested a diverse range of ideas and changes in a variety of areas. Overall, two fundamentally different approaches to realising the desired changes were identified: Realising utopias either through *technological developments and advancements* or through *social change*. These two approaches are then actualised in concrete suggestions in a range of areas of human activity in society, the utopian areas: *Transport and communication, locality and globality, education, food, health, knowledge, mindset and lifestyle, work,* and the *political system*. For instance, education is described as a prominent realm to realise equality. Here, many participants call for the school system to be reformed and for quality education to be available to all. Using the framework developed (see Table 1 and Appendix), these suggestions can thus be classified as social change approaches to reach the utopian goal of equality in the area of education.

In a similar way, sustainability is suggested to be advanced through a change in food consumption behaviour, shifting from a sense of abundance to sufficiency and hence offers another example of the social change approach:

There will always be enough natural products if we are careful about waste and satisfy our taste rather than just filling our plate. (Male, 30)

However, even in one single area, multiple suggested goals and approaches could be identified: While food production and consumption are desired to become more sustainable, it is also a matter of quality of life. Increasing life quality is proposed to be achieved both by a shift to plant-based diets (social change approach) and technological advancements in nutrition (technology approach):

All our extra nutritional requirement will be provided in either one pill or one drink a day, customized to provide each individuals requirement at each life stage. (Female, 63)

5.2.3 Utopia-affected

As a third organising theme, participants also took into account the consequences of their utopias for various realms of life. These are to be distinguished from the utopian areas in that respondents very rarely suggested deliberate changes but rather described the expected consequences. Most prominently, participants discussed the nature of *social interactions* in the future. They expect no reduction in social interactions in total as they believe that people are and will be social beings. However, the data is inconclusive about the form of interaction: Some participants envision a decrease in physical interactions, connected to a widespread adoption of digital communication technology, others foresee a rise in interactions as a form of connecting with past ideals and a rejection of technology:

> Social media and technology will go full circle - at the minute it is getting so much more advance[d], that eventually people will miss simple features and so we will begin to see a bell shaped [sic] curve and begin the decline back to more simple technology. We may even begin sending letters again just for the novelty value. (Female, 19)

Participants also wrote about the effects on *physical spaces* with the majority believing that functional (indoor) physical spaces like shops or libraries will get lost as a result of digitalisation; a current trend that they expect to continue. Some foresee an increased valuation of nature, in particular for exercise and food production. With regards to the role of *spirituality and religion*, the responses are inconclusive: Both are expected to decline, sustain or increase in value and importance.

5.2.4 Concrete Utopias

Besides general visions for what an ideal world would look like in 50 years (e.g. a higher quality of living), the excerpts quoted above illustrate that participants also described how these goals would materialise in concrete utopias, i.e. new or altered products, processes, practices, values, institutions and structures. In total, 81 of these concrete utopias could be gathered from the data; the absolute number of codes in this regard was higher but responses describing similar utopias were grouped and thus only counted once. All the of the gathered concrete utopias could be assigned to one of the nine utopian areas mentioned above. In cases of utopias fitting multiple categories (e.g. local food production), its main feature was used as decisive criterion for categorisation (see Appendix).

Generally, an examination of the concrete utopias provided by the participants did not offer a conclusive image of what future people specifically envision. For instance, while there

is agreement about a likely move towards plant-based diets, there seems to be little consensus of how the food is produced, sourced and supplied; concrete utopias range from a completely digitised production, ordering and delivery to local, analogue and community-driven concepts and also include a mix of both. It appears, thus, that the two utopian approaches (social change, technology) do not just affect general utopian ideas but are also defining at the level of concrete utopias.

Summarising the results of the thematic analysis, it has become apparent that the participants' responses are unified by their desire to realise one or several of the three utopian goals through one or both utopian approaches in the various utopian areas. This desire is then sometimes accentuated by the description of concrete utopias. The combination of the various organising themes can be structured as follows (see Appendix for complete table):

Utopian goal	Utopian approach	Utopian area	Concrete utopia
Sustainability	Social change	Food	Community gardening
	Technology	Food	Food production using hydroponics

Table 1. Excerpt of Taxonomy of Utopias.

5.3   Discussion

The present study served a twofold purpose: Contributing to filling the research gap on the content of people's utopias and providing concrete utopias for usage as stimuli in the following experimental study. As the latter objective is a rather operational one, the following discussion will focus on the former. In the limited body of research existent on the content of utopias in psychology and beyond, it has been suggested that utopias essentially revolve around the problem of resource availability and allocation (Davis, 1981; Kashima & Fernando, 2020). The present data confirms this analysis. The three identified utopian goals are all concerned with exactly this issue: The goal of equality is a matter of allocating existing resources in a fair and balanced way and the way that these resources are allocated also determines quality of life. Sustainability refers to both the limited availability of resources (e.g. atmosphere's remaining CO^2 capacity) and their allocation in a manner that allows for the regeneration of said resources.

Building on this stipulation, existing research proposes the existence of two fundamentally different solutions to the problem: Sufficiency, i.e. following a principle of moderation, and abundance, i.e. following a principle of maximisation (Fernando et al., 2019a;

Kashima & Fernando, 2020). Examining this opposition, Fernando and colleagues (2019a) postulate that what they call the "Green" utopia is defined by sufficiency, as opposed to the "Sci-Fi" utopia which in their view is characterised by abundance. In essence, if utopias essentially revolve around the question of resources, the two potential answers (sufficiency and abundance) are thus the defining features of a utopia. This is where the current study is able to add more nuance to the literature.

The present study corroborates the existence of these oppositional solutions. In fact, sufficiency and abundance seem to mirror the two utopian approaches of social change and technology identified in the data. In other words, Fernando and colleagues' (2019a) "Green" utopia can be seen as an instance of the social change approach and their "Sci-Fi" utopia of the technology approach. However, rather than the sole defining element of a utopia, the current study suggests sufficiency and abundance to be approaches to realise utopias, which are driven by one or several of the three identified goals that should be considered equally defining of a utopia.

This conception then allows to account for utopias describing the realisation of one goal through both approaches: For instance, to realise the utopian goal of sustainability, participants describe both social change approach-based (e.g. plant-based diets as the norm) and technology approach-based (e.g. lab-grown protein) concrete utopias. Thus, Fernando and colleagues' (2019a) terminology of the "Green" utopia and its equation with sufficiency is incomplete as sustainability (the presumed goal of a "Green" utopia) can be achieved through social and technological (and thus potentially abundance-focused) approaches. Moreover, utopias can be driven by more than a desire for sustainability, most notably benevolence (Bain et al., 2013) which can be likened to the goal of equality in this study.

With regards to the collection of concrete utopias elicited by the participants, little precedent exists in the research context. The current results mirror the collections of already existing realised utopias in other disciplines (e.g. Frantzeskaki et al., 2016) and popular science literature (Bregman, 2018). These compilations are, however, limited to utopias that have already been turned into practice. What this study adds to the body of research in this context are envisioned utopias that people are able to describe in considerable detail but are yet to be realised.

In sum, the present exploratory study was able to provide more nuance to the existing understanding of utopias and to validate and extend the assertion that two opposing approaches to realising utopias exist: social change (sufficiency) and technology (abundance). In addition, the study provided ample examples of concrete utopias for all combinations of goals and

approaches which can be used to test hypotheses regarding the presumed effect of realised utopias experimentally in the second study and beyond.

6. Study 2

As outlined earlier, plenty of assumption exist about the power of concrete utopias to realise change in society. This, however, has hardly been examined. In order to do so, it was first deemed necessary to explore what people actually consider to be utopian since the content of utopian thinking – despite its acknowledged importance – has been neglected academically so far. Any investigation into the effects of utopias on people's attitudes towards these utopias and their intentions to engage in change likely profits from a better understanding in this regard. The first study of this dissertation thus attempted to provide exactly these insights, namely a taxonomy of utopian goals, approaches and areas which can be used to grant more nuance to the following experimental study as well as a collection of concrete utopias to be used as stimuli therein. It is the aim of this study to examine the effects of concrete utopias on participants' desire to engage in change. The research question at hand is the following: How do concrete utopias effect people's attitudes towards these utopias and their intentions to engage in change?

6.1   Development of Hypotheses

As evident from the general literature review, little prior research regarding the research question exist. The fundamental assumption of building concrete utopias is that their existence creates change through replication and multiplication (Gernert et al., 2018; Mardache, 2016). Conversely, if things continued as they are without any realised utopian changes, there would be little change. While no prior studies exist comparing the effects of one or several utopian conditions to a control condition depicting business-as-usual, there is research on the potential underlying mechanism: In fact, ample evidence (e.g. Jost, 2015; Jost et al., 2017) exists that system justification, i.e. the tendency of people to defend the status quo, even if they are disadvantaged by it, inhibits change activism. Utopian thinking is proposed as a way to overcome this tendency and reduce system justification, eventually leading to greater collective action by, among other things, "increasing the cognitive accessibility of alternatives to the status quo" (Badaan et al., 2020, p. 9). Evidence of a realised concrete utopia is expected to enhance this accessibility. Another line of work proposes that people might be more inclined to show behaviour towards a future scenario when this utopia appears achievable rather than remote and unattainable (Oettingen & Mayer, 2002; Bain et al., 2013). In this way, the fact that a utopia has already been realised may showcase its attainability. In sum, this body of research suggests that the exposure to a concrete utopia would lead to greater intentions to engage in change than a control condition depicting business-as-usual (H1).

Given that there is widespread agreement about the importance of content for the effects of utopias, it can be expected that the type of utopia the participants are exposed to is likely to influence the effects on change. This is even more relevant in light of the results obtained in the exploratory study which found utopias to differ on a variety of elements, namely in terms of goal, approach and area. Thus, to provide a more nuanced answer to the research question, these subtleties ought to be taken into account.

Given the limited scope of this dissertation, experimental manipulations in this study will vary only in utopian approach, keeping utopian goal and area constant. This design is sensible as the little prior research that exists took a similar path: As outlined in the discussion of the qualitative study, Fernando et al.'s (2019a) "Green" and "Sci-Fi" utopias can be understood as instances of the social change and technology approach, respectively. In their study, they found the "Green" condition, when evaluated positively, to be superior in predicting social change motivation compared to the "Sci-Fi" condition. Several potential explanations exist for this in the literature, all concerned with the way technological advancement is commonly conceived: For instance, it is proposed that since major technological developments are necessarily required for the realisation of some utopias, people may feel them to be very distant and presume it unlikely for them to experience the changes in their lifetime (Fernando et al., 2019a). Moreover, according to people's lay belief about societal change, also known as the folk theory of social change (Kashima et al., 2009, 2011), society may already be taking the technology approach, thus implying that this naturally occurring process does not require engagement (Fernando et al., 2019b). Technological advancements may also appear to offer little opportunities for everyday people with little technical expertise to participate (Fernando et al., 2019b) – a hypothesis that demands even more consideration as participatory efficacy has been shown to mediate change motivation (Fernando et al., 2019a). In this light, it is worthy to explore whether social change approach-based concrete utopias will indeed have a greater effect on change intentions than technology approach-based utopias (EH1).

Yet, as Fernando et al. (2019a) have shown, it is not just the content of the utopia that matters but also its evaluation by the participants that defines the effects on social change motivation. This finding is in line with existing research and theories: According to the Collective Effort Model (Karau & Williams, 1993), a goal ought to be desirable to elicit individuals' efforts (Fernando et al., 2018). Coming to a similar conclusion, Völlink, Meertens and Midden (2002) analysed the diffusion of pro-environmental innovations and found the evaluation of the proposed innovation's advantages to be the initial and decisive step. Translated into the context of utopias, this may be interpreted in a way that suggest that before

deciding to exert efforts towards supporting a concrete utopia, this utopia needs to be evaluated positively.

Accordingly, in their study on "Green" vs. "Sci-Fi" utopias, Fernando et al. (2019a) incorporated the evaluation in their theoretical model and experimental design; they operationalised the evaluation of the utopia presented in the respective condition as a moderator and indeed found evidence of moderation. Given that the present study, in contrast, includes a control condition and is more specific in its presentation of utopias as stimuli, differences between the conditions on their respective evaluation are expected (H2). Thus, participants' evaluations are not independent from the conditions, rendering a moderation model unsuitable (Fairchild & McQuillin, 2010).

Instead, it is proposed that the evaluation of the concrete utopia mediates the effects of the condition on change intentions (H3, see Figure 1). Assuming this mechanism then likens the model at hand to one based on the Theory of Planned Behaviour (TPB; Ajzen, 1988, 1991) which intends to explain variance in people's behaviour on the premise that behavioural intentions are the most relevant precursor of an individual's actions (Graham-Rowe et al., 2015). These intentions are formed by attitudes towards the behaviour, subjective norms and perceived behavioural control. While originated in health psychology, the TPB has been successfully applied to a range of contexts, among them activism (Fielding et al., 2008; Fox-Cardamone et al., 2000) and pro-environmental practices one could have considered utopian at one point (composting, Taylor & Todd, 1995; recycling, Boldero, 1995; organic food consumption, Arvola et al., 2008). Its power in predicting behaviour has been well demonstrated (e.g. Armitage & Conner, 2001), yet concerns have been raised about its focus on rationality and deliberativeness (Conner, 2020).
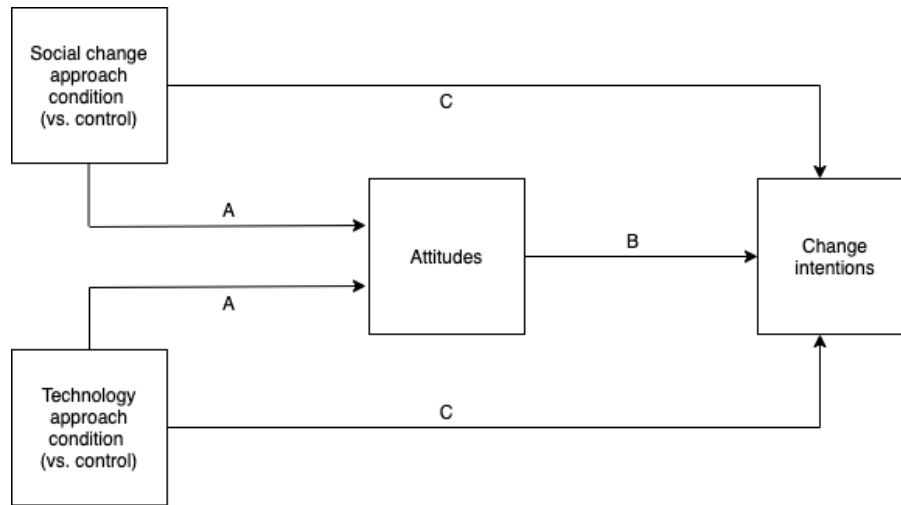
Figure 1. PROCESS Model 4 (Mediation) with Path Coding (adapted from Hayes, 2018, p. 585).

It is not in the scope of this study to test the TPB in the utopian context, especially as the participants' ultimate behaviour is not part of the experimental design. However, the TPB provides an adjacent framework to inform the hypothesised model: The evaluation of concrete utopias can be likened to the element of attitudes in the TPB. To avoid confusion, the current study will therefore adopt the language of the TPB and refer to the evaluation as attitudes. In general, ample precedent for the conception of a mediation as similar to the TPB exists (e.g. Blanchard et al., 2008; Smith et al., 2008) and thus offers more support for the hypothesised model.

Finally, scholars agree that people vary in their ability of and their focus and clarity while engaging in utopian thinking (Tonn et al., 2006; Bain et al., 2013). Acknowledging this, Basso and Krpan (2020) developed the Utopian Impulse and showed it to be a reliable moderator of attitudes, intention and behaviour in utopian contexts. In light of this research, it makes sense to explore whether the individual differences in the Utopian Impulse moderate the effects of the concrete utopias on intentions as well as the mediation through attitudes (EH2). Testing moderated mediations is not without precedent in utopian psychology: Fernando et al. (2019a) also developed and tested a moderated mediation in their "Green" vs. "Sci-Fi" study and found some evidence for its existence. The proposed moderation mediation model for this study is illustrated in Figure 2.
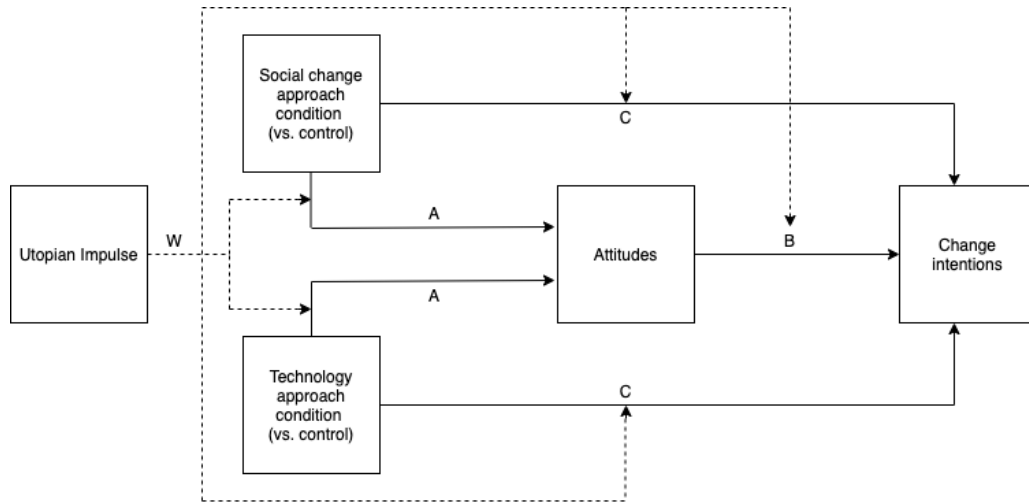
Figure 2. PROCESS Model 59 (Moderated Mediation) with Path Coding (adapted from Hayes, 2018, p. 597).

Put formally, it is hypothesised that

H1: *Participants in both treatment conditions will have higher intentions for change compared to the control condition.*

H2: *Participants in both treatment conditions will have higher positive attitudes towards the concrete utopias compared to the control condition.*

H3: *The effects of both treatment conditions on intentions for change will be mediated by the attitudes towards the concrete utopias.*

As a further exploratory hypotheses (EH), it will be tested

EH1: *whether participants in the social change approach treatment condition have higher intentions for change compared to the technology approach treatment condition.*

EH2: *whether the Utopian Impulse moderates the effects of the treatment conditions on intentions for change and their mediated paths over the attitudes towards the concrete utopias.*

6.2   Method

The study was preregistered on AsPredicted (www.aspredicted.org) under the reference number #43956 (see Appendix). Data collection was performed using Qualtrics. For the data analysis, SPSS 26 and the add-on PROCESS 3.3 (Hayes, 2018) was used for mediation and moderation mediation analyses.

6.2.1 Sample Size

The experimental study was a three-group between-subjects design (social change approach condition, technology approach condition and control) which tested whether a difference in attitudes and change intentions existed between the experimental conditions and the control. The number of participants recruited was determined using *a priori* power analysis with G*Power (Faul et al., 2007). A medium effect size ($f = 0.30$), based on conventions in the field (Beck, 2013), an alpha of 0.05 and a power of 0.99 were assumed, yielding a G*Power suggested total sample size of 243. Adding 15% for expected invalid responses due to the exclusion criteria, the final total sample size should be 279. To be on the safe side, data was collected on 300 participants.

6.2.2 Participants

Participants were recruited on Prolific.ac and taken from a larger representative sample of the UK population used by Krpan and Basso (2020). Only individuals from their participant pool were given access to the present study. Payment for completion of the study was £0.45. To ensure response quality, a range of quality control measures suggested for online experiments were added (Buhrmester et al., 2011; Mason & Suri, 2012; Rouse, 2015; Rabi & Basso, 2020). As first measure, participation on mobile phones was prohibited. In addition, a comprehension check, an attention check as well as an option to self-exclude one's data for not having taken the study seriously were added. All questions were formatted as forced response, ensuring survey completion. In total, 297 participants completed the survey; six participants failed the comprehension check, two failed the attention check and two indicated to self-exclude their data, leaving a final sample of 287 participants (Males = 137, Females = 150, Other = 0, $M_{Age} = 43.48$, $SD_{Age} = 14.10$).

6.2.3 Procedure and Measures

Having read the general information on the study and completed the consent form, participants were informed that, in the following, they would first see information on an organisation which produces food and then be asked questions about their personal preferences. Participants were then randomly assigned to one of the three conditions (social change approach condition, technology approach condition, control condition). The individual conditions were created on the basis of Hughes and Huby's (2004) recommendations for vignettes. Stemming from the insights from the exploratory qualitative study presented earlier,

it appeared that the utopian goal of sustainability was particularly prevalent in the area of food. Many respondents described how they believed a sustainable food production system to look like. Interestingly, both utopian approaches were equally cited as paths to realise sustainability in this area. Given this prominence, it was decided to use the goal of sustainability and the area of food for this experimental study. Both experimental conditions presented to the participants were mentioned as concrete utopias in the experimental study (hydroponic food production, community gardening) and their descriptions are based on real-world examples (Zero Carbon Foods, Hickey, 2015; Growing communities, Larsson, 2015).

The two experimental conditions started by stating the same utopian goal, sustainability: "*Barlow Farming is an organisation which aims to realise the future of sustainable food production.*" Then, the two different utopian approaches were detailed. For the technology approach condition, the use of hydroponic technology was stressed and outlined with further details. Contrarily, the social change approach condition highlighted the use of community volunteers who self-organise to grow the vegetables. To emphasise that business was to continue as usual, the control condition focused on the goal of continuous growth: "*Barlow Farming is an organisation which aims to continue its growing operation of food production.*" Further details made sure not to overemphasise one or the other approach to food production and thus included human (skills, experience) and technological (pesticides, fertilisers) elements. All three conditions were accompanied by an image illustrating the approach taken (see Appendix).

To ensure response quality, participants were asked a comprehension check question right after seeing the condition, inquiring about the dominant technique used by Barlow Farming to grow vegetables. Participants were then asked about their attitudes towards the food system the organisation they had been confronted with was exemplary of on a four-item scale adapted from Fernando et al. (2019a). On a scale from 1 (*strongly disagree*) to 7 (*strongly agree*), people were asked to rate whether "*This is the kind of food production system that I would love to see in the world*" and "*I find the food production system described to be very appealing*", with two further reverse-coded items ($\alpha = 0.93$). The items were then averaged to form the scale as a mediator.

Next, participants were asked about their intentions to engage in change behaviour. This was operationalised using Fernando et al's (2018) Citizenship for Change scale, which was adapted and made domain-specific to the present context of food production. Five items (taking action to change the status quo, taking action to change the future, speaking to family and friends, donating money, volunteering, e.g. "*How much do you want to take action to change*

the current food production system?”) were answered on a 7-point-scale (1 = *not at all*, 7 = *a great deal*, α = 0.93) and then averaged to form the scale as dependent variable. In order to underline the hypothesised mediation model, the order of presentation of attitudes towards the food system (hypothesised mediator) and domain-specific citizenship for change (dependent variable) was randomised.

Following this, the individual differences in utopian thinking were collected using the 12-item Utopian Impulse scale (1 = *strongly disagree*, 7 = *strongly agree*, α = 0.93) developed by Basso and Krpan (2020). In order to avoid order effects, item presentation was randomised; one attention check item was included as well. Finally, demographics and further covariates (dietary practices, income, political orientation) were collected; participants were then given the chance to self-exclude, debriefed and given the opportunity to comment on the study.

6.3   Results

6.3.1   Change Intentions (H1)

A one-way ANOVA revealed a significant main effect of the experimental conditions on change intentions ($F(2, 284) = 7.41$, $p = .001$, $\eta_p^2 = 0.50$). Tukey-HSD post-hoc tests showed an insignificant effect of the technology approach condition ($M = 3.77$, $SD = 1.48$) compared to the control condition ($M = 3.39$, $SD = 1.30$; $p = .112$, *95% CI* = [-0.67, 0.84], $d = 0.27$). In contrast, the effect of the social change approach condition was significant ($M = 4.13$, $SD = 1.22$; $p = .000$, *95% CI* = [0.29, 1.20], $d = 0.59$). The effects remained (non-)significant after the inclusion of the covariates age, gender, dietary preferences, income and political orientation, with the post-hoc tests being Bonferroni-corrected (see Appendix for complete data analysis). In light of these results, H1 can be partially supported.

6.3.2   Attitudes (H2)

A one-way ANOVA revealed a significant main effect of the experimental conditions on attitudes ($F(2, 284) = 19.24$, $p = .000$, $\eta_p^2 = 0.12$). Tukey-HSD post-hoc tests showed significant effects for both the comparison of the technology approach condition ($M = 5.13$, $SD = 1.29$; $p = .000$, *95% CI* = [-1.11, -0.27], $d = 0.56$) and social change approach condition ($M = 5.56$, $SD = 1.13$; $p = .000$, *95% CI* = [-1.51, -0.67], $d = 0.98$) to the control condition ($M = 4.45$, $SD = 1.28$). The results remained significant after the inclusion of the covariates and thus provide evidence to support H2.

6.3.3 Mediation (H3)

To test the proposed mediation model (see Figure 1), a mediation analysis using the PROCESS Model 4 macro for SPSS (Hayes, 2018) was performed. The conditions were dummy coded as follows: 0 = control, 1 = social change approach, 2 = technology approach. Attitudes were entered as potential mediator and change intentions as outcome variable. Bias-corrected bootstrap analysis was employed and set at 5.000 samples. In total, the tested mediation model accounted for 12% of the variance in social change intentions ($R^2 = .119$).

Social change approach condition versus control:

The indirect effect of the social change approach condition on change intentions via attitudes was non-significant compared to the control condition ($A * B, \beta = 0.10, SE = 0.08, 95\% CI = [-0.07, 0.27]$). However, data displayed a significant direct effect on social change intentions ($C, \beta = 0.65, SE = 0.21, p = .002, 95\% CI = [0.24, 1.06]$) and a significant total effect ($A * B + C, \beta = 0.75, SE = 0.19, p = .000, 95\% CI = [0.37, 1.13]$). The results were robust and remained (non-)significant after the inclusion of covariates.

Technology approach condition versus control:

The indirect effect of the technology approach condition on change intentions via attitudes was non-significant compared to the control condition ($A * B, \beta = 0.06, SE = 0.05, 95\% CI = [-0.05, 0.17]$). However, data displayed a marginally significant direct effect on social change intentions ($C, \beta = 0.33, SE = 0.20, p = .100, 95\% CI = [-0.06, 0.72], 90\% CI = [0.00, 0.65]$) and a significant total effect ($A * B + C, \beta = 0.39, SE = 0.19, p = .046, 95\% CI = [0.01, 0.77]$). After the inclusion of covariates, the direct effect was non-significant and total effect was marginally significant.

The complete model including significant and non-significant pathways is illustrated in Figure 3. Overall, the lack of significant indirect effects and evidence of direct effects suggests that no mediation exists (Hayes, 2018). Therefore, H3 cannot be supported; attitudes do not appear to mediate the effects of the conditions on change intentions.
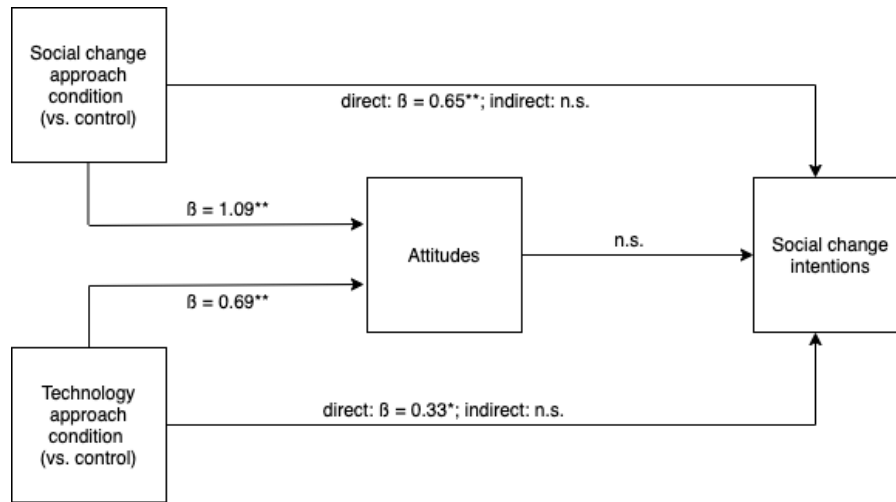
Figure 3. Mediation Model.

Note: * p ≤ .10, ** p < .05. Betas of non-significant pathways (n.s.) are not shown.

However, when the analysis is restricted to the two experimental conditions (n = 190), the indirect effect of the approach condition on change intentions through attitudes was significant (*A * B, β* = 0.16, *SE* = 0.08, *95% CI* = [0.02, 0.35]), whereas the direct effect was not (*C, β* = 0.2, *SE* = 0.19, *p* = .293, *95% CI* = [-0.17, 0.56]). As the total effect was marginally significant (*A * B + C* = 0.36, *SE* = 0.20, *p* = .070, *95% CI* = [-0.03, 0.75], *90% CI* = [0.03, 0.68]; significant with inclusion of covariates), there is evidence of a marginally significant full mediation of the effects of the conditions on change intentions through attitudes.

6.3.4 Additional Hypotheses and Analyses

Change Intentions (EH1)

Removing the control condition from the analysis, a one-way ANOVA revealed a marginally significant effect of the experimental conditions on change intentions ($F(1, 188)$ = 3.32, p = .070, η_p^2 = 0.17). After inclusion of covariates, the effect became significant ($F(1, 183)$ = 4.84, p = .030, η_p^2 = 0.26). This change was driven by controlling for political orientation, which was a strong predictor of change intentions itself ($F(1, 183)$ = 11.52, p = .001, η_p^2 = 0.06).

Moderated Mediation (EH2)

To validate the second exploratory hypothesis, a moderated mediation analysis was conducted using the PROCESS Model 59 macro for SPSS (Hayes, 2018). The conditions were dummy coded as follows: 0 = control, 1 = social change approach, 2 = technology approach.

Attitudes were entered as potential mediator, the Utopian Impulse as potential moderator and change intentions as outcome variable (see Figure 2). Bias-corrected bootstrap analysis was employed and set at 5.000 samples. The conditional effect of the moderator was evaluated at the 16th (low), 50th (medium) and 84th (high) percentiles. In total, the tested mediation model accounted for 59% of the variance in social change intentions ($R^2 = .593$).

Results revealed non-significant conditional direct effects of both approach conditions on change intentions at all levels of the moderator. In contrast, conditional direct effects were significant at all levels of the Utopian Impulse except at the low level for the technology approach condition (see Appendix). The results were robust and remained (non-)significant after the inclusion of covariates. Given the lack of significant indirect and interaction effects, results did not indicate the existence of a moderation of the effect of the experimental conditions on change intentions through attitudes as a mediator.

Moderation

The Utopian Impulse was a strong predictor of change intentions itself ($F(1, 286) = 356.90$, $p = .000$, $\eta_p^2 = 0.59$) and also marginally significantly moderated the effect of the experimental conditions on change intentions ($\Delta R^2 = 0.001$, $F(2, 281) = 2.60$, $p = .076$). In addition, the Utopian Impulse also significantly moderates the effect of the experimental conditions on attitudes ($\Delta R^2 = 0.114$, $F(2, 281) = 20.37$, $p = .000$) with significant ($p < .001$) conditional effects for both conditions at medium and high levels of the moderator. This is also to be observed when the analysis is limited to the two experimental conditions, with a significant moderation effect on change intentions ($\Delta R^2 = 0.001$, $F(1, 186) = 5.36$, $p = .022$), and significant conditional effects for low (W at 16th percentile: $\beta = 0.70$, $SE = 0.18$, $p = .001$; *95% CI = [0.35, 1.05]*) and medium (W at 50th percentile: $\beta = 0.40$, $SE = 0.13$, $p = .002$; *95% CI = [0.15, 0.65]*) levels of the moderator. The results were robust and remained significant after the inclusion of covariates.

6.4   Discussion

Data analysis yielded a range of results: While two of the three main hypotheses could be (tentatively) supported (H1, H2), support for H3 was only found in a sub-sample of the data. Beyond theses hypotheses, a number of exploratory analyses were conducted: No evidence of moderated moderation could be found (EH2). However, results indicated that the Utopian

Impulse was both a strong predictor and marginally significant moderator. Lastly, as expected, differences between the two experimental conditions could be identified (EH1).

7. General Discussion

The aim of this dissertation was to explore and test the effects of concrete utopias on people's change intentions. While the exploratory qualitative study revealed a first taxonomy of utopias and informed the experiment, the second pre-registered study investigated the effects of concrete utopias geared toward the utopian goal of sustainability in the area of food production through the social change approach and the technology approach. Given the small number of prior studies in this area, there is a limited literature to embed the present findings in. Nevertheless, an attempt is made to connect the results to the present state of research.

As hypothesised, the data indeed validates the claims and hypotheses put forth by a number of scholars (e.g. Gernert et al., 2018): Concrete utopias can lead to change by affecting people's intentions to engage in relevant actions (H1). As shown by Fernando et al. (2018), mental contrasting, i.e. comparing a utopian vision with the current reality, is a potential mechanism for this. Developed by Oettingen (2012) as part of fantasy realisation theory, it is postulated that "mental contrasting future and reality will produce both active goal pursuit and active goal disengagement, depending on a person's high versus low expectations of success" (p. 1). The design of the present study with the utopian conditions presented first, followed by the items asking about participants' willingness to change the current food production system might have facilitated this process, as the order of contrasting is relevant and reverse contrasting, i.e. thinking of the current state first, does not lead to more societal engagement (Fernando et al., 2018). In addition, the stimuli presented concrete utopias as having been realised already; hence, participants potentially assumed their intended actions to have a high degree of success (Oettingen & Mayer, 2002). As outlined in the literature review, other mechanisms have been proposed as well and it requires further investigation to conclusively determine their validity. Beyond the significant main effect, the post-hoc tests already indicated the superiority of the social change approach condition which will be picked up later in the discussion. The lack of post-hoc significance for the technology approach condition leads to the conclusion that H1 can be supported only partially.

It was also suggested by scholars (e.g. Fernando et al., 2019a) that attitudes towards utopias play a role in determining their effect. The current findings support this hypothesis (H2). It is also because of this strong effect that a model involving the attitudes as moderator (Fernando et al., 2019a) is unsuitable. Instead, a mediator model in alignment with the TPB was proposed and tested. This alignment as well as the predictive power of attitudes for intentions has been well-established in studies from a range of disciplines (Armitage & Conner,

2001; Blanchard et al., 2008; Munir et al., 2019; Smith et al., 2008). Contrary to this research and the hypothesis (H3), no evidence for the general mediation model was identified. However, results revealed a marginal full mediation when the control condition was omitted. It thus appears that the evaluation of a utopia matters for its effect on change intentions when utopias are compared to each other and when the differences are more nuanced. In light of this lack mediation in the overall sample, it is unsurprising that no evidence for moderated mediation (EH2) was found either.

As the initial post-hoc analysis of the main effect suggested, a closer examination of the two experimental conditions showed the social change approach to be marginally better at eliciting change intention than the technology approach (EH1). This finding is in line with previously discussed research highlighting the temporal remoteness of (Fernando et al., 2019a) and the lack of efficacy associated with technological change (Fernando et al., 2019b) as well as the folk theory of social change (Kashima et al., 2009). In other words, people may feel less inclined to invest energy, time and money into realising a future that they perceive society to move towards anyways and for whose realisation their efforts would matter little. This analysis is supported by Scott et al.'s (2019) findings which suggest that people question the impact of their personal actions for good causes even when personally supporting these.

While validating the moderated mediation model, the Utopian Impulse was included in the analysis. Although it did not moderate paths in the proposed model, the results show that it strongly predicted change intentions itself and thus supports previous findings on its predictive power in utopian contexts (Krpan & Basso, 2020). Moreover, (marginal) moderation was observed in analyses including (of attitudes) and excluding (of attitudes and intentions) the control condition. In light of this evidence, the Utopian Impulse appeared to play a central role and its examination yielded two central take-aways: Firstly, at low values of the Utopian Impulse, no significant differences between the conditions on change intentions could be observed. Hence, it seems that people with little utopian propensity are hardly affected by utopias and their realisation. Secondly, against the backdrop of the social change approach condition being marginally more effective at eliciting change intentions, the higher the Utopian Impulse scores were, the lower the importance of the allocation to one of the two approaches became. Put differently, the higher one's propensity to engage in utopian thoughts and actions, the less relevant it becomes whether these are directed at a social change approach-based or technology approach-based utopia. In general, these findings indicate that individual differences in the Utopian Impulse matter as to whether a concrete utopia can lead to change intentions. If one has a disposition towards utopianism, the details of the utopias are less

relevant. Consequently, as proposed by Basso and Krpan (2020), a potential way to bring about change might be to focus efforts on those people with high Utopian Impulse.

8.   Future Directions and Limitations

The findings presented in this dissertation highlight the need for further research in a number of areas: For one, since the taxonomy of utopian goals, approaches and areas was developed on the basis of an exploratory qualitative study, further research is necessary to validate the categorisations proposed in study 1, in particular as it is possible that more than the three identified goals exist. Though intended to provide as wide of a perspective on human activity in society as possible, the six questions used in study 1 might have also limited the range of responses; different questions might elicit different data; so would a different, e.g. non-Western sample. For two, before generalising the results obtained in study 2, it is advisable to investigate whether the identified effects are specific to the goal of sustainability and the area of food or whether they hold true when tested with different goals and areas (e.g. equality and education). Finally, as suggested above, it would be worthwhile to probe the hypothesis that change can indeed be initiated effectively by first concentrating efforts and resources on individuals with high levels of utopian propensity, i.e. strong Utopian Impulse.

Besides these potential avenues of research, several limitations, mostly revolving around the experimental study, also need to be attended to. A number of hypotheses could not be supported on the basis of the data. For instance, the complete lack or limited existence of mediation and moderation effects might be due to the strength of the main effect and the Utopian Impulse as individual predictor. In part, the strong main effect was likely a result of suboptimal stimulus design; notably, the control condition was evaluated very poorly. For future research, the respective vignette should be altered and avoid elements that are negatively connotated in popular perception, namely pesticides in this case.

In this regard, the combination of the condition with the dependent variable demands further scrutiny. With the domain-specific Citizenship for Change scale being very much focused on changing the status quo and the control condition basically depicting exactly this, it is hardly surprising to see low scores on change intentions. Potential follow-up studies should take this observation into account and develop a control vignette that allows for some form of realistic but non-utopian change.

Finally, it is worth noting that the present research was limited to studying attitudes and behavioural intentions. While sufficient evidence exists for intentions to be a good predictor of behaviour (TPB; Armitage & Conner, 2001), there is an equal amount of research highlighting the intention-behaviour gap (Sheeran, 2002). In order to fully examine the effects of utopias

for change, behaviour ought to be incorporated into research designs, for instance like Basso & Krpan (2020) or Fernando et al., (2019a).

9.   Conclusion

The present study provides initial evidence to back up the prevalent claim that concrete utopias can potentially lead to social change. While actual behaviour was not tested, the results suggest that people are indeed affected by concrete utopias in their intention for change. Beyond this main finding, the two studies also provide more nuance: The first study yielded a taxonomy of utopias differentiated by goals, approaches and areas and in fact, in study 2, people's intentions for change differed with regards to the approach illustrated in the experimental conditions. Moreover, individual differences in the propensity to think and behave in utopian ways also affected change intentions. In the future, these findings as well as the underlying mechanisms of the effect of concrete utopias merit further research.

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Appendix

1. Coding Book – Study 1

Research question: How do ordinary people envision an ideal future?

Global theme: Respondents envisioned a sustainable world that is equitable in the global and the local, offers a high quality of life and is enabled by technological progress and social changes.

Organising theme	Theme	Summary	Parameters			Example
			Specificity	Valence	Novelty	
The utopian goals: an equal, sustainable world worth living in	Equality	People's futures are defined by a deep-seated desire for equality in all areas of life, which can be seen as a response to the prevalent perception of a divide between the rich and the poor. Respondents had broad ideas of how to achieve equality but seldomly described concrete measures. If they did, they seemed to be informed by today's proposals.	Desire for equality was very present. Participants voiced the areas where they would like this equality to occur (general society, law, work) and sometimes described semi-concrete paths to get there (free access to education and knowledge, structural changes in government). Seldomly, concrete measures were mentioned (UBI, open borders).	Overwhelmingly positive; equality was the second most cited theme in the data. In this context, the common perception of the rich pitted against the poor has to be noted as something of negative valence. In fact, some participants expected this perceived inequality to persist in the future; dystopia.	The novelty of the comments was rather low, which is not surprising given the low number of concrete measures. UBI and open borders were utopias that already exist as pilots today; their novelty lies in their national or global application.	"Society will be much more equal with every adult given a basic wage, no matter of their age, colour, disabilities etc." (Female, 51)
	Sustainability	Respondents seemed to understand sustainability rather broadly as acting consciously with regards to environmental resources. It appeared to be an explicitly voiced	For technology, food and locality, these changes are very concrete. In others, e.g. mindset, they are rather inconcrete.	Urgency; no alternatives. Positive valence.	see individual themes.	"Overall, supply will be more concentrated in each nation and there will be less global trade, helping the environment and the employment

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		goal and a secondary motivating force for other goals.				situations in many nations." (Female, 28)
	Quality of life	Respondents expected and desired a higher quality of life. They suggested this requires a redefinition of what a good life is and concrete developments with regards to their health, money and time affluence, work and sociality.	The individual areas where the higher quality of life will be realised were named explicitly (more leisure time, greater wealth, better health) but not fleshed out in detail. There was little further elaboration of how these changes will manifest in the day-to-day.	Very positive valence, unsurprising given the theme.	Little novelty; increasing quality of life has been a goal for ages; its re-definition carries some novelty.	"I believe in fifty years time, medical research currently on the fringe of approval, will come to fruition, i.e. stem cell research. The use of this life changing treatment will cause many diseases (such as ALS) to be manageable, if not curable, and will see an increase in the quality of life for many people born with degenerative/life altering diseases/conditions." (Female, 24)
The utopian approaches: Two fundamentally different ways to realise the desired changes exist	Technology	Participants considered technology a likely and viable route to realise their utopian visions. This was particularly true in areas which are already technology-dominated (e.g. transport) and thus suggest a continuation of an existing trend.	Mostly very concrete, in particular in supply (robotics & AI), transport (high-speed underground networks, hydrogen cars), digital communication (facetime+, holography), education (online learning) & knowledge (completely digital). Great hope but less concreteness with regards to the body:	Overwhelmingly positive; Technooptimism. People saw technology as the solution to today's and future problems, be it in health, sufficient supply for a growing population, inefficient processes or equitable access to knowledge. Yet, concerns remained about the power that gatekeeping of (mis-	Predominantly evolved versions of today's technology (multi-sensory video chat, all-in-on nutrient pill) and/or their increased adoption (lab grown protein, powdered food, 3D printer). Some technologies appeared to be new but the underlying ideas were based on today (holographic videocall,	"We will organise supply through the use of technology. As we advance, so will technology which will make it smarter, quicker and overall more efficient. Time to deliver supply will be shortened, as transport will have advance, producing faster vans, trains, or airplanes. Time to manufacture and

			People imagined great scientific progress but could not fathom what this would look like in detail.	)information holds, the loss of physical interaction because of digital communication and potential job losses because of automation.	mental & physical pain relief chamber). Seldomly, technology is completely new (brain interface to communicate, high speed underground networks).	organise supply will also be shortened and more efficient. We may utilise robotic technology, rather than humans to reduce human error and to speed up the process so individuals/businesses receive their supply faster and instantly." (Female, 27)
	Social change	Respondents conceived social change broadly and described changes in social norms (diets), policies (UBI) and institutions (world government). Proposals ranged from radical ideas (open borders) to continuing current developments (home office as norm).	The more radical a proposal, the less detailed it was described by the respondents. For measures currently debated or tested (e.g. UBI) the participants gave more details.	Positive valence with occasional taints of pessimism stemming from a rather negative image of humanity. For instance, while most respondents saw social changes as likely increasing equality, some foreshadow wealth inequality to persist.	Novelty varies. Some proposals were new and radical (world government, open borders), others still debated but not yet in place (UBI), while other developments are already happening (dietary practices).	"A universal basic income could be introduced globally so everyone can benefit from the essentials and healthcare" (Female, 54)
The utopian areas: The utopian goals are achieved through developments in these areas	Transport & communica-tion	Respondents' in this area were defined by a focus on technological solutions. Except for a shift in primary transportation mode, all other notable suggestions rely on some form of technological advancement. Notably, the majority of suggested	Very concrete, in particular when it came to technological advancement in certain segments (online chat, cars). Other suggestions were kept very broad (zero carbon transport). Interestingly, some niche solutions were described: Soulmate-	Given the high level of technological suggestions, technooptimism was omnipresent. In fact, little to no negative comments.	No moon shots, mostly further developments of technological status quo, taking into account what is currently being debated on the horizon (e.g. delivery drones).	"It'll be transported by super fast plane travel, when coming from other countries, but this travel will not cause pollution." (Female, 23)

	changes were meant to realise the goal of sustainability.	matching and technology to remember the dead.			
Locality & globality	Participants' futures displayed a tension between globality and locality with both connecting to other themes. On a macro level, people foresaw global entities and developments as means to achieve equality; on meso and micro levels, locality predominated and was seen as a modus operandi to realise sustainable lives, supported by technology, with higher quality of life.	A tension between these two opposing concepts existed in the comments. The inconcrete comments tended to describe a global future (world government, global supply chain), whereas locality was very much fleshed out in the comments foreseeing such a future (local production & consumption of food using hydroponics, organisation of society in local communities).	Both concepts were valenced positively and their advantages are considered predominantly. Globality was often connected to the idea of equality. Locality was seen as a way to increase sustainability and raise quality of life by simplifying, often accompanied by a shift of mindset away from consumerism.	Global ideas were rather limited in their novelty; again, their global application was what makes them utopian (global UBI, world government, global free education). On the local level, what was particularly novel is the organisational focus on self-sufficient and self-governing local communities and hubs away from the centralistic, metropolitan-based current system. The individual ideas to occur locally were evolved versions and increased adoptions of today's practices (indoor food production, shared 3D printers).	"The decentralisation of human culture away from the cities will allow more people to access green spaces, and discourage large scale urbanisation, leading to further improved health due to reductions in pollution" (Female, 27)
Education	Respondents saw education as a prominent realm to realise equality, stemming from a dissatisfaction with the current educational	Respondents provided concrete ideas: Education ought to focus on life skills and curricula should change accordingly; online	Comments often stemmed from dissatisfaction with current educational system.	Little novelty. Normalising current exceptions (online teaching) and widespread adoption of practices (free	"Education is free to all. Education is key to bringing about change and a more equal society. Education is key to bridging the gap

Theme					
	system. Education ought to go beyond responding to current trends like digitalisation and realise its potential to teach relevant life skills to everyone.	teaching will become the norm, so will life-long learning opportunities for everyone. In general, education was seen as a primary place for the manifestation of equality. Participants were mixed on the future of higher education (mandatory vs. irrelevant).		education). Explicit focus on life skills and more emphasis on life-long learning was somewhat novel.	between rich and poor." (Female, 35)
Food	Respondents agreed that food production and consumption will change, with (new) technology playing a big role in enabling this change. For food preferences, a normalisation of today's exceptions like veganism was expected. Organic and artificial production built two opposing extremes on the supply side.	Very concrete with regards to what is consumed (less meat, artificial alternatives, veganism is norm); semi-concrete with regards to the connection to physical health (optimising food for nutrient; personalised food); inconcrete with regards to an increased awareness and value for food.	Positive valence even for abdication (meat) or artificial food. In general, tension between two extremes: everything is completely organic or artificial.	In terms of practices, today's exceptions (veganism) are normalised and widely adopted. Technological ideas about completely artificial food production or individualised food were quite utopian.	"There will always be enough natural products if we are careful about waste and satisfy our taste rather than just filling our plate." (Male, 30)
Health	Health was an important consideration in people's futures. Respondents assumed scientific breakthroughs that will allow excellent physical health to become the	Concrete with regards to technological solutions (see technology theme), rather inconcrete with increased awareness for physical and mental health.	Important theme, many comments! Great hope in scientific progress (technooptimism) with higher life expectancy and better health as results. The ways to get	Technological solutions were utopian (see technology theme), lifestyle changes were widespread adoption of today's practices (exercise, diet).	"I think that rather than people looking after their body in the future, medical procedures will advance enough that people will rely on this." (Female, 30)

Theme					
	norm (technooptimism), shifting the focus to mental health where treatments were less concrete.		there were not completely positive (exercise is recognised as necessary but it might need to be mandated by law). Change of valence for mental health to the positive and normal, especially after physical health is taken for granted.	Interestingly, no mention of digital treatments.	
Knowledge	Participants overwhelmingly expected knowledge to be ubiquitous, digital and accessible. This way, it forms a fundamental enabler of an equal society.	Respondents agreed on the general premise of universal availability of knowledge but offered little concrete manifestations of this. Specific physical entities of knowledge (books, libraries) were expected to disappear.	Very positive with respect to the enabling of equality. Some comments about the dangers of misinformation and the question of assessing what is and what is not.	Digitising or making it publicly available is not new (Wikipedia); the utopianness rather lies in the absolute nature of the promise, i.e. all knowledge is available.	"The internet would be the main source of knowledge, with all of society having a good grip on this since they have all grown up using technology. Access to all of the world would be possible and think information would be in real time. Paper and magazine sources on knowledge wouldn't exists but there would be a greater spread of source of information that gives an overview." (Female, 33)
Mindset & lifestyle	Respondents shared a desire to change the dominant mindset from a wealth-and-success-pursuing one to one	Responses on this theme were specific with regards to the aspired change in mindset and lifestyle (sufficiency,	Very positive with little to no negatively valenced perspectives on the future.	Limited novelty; utopianess lies in the widespread adoption of currently increasingly	"Success will be redefined by personal fulfilment, and not by anyone else's standards, so I believe that we will

	defined by sufficiency, self-care and mindfulness. As a way to get there, widespread adoption of increasingly relevant practices like meditation was proposed. In addition, a broadening of lifestyles and conceptions of institutions like family was suggested.	simplicity, self-care, valuing the present, overcoming wealth as marker of success, broadening the family) but rather inconcrete when it came to the realisation of this change if successful. The frequently mentioned exception being the widespread teaching and practice of mindfulness.		relevant mindsets and practices.	be much more content with ourselves and our decisions." (Female, 19)
Work	Work was a second-tier theme for respondents. They foresaw general and rather granular improvements, caused by a change in mindset and technology. Some worried about negative consequences of technological progress.	Rather general comments on desired improvements (work-life balance, equality at the workplace) and effects of technology (little manual labour, home office).	Increase valence of trade jobs; worry about job shortage because of technology.	Normalising today's exceptions (home office as the norm) and dealing with issues that are of relevance today as well (work-life balance, automation); little novelty.	"lots of people in corporate jobs working from home as there will be no need to hire out massive spaces when people can achieve the same thing from their kitchen table." (Female, 20)
Political system	Respondents displayed a general dissatisfaction with the current political system and offered both concrete, rather utopian alternatives as well as more inconcrete desires for change.	Dissatisfaction with current situation led to both, concrete alternatives (global government) and inconcrete desires (more transparency and diversity)	Proposed alternatives carried positive valence. Continuation of today was valenced neutral to negative.	Concrete alternatives are rather novel (segmenting the world in 4 areas, one world government); other themes were picked up (more autonomy for local hubs); others saw a continuation of today (meritocracy, market completely dominates,	"There will be a central government overseeing supplies to 4 different regions on the earth. Each government supply zone will be elected from it's own region." (Female, 65)

				little change in governmental structure)		
The utopia-affected: Pursuing the utopian goals has consequences in these areas	Spirit & religion	Comments were very inconcrete and inconclusive in their projections: Religion and spirit were expected to decline, maintain or increase in value.	See summary.	Inconclusive.	No novelty.	"Religious and spiritual belief will remain as it has for thousands of years although i believe that the number of people that believe in these things will become lower and lower." (Male, 35)
	Social interaction	No reduction in social interactions in total, people are and will be social animals. However, the data was inconclusive about the form of interaction: Some participants saw a rise in physical interactions as a form of connecting with past ideals, others saw a decrease, connected to a widespread adoption of digital communication technology.	Data very inconcrete. See summary.	Mixed. Increases in physical interactions were more positively valenced than digital ones. The latter was sometimes connected to current social distancing measures during Covid19, suggesting these practices to simply continue but carrying a rather negative valence.	Rather little novelty. Interestingly, some suggestions could be seen as a backwards movement towards old ideals (analogue; one village raising a child)	"Social media and technology will go full circle - at the minute it is getting so much more advance[d], that eventually people will miss simple features and so we will begin to see a bell shaped curve and begin the decline back to more simple technology. We may even begin sending letters again just for the novelty value." (Female, 49)
	Physical space	The majority of respondents believed that functional (indoor) physical spaces will get lost as a result of digitalisation; a current trend that will continue.	Concrete in terms of what gets lost: less physical shops, less libraries, less books as result of a move towards digital life, attenuated by covid19 and people	Loss of physical space considered inevitable, some sorrow involved. Nature related comments were very positive.	Little to no novelty, rather a linear continuation of current trends	"I believe high street shops and physical retail stores will begin to die out, replaced by online/telephone shopping, as the customer can receive just

Some foresaw an increased valuation of nature, in particular to exercise and for food production.

staying at home. On the other hand, some participants foresaw an increased valuation of nature, in particular to exercise and for food production.

as fast delivery, without the need to go out of their way and into the store." (Female, 24)

2. Taxonomy of Utopias – Study 1

Utopian goal	Utopian approach	Utopian area	Concrete utopia
Equality	Social change	Transport & communication	Bicycle as dominant form of transport
		Locality & globality	Local self-governing communities
		Education	Global free education
		Food	Local food production and consumption
		Health	Easy, cheap or free access to sports facilities for everyone
		Knowledge	-
		Mindset & lifestyle	Concept of IQ is overcome; individualised measures
		Work	Equality maternity and paternity leave
		Political system	Universal basic income
	Technology	Transport & communication	Ubiquitous and faster air travel
		Locality & globality	Locally shared 3D printers
		Education	-
		Food	-
		Health	Individualised exercise programs at home
		Knowledge	All knowledge is digitally available
		Mindset & lifestyle	-
		Work	-
		Political system	Citizenship (voting, etc.) is digital
Sustainability	Social change	Transport & communication	Bicycle as dominant form of transport
		Locality & globality	Local self-sustaining communities
		Education	Online schooling as the norm
		Food	Community gardening

		Health	Personal green space for everyone
		Knowledge	-
		Mindset & lifestyle	Mindset shift towards sufficiency and simplicity
		Work	Home office as the norm
		Political system	Law enforcement of sustainability rules
	Technology	Transport & communication	Zero carbon transport
		Locality & globality	Locally shared 3D printers
		Education	-
		Food	Food productions using hydroponics
		Health	-
		Knowledge	-
		Mindset & lifestyle	-
		Work	-
		Political system	Resource-relevant decisions are made by humans aided by technology
Quality of life	Social change	Transport & communication	Bicycle as dominant form of transportation
		Locality & globality	Migration to the countryside
		Education	Individual life-skills oriented education
		Food	Plant-based diets as the norm
		Health	Holistic health centres care for body, mind, spirit and soul
		Knowledge	All knowledge and information are fact-checked
		Mindset & lifestyle	Wealth is overcome as measure of success
		Work	Transparent salaries
		Political system	Transparent government
	Technology	Transport & communication	Holographic communication
		Locality & globality	-

Education	-
Food	Personalised diets and food
Health	Physical and mental pain relief chamber
Knowledge	Internet access for everyone through satellites
Mindset & lifestyle	-
Work	-
Political system	-

3. List of Concrete Utopias – Study 1

Concrete utopias	Transport & communication	Locality & globality	Education	Food	Health	Knowledge	Mindset & lifestyle	Work	Political system
3D printers print everything	x								
Holographic communication	x								
Multisensory communication	x								
Autonomous delivery drones	x								
High speed underground networks for people and goods	x								
Brain interface	x								
Autonomous vehicles	x								
Zero carbon transport	x								
Bicycle as dominant form of transport	x								
Communication without speech	x								
Ubiquitous and faster air travel	x								
Space travel as part of the supply chain	x								
Remembering the dead through technology	x								
Soulmate-matching app	x								
Predictive supply	x								
Desalination facilities in drought-prone areas	x								
Everything is ordered online	x								
Hydrogen-powered vehicles	x								
Locally shared 3D printers		x							
Local self-sustaining communities		x							
Local self-governing communities		x							

Migration to the countryside		x							
Global free education			x						
Individual life-skills oriented education			x						
Life-long learning			x						
Students-choose-schools education system			x						
Education focused on access to rather than acquisition of knowledge			x						
University is mandatory			x						
Online schooling as the norm			x						
Powdered food				x					
Community gardening				x					
Local food production and consumption				x					
Lab-grown protein				x					
Food production using hydroponics				x					
Personalised diets and food				x					
Regulation of animal product consumption				x					
Food offerings based on seasonality				x					
Plant-based diets as the norm				x					
Insects as food				x					
Physical and mental pain relief chamber					x				
Innovation is done by AI					x				
Genetic diseases and disorders are cured					x				
Personalised medicine					x				
Easy, cheap or free access to sports facilities for everyone					x				
Exercise as daily requirement					x				
Holistic health centres care for body, mind, spirit and soul					x				

Individualised exercise programs at home					x				
Personal green space for everyone					x				
Learning during sleep						x			
Unlimited brain capacity						x			
Internet access for everyone through satellites						x			
All knowledge is digitally available						x			
All knowledge and information are fact-checked						x			
Increased adoption of mindfulness							x		
Mindset shift toward sufficiency and simplicity							x		
Redefinition of a good life							x		
Intergenerational living							x		
Adoption and fostering kids as first option							x		
Broader conception of family							x		
Concept of IQ is overcome; individualised measures							x		
Less cosmetic surgery							x		
Wealth is overcome as measure of success							x		
Catholic church opens for women							x		
Improved work life balance								x	
Home office as the norm								x	
Female care work financially rewarded								x	
Equal maternity/paternity leave								x	
Workers can take mental health days off								x	
Transparent salaries								x	
World government									x
Transparent government									x
Global trade of goods is fixed, regardless of politics									x

									x
Refugees are welcomed for their potential									x
Citizenship (voting, etc.) is digital									x
Law enforcement of sustainability rules									x
Sustainable, carbon-free economic model									x
Universal basic income									x
Open borders									x
Resource-relevant decisions are made by humans aided by technology									x
Establishment of technology-free zones									x

4.   Sample Demographics

4.1   Study 1

Categorical Variable	n	Percentage
Final Sample	34	100.0%
Gender		
Female	26	76,5%
Male	8	23,5%
Other	0	0%
Continuous Variable	Mean	SD
Age	31.3	12.1

4.2   Study 2

Categorical Variable	n	Percentage
Final Sample	287	100.0%
Control Condition	97	33.8%
Social Change Condition	94	32.8%
Technology Condition	96	33.4%
Gender		
Female	150	52.3%
Male	137	47,7%
Other	0	0%
Dietary Practices		
Meat Lover	43	15.0%
Regular Omnivore	149	51.9%
Meat Reducer	53	18.5%
Pescatarian	17	5.9%
Vegetarian	22	7.7%
Vegan	3	1%
Continuous Variable	Mean	SD
Income	25530	18500
Age	45.83	14.10
Political Orientation	4.48	2.09

5.   Materials Used in Studies

The following material is shown exactly as used in the studies (except for randomised order, when applicable).

<u>5.1   Study 1</u>

Thank you for accepting to participate in this study.

The survey will contain two parts.

In the first part, you will be asked questions about life 50 years from now. Try to imagine what life in 2070 ideally will look like and describe it in your answers. There will be six questions, each focused on one particular aspect of an ideal world in 50 years. There are no wrong answers. Your responses should have at least 500 characters but you are welcome to write more.

In the second part, you will be asked to sign-up to an external website with random information, transfer your answers to it and confirm your submission by providing the URL. This task is straightforward and will be detailed later in the survey.

Please read all of the information carefully before answering the questions that follow.

--- Page break ---

Now imagine what life ideally will look like 50 years from now and proceed to the first question.

--- Page break ---

How do we organise supply in fifty years?

--- Page break ---

How do we structure society in fifty years?

--- Page break ---

How do we relate to people in fifty years?

--- Page break ---

How do we nurture the body in fifty years?

--- Page break ---

How do we manage knowledge in fifty years?

--- Page break ---

How do we mind the spirit in fifty years?

5.2   Study 2

Control condition

Barlow Farming is an organisation which aims to continue its growing operation of food production. Located in Bromley, England, the organisation owns several hectares of land which it uses as farmland to produce vegetables. To ensure crop yields, Barlow Farming relies on the farmers' experience and skills as well as the use of pesticides, fertilisers and technology.

Its founder, Ken Barlow, prides himself on working with this set of tools and practices to enable a continuously growing food production.

Social change condition

Barlow Farming is an organisation which aims to realise the future of sustainable food production. Located in Bromley, England, the organisation owns several pieces of land which it uses as community gardens to produce vegetables in a sustainable way. To ensure crop yields, Barlow Farming relies on a community of self-organising local volunteers who work in the gardens, instead of using pesticides and fertilisers.
Its founder, Ken Barlow, prides himself on working with this community to enable an environmentally friendly food production.

Technology condition

Barlow Farming is an organisation which aims to realise the future of sustainable food production. Located in Bromley, England, the organisation owns several warehouses which it uses as farms to produce vegetables in a sustainable way. To ensure crop yields, Barlow Farming relies on hydroponic technology with a computer automatically adjusting LED-lightening, temperature and nutrient levels, instead of using pesticides and fertilisers.
Its founder, Ken Barlow, prides himself on working with this technology to enable an environmentally friendly food production.

Comprehension Check

What does Barlow Farming use to grow vegetables? (1 = hydroponic technology; 2 = a mix of established farming practices; 3 = Community volunteers)

Dependent Variable: Change Intentions

7-point scale (1 = *not at all*, 7 = *a great deal*). The items are then averaged to form the scale.

How much do you want to take some form of action to change the current food production system?

How much do you want to take action to change the direction in which food production is heading at this point?

How much do you want to speak to family or friends about the need for change in the current food production system?

How much do you want to donate money to an organisation or lobby group which supports change in the current food production system?

How much do you want to give your own time volunteering for an organisation which supports change in the current food production system?

Independent Variable: Attitudes Towards the Utopia

7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The items are then averaged to form the scale as a moderator.

This is the kind of food production system that I would love to see in the world.

This kind of food production system is something I would be afraid of seeing in the world.

I find the food production system described to be unappealing.

I find the food production system described to be very appealing.

Independent Variable: Utopian Impulse Scale

7-point scale (1 = *strongly disagree*, 7 = *strongly agree*). The items are then averaged to form the scale as a moderator.

One of the most important driving forces in my life is to develop ideas that could contribute to a better world in which nothing is missing for all human beings.

I frequently have the impulse to help transform the current society into a new world where the biggest issues of our age are extinct.

I often participate in conversations whose purpose is to come up with potential solutions to the biggest social ills of our time.

I feel that there are many alternative social and economic activities that could resolve current social issues if they were widely adopted.

I often feel that there are new ways of living that would create social and economic justice for everyone.

I often get the impression that the future of our society could be better if some existing solutions to transform economic and social reality were scaled up.

I feel excited when I come across propositions that could overcome our past and present economic, social, and environmental failures.

I am thrilled when I come across already existing solutions that could improve the circumstances of people who are underprivileged if they were more widely adopted.

I get excited when I encounter ideas that changed the world for the better by enabling social and economic progress.

Current examples of social and economic inequality motivate me to choose ethical products that counter exploitation and injustice.

Whenever I have the choice, I choose products and services that can help fix the social and environmental problems resulting from our malfunctioning economic system.

My everyday choices of products and services can help transform the economic and social life of the workers in these industries.

Additional Attention Check Item: Please respond with 'Neither agree nor disagree' for this item.

Covariates

Age

What is your age (in years)?

Gender

What is your gender? Male – Female – Other

Dietary practices

Please enter your dietary practices below:

Meat lover: I prefer to eat meat.

Omnivore: I eat meat and vegetables.

Flexitarian: I eat meat, but not very much.

Pescetarian: I eat fish but no other meat.

Vegetarian: I do not eat any meat.

Vegan: I do not eat any meat or animal products.

Political orientation

In politics, people sometimes talk of "left" and "right". Using the scale below, where would you place yourself on the political spectrum? (0 = *left,* 10 = *right*)

Annual Income

Please, drag the slider to indicate your personal annual income (after taxes) in £1,000s.

For instance:

- if your income is £30,000 a year, drag the slider to the number 30.

- if your income is £100,000 a year or more, drag the slider to the number 100.

6.   Analyses with Covariates in Study 2

Model	Condition	Moderator Level	Pathway/Test	Excl. covariates				Incl. covariates			
				p-value	*95% CI*	*90% CI*	*Sign. level*	*p-value*	*95% CI*	*90% CI*	*Sign. level*
Hypotheses											
Main effect: attitudes	All	n/a	ANOVA	p < .001	n/a		95%	p < .001	n/a		95%
	1 vs. 0		Post-hoc	p < .001	[0.67; 1.52]		95%	p < .001	[0.62; 1.49]		95%
	2 vs. 0		Post-hoc	p < .001	[0.27; 1.11]		95%	p < .001	[0.27; 1.13]		95%
	1 vs. 2		Post-hoc	p = .066	[-0.02; 0.82]	[0.03; 0.77]	90%	p = .142	[-0.08; 0.79]	[-0.03; 0.74]	n.s.
Main effect: intentions	All	n/a	ANOVA	p = .001	n/a		95%	p < .001	n/a		95%
	1 vs. 0		Post-hoc	p < .001	[0.29; 1.20]		95%	p < .001	[0.29; 1.18]		95%
	2 vs. 0		Post-hoc	p = .112	[-0.67; 0.84]		n.s.	p = .225	[0.12; 0.78]		n.s.
	1 vs. 2		Post-hoc	p = .156	[-0.10; 0.82]		n.s.	p = .091	[-0.04; 0.85]	[0.01; 0.80]	90%
Attitudes and intentions (mediation model)	1 vs. 0	n/a	A*B (Indirect effect)	n/a	[-0.74; 0.27]		n.s.	n/a	[-0.02; 0.28]	[0.01; 0.25]	90%
			C (Direct effect)	p = .002	[0.24; 1.06]		95%	p = .002	[0.22; 0.99]		95%
			A*B + C (Total effect)	p < .001	[0.36; 1.13]		95%	p < .001	[0.37; 1.10]		95%
			A	p < .001	[0.74; 1.45]		95%	p < .001	[0.70; 1.41]		95%
	2 vs. 0	n/a	A*B (Indirect effect)	n/a	[-0.05; 0.17]	[-0.04; 0.23]	n.s.	n/a	[-0.01; 0.18]	[0.04; 0.17]	90%
			C (Direct effect)	p = .100	[-0.06; 0.72]	[0.00; 0.65]	90%	p = .194	[-0.13; 0.62]	[-0.07; 0.56]	n.s.
			A*B + C (Total effect)	p = .050	[0.01; 0.77]		95%	p = .075	[-0.03; 0.69]	[0.03; 0.64]	90%
			A	p < .001	[0.34; 1.04]		95%	p < .001	[0.35; 1.05]		95%
	All	n/a	B (condition-independent)	p = .171	[-0.04; 0.21]		n.s.	p = .052	[-0.00; 0.24]	[0.02; 0.22]	90%
Exploratory Hypotheses											
Main effect: intentions (excluding control condition)	All	n/a	ANOVA	p = .070	n/a		n.s.	p = .029	n/a		95%
Attitudes, intentions and Utopian Impulse (moderated mediation)	1 vs. 0	16th percentile	A*B (Indirect effect)	n/a	[-0.07; 0.06]	[-0.05; 0.04]	n.s.	n/a	[-0.07; 0.05]	[-0.05; 0.04]	n.s.
			C (Direct effect)	p < .001	[0.44; 1.15]		95%	p < .001	[0.43; 1.15]		95%
			A	p = .626	[-0.34; 0.57]		n.s.	p = .687	[-0.36; 0.54]		n.s.
		50th percentile	A*B (Indirect effect)	n/a	[-0.21; 0.05]	[-0.19; 0.02]	n.s.	n/a	[-0.22; 0.29]		n.s.
			C (Direct effect)	p < .001	[0.47; 1.04]		95%	p < .001	[0.45; 1.02]		95%
			A	p < .001	[0.85; 1.50]		95%	p < .001	[0.81; 1.45]		95%
		84th percentile	A*B (Indirect effect)	n/a	[-0.38; 0.20]		n.s.	n/a	[-0.40; 0.16]		n.s.
			C (Direct effect)	p = .001	[0.30; 1.13]		95%	p = .001	[0.27; 1.11]		95%
			A	p < .001	[1.62; 2.54]		95%	p < .001	[1.56; 2.46]		95%
	2 vs. 0	16th percentile	A*B (Indirect effect)	n/a	[-0.04; 0.11]	[-0.03; 0.09]	n.s.	n/a	[-0.05; 0.10]	[-0.03; 0.08]	n.s.
			C (Direct effect)	p = .645	[-0.28; 0.44]		n.s.	p = .648	[-0.28; 0.45]		n.s.
			A	p = .339	[-0.68; 0.24]		n.s.	p = .491	[-0.62; 0.30]		
		50th percentile	A*B (Indirect effect)	n/a	[-0.15; 0.03]	[-0.13; 0.01]	n.s.	n/a	[-0.16; 0.02]	[-0.14; 0.01]	n.s.
			C (Direct effect)	p = .018	[0.06; 0.59]		95%	p = .019	[0.53; 0.59]		95%
			A	p < .001	[0.42; 1.07]		95%	p < .001	[0.44; 1.07]		95%
		84th percentile	A*B (Indirect effect)	n/a	[-0.30; 0.14]		n.s.	n/a	[-0.32; 0.12]		n.s.
			C (Direct effect)	p = .009	[0.13; 0.92]		95%	p = .001	[0.13; 0.92]		95%
			A	p < .001	[1.11; 2.02]		95%	p < .001	[1.09; 1.98]		95%
	All	n/a	B (condition-independent)	p = .136	[-0.54; 0.07]		n.s.	p = .130	[-0.54; 0.07]		n.s.

Additional Analyses										
Attitudes and intentions (mediation model excluding control condition)	1 vs. 2	n/a	A*B (Indirect effect)	n/a	[0.02; 0.35]		95%	n/a	[0.14; 0.33]	95%
			C (Direct effect)	p = .293	[-0.17; 0.57]		n.s.	p = .138	[-0.09; 0.62]	n.s.
			A*B + C (Total effect)	p = .070	[-0.03; 0.75]	[0.03; 0.68]	90%	p = .029	[0.04; 0.78]	95%
			A	p = .023	[0.05; 0.75]		95%	p = .029	[0.04; 0.75]	95%
	All		B (condition-independent)	p < .001	[0.25; 0.55]		95%	p < .001	[0.23; 0.52]	95%
Attitudes and Utopian Impulse (moderation model)	1 vs. 0	16th percentile		p = .626	[-0.34; 0.57]		n.s.	p = .687	[-0.36; 0.54]	n.s.
		50th percentile		p < .001	[0.85; 1.50]		95%	p < .001	[0.81; 1.45]	95%
		84th percentile		p < .001	[1.62; 2.54]		95%	p < .001	[1.56; 2.46]	95%
	2 vs. 0	16th percentile		p = .339	[-0.69; 0.24]		n.s.	p = .491	[-0.62; 0.30]	n.s.
		50th percentile		p < .001	[0.42; 1.07]		95%	p < .001	[0.44; 1.07]	95%
		84th percentile		p < .001	[1.11; 2.02]		95%	p < .001	[1.09; 1.98]	95%
	All	n/a	ANOVA (interaction)	p < .001	n/a		95%	p < .001	n/a	95%
Intentions and Utopian Impulse (moderation model)	1 vs. 0	16th percentile		p < .001	[0.46; 1.17]		95%	p < .001	[0.45; 1.16]	95%
		50th percentile		p < .001	[0.45; 0.96]		95%	p < .001	[0.42; 0.92]	95%
		84th percentile		p = .001	[0.25; 0.97]		95%	p = .003	[0.20; 0.92]	95%
	2 vs. 0	16th percentile		p = .546	[-0.25; 0.47]		n.s.	p = .551	[-0.25; 0.47]	n.s.
		50th percentile		p = .019	[0.05; 0.55]		95%	p = .026	[0.03; 0.54]	95%
		84th percentile		p = .010	[0.11; 0.82]		95%	p = .016	[0.08; 0.79]	95%
	All	n/a	ANOVA (interaction)	p = .079	n/a		marginal	p = .068	n/a	marginal
Intentions and Utopian Impulse (moderation model; excluding control condition)	All	16th percentile		p < .001	[0.35; 1.05]		95%	p < .001	[0.36; 1.06]	95%
		50th percentile		p = .002	[0.15; 0.65]		95%	p = .002	[0.14; 0.64]	95%
		84th percentile		p = .489	[-0.23; 0.47]		n.s.	p = .590	[-0.25; 0.44]	n.s.
		n/a	ANOVA (interaction)	p = .217	n/a		95%	p = .015	n/a	95%

7.   Pre-Registration

Effects of sustainable concrete utopias on people's change motivation (#43956)

Created: 07/02/2020 07:35 AM (PT)
Shared: 08/17/2020 10:28 AM (PT)

This pre-registration is not yet public. This anonymized copy (without author names) was created by the author(s) to use during peer-review. A non-anonymized version (containing author names) will become publicly available only if an author makes it public. Until that happens the contents of this pre-registration are confidential.

1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
The main research question of this study is: How do sustainable real utopias effect intentions to engage in social change?

H1: Participants in both treatment conditions will have higher scores on domain-specific citizenship for change compared to the control condition.
H2: Participants in both treatment conditions will have higher positive attitudes toward the food production system when compared to the control condition.
H3: The effects of both treatment conditions on domain-specific citizenship for change will be mediated by the attitude toward the food production system.

As a further exploratory hypotheses, it will be tested
1) whether participants in the social change treatment condition have higher scores on domain-specific citizenship for change compared to the technology treatment condition.
2) whether the Utopian Impulse moderates the effects of the treatment conditions on domain-specific citizenship for change and their mediated paths over the attitudes toward the food production system.

3) Describe the key dependent variable(s) specifying how they will be measured.
The dependent variable "domain-specific citizenship for change" is measured by survey questions on a 7-point scale (1 = not at all, 7 = a great deal). The items are then averaged to form the scale.
- How much do you want to take some form of action to change the current food production system?
- How much do you want to take action to change the direction in which food production is heading at this point?
- How much do you want to speak to family or friends about the need for change in the current food production system?
- How much do you want to donate money to an organisation or lobby group which supports change in the current food production system?
- How much do you want to give your own time volunteering for an organisation which supports change in the current food production system?

The mediator variable "attitude toward the food production system" is measured by survey questions on a 7-point scale (1 = strongly disagree, 7 = strongly agree). The items are then averaged to form the scale.
- This is the kind of food production system that I would love to see in the world.
- This kind of food production system is something I would be afraid of seeing in the world.
- I find the food production system described to be unappealing.
- I find the food production system described to be very appealing.

4) How many and which conditions will participants be assigned to?
The study is a 3-condition (sustainable technology-based utopia; sustainable social change-based real utopia; control non-utopia condition) between-subjects design. Participants in the treatment conditions will be presented with a description of a sustainable technology-based/social change-based food-producing organisation.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
A one-way ANOVA and post-hoc test (Tukey's HSD) will test H1, H2 and exploratory hypothesis 1, a mediation analysis will test H3, and a moderated mediation analysis will test exploratory hypothesis 2.
Additional analyses might test these effects with diet, age, gender, political orientation, income included as covariates.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Participant exclusion criteria:
- All participants who do not consent to the consent form;
- All participants who fail attention checks, or who self-excluded their data from usage;
- All participants who did not respond to all questions (incomplete data sets).

7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the

number will be determined.

Sample size is determined a priori by G*Power.

For a one-way ANOVA (F-test), assuming 3 groups, G*Power suggests a total sample size of 243 with an alpha of 0.05, an assumed effect size of 0.30 (medium) and a power of 0.99. Adding 15% for invalid responses, the final total sample size should be 279. To be on the safe side, I decided to collect on 300 participants.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

Variables I control for:

- Demographics (diet, age, gender, political orientation, income)

To test the exploratory hypothesis 2, the Utopian Impulse (Basso & Krpan, 2020) will be collected as well.