Imagining a post-Corona future: a qualitative study on how uncertainty attitudes are related to people's use of futures consciousness

Master Thesis – Positive Psychology and Technology

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22nd July 2021

Abstract

The capacity of futures consciousness (FC) entails the ability to anticipate and plan for the future and is considered to be crucial in facing future uncertainties. Especially in times of rapid change such as during the Corona pandemic, the capacity to be future conscious becomes even more relevant. Life scripts as they were known before the pandemic were disrupted for people on a global scale; offering insights into how futures consciousness may operate beyond its usual functioning. This study investigated how the five dimensions of futures consciousness (Time Perspective, Agency Beliefs, Openness to Alternatives, Systems Perception, and Concern for Others) (Ahvenharju, Minkkinen, & Lalot, 2018) vary depending on (un-) certainty attitudes brought about by the pandemic. Letters from the Future (Sools, 2020) from 36 participants aged between 17 years and 81 years from a multitude of countries were qualitatively analyzed using a context-sensitive futures consciousness model (Sools et al., in press). Participant's (un-) certainty attitudes were calculated based on a scale developed for this study. Results demonstrate that letters from high and low certainty participants differed on the first three dimensions. On the first dimension, Time Perspective, the low certainty group imagined their future to be characterized by a new pandemic normal while the high certainty group showed the tendency to imagine a future without Corona. On the second dimension, Agency Beliefs, people in the low certainty group attributed themselves lower agency beliefs compared to the high certainty group. On the Openness to Alternatives dimension, the low certainty group proportionally took a closed stance towards the future more often than the high certainty group. On the last two dimensions, Systems Perception and Concern for Others, no differences were found. Finally, the article discusses how this study added to the validity of the (un-) certainty scale and gives suggestions for future research to investigate in more detail which variables may have played a role in the lack of differences between the groups on the last two dimensions.

Key Words

Futures Consciousness; Letters from the Future; Qualitative Analysis; (Un-) Certainty Attitudes; Post-Corona Future; Desired Future

1. Introduction

"I am trusting the uncertainty and believing I will end up somewhere right and good."

- Rupi Kaur

Only a few events exist that have the potential to affect the lives of whole populations on a global scale (Mutz & Gerke, 2020). Still, some singular events can possess the magnitude to change lifestyles worldwide and in short periods of time (Mutz & Gerke, 2020). The outbreak of the novel Coronavirus in Wuhan, China, in December 2019 definitely belongs in the category of events that come along with "fast and far-reaching […] change" (Mutz & Gerke, 2020, p.2). Changes, that occur on "personal, emotional, psychological, […], economic, and cultural" levels (He & Harris, 2020, p.176) and alter the ways in which people live their present daily lives (de Haas et al., 2020).

The fact that "the world has changed" (He & Harris, 2020, p.176), might be the one and only certainty the outbreak of the virus has brought about. Research agrees that the Coronavirus is associated with much uncertainty (Ratten, 2020; Xiong et al., 2020). In their study on the global effects of Corona-induced uncertainty, Caggiano et al. (2020, p.1) refer to the novel virus as being a worldwide "uncertainty shock". This uncertainty makes it challenging for people to "anticipate and plan for the future" (Ratten, 2020, p.504). Ergo, the virus does not only affect people's present lives but how they approach their future as well.

While uncertainties regarding the future never can be fully removed (Hughes et al., 2013), the uncertainties engendered by the outbreak of the novel Coronavirus are creating a whole "new normal" (Ratten, 2020, p.504), re-shaping the lives of people worldwide. Research speaking of "pre-pandemic times" (Koffman et al., 2020, p.214) and a world after

the pandemic (He & Harris, 2020, p. 176) is pointing out the extent to which the outbreak of the virus may disrupt normative life scripts which guide future images (Bohn & Berntzen, 2008). Life expectations that have been present before the pandemic were brought out of balance by the novel virus and uncertainties regarding what the future may hold arise. Especially in a world characterized by increasing complexity, interconnectivity and rapid change, it is more essential than ever to understand how humans make sense of their future and manage uncertainties (Lalot et al., 2020; Lombardo, 2006).

A capacity which is considered to be increasingly important in facing future uncertainties and drafting alternative courses of action in life is futures consciousness (FC) (Ahvenharju et al., 2018). Futures consciousness is defined as "the capacity that a person has for understanding, anticipating and preparing for the future" (Lalot et al., 2020, p.2). Originally, the term futures consciousness was coined by Lombardo, who defined futures consciousness as "the total set of psychological abilities, processes, and experiences that humans use to understand and deal with the future" (Lombardo, 2006, p.46). The capacity of futures consciousness is crucial in the decision-making process towards a desirable future (Ahvenharju et al., 2018). Respectively, futures researchers aim to increase this capacity to make decision-making towards a preferred future possible (Ahvenharju et al., 2018).

1.1 Futures research and the dimensional model of futures consciousness

In their paper on how future scenarios can be developed and used, Börjeson et al. (2006, p.725) propose to capture the concept of a preferred future with the question "How can a specific target be reached?". The authors take a rather narrow stance towards approaching a desired future and place the concept of a preferred future in a concrete scenario building context. Considering a broader context, the concept of a preferred future simply refers to a desired or wished-for future which can be captured with a more general question, such as "What *should* happen?". Next to the concept of a preferred future, the field of futures

research is concerned with the exploration of probable and possible futures (Amara, 1981 as cited by Börjeson et al., 2005). The two latter concepts can be covered by the questions "What *will* happen? [and] What *can* happen?" (Börjeson et al., 2006, p.725). These questions reflect how futures research examines and distinguishes probable, possible and preferred futures (Ahvenharju et al., 2018). Since futures consciousness is specifically relevant for the decision-making process towards a desired future, the pandemic offers a unique framework to examine how futures consciousness operates in times of change and uncertainties. The extraordinary circumstances brought about by the pandemic may challenge or modify how people think about and approach their desired future.

The way in which people approach and anticipate their future constitutes the focus in the dimensional model of futures consciousness developed by Ahvenharju et al. (2018). Instead of centring around a thematic approach and the content of future images, the model derives from an athematic approach of futures consciousness. By following an athematic approach, the model is not "thematic-dependent" but has the advantage to be used in a multitude of research contexts such as "impact assessments or comparative studies" (Lalot et al., 2020, p.17). Further, the athematic approach to studying futures consciousness allows researchers to examine the processes underlying people's understanding of futures consciousness (Ahvenharju et al. 2018) and, therefore, is less focused on the content of people's future imaginations. Still, the authors acknowledge that separating the content of future images and the mechanisms which are present to attain those images is not done straightforward. In contrast to Lombardo's rather normative idea of futures consciousness, Ahvenharju et al. (2018) intended to design a conceptual model of futures consciousness that would be sufficiently holistic and integrated to be used in empirical research. Therefore, the researchers developed the dimensional model "based on an integrated review and analysis of the descriptions of future consciousness" from various fields of research (p.1).

The model includes the five interrelated dimensions *Time Perspective (TP), Agency Beliefs (AB), Openness to Alternatives (OA), Systems Perception (SP), and Concern for Others (CO)*. The first dimension, Time Perspective, forms the basis of the model and highlights the importance of the concept of time passing by, with a specific focus on long-term thinking and envisioning the future. Dimension two, Agency Beliefs, refers to the assumption of individuals to be able to control their future and perceive themselves as active agents in shaping the future. The third dimension, Openness to Alternatives, is based on the supposition that the future may always bring new developments and that there is no one fixed future. Rather, there are several potential ways of how the future may evolve. Openness to Alternatives encompasses the capacity to imagine and explore alternative pathways and the ability to endure a future that is uncertain. Individual's comprehension and acknowledgement of the complex systems that they live in are included in the fourth dimension, Systems Perception. To head towards a better global future, individuals need to understand how they as an individual are connected to the cultural, societal and environmental systems that they live. Concern for Others emphasizes not only being concerned with one's own future but to show commitment to society and future generations, as well. In their article on the development of a quantitative tool to measure futures consciousness, Lalot et al. (2020) refer to Concern for Others as the "most normatively connotated dimension of" futures consciousness (p.6). The current study agrees with the authors by recognizing the fifth dimension as more normatively compared to the other four dimensions but, at the same time, has the aspiration to acknowledge Concern for Others as a descriptive lens to view futures consciousness following the purpose to explore variations in its usage.

1.2 (Intolerance of) uncertainty

Drawing on the dimensional model, the Openness to Alternatives dimension is negatively related to the construct of intolerance of uncertainty (IU) (Carleton et al., 2007 as

cited in Lalot et al., 2020). Openness to Alternatives includes the capability to embrace and appreciate variations in repetitive patterns and future pathways (Ahvenharju et al., 2018). Accordingly, Openness to Alternatives is about holding several futures in view and being flexible when faced with a multitude of alternatives (Ahvenharju et al., 2018).

Contrariwise, the concept of IU implies struggles with uncertainties and evokes negative emotions, cognitions and behaviours in the light of uncertainty (Rettie & Daniels, 2020). IU includes the tendency of people to perceive being uncertain about the future as unfair and "affects how a person perceives, interprets, and responds to uncertain situations on a cognitive, emotional, and behavioral level" (Laugesen et al., 2003, p.56). When faced with uncertain situations, intolerance of uncertainty leads to the inability to act and the uncertain situation is perceived as stressful and upsetting (Laugesen et al., 2003). Eventually, intolerance of uncertainty may hinder the decision-making process towards a desired future. For a person to still be able to make an informed decision towards a desired future, it would be necessary to learn how to deal with uncertainty.

This may lead to the assumption that for an individual to score high on Openness to Alternatives, one must be as open as possible and must have no troubles facing uncertainty but tolerate and appreciate uncertainty. Howbeit, Miller (2015) proposes to employ futures consciousness in a flexible manner and in many different ways instead of merely adopting it in one specific direction (Miller, 2015). In line with that, an individual who is holding a high level of Openness to Alternatives may be able to switch between openness and closedness, rather than solely holding an open attitude toward alternative futures. Hence, it is not yet explicit, how a "good" level of Openness to Alternatives may manifest itself.

Considering Openness to Alternatives as a means to view futures consciousness in the light of uncertainty, it is a necessary step to conceptualize how (un-) certainty is specified. Acknowledging the fact that uncertainty can be both of objective and subjective

nature (Baudrit & Dubois, 2005), this study will focus on subjective uncertainty to explore how the experience of uncertainty may relate to futures consciousness. While certainty is defined "as the subjective sense of conviction, clarity, or confidence one has about an attitude, identity, or belief", uncertainty is identified as "a lack of conviction or clarity" thereof (Frost, 2019, p.830). In line with that, Hill and Ross (1997) introduced the construct of future certainty as "perceived stability and steadiness of one's future life course" (as cited in Davis & Niebes-Davis, 2010, p. 150). Individuals who feel confident predicting upcoming life events or occurrences possess a high degree of future certainty, while individuals with a low degree of future certainty question what their future might bring (Davis & Niebes-Davis, 2010). Accordingly, an individual who feels uncertain about their future might experience more difficulties in the decision-making process towards a preferred future compared to a future certain individual. For a person to still be able to engage in a decision-making process towards a desired future it would be inevitable to seek certainty and control.

It may be inferred that IU as well as an individual's experience of uncertainty, hinder the decision-making process towards a desired future. However, referring back to Miller (2015) who recognizes futures consciousness as a meta-capacity which can be applied in variable ways and for several purposes, the same might be the case for (intolerance of) uncertainty. On the one hand, (intolerance of) uncertainty may function as a barrier in the decision-making process towards a desired future while, on the other hand, (intolerance of) uncertainty may lead to a shift or even an improvement in the decision-making process towards a preferred future. Modes such as "visioning, forecasting, and scenario selection", which were found to be relevant for future planning in light of uncertainty (Zapata & Kaza, 2015, p.754), may be hindered or just as well improved by (intolerance of) uncertainty. In the same line of reasoning, it may be assumed that diverging levels of (intolerance of) uncertainty may lead to variations in the dimensions of futures consciousness. Therefore,

more research is needed concerning how (un-) certainties during a pandemic may affect the ability to envision, plan, and make decisions towards a preferred future.

1.3 The current study

Given the context of the Coronavirus outbreak, a unique framework is offered to examine how futures consciousness operates in times of change and uncertainties. On the one hand, futures consciousness could become menaced (Ratten, 2020), while on the other hand it may be challenged or even improved. The capacity to anticipate and prepare for the future may gain a whole new status. Particularly in times of uncertainty in which people globally have to use their skills to imagine their future throughout all the ambiguity.

Since existing research lacks knowledge regarding how futures consciousness functions in light of (un-) certainty during a pandemic context, the current study will investigate how futures consciousness may be related to (un-) certainty attitudes about a post-Corona future. The research question is stated as follows: *"How do dimensions of futures consciousness vary depending on (un-) certainty attitudes about a post-Corona future?"*. Special attention will be paid to the Openness to Alternatives dimension of the dimensional model since Openness to Alternatives is found to be negatively related to the intolerance of uncertainty. A follow-up research question is stated to explore patterns in participant characteristics based on their (un-) certainty attitudes: *"Can a pattern be discerned that may be typical for participants scoring high or low on (un-) certainty about a post-Corona future?"*. By exploring this research question, insight on how future (un-) certainty attitudes differ based on participant characterises, may emerge.

2. Methodology

An existing data set collected in the study "Will the World Never be the Same? Letters from a Post-Corona Future" formed the basis of the current study. The larger study included two parts: 1) the Letters from the Future exercise (Sools, 2020) and 2) a

questionnaire (see Appendix A2 and A3). For purposes of this study, data from the questionnaire was used to create a purposive sample of letters from high and low future certainty individuals for further qualitative analysis. A qualitative approach to analysis was chosen since it focuses on understanding human nature and gets close to the research subject (Bassett et al., 2003). This approach is considered most suitable to explore people's desired future perspectives of a future post-Corona world.

2.1 Description of the larger study

Data in the larger study was collected via the online Survey tool Qualtrics, using convenience sampling in the networks of the researchers. In particular, the survey was distributed via channels such as personal and professional networks, social media platforms like LinkedIn, Twitter and a regional newspaper. A brief description with information including the background of the study, eligibility criteria, reasons for participation, how the study operates transnational, and information on the research team was stated on the various channels.

People were eligible to participate in the study if they were over the age of 16 years and possessed sufficient linguistic skills (English or other languages included in the study). There was no gender requirement in order to participate. Individuals were excluded from the study if they were under the age of 16 years, did not have sufficient linguistic skills and did not have access to a technical device.

The recruitment efforts resulted in data from a variety of people living in countries that are affected by the Coronavirus outbreak and associated consequences, but mostly from Europe and South America. The final sample of the study consisted of 237 participants out of which 68% were women. Participants predominantly had a higher educational background and half of the participants reported employment or no change to their employment situation

due to Corona. The age range of the sample was between 16 and 81 years with the highest contributions of young and middle adulthood and fewer above 55 years.

2.2 Procedure

Participants could access the study via the channels mentioned above (see section 2.1) and were able to select the language in which they wanted to fill out the survey. Initially, participants were asked to read the consent form and to give active consent to take part in the study (see Appendix A1). After they gave their consent, participants were asked to write their letters from the future. As a next step, participants were asked to fill out the ten questions included in the questionnaire. The completion of the online survey took the participants 20-30 minutes on average, while participants could log out of the study at any time in case of experiencing stress, inconvenience or discomfort. The survey was online from April to July 2020. Participants received no compensation. Participant letters which were not originally written in English were translated into English. For reasons of safety all data were pseudonymized, encrypted and stored within the UT Network storage.

2.3 Materials

2.3.1 Letters from the Future

To discover the way participants envision their desired post-Corona world, they were to engage in "a simple yet powerfully moving creative writing exercise, called Letters from the Future (LF)" (Sools, 2020, p.453). Originating in health promotion, this exercise was used in creative writing groups consisting of older people with mild depressive symptoms (Bohlmeijer, 2007 as cited in Sools, 2020). The idea behind the exercise is to imagine travelling to the future in a time machine. Depicting the future, individuals were asked to write a letter to a chosen public in the present about how their post-Corona future and the pathway that led to their future would be like. Participants received five prompts to write about their future as vividly as possible. These five prompts included 1) the time in the future

in which the participant may arrive, 2) how their future world looks like, 3) how they think about their future selves, 4) the pathway that led to their future, and, 5) the receiver of the letter (see Appendix A2). Compared to the original instructions of the Letters from the Future exercise, specific attention was paid to the future in which the Corona outbreak is over, rather than just referring to *a* future. Another main difference was that participants specifically were asked to not only write about their personal futures but also about the world at various levels which could range from more distant to even planetary levels. Additionally, the hint to describe oneself in the future was made more explicit.

2.3.2 Questionnaire

In total, the questionnaire was composed of ten questions (see appendix A3). The first three questions covered the topics of how the pandemic has affected participants' lives, how hopeful they are towards the future, and their present attitude towards the future. Within the third question, participants could indicate how certain they are about the future (certainty attitude), how much they perceive to have control over the future (control attitude) and how uncertain they are about the future (uncertainty attitude). The survey ended with seven questions about participant demographics. The participants were given the option to stay in contact with the researchers and take part in subsequent studies.

2.4 Selection criteria of the current study

The first step in the selection process was to select the letters with the highest certainty scores (highest possible score = 100) and lowest certainty scores (lowest possible scores = 0) within the larger study. To calculate the certainty scores, three questions of the questionnaire (see appendix A3) were used. In the respective questions, participants could indicate how certain they are about the future (certainty attitude), how much they perceive to have control over the future (control attitude) and how uncertain they are about the future (uncertainty attitude), with the last item (uncertainty attitude) reversed. In each of these

questions, participants were able to indicate their level of (un-) certainty on a scale from 0 to 100. Since the Coronavirus has shown global impacts, the second selection criterion was to guarantee country variation, while balancing the need to have sufficient data per country to make meaningful comparisons. To conduct substantial analysis, the third step was to exclude letters with less than one hundred words. Letters with less than one hundred words were excluded, even if based on their certainty scores they would have been included. When, for example, a letter with a certainty score of 67,00 for the high scoring sample had more than 100 words it was chosen over a letter with a certainty score of 77,00 with less than 100 words. The second letter would have been excluded and the first letter, respectively, would have been included. One Ecuadorian letter, which could have been included based on the low uncertainty score, eventually could not be included due to an insufficient word count. The same procedure was applied to the German letters, in which both, the highest and the lowest-scoring letters could not be included due to an insufficient word count. In that case, the two subsequent highest and lowest scoring letters within the German sample which had a sufficient word count were included. One Italian letter which based on its high certainty score could have been included, eventually was excluded due to an insufficient word count.

The selection procedure yielded in a final sample of 36 participants whereof 18 participants had a low future certainty attitude (m = 15,80) and 18 participants had a high future certainty attitude (m = 70,77). In the high certainty sample, one additional letter can be found. This letter was excluded from analysis since it depicted a past rather than a future description (see section 3.3). For more information on participant characteristics of both groups see Appendix C.

2.5 Data Analysis

The letters were analysed qualitatively using an analytic framework developed by Sools et al. (in press) which is based on the dimensional model of futures consciousness (see

Appendix B). The analytic framework operationalizes the five dimensions of futures consciousness in everyday language and serves as a qualitative method of analysis complementary to the Futures Consciousness Scale (FCS) developed by Lalot et al. (2020) which is to be used quantitively. While the FCS refers to futures consciousness as a generic disposition or a personality trait (Sools et al., in press), the qualitative methodology "focuses on the situated use of futures consciousness in response to a high-impact event" (Sools et al., in press, page 6) such as the pandemic. The analytic framework presents a hierarchical coding system with each dimension including two main codes. Each main code contains several subcodes which either are applied on sentence, section or letter levels. The sentence/section level codes are used for different sections within letters, while letter level codes are used to gain an overall impression of the composite letter. In this way, it can be accounted for "variety within letters and variety between letters" (Sools et al., in press, p.12). The codes do not function mutually exclusive. Therefore, one sentence can be coded with several codes.

The full analysis/coding process was performed using the software ATLAS.ti9.0.23. For purposes of intersubjective agreement, the coding process was in exchange with the supervisors of this study. Eight out of the 36 letters were coded by another independent researcher to guarantee interrater reliability.

One letter, belonging to the sample scoring high on certainty, was not included in the comparative analysis since it was situated in the past and not in the future. The letter will be analyzed separately (see section 3.3).

3. Results

First, a comparative analysis on how the five dimensions of futures consciousness vary between the participant's (un-) certainty attitudes will be given (Table 1). This comparative analysis includes a brief description of the overall pattern per futures consciousness dimension followed by a presentation of any demarcation between the groups

on each dimension. Thereafter, a description will be given of which background variables were found to be distinctive for the two groups and which were not (Appendix C). Finally, attention will be paid to one specific letter which scored highest on the certainty attitude about the future, while timewise it is situated in a past scenario (Appendix D).

3.1 (Un-) certainty attitudes and variations in the use of futures consciousness

To answer the main research question *"How do dimensions of futures consciousness vary depending on (un-) certainty attitudes about a post-Corona future?"* a comparative analysis will be given on how the (sub-) codes are distributed per dimension and certainty attitude (table 1). To give an in-depth appreciation of how the codes per dimension are represented in each sample, example citations from the letters will be used.

Having a look at the overall pattern on dimension one, Time Perspective, it can be seen that the majority of the participants imagined their future to be within a timeframe of 1 to 10 years (n=21). Another tendency which can be observed is that more participants imagined their post-Corona future to be longer after Corona has ended (n=6) than just after Corona has ended (n=1).

When considering the differences between the two groups on the first dimension, high and low certainty participants differed in their use of subjective time horizon. While the low certainty sample showed the clear tendency to imagine their future in a world which is characterized by a new pandemic normal (n=10), participants in the high certainty sample did not show this tendency (n=2). This is getting evident in the following two excerpts which both are placed 1 to 10 years in the future but differed in the use of subjective time horizon:
1. Excerpt from the low scoring sample: "*2025, five years since the outbreak of the 2020 pandemic. Life as we have known it has changed in the past five years. Most people have included controlled outings and physical distancing in their routine*."

2. Excerpt from the high scoring sample: *"Dear, I am writing this letter from the future. It is now July 2023, we are finally no longer suffering from the coronavirus. The environment is cleaner because we went outside much less, less waste was released into the environment and less exhaust fumes were released into the air."*

It could be argued that participants' high certainty attitude arises due to imagining a future world without Corona. A world without Corona would imply a world that is not characterized by all the uncertainties and changes which came along with the pandemic. Rather, the imagined post-Corona world would be more similar to what was known before the outbreak of the virus. This, in turn, may convey a sense of "normality" and habituality. Hence, imaging a future post-Corona world similar to how life used to be before the pandemic may come along with much more certainty than the imagination of a post-Corona future which is marked by the pandemic. In the same way, it could be argued that participants who imagined their future world as a new pandemic normal may feel less certain because the pandemic context is connected with the unknown and the unusual. An extended Corona world would be accompanied by the exposure to recurrent episodes of new restrictions and measures which convey an atmosphere of novelty and unfamiliarity. An extended Corona world presents the embodiment of the unknown and, therefore, everything else than "normality".

On the second dimension, Agency Beliefs, low levels of agency (n=204) outweigh intermediate levels of agency (n=135) in both groups. High levels of agency seem to represent an exception to the rule (n=2). Most participants engaged in mixed agency beliefs (n=23) rather than solely depicting collective agency beliefs (n=9) or personal agency beliefs (n=4).

Considering the differences on the second dimension, the low scoring certainty sample displayed proportionally lower agency beliefs (n=127) than intermediate agency

beliefs (n=67), while in the high scoring certainty sample low agency beliefs (n=77) and intermediate agency beliefs (n=68) were less distanced from each other. A possible explanation may be that participants who experience less future certainty also feel less able to actively engage in a decision making process regarding their desired future. Alternatively, it could be reasoned that low agency beliefs lead to more uncertainty regarding the future since participants do not feel like having active control and a sense of mastery over what might/will happen in the future. Rather, participants are relying on and waiting for others to take action and to give them direction:

"They are saying that things will get better and that we shall soon go back to our old rhythms, but this is continuously being postponed."

While low agency beliefs would imply that participants perceive themselves as having little control over their future, intermediate agency may be characterized by having a higher sense of control and own mastery over a given situation. This, in turn, may lead to more certainty. Further, it could be argued that already high levels of future certainty may set the baseline for feeling intermediate agency rather than low agency. In the following excerpt, a participant scoring high on future certainty expressed intermediate agency by taking action without being dependent on another agent/institution:

"I take that time more often now without getting permission (by the government) to stay at home."

While the assumption could have been made that people scoring high on future certainty also display higher abilities to specify the respective agent – be it themselves or another person/instance – no differences could be found in this regard. Participants scoring higher on certainty seem to perceive themselves/others as possessing more agency and mastery about their future. However, they did not make clearer or more specific descriptions concerning the respective agent. Rather, both groups tended to be less specific about the agent at hand while

they have been more specific about the respective action which was executed by an agent. This can be seen in the following excerpts.

1. Excerpt from the low scoring sample: *"Most people have included controlled outings and physical distancing in their routine."*

2. Excerpt from the high scoring sample: *"Shaking hands is a no-go and cuddles are only done with loved ones. Everybody washes their hands daily and at work everything is much cleaner and more professional."*

In both excerpts, the actions such as washing hands" and "physical distancing" are clearly defined while the agent is described very vague and referred to as a more general instance.

At the Openness to Alternatives dimension, a clear tendency can be observed: closed attitudes towards the future (n=767) clearly outweigh open attitudes towards the future (n=275). Less than half of the participants posed reflective questions within their letters from the future (n=10) and a minority of participants presented contrasting group action (n=5) in their letters. Further, participants tended to discuss multiple issues in the letters (n=34) rather than solely writing about one single issue (n=2). At first sight, this result may seem contradictory to the fact that both samples took a closed rather than open attitude towards the future. Which leads to the assumption that taking a closed stance towards the future does not exclude the possibility to think about multiple future issues. In fact, issues that are discussed in the letters can be of multitude, as the results show, and still be approached with a closed attitude. In this excerpt it is getting evident how multiple issues such as the economy, the health system and social movements can be mentioned within a closed attitude:

"The capitalist system, in turn, paralyzed the world economy more and more every day, as soon as we stopped being its cogs. We also handled it wrong. People took to the streets at the end of quarantine, scenes resembling crowds of carnivals took place everywhere. Everyone was getting together, traveling, filling the churches, and cafes. The National Health System,

devastated for decades, lasted a month. In the process, anyone who did not have the financial comfort for private clinics was simply not hospitalized ... After a year, the vaccine came. It became mandatory for everyone and refusing it resulted in an unnegotiable 18 years in prison. Dictatorships are the way in the future. ”

Considering the discrepancies at the third dimension, participants in the low certainty sample (closed: n=404, open: n=151) proportionally took a closed stance towards the future more often than participants within the high certainty sample (closed: n=363, open: n=124). This may be due to the fact that participants who are uncertain about the future experience more difficulties to imagine multiple alternative desired futures. In line with that, participants who are uncertain about the future tended to imagine a future which appears to be similar to their momentary situation: a new pandemic normal; instead of imagining a post-Corona world that is free from the pandemic context:

“Now people move around alone or with one other, hiding their feelings and, consequently, their faces because they wear a protective mask. They talk, they laugh, they express themselves without showing anything. There is life in the shops but on balanced levels as couples talk wearing masks and sit at a distance. After every physical contact, no one forgets the antiseptic gel.”

The excerpt, taken from a participant who is uncertain about the future, shows how the participant could not imagine a future alternative other than a new pandemic normal, even in ten years ahead. An opposite example would be this excerpt taken from a high certainty letter. The letter is placed in the near future (2021) and shows how a future certain participant was open about how a life without Corona could look like:

“People walk freely, enjoy the spring sun and may have a coffee with their friends in a café.”

At the fourth dimension, Systems Perception, participants of both groups possessed extensive awareness of interconnectedness between several systems (n=27) as opposed to

some awareness of interconnectedness (n=9). When comparing explicit awareness (n=124) with implicit awareness (n=89), this tendency can be observed at the sentence/section level as well. It is noticeable that on the Systems Perception dimension the codes are proportionally similarly distributed and frequented and that both samples showed extensive awareness (low certainty sample: n=14; high certainty sample: n=13) rather than some awareness (low certainty sample: n=4; high certainty sample: n=5) of interconnectedness between the systems. Awareness between several systems is made explicit:

1. *"Throughout this whole situation, the government has done its best to protect people. We have also done our best with the whole world."*

2. *"The current situation became possible only thanks to the changes in people's mentality and the acceptance of the restrictions. Corona receded and the restrictions were removed step by step."*

The first excerpt is taken from a letter within the low scoring certainty group and shows how awareness exists between the interconnectedness of national and global levels. In the second excerpt, taken from a letter within the high scoring certainty group, the participant's awareness can be seen between how changes in people's minds lead to and are interconnected with changes in people's behaviours and the resulting consequences of such behavior. It could be argued that the pandemic with its global effects may lead to more awareness of interconnectedness between systems, regardless of being future certain or uncertain. This awareness may differ within contexts which may not affect the world on a global scale.

Heightened awareness of what is happening around the individual can be observed on the Concern for Others dimension as well. Both samples showed intermediate concern for others (n=31). And letters of both samples mainly depicted concerns for society (low scoring sample: n=37; high scoring sample: n=35) and concerns for humans and generations (low scoring sample: n=25; high scoring sample: n=27). This shows how people are less

concerned with themselves compared to societal developments and other human beings. A difference can be found regarding participant's awareness of what matters. Participants scoring high on certainty (n=14) showed greater awareness of what matters compared to participants scoring low on certainty (n=5). Based on this tendency the assumption may be made that becoming aware of what matters in life – due to the pandemic context – might lead to more certainty regarding what one wants and needs in a post-Corona future. Awareness of what matters might be related to seeing things clearer and developing a deeper sense of what is important in life and what is not. Further, it could be observed that participants' concern for freedom often co-occurred with the imagination of a new pandemic normal/extended Corona future. While most participants within the low certainty group imagined their future to be characterized by a new pandemic normal (n=10) the same number of participants also was concerned about their freedom of movement and/or of being free from fear. A supposable explanation for this co-occurrence might be that imagining a future that is characterized by the pandemic and all the restrictions that came along with it – such as physical distancing, the exit clock and travel restrictions – evoke participant's concern to not be able to live freely and unconfined. The co-occurrence of the two subcodes (extended Corona/new pandemic normal and concern about freedom) is visible in the following excerpt taken from a letter within the low certainty sample:

"There are far fewer people on the streets than in the past, things are incredibly quiet. Nights are not very busy since only a few groups of young people go out to the parks to do joke and kid around. Everything is meticulous in terms of cleanliness and hygiene; people are almost afraid of unnecessary contacts, and we are entirely alienated. There are no more than 50 people in gatherings. Concerts, dances, parties, and entertainment as we used to know it has been forgotten."

Revisiting the overall pattern of both groups, participants (n=36) imagined their future in a timeframe laying between 1 to 10 years. Both groups showed the tendency to express mixed rather than solely collective or personal agency. All participants except for two showed multiplicity in topics and participants tended to have closed attitudes towards the future more than open attitudes. Systems perception was mostly demonstrated in explicit ways and participants expressed intermediate concern for others, mainly focused on societal concerns.

Summarizing the main distinctions between the groups which were found on the first three dimensions, future uncertain participants were more likely to imagine a future characterized by a new pandemic normal compared to future certain participants. In the sample of future certain participants, low and high agency beliefs were closer to each other compared to the future uncertain sample in which low agency beliefs appeared at a higher frequency. Both samples took a rather closed attitude towards the future, while future uncertain participants showed proportionally more closed attitudes compared to future certain participants. Although some main differences between the groups could be found, a prototypical pattern which would be distinctive for each of the groups did not emerge.

Table 1

Distribution and frequency of codes per dimension

Dimension	**Code**	**Low certainty sample (n=18)**	**High certainty sample (n=18)**	**Full sample (n=36)**
Time Perspective	**Objective Time Horizon**			
	ST > 1 year		1	1
	MT 1-10 years	9	12	21
	LT < 10 years	3	2	5
	Unspecified		1	1
	Subjective Time Horizon			
	Within Corona		1	1
	Extended Corona/New Pandemic Normal	10	2	12

	Just after Corona		1	1
	Longer after Corona has ended	5	1	6
	Timespan unclear	3		3
Agency Beliefs				
	Degree of Agency			
	Low	127	77	204
	Intermediate	67	68	135
	High	1	1	2
	Distribution of Agency			
	Personal	2	2	4
	Collective	5	4	9
	Mixed	11	12	23
Openness to Alternatives				
	Attitude			
	Closed	404	363	767
	Open	151	124	275
	Multiplicity			
	Single Issue	1	1	2
	Multiple Issue	17	17	34
	Contrasting Group Action	2	5	7
	Reflective Questions	5	5	10
Systems Perception				
	Explicitness of Systematic Awareness			
	Implicit	47	42	89
	Explicit	65	59	124
	Degree of Systematic Awareness			
	No			0
	Some	4	5	9
	Extensive	14	13	27
Concern for Others				
	Kind of Concern			
	Self	18	13	31
	Freedom	10	6	16
	Awareness of What Matters	5	14	19
	Humans & Generations	25	27	52
	Society	37	35	72
	Green	16	11	27
	Degree of Concern			
	Self only			
	Low	1		1
	Intermediate	16	15	31
	High	1	3	4

Note. The table presents the distribution and frequency of codes per dimension and (un-) certainty group as well as the total number of codes per dimension including all letters.

3.2 Description of high- and low scoring certainty samples

To answer the follow-up research question *"Can a pattern be discerned that may be typical for participants scoring high or low on (un-) certainty about a post-Corona future?"* a description will be given for which participant characteristics were distinctive for the two groups and which were not. Since variability in participants' country of origin was accounted for during the selection procedure, this characteristic will not be included in the following description.

In terms of gender, both samples included more women than men (high certainty sample: 11 women, 7 men; low certainty sample: 10 women, 8 men). This distribution seems to be appropriate given that the larger study included 2/3 women and 1/3 men. Regarding age, participants from both groups were very similar, with the mean age of the high certainty group being six years lower (high certainty sample: m=37; low certainty sample: m= 43). This age range seems to be in line with the larger study, in which most participants were in young and middle adulthood. Further, the distribution of employment was remarkably alike among both samples. The majority of both groups was working as a paid employee (high certainty sample: n=8; low certainty sample: n=7) and both samples included three participants who were self-employed and three participants who were looking for work. The majority of both groups did not experience changes in employment due to the pandemic. Leading to the assumption that age, gender, status of employment and change of employment may not play distinctive features in how (un-) certain one is about the future.

Most differences between the samples could be found in terms of participants' educational status. While most participants with a high future certainty attitude were High school graduates (n=5) or had an Associate degree (n=4), only one participant in the low scoring certainty sample was a High school graduate and no participant in the low scoring sample had an Associate degree. The low scoring sample was mainly characterized by participant's who either had a Master's Degree (n=5) or a Bachelor's Degree (n=5). Those

represented a minority in the high certainty group (Bachelor's Degree: n=3; Master's Degree: n=2). While three participants within the low scoring sample had a "Less than High School Degree", this educational status was not included in the high scoring sample. Next to these differences in educational status, one similarity is that within each sample, three participants indicated to have a Doctoral Degree.

It was striking that while two participants indicated to be completely uncertain about their future (level of future certainty = 0), no participant was fully certain about their future. The highest certainty score within the high scoring sample showed a future certainty level of 87,66. However, this letter was not included in the analysis since it depicted a past rather than a future imagination (for further elaboration see section 3.3). The second highest certainty score which was reached was a score of 75,00.

In sum, the most distinctive characteristic between the two (un-) certainty groups was found to be participants' educational status. Regarding age, gender, status of employment and change of employment due to the pandemic no major distinctions got evident.

3.3 Letter from the past

The letter which was not included in the comparative analysis above (section 3.2) will be analyzed in the following section. Its analysis using the coding scheme developed by Sools et al. (in press) should be interpreted with caution since the letter included a past description of *"the golden age of humanity"*, situated *"200 centuries BC. C"* and therefore did not fall under the original idea of a letter coming from the future. Still, it seemed worth to mention and analyze the letter since it is the one with the highest future certainty score.

The first dimension, Time Perspective, is left out from analysis since the past cannot be classified and integrated within the futures consciousness coding scheme (Sools et al., in press). At the second dimension, Agency Beliefs, the letter corresponds with the other letters from the high certainty sample in a way that it showed higher intermediate agency beliefs

(n=2) compared to low agency beliefs (n=1). However, while the majority of the letters within the high certainty sample showed mixed agency beliefs, the writer of the letter from the past showed mainly collective agency. In the following example excerpt it can be seen how the writer took a collective stance and expressed intermediate agency:

"Human beings aware of their inner development, with a remarkable IQ and enormous emotional intelligence to face any eventual human conflict."

The way in which the writer described human beings shows his deep trust in humanity, paired with a heightened sense of mastery and control over what the future may bring.

This sense of certainty would be in line with the fact that, at the Openness to Alternatives dimension, the author took a closed stance towards the future (n=4) twice as much as an open attitude (n=2). He seems to be certain of what the future will bring forward instead of solely making guesses about how his desired future may look like. One may assume that by situating the future within a past scenario, it became possible to the writer to describe his imagined future – an "imagination" which is already known – with more certainty than describing an otherwise far-fetched future which would not be based on a scenario that already has happened. The author used the past as a narrative device to circumvent his future imagination from a fictional/phantasy scenario which may be perceived as unrealistic by his chosen audience. The author's imagined future is based on a realistic past scenario instead of an unrealistic "what-if" imagination. This may have created a heightened sense of certainty to the author. He avoided the unknown and referred to a time in history which he may be more familiar with:

"A time of peace, intellectual splendor and spiritual wealth."

The tendency to describe the future with a closed rather than an open attitude is in line with the other letters of the high certainty group just as well as describing multiple issues instead of solely being focused on a single future issue.

The writer showed some awareness of the interconnectedness of systems by showing more explicit (n=2) than implicit (n=1) awareness. This corresponds with the other letters from the high certainty sample. Further, the author expressed concern for humans and generations (n=2) as well as for the society (n=1) which is in agreement with the concerns mainly expressed by the high certainty sample.

What makes the letter especially striking is the fact that it showed several analogies to a letter from the future within the low certainty sample:

Excerpt letter from the past (high certainty):

1. "*Human beings aware of their inner development, with a remarkable IQ and enormous*
2. emotional intelligence to face any eventual human conflict. A time of peace, intellectual
3. splendor and spiritual wealth. The life and system of that troubled past from which it came,
4. contrasted with the wonderful attitude of the inhabitants of the Atlantean civilization."

Excerpt letter from the future (low certainty):

1. "People are different. There are no fights, people are more sensible and considerate of
2. others. The atmosphere is pleasant in general and people are friendly. However, there's a
3. lack of intelligent people and of those who think things through. The competition between
4. people has decreased, decisions are made at popular assemblies, and there are solutions
5. that help to settle the matters in case somebody breaks the rules. No significant changes
6. have occurred in people's manners. It's been accepted that yelling over the others is not
7. allowed. The opinion and comments of each community member are heard out. It's a time
8. of peace."

It is noticeable in how many ways the two letters are sharing and discussing similar issues. Both participants referred to their imagined time as a "*time of peace*" (letter from the past: line 2; letter from the future: lines 7-8). Further, both letters were concerned with the topic of conflict and how people in their imagined frame of time deal with conflicts

(letter from the past: lines 1-2; letter from the future: full excerpt). In the letter from the past, people are imagined to make use of their "*remarkable IQ and enormous emotional intelligence to face any eventual human conflict*". In the letter from the future people are imagined to be "*more sensible and considerate of others*" which may help to solve conflicts more balanced way. Further, "*decisions are made at popular assemblies, and there are solutions that help to settle the matters in case somebody breaks the rules".* Also, "*yelling over the others is not allowed"* and *"the opinion and comments of each community member are heard out*" to handle and solve conflicts that may arise. Another commonality was that in both letters human beings are described to be very humane and well-behaved (letter from the past: line 4; letter from the future: line 2).

A main difference between the letters is that the letter from the past described the population as highly intelligent (line 1), while in the letter from the future the population was described as lacking intelligent people (line 3). The assumption may be made that the letter from the past intentionally referred to the past in this regard because imaging a future world in which people are highly intelligent may seem to be too unrealistic to the author. However, the people in the past fulfilled the requirements and abilities the writer wishes to be present in a future population, which is why he may have situated his future in the past. This would be coherent with the fact that the author of the letter from the future could not imagine the future world population to be highly intelligent and therefore imagined the exact opposite: "*a lack of intelligent people*". Hence, both writers could not realistically imagine a future population to be highly intelligent or, at least, to possess the requirements and abilities needed to develop outstanding intelligence.

Overall, while both letters were situated in highly diverging frames of time, they coincide in a multitude of topics: their view on humanity in general, how conflicts can be solved in a humane manner and the doubt for a future world population to exhibit the

required skills to develop remarkable intelligence as they were innate to past populations. Although the letter from the past was situated *"200 centuries BC. C."* it could be analyzed, even though cautiously, with the futures consciousness coding scheme (Sools et al., in press).

4. Conclusion and Discussion

In this study, it was examined how the five interrelated dimensions of futures consciousness vary depending on participant's future (un-) certainty attitudes while paying special attention to the Openness to Alternatives dimension. Letters from the Future (Sools, 2020) were qualitatively analyzed using the analytic framework developed by Sools et al. (in press). Findings show that main variations in the dimensions of futures consciousness based on participant's (un-) certainty attitudes can be discerned on the first three dimensions. On the first dimension, Time Perspective, subjective time horizon was found to be the distinctive feature. While future certain people tended to imagine their future without Corona, future uncertain people imagined their future to be characterized by a new pandemic normal/extended Corona. On the second dimension, Agency Beliefs, the degree of agency differentiated the two groups in a way that future uncertain people attributed themselves lower agency beliefs than future certain people did. On the Openness to Alternatives dimension, future uncertain individuals took a closed attitude towards the future proportionally more often than future certain individuals did. On the last two dimensions, no major differences between the groups were found.

The finding that future uncertain people tended to imagine their post-Corona future mostly as a new pandemic normal while future certain people were unlikely to imagine a post-Corona future to be characterized by a pandemic context illustrates how the imagination of a future which is characterized by a pandemic context leads to higher levels of uncertainty. Taking into consideration research (Ratten, 2020; Xiong et al., 2020) that found that the Corona outbreak is associated with much uncertainty, it is a logical inference to feel

more uncertain when imagining a future that is still characterized by the present pandemic context. Based on the normative assumption that a new pandemic normal would not be anybody's desired future imagination, future uncertain people showed a lower ability to imagine their desired future – without Corona. To engage in the decision-making process towards a desired future, futures consciousness is needed (Ahvenharju et al., 2018). Considering the findings, future certainty may enable people to better engage in that decision-making process using their futures consciousness while future uncertainty seems to hinder people in that process. This would resonate with the outlier of this study, the letter from the past, which was written by a future certain person who did imagine a future without Corona.

Further, the findings of this study indicate that future uncertain people proportionally attributed themselves lower agency beliefs compared to future certain people. This outcome aligns with research showing how intolerance of uncertainty leads to the inability to act (Laugesen et al., 2003). Low future certain people cannot accept the uncertainty brought about by the pandemic and, instead of making use of the uncertainty and becoming an active agent, are intolerant of uncertainty. They feel out of control, have a sense of decreased mastery and, as stated by Laugesen et al. (2003) do not feel able to take action. Again, this inability to act may become a hindering factor in the decision-making process towards a desired future and therewith may decrease people's ability to be future conscious.

Both, future certain and future uncertain people showed the ability to take open as well as closed stances towards their future and therefore expressed flexibility in the use of openness/closedness by taking both stances when imagining their future. This aligns with Miller's (2015) idea of futures consciousness which he views as a malleable, flexibly applicable meta-capacity. The fact that participants chose to take a rather closed than open attitude towards the future instead of taking a balanced stance may be a result of the extraordinary circumstances of the pandemic context. Further, future uncertain people

proportionally expressed more closed than open attitudes compared to future certain people. This may indicate that intolerance of uncertainty – an uncertainty brought about by the pandemic – hindered future uncertain individuals to take an open stance towards their desired future. While intolerance of uncertainty could have yielded the way towards a more open-minded and diverse view about the future, it rather seems to hinder the process of seeing and valuing alternative future pathways. This outcome is in line with the finding that intolerance of uncertainty is negatively related to openness to alternatives (Carleton et al., 2007 as cited in Lalot et al., 2020). Aligning with the first two dimensions, future uncertainty and the concomitant intolerance of uncertainty may decrease people's ability to be future conscious and, thereby, may hinder people's decision-making process towards a desired future.

Reflecting on the first three dimensions, it can be seen how (intolerance of) uncertainty may represent a hindering rather than a fostering factor in the use of futures consciousness. Since futures consciousness is crucial in the decision-making process towards a desired future (Ahvenharju et al., 2018) people's ability to engage in this respective decision-making process may be affected by the restricted use of futures consciousness which seems to emerge due to higher levels of uncertainty. This would be in line with research which found that higher levels of uncertainty about the future make it more challenging for individuals to make informed decisions about their future (Hughes et al., 2013). Moreover, it becomes evident that different levels of (un-) certainty lead to variations in the first three dimensions of futures consciousness. This illustrates how the capacity of futures consciousness is not fixed and stable but flexible and malleable, just as proposed by Miller (2015).

Based on the fact that all five dimensions of futures consciousness are interrelated it seems rather striking that those variations could not be found for the last two dimensions. A possible reason for that may be that Systems Perception, as well as Concern for Others,

gained importance in the pandemic context – regardless of how certain or uncertain one is about the future. Taking into account Ahvenharju's et al. (2018) descriptions of Systems Perception and Concern for Others, the heightened relevance of the last two dimensions in the pandemic context becomes evident. Regarding Systems Perception, the authors highlight the fact that individuals do not need to "adopt a particular systemic worldview or theory of reality" (p. 10) but to "have the capacity for systems perception when it is necessary or useful" (p.10). Given the pandemic context which is connecting the world on several levels, the capacity to be aware of the interconnection between those systems is "necessary" as well as "useful" (p.10). Considering Concern for Others, it is emphasized that "the ethics of care and responsibility should be central in the context of futures thinking" especially when faced with "radical uncertainty" (Groves, 2009 as cited in Ahvenharju's et al. 2018). Since the pandemic is circumscribed as a worldwide "uncertainty shock" (Caggiano et al. 2020, p.1) it becomes more important to be concerned not only with oneself but with a broader spectrum of individuals, which is reflected in the outcomes of the present study as well. As opposed to the first three dimensions, the relevance of Systems Perception and Concern for Others within the pandemic context seems to go beyond levels of (un-) certainty, therefore causing no differences between the two samples on these dimensions.

The overall impression of how the five dimensions varied or did not vary between the groups based on participants (un-) certainty attitudes should be seen in the light of the pandemic context. Another context which may be closer to the "usual life" might lead to another distribution and frequency of codes. This is supported by the finding that none of the participants indicated to be fully certain about the future while two participants stated to be completely uncertain about their post-Corona future. Representing how the pandemic context brings about extraordinary levels of uncertainty (Ratten, 2020; Xiong et al., 2020) and is divergent from life before the pandemic (He & Harris, 2020).

4.1 Reflection on the study and recommendations for future research

A strength of this study is that it examined futures consciousness, a capacity that is becoming more and more important in facing future uncertainties (Ahvenharju et al., 2018), within a context that could not be more suitable to measure uncertainties. Still, it would be worthwhile for future research to investigate whether differences between the groups on the first three dimensions of futures consciousness would emerge in other contexts, as well. (Un-) certainty attitudes could be compared in other crisis contexts which are characterized by uncertainty, such as illnesses or wars. And which, just as the pandemic, affect a broad range of people. Further, future research could examine whether different (un-) certainty attitudes would lead to divergences on the first three dimensions in non-crisis situations. Paying special attention to the Openness to Alternatives dimension, a suggestion for future research would be to concentrate more in-depth on Miller's (2015) idea of a flexible meta-capacity and to examine whether Openness to Alternatives may show properties such as flexibility when being researched in a context which is closer to the life before the pandemic.

Reflecting on the study's outcome that uncertainty attitudes have shown to be hindering rather than supporting individuals to be future conscious – at least on the first three dimensions – a suggestion for future research would be to examine whether this restricted use of futures consciousness would have any implications for engaging in the decision-making process towards a desired future. Since futures researchers aim to increase the capacity of futures consciousness (Ahvenharju et al., 2018), uncertainty attitudes may represent one direction to be researched in more detail. Hence, more research is needed concerning how (un-) certainty attitudes may affect abilities such a "visioning, forecasting, and scenario selection", which were found to be relevant for future planning in light of uncertainty (Zapata & Kaza, 2015, p.754).

Considering the fact that no differences were found on the last two dimensions, future research is advised to examine which factors may have played a role in the lack of differences between the groups on those dimensions. One possible factor that may have contributed to this outcome could have been the prompts which were added to the original Letters from the Future exercise – more specifically, the prompt that asked participants to describe their surroundings ranging from more distant to even planetary levels. Since the last two dimensions are concerned with the connection between several levels – Systems Perception, amongst others, with cultural or environmental systems and Concern for Others with society and future generations (Lalot et al., 2020) – this prompt may have highlighted the importance of the last two dimensions, thereby moving (un-) certainty attitudes in the background. If other research would agree with this study in not finding any variations between the two groups on those dimensions, this may imply that no link at all exists between (un-) certainty attitudes and the last two dimensions of futures consciousness. A benefit concerning the added prompts was that they may have stimulated participants to dive into vivid future imaginations, making the use of futures consciousness more accessible.

Taking the questionnaire into account, a limitation to this study was the scale that measured participant (un-) certainty. The scale was solely developed for reasons of this study which means that it is not scientifically accepted in the field of research and can neither guarantee sufficient validity nor reliability. However, the scale never was intended to be a reliable or valid construct since the main focus of the study were the Letters from the Future. Moreover, a scale solely developed for reasons of this study has the benefit of measuring only what is of value to be known regarding the specific research question while not overburdening the participants. These demands were fulfilled with the respective scale. Further, the current study did find meaningful variation in the use of futures consciousness between the two groups which adds to the validity of the scale and represents a strength of

the study. In future research, the questionnaire is advised to be tested on its validity and reliability and may be expanded by other scales which were shown to effectively capture (un-) certainty attitudes.

Reflecting on the methodology of the study, a limitation was the exclusion of letters with less than 100 words. Based on this criterion, one Ecuadorian, two German, as well as one Italian letter, have been excluded from the study. The analysis of those letters may have yielded different outcomes in a way that the more letters included in the study may have led to higher variation in participant characteristics. Higher variation, in turn, could have been a possible indicator for patterns turning out prototypical for each group that could not be found due to the homogeneity of both groups present in this study. A suggestion for future research would be to leave out the exclusion criteria of letters with less than 100 words and to 1) examine how this may change the results regarding variations in the dimensions of futures consciousness and participant characteristics, and, 2) whether it is worthwhile and meaningful to include letters with less than 100 words in the analysis or whether a deep analysis is only possible with letters which are composed of a higher word count.

Finally, a strength of the study is its uniqueness in how it combines the concept of (un-) certainty, the capacity of futures consciousness and the pandemic context to paint a picture of how those three concepts may affect each other. Aligning with other research (Lalot et al., 2020; Lombardo, 2006), this study recognized the need and importance to examine how humans make sense of their future and deal with future uncertainties.

4.2 Final remark

The current study demonstrated how the capacity of futures consciousness, including its five interrelated dimensions, manifests itself depending on (un-) certainty attitudes within a highly uncertain (pandemic) context. Its main value lies in pinpointing that (un-) certainty attitudes are related to people's use of futures consciousness. This knowledge is beneficial in

educating people on how to use their uncertainties as a facilitating rather than a hindering factor in being future conscious. If people's use of futures consciousness improves due to effectively using their uncertainties, people's ability to make informed decisions towards their desired future may increase as a result. Eventually, people's well-being can be enhanced by teaching them how to make well-founded decisions towards a desired future.

This study is the first to give the impulse to include (un-) certainty attitudes in future research on the use of futures consciousness. Since ambiguities and uncertainties always have and always will make up a part of people's lives, it is highly relevant to understand how people can constructively use their uncertainties.

References

Ahvenharju, S., Minkkinen, M., & Lalot, F. (2018). The five dimensions of futures consciousness. *Futures, 104,* 1-13. https://doi.org/10.1016/j.futures.2018.06.010

Bassett, C., Bassett, J., & Tanner, J. (2003). Quantitative and qualitative research. *Journal of Perioperative Practice*, *13*(3), 116–117. https://doi.org/10.1177/175045890301300303

Baudrit, C., & Dubois, D. (2005). Comparing Methods for Joint Objective and Subjective Uncertainty Propagation with an example in a risk assessment. In *ISIPTA* (Vol. 5).

Bohn, A., & Berntsen, D. (2013). The future is bright and predictable: The development of prospective life stories across childhood and adolescence. *Developmental Psychology*, *49*(7), 1232–1241. https://doi.org/10.1037/a0030212

Börjeson, L., Höjer, M., Dreborg, K., Ekvall, T., & Finnveden, G. (2006). Scenario types and techniques: Towards a user's guide. *Futures*, *38*(7), 723-739. https://doi.org/10.1016/j.futures.2005.12.002

Börjeson, L., Höjer, M., Dreborg, K. H., Finnveden, G., & Ekvall, T. (2005). Towards a user's guide to scenarios-a report on scenario types and scenario techniques.

Caggiano, G., Castelnuovo, E., & Kima, R. (2020). The global effects of COVID-19-Induced uncertainty. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3598710

Davis, M. J., & Niebes-Davis, A. J. (2010). Ethnic differences and influence of perceived future certainty on adolescent and young adult sexual knowledge and attitudes. *Health, Risk & Society*, *12*(2), 149-167. https://doi.org/10.1080/13698571003632452

De Haas, M., Faber, R., & Hamersma, M. (2020). How COVID-19 and the Dutch 'intelligent lockdown' change activities, work and travel behaviour: Evidence from longitudinal data in The Netherlands. *Transportation Research Interdisciplinary Perspectives*, *6*, 100150. https://doi.org/10.1016/j.trip.2020.100150

Frost, J. (2019). Certainty, uncertainty, or indifference? Examining variation in the identity narratives of Nonreligious Americans. *American Sociological Review*, *84*(5), 828-850. https://doi.org/10.1177/0003122419871957

He, H., & Harris, L. (2020). The impact of COVID-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of Business Research*, *116*, 176-182. https://doi.org/10.1016/j.jbusres.2020.05.030

Hughes, N., Strachan, N., & Gross, R. (2013). The structure of uncertainty in future low carbon pathways. *Energy Policy*, *52*, 45-54. https://doi.org/10.1016/j.enpol.2012.04.028

Koffman, J., Gross, J., Etkind, S. N., & Selman, L. (2020). Uncertainty and COVID-19: How are we to respond? *Journal of the Royal Society of Medicine*, *113*(6), 211-216. https://doi.org/10.1177/0141076820930665

Lalot, F., Ahvenharju, S., Minkkinen, M., & Wensing, E. (2020). Aware of the future? *European Journal of Psychological Assessment*, *36*(5), 874-888. https://doi.org/10.1027/1015-5759/a000565

Laugesen, N., Dugas, M. J., & Bukowski, W. M. (2003). Understanding adolescent worry: the application of a cognitive model. *Journal of Abnormal Child Psychology : An Official Publication of the International Society for Research in Child and Adolescent Psychopathology*, *31*(1), 55–64. https://doi.org/10.1023/A:1021721332181

Lombardo, T. (2006). Thinking ahead: the value of future consciousness psychologists are recognizing the key role that the future plays in our thinking, our actions, and our successes and failures in life. *Futurist*, *40*(1), 45–50.

Miller, R. (2007). Futures literacy: A hybrid strategic scenario method. *Futures*, *39*(4), 341-362. https://doi.org/10.1016/j.futures.2006.12.001

Mutz, M., & Gerke, M. (2020). Sport and exercise in times of self-quarantine: How Germans changed their behaviour at the beginning of the COVID-19 pandemic. *International Review for the Sociology of Sport*, 101269022093433. https://doi.org/10.1177/1012690220934335

Ratten, V. (2020). Coronavirus (COVID-19) and entrepreneurship: Changing life and work landscape. *Journal of Small Business & Entrepreneurship*, *32*(5), 503-516. https://doi.org/10.1080/08276331.2020.1790167

Rettie, H., & Daniels, J. (2020). Coping and tolerance of uncertainty: Predictors and mediators of mental health during the COVID-19 pandemic. *American Psychologist*. https://doi.org/10.1037/amp0000710

Sools, A. (2020). Back from the future: A narrative approach to study the imagination of personal futures. *International Journal of Social Research Methodology*, *23*(4), 451-465. https://doi.org/10.1080/13645579.2020.1719617

Sools, A., de Groot, I., Coppers, J., Triliva, S., (in press). A context-sensitive developmental model for assessing futures consciousness: The case of young people's imaginations of post-corona futures

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M., Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental health in the general population: A systematic review. *Journal of Affective Disorders*, *277*, 55-64. https://doi.org/10.1016/j.jad.2020.08.001

Zapata, M. A., & Kaza, N. (2015). Radical uncertainty: Scenario planning for futures. *Environment and Planning B: Planning and Design*, *42*(4), 754-770. https://doi.org/10.1068/b39059

Appendix A

The larger study

A1 Informed Consent

Will the Future Never be the Same? Letters from a Post-Corona Future

Welcome to this research study!

How do we envision our future lives and the future world once the current coronavirus outbreak is over? How do our present actions and decisions ensure that the new world to come will be a world we would like to be living in? Thanks to your contribution, this study will explore these questions.

For this study, you will be asked to:

1. Write a letter from the viewpoint of the future back to the present. You will receive more detailed information about how to write this the letter via a time machine exercise.

2. Answer 10 questions about yourself.

Your responses will be kept completely confidential and processed anonymously.

The study should take you around 20-30 minutes to complete, but feel free to take as long as you need. Your participation in this research is voluntary. You have the right to withdraw at any point from the study. The project leaders of this study are located at the University of Twente in the Netherlands and can be contacted at:
Anneke Sools: a.m.sools@utwente.nl
Yashar Saghai: y.saghai@utwente.nl

By clicking the button below, you acknowledge:

Your participation in the study is voluntary. You are at least 16 years of age. You are aware that you may choose to terminate your participation at any time while taking this survey without giving a reason.

O I consent and begin the study.

O I do not consent, I do not wish to participate.

A2 Letters from the Future

Instructions: How to write your letter from the future

In this exercise you will imagine traveling to the future with a time machine. You will travel to a moment in time when the current coronavirus outbreak had ended. It may be the time just after the dust has settled or a longer time ahead when the longer-term impact of the corona outbreak has become clear. Once arrived in the future, you will write a letter about that future and send it back to the present.

The following suggestions give you an idea about what your own letter from the future might look like. Feel free to use these instructions as a basis for writing the letter your own way. Don't worry about spelling, sentence structure, or grammar but simply write anything that comes to your mind. There is no right or wrong answer.

Keep in mind that it is a letter that is written backwards from the future to the present, so you imagine the future situation as if it is already realized. Feel free to use your full imagination: Remember that it is about a future which has not occurred yet. Consider it an opportunity to think about possibilities to transform your own life and the world around you for the better.

Ready to travel to the future? Then start writing your letter with the following guidelines.

Imagine the following points as vividly as possible, giving a detailed description so that others reading your letter will be able to see the future you imagined as if they were watching a movie.

(1) How far into the future and where did you travel?
Imagine traveling with a time machine to the future. Once arrived, you step out of the time machine and start living in this new time. Do you have a sense of where and when this future will take place? This time may be a week, a month, half a year, one full year, many years, decades or even centuries or millennia ahead of us.
(2) Describe your future world
Now that you're familiar with your future world, can you describe it? Look at your immediate surroundings. What do you see, feel, hear and smell? Do you for example see nature, buildings, people, technology? Are you in a city or in the countryside? Are you in your own country or elsewhere? Are you inside a building or outside? Is it noisy or quiet? Now turn to look at your future world at large (community, society, humanity, the planet). Do you notice anything about how society or nature are functioning now that the corona outbreak is over

(such as, social relations, the environment, schools, hospitals, employment, businesses, industries, transportation, technology, the concrete effects of laws, regulations, policies)? What positive changes do you notice in what matters to you? What has disappeared that you're glad has not returned?

(3) Describe yourself in the future

Consider now yourself. What are you feeling, thinking, and doing? If there are other people, what can you tell about them? What is happening in your future life?

How are you dealing with opportunities and setbacks on a specific day, moment or event?

(4) Path towards the future

Now think about the path that led to the future you just described. How did this future come into being, who or what has contributed to making those changes possible? How do you look back on this path to the future?

(5) Message to the present

You decide to whom you want to write the letter and give a message to this person in the present. This could for example be yourself in the present, another person, group or organization (for example, your child or grandchild, friends, the next generation, the minister of Health etc.).

Thank you for your letter! To complete the survey, please answer the following 10 questions.

A3 Questionnaire

The questionnaire including ten items

Q1 Can you tell us your story of how the corona outbreak has affected your life? Please feel free to write whatever comes to mind, long or short.

Q2 Indicate on a scale from 1 (very fearful) to 5 (very hopeful) your present attitude towards the future

	Very fearful	Fearful	Neutral	Hopeful	Very hopeful
My outlook on my personal future life is	O	O	O	O	O

	Very fearful	Fearful	Neutral	Hopeful	Very hopeful
My outlook on the future of the country where I reside is	O	O	O	O	O
My outlook on the future of humanity is	O	O	O	O	O
My outlook on the future of the planet is	O	O	O	O	O

Q3 Slide the bar from left to right to describe your present attitude towards the future

Not at all		Sometimes		All the time
0	25	50	75	100

I feel certain about the future

I feel I have control over the future

I feel comfortable not knowing what the future will hold

Demographic Information

Q4 What is your age?

Q5 What is your gender?

O Female

O Male

O Other

O I prefer not to answer

Q6 In which country do you currently reside?

Q7 What is the highest level of school you have completed or the higher degree you have received?

O Less than high school degree

O High school graduate (high school diploma or equivalent, including GED)

O Some college but no degree

O Associate degree (2-years)

O Bachelor's degree

O Master's degree

O Doctoral degree

O Professional degree (JD, MD)

O Other

O I prefer not to answer

Q8 Which statement best describes your employment status just before the corona outbreak started?

O Working (paid employee)

O Working (self-employed)

O Not working (looking for work)

O Not working (retired)

O Not working (disabled)

O Not working (other)

O I prefer not to answer

Q9 How did your employment situation or income change because of the corona outbreak?

O No change

O Loss of employment

O Cuts to employment or income

O Change of position or field of employment

O No immediate change, but cuts to employment or income in the coming months is likely

O Increased hours and/or income

O I prefer not to answer

Q10 What is your household situation?

O Single

O Together with partner

O Together with partner and children

O Together with children no partner

O Other

O I prefer not to answer

Debriefing

Inspire others and share your story

Thank you for filling out the questionnaire! We have two more options for you before you leave. Do not forget to complete and submit your contribution to this study by clicking >> below.

1. Share your story

Make your story available to others by giving permission to publish your Letter from the Future on the public website of the project. We may slightly edit your letter to remove any

identifying information to fully anonymize it. Please note that it may take a while to make a selection of letters for the website.

2. Join our follow-up study

We are looking for volunteers who would like to participate in a longer study where you will be asked to reflect on how your outlook on the future develops as the outbreak evolves. We are currently looking for funds so that we can give long-term participants some compensation for their efforts.

Please fill in your e-mail address in case you agree to be contacted for a follow-up study. The e-mail address will only be used for this purpose.

Appendix B

Analytical framework/coding scheme

Table B1

Coding scheme for the dimensional model of futures consciousness

Dimension	Code	Description
Time Perspective (TP)		
	Objective Time Horizon (OTH)	The writer has dated the letter (year, day) so that the exact timespan can be determined
	OTH-ST	ST short term: less than or 1 year ahead
	OTH-MT	MT midterm: over 1 year up to 10 years ahead
	OTH-LT	LT longterm: over 10 years or more ahead
	OTH - unspecified	The date has not been made explicit in the letter
	Subjective Time Horizon (STH)	The timespan can be deduced based on the depicted events in the letter
	STH Within Corona	During the Corona crisis period, typically describing social distancing measures or lockdown
	STH Extended Corona/ New pandemic normal	Aspects of Corona still influence life, even if the pandemic is already gone. It might be that certain measures (social distancing, wearing masks) or behaviour remains the same as during Corona.
	STH just after Corona	A proximate post-corona future estimated or explicitly situated only weeks or months after the pandemic came to an end.
	STH longer after Corona has ended	A distant post-corona future, estimated or explicitly situated weeks or months after the pandemic came to an end
	STH timespan unclear	It is unclear when the depicted future takes place
Agency Beliefs (AB)		
	Degree of Agency	Section/sentence-level codes indicating (a) the degree to which the actor and action(s) are specified and clear and (b) the number of agency-aspects made explicit. There are four aspects of agency (actions, responsibility for actions, reflection on consequences of actions, intentions or plans for actions).
	Low Agency	There may be a specified agent, but the actions, responsibility, reflection on action consequences, and plans/intentions for action are vague.

	Intermediate Agency	There is an unspecified agent with 2 or more aspects of agency attributed, or there is a specified agent with one aspect of agency made specific.
	High Agency	There is a specified agent with 2 or more aspects of agency made specific.
	Distribution of agency	Letter-level code describing whether in the letter as a whole a collective or personal agent dominates
	Personal agency	In this letter agency is primarily allocated to a personal agent (typically an I-agent or You-agent, i.e., referring to the future or present self of the letter writer, sometimes including the immediate relations/family of the I).
	Collective agency	In this letter agency is primarily allocated to a collective agent, either the government, an organization, institution, community, or group.
	Mixed personal/collective agency	In this letter the allocated agency is equally distributed between collective and personal agents, for example because the letter has multiple sections which each have different actors varying between the personal life and societal developments.
Openness to alternatives (OA)		
	Attitude	Sentence-level code indicating the stance towards the future
	Closed	A closed stance towards what the future will hold, in giving a sense of certainty, predictability and control. This can be observed in word use (definitely, certainly, no doubt) and the lack of subjunctivizing language.
	Open	Openness towards what the future will hold, allowing uncertainty and unpredictability. Openness can be observed by content (I surmised, it seems, I doubt, as if) and by subjunctivizing language (Sools, 2012).
	Multiplicity	Letter-level codes for various ways in which multiple manifests in the letters in topics, thoughts or action possibilities
	Single-issue	Letters that predominantly deal with one central issue[1]
	Multiple-issue	Letters dealing with at least 2 issues and a single key issue cannot easily be identified.
	Contrasting group action	Contrast is created in action possibilities between groups (some versus others, others and self, or different stakeholder groups).

	Reflective questions	Through raising reflective questions, the writer opens up multiple options and alternative perspectives
Systems Perception (SP)		
	Explicitness of systemic awareness	Section-level codes for letter parts showing the extent to which awareness of interconnectedness between system parts is demonstrated observably in implicit or explicit reflection.
	Implicit interconnectedness	The wording does not express a (cause and effect) relation between parts (e.g., generations, timeframes and/or domains). Parts are implicitly connected for example when a narrator moves from the description of developments at one level to developments in another, without referring to how one level influences the other.
	Explicit interconnectedness	A connection between levels, generations, times or domains is made explicit, for example by causal connectors or other linguistic markers or when the content of the letter reflects awareness of how things cohere, are part of a larger whole and cannot be thought of each other independently.
	Degree of Systemic awareness	Whole letter-level code of the degree of awareness shown overall of interconnectedness between parts, e.g. (a) personal-social-planetary levels; (b) generations; (c) times, e.g., past, present, future; (d) domains in life / society such as health, education, economy.
	No interconnectedness	One level only (no descriptions of explicit relations between levels)
	Some interconnectedness	Relations between 2 levels are mentioned explicitly (if other relations are mentioned implicitly, letters are coded at this level)
	Extensive interconnectedness	3 or more relations presented explicitly OR one relation is described in a way that shows complexity (e.g., nonlinear thinking) OR one relation is described extensively (= elaborative narrative)
Concern for Others (CO)		
	Kind of Concern	Sentence/section level code about the object of concern
	Self	Concern for the personal life of the writer (well-being, health, education, housing, etc.) and the immediate circle of friends and family
	Freedom	Concern about freedom of movement, of doing what one wants to do, of being free from fear
	Awareness of what matters	Realization or (renewed) appreciation of values in (personal) life

	Humans & generations	Concern for other humans beyond the immediate circle of friends and family (local or global) or even extending to generations before and after
	Society	Concern for social inequality, the economy, the health-care system, the educational system etc.
	Green	Concern for the environment, either locally (sustainable communities) or globally (e.g., climate change and transition to a green economy)
	Degree of Concern	Whole letter level code about the number of self-transcending concerns (from none to – nearly – all)
	Self-only	The writer shows concrete concern(s) related to the personal future (happiness, well-being, education, employment, finances) that may include the immediate circle of friends/family
	Low	One self-transcending concern is mentioned (e.g., freedom, awareness of what matters, humans/generations, society or green) with or without concern for self
	Intermediate	Two or three self-transcending concerns are mentioned (e.g., freedom, awareness of what matters, humans/generations, society or green) with or without concern for self
	High	Four or five self-transcending concerns are mentioned (e.g., freedom, awareness of what matters, humans/generations, society, green) with or without concern for self

Note. The table shows the version of the coding scheme developed by Sools et al. (in press) which was used in this study.

Appendix C

Participant characteristics

Table C1

Participant characteristics of the low scoring sample

Country	Gender	Age	Education	Employment	Change of Employment	Level
Greece	Male	37	Doctoral Degree	Not Working (looking for work)	No change	0,000
The Netherlands	Male	57	Less than High School Degree	Not Working (looking for work)	No change	0,000
Greece	Male	25	Master	Not Working (temporary layoff from work)	Loss of employment	1,667
The Netherlands	Female	17	Less than High School Degree	Working (paid employee)	Cuts to employment or income	2,000
Greece	Female	19	High School Graduate	Not Working (looking for work)	No change	2,667
Greece	Female	25	Bachelor	Not working (other)	No change	7,333
Greece	Female	54	Bachelor	Working (paid employee)	No change	8,333
The Netherlands	Male	59	Master	Working (paid employee)	No change	15,000
Estonia	Female	81	Master	Not working (retired)	No change	16,667

Italian	Female	27	Bachelor	Not working (other)	No change	20
Estonia	Female	27	Master	Working (paid employee)	No change	22,667
The Netherlands	Female	73	Doctoral Degree	Not working (other)	No change	24,000
French	Male	44	Bachelor	Working (paid employee)	No change	24,667
The Netherlands	Female	17	Less than High School Degree	Working (paid employee)	Increased hours and/or income	25,000
Germany	Male	-	Master	Working (self-employed)	No change	26,667
Finland	Male	42	Bachelor	Working (self-employed)	No immediate change, but cuts to employment or income in the coming months are likely	27,667
Canada	Male	70	Professional Degree (JD, MD)	Working (self-employed)	Cuts to employment or income	29,667
United Kingdom of Great Britain	Female	52	Doctoral Degree	Working (paid employee)	No change	30,667

Table C2

Participant characteristics of the high scoring sample

Country	Gender	Age	Education	Employment	Change in Employment	Level
Ecuador	Male	59	Other	Working (self-employed)	No immediate change, but cuts to employment or income in the coming months are likely	87,666

The Netherlands	Female	45	Associate Degree (2 years)	Working (paid employee)	No change	75,000
The Netherlands	Female	17	High School Graduate	Working (paid employee)	Loss of employment	74,667
Greece	Female	24	High School Graduate	Not Working (other)	No change	74,333
Greece	Female	48	Bachelor	Not Working (other)	No immediate change, but cuts to employment or income in the coming months are likely	73,667
United Kingdom of Great Britain	Female	33	Doctoral Degree	Working (self-employed)	No change	73,333
Portugal	Female	67	Doctoral Degree	Not working (retired)	No change	73,333
Greece	Male	54	Doctoral Degree	Working (paid employee)	No change	73,333
Spain	Male	25	Master	Not working (looking for work)	No change	73,333
The Netherlands	Male	17	High School Graduate	Working (paid employee)	No change	71,667
The Netherlands	Female	18	High School Graduate	Not Working (temporary layoff from work)	Cuts to employment or income	71,667
Estonia	Female	52	High School Graduate	Working (paid employee)	No immediate change, but cuts to employment or income in the coming months are likely	71,667
Finland	Female	22	Associate Degree (2 years)	Working (paid employee)	Cuts to employment or income	70,000

Ecuador	Male	39	Associate Degree (2 years)	Not working (looking for work)	Loss of employment	68,000
Finland	Female	74	Bachelor	Not working (retired)	No change	68,000
Ecuador	Male	43	Associate Degree (2 years)	Working (paid employee)	Cuts to employment or income	66,667
Greece	Male	31	Bachelor	Working (paid employee)	No change	66,667
USA	Male	37	Master	Working (self-employed)	Cuts to employment or income	64,667
Germany	Female	21	Some college but no degree	Not working (looking for work)	No change	64,000

Appendix D

Letter from the past

Table D1

Distribution of codes per dimension in the letter from the past (N=1)

Dimension	Code	Occurence of Codes (N)
Agency Beliefs		
	Degree of Agency	
	Low	1
	Intermediate	2
	High	
	Distribution of Agency	
	Personal	
	Collective	1
	Mixed	
Openness to Alternatives	**Attitude**	
	Closed	4
	Open	2
	Multiplicity	
	Single Issue	
	Multiple Issue	1
	Contrasting Group Action	
	Reflective Questions	
Systems Perception		
	Explicitness of Systematic Awareness	
	Implicit	1
	Explicit	2
	Degree of Systematic Awareness	
	No	
	Some	1
	Extensive	
Concern for Others		
	Kind of Concern	
	Self	
	Freedom	
	Awareness of What Matters	
	Humans & Generations	2
	Society	1
	Green	
	Degree of Concern	
	Self only	
	Low	
	Intermediate	
	High	