Visual Narrative for Taking Future Generations Perspective

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Future Generation's Perspective

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Abstract

Intergenerational problems occur when the current generation chooses actions that benefit them without fully considering future generations' needs. The present study posits that the public has a general tendency to serve as the proxy of future generations willingly, and aims to develop a visual narrative intervention measure to accelerate this willingness. The narrative was created on the basis of the interview survey with a participant in a Future Design workshop (Hara et al., 2019) as an "imaginary future generation". A lab-experiment was designed using this visual narrative as an intervention tool, to assess the impact of this intervention on the research subjects' political preferences and their concerns for future generations. A total of 186 subjects were collected and requested to choose their most preferred option among a list of four options prevalent in the life of the present generation, both before and after the exposure to this intervention. It was found that the exposure to this visual narrative significantly changed the subjects' preferences as the proxies of the future generation. After this intervention, the subjects wished the present generation had chosen sustainable options more different from the status quo so that the future generations' do not regret from inaction (i.e., the regret of not having done certain actions at present), indicating that the intervention was effective in acquiring the perspective of the future generation. The present study demonstrates that individuals of the present generation can be motivated to take the perspective of the future generation.

Keywords: Perspective; future design; retrospective treatment; retrospective assessment.

1. Introduction

Sustainable Development Goals (SDGs) provide an evidence-based framework for global sustainability governance (United Nations General Assembly, 2015). These goals were adopted by all United Nations Member States in 2015 as part of a universal call to action to meet the 17 goals and 169 targets for ending poverty, protecting the planet, and ensuring that all people are able to enjoy peace and prosperity by 2030. SDGs are occasionally criticized for focusing more on the well-being of the current generation in the near future without ensuring a just future for generations of the distant future (Oliveira, 2018). The neglected well-being of such generations can be partly explained as a trade-off inherent to certain goals and targets, which are implicit in the design of SDG design and have been referred to in earlier studies (Allen, Metternicht, & Wiedmann, 2018; Collste, Pedercini, & Cornell, 2017; Saito et al., 2017; Costana et al., 2016; Kamijo et al., 2017). For example, Costana et al. (2016) argue that increasing agricultural land use to end hunger (SDG 2) may result in biodiversity loss (SDG 15), land degradation, water pollution (SDG 6), and adverse effects on marine resources (SDG 14), all of which can in turn lead to food security concerns (SDG 2). This example shows how aiding the present generation can negatively affect future generations.

Due to incompatibilities between the interests of the present generation and the welfare of future generations, it is possible that the preset generation may take governmental or intergovernmental actions which may unintentionally harm future generations. This leads to what earlier studies have called presentism (an underlying bias within established laws and policies that have the potential to negatively affect future generations; Thompson, 2010). Jones, O'Brien, and Ryan (2018) also premised that governments primarily focus on short term concerns and systematically neglect global catastrophic risks (thereby neglecting future generations). Norton (2005) deepens the concept of "*presentism*" by contrasting it with "*futurists*," where the latter anticipates the demands of "*an ever-expanding class of future claimants*" (Norton 2015: 322). In the

field of economics, presentism is interpreted as the tendency of the present generation to overtly discount the value of future generations. Contrastingly, other authors argue that we should not treat people differently simply because they are differently located in time (e.g., Kymlicka, 2002; Pigou, 1932; Stern et al., 2006). While still others defend positive time discount rates (e.g., Nordhaus & Boyer, 2000; Nordhaus, 2008; Caney, 2008). Contemporary policy making often does not adhere to the zero-discount principle but instead privileges the welfare of current generations (Graham et al., 2017; Adams & Grovers, 2007; Stern et al., 2006), and thus is criticized for contributing to generational bias.

Against this backdrop, several national governments have set up institutional structures that present the interests of future generations, such as Finland, Hungary, Israel, Scotland, Singapore, and Wales. Jones, O'Brien, and Ryan (2018) identify a common trend in this cases which face several tribulations barely a few years since their creation such as an election cycle mainly because of politicians' rejection of the power attached to these institutions. They conclude that the legitimacy of, and public support behind, an institution is a critical factor as to whether it will last.

In spite of these challenges, the current study hypothesizes that the public has a tendency to willingly serve as the proxy of future generations and to establish SDGs which balance the needs of the present while safeguarding the security of the future. Building on this assumption, this paper aims to develop an intervention measure to accelerate and confirm its effectiveness. The psychological literature partly supports this proposition on perspective taking. Perspective taking is a cognitive process where individuals adopt the viewpoints of others in an attempt to understand their preferences, values, and needs (e.g., Parker & Axtel, 2001), leading to empathy (Duan & Hill, 1996).

Earlier studies argue that an individual's active engagement in perspective taking is a consequence of not only his abilities but also his motivation (Gehlbach, 2004; Zhang et al. 2013; Grant & Berry, 2011) or an incentive to do so (Hodges et al., 2011; Klein & Hodges, 2001). Gehlbach, Brinkworth, and Wang (2012) qualitatively investigated what motivates individuals to

take the perspective of others, and identified "intrinsic interest" among others as one of the reasons, in line with motivation theorists stating that the mental world is indeed a subject of curiosity (e.g., McClelland, 1987) (possession of intrinsic interest means that he or she feels a curiosity and/or need to understand others, rather than being motivated by higher level objectives). Although earlier studies implicitly limit the target of perspective taking to those who live in the same era, the present study posits a more general hypothesis, that individuals can have an "intrinsic interest" in taking the perspective of others who belong to future generations, including that of the next generation. The hypothesis is tested by developing an original intervention measure that motivates people uniquely to take interests in the future generation's wellbeing.

Our strategy for developing such an intervention comprises; (i) identifying a case where an individual succeeds by willingly taking the perspective of future generation's with an intrinsic interest, (ii) to choose him/her as a protagonist, and (iii) to create a factual visual narrative (i.e., a narrative attached to visual information such as pictures and movies) in a way that audiences can empathize with the future generation's perspective by sharing the protagonist's experience. This strategy is consistent with studies in cognitive psychology, developmental psychology, neuroscience, and poetics. This suggests that readers of a narrative can simulate the events described in the narrative by taking the perspective of the protagonist, other characters, or observers (Brunye et al., 2009; Barsalou, 2008; Fisher & Zwaan, 2008; Glenberg, 2007; Lozano, Hard, & Tversky, 2007; Tettamanti et al., 2005; Boyd, 2005; Sanfordm & Emmott, 2002; Oatley, 1999: Hartung et al., 2016). The structure of the present study is as follows. In section 2, we introduce a theoretical framework the present study relies on. In reference to this, section 3 posits a hypothesis, which will be tested in the subsequent sections by verifying that the developed visual narrative works as an efficient intervention measure indeed.

One thing should be noted concerning the meaning of the term "narrative." Drawing parallels with the term "story," Riessman (2008, p. 8) stresses the social nature of narrative by arguing that

"(e)vents perceived by the speaker are selected, organized, connected, and evaluated as meaningful for a particular audience" in narratives, and thus, narratives are "strategic, functional, and purposeful." While this study does not interrogate whether "narrative" and "story" are interchangeable, our analysis presupposes that a narrative is a product of a narrator's purposeful selecting and connecting of events for an audience. The present study regards purposefulness and connectedness as essential characteristics of narratives. Therefore, visual narratives presented in this study were created from material garnered from interviews which were the result of interviewers and interviewees jointly forming intimate connections among thee interviewers' life events, including the participation in the workshop. Such an approach allowed the viewers of visual narratives to identify with the subjects within the narratives and assume the perspective of future generations. Literature on sustainability conforms to the present study's understandings on the purposefulness and connectedness. Van der Leeuw (2019) argues that narratives are created to integrate particular events or trends into a society's worldview and to facilitate transition. Veland et al. (2018) argue that transformations to sustainability will require recognizing and engaging multiple, diverse experiences of agency and that attention to narrative can facilitate this process. One important difference between the present study and previous studies is that the former considers narrative as a measure to facilitate the creation of what the latter call narratives. See the discussion section for details.

2. Theoretical Framework and Hypothesis

Several frameworks have been utilized to explain how narratives affect recipients. Dual-processing models of persuasion, such as the elaboration likelihood model (ELM; Petty & Cacioppo, 1986), as well as the heuristic systematic model (HSM; Chaiken, 1980), aim to understand persuasion in situations where the recipient of the message is aware of its persuasive

intent. They equally posit two routes of information processing: central and peripheral in ELM, and heuristic and systematic in HSM. However, after an extensive literature review, Hinyard and Kreuter (2007) argue that earlier studies have yielded mixed results with regard to whether these models are applicable to persuasion in narratives. Several authors (Escalas, 2007; Green and Brock, 2000, Slater 2002) also note that although these models provide a valid characterization of analytical persuasion (i.e., science books, news reports, speeches, etc.), they do not adequately account for persuasion in narrative (i.e., novels, movies, etc.).

In contrast, the transportation-imagery model (Green & Brock, 2000; 2002) posits that narrative persuasion occurs when the recipient of a narrative is "transported" into the narrative world. Moreover, the term "transportation" has been previously conceptualized by Gerring (1993) as a state of detachment from one's immediate reality because of his or her engrossment in a story. This model conceives of the characteristics of the storyteller and the story receiver as antecedents to the phenomenon of transportation. Consistent with this model, Green (2004) found that attributes such as the perceived realism of the story and personal experiences approximate to the narrative increased the likelihood of transportation. Van Laer et al. (2013) extended this model by further positing that transportation leads to a receiver feeling an (i) affective response such as warm feelings (Chang, 2009) and upbeat feelings (Escalas, 2004), (ii) decreased critical thought, (iii) adoption of story-consistent beliefs, (iv) adoption of story-consistent attitude, and (v) increased intention to perform a story-consistent action. The same authors also refined the model by developing typologies of storyteller antecedents (i.e., identifiable characters, imaginable plot, and verisimilitude) and four story-receiver antecedents (i.e., familiarity, attention, transportability, and demographics).

In the introduction, we posited that visual narratives can motivate individuals to take an intrinsic interest in assuming the perspectives of future generations. By applying the extended transportation-imagery model (especially consequences (i) and (iv) of transportation), this proposition can be refined as follows:

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Hypothesis: When individuals are exposed and transported to a visual narrative containing a protagonist with an intrinsic interest in assuming the perspectives of future generations, audiences tend to adopt the concerns of the protagonist and take on a positive attitude towards sustainable political options which benefit future generations.

However, this hypothesis requires a further elaboration in order to be verifiable in an experimental study. Indeed, we must specify the meaning of "sustainable political options which benefit future generations." In clarifying this point, it is useful to refer to the literature on the psychology of regret (i.e., the emotion experienced when people look back on bad decisions) (Zeelenberg, Van den Bos, Van Dijk, & Pieters, 2002). In this field, there is a concern regarding whether people regret the actions they have taken more than the actions they have foregone (i.e., inactions) (Bonnefon & Zhang, 2008; Gleicher et al., 1990; Kahneman & Tversky, 1982; Landman, 1987; Zeelenberg et al., 2002; Zeelenberg, Van Dijk, & Manstead, 2000). Gilovich and Medvec (1994, 1995) demonstrate that while actions generate more regret in the short term, the pain of regrettable inaction bolsters in the long run. Nakagawa et al. (2019a) and Nakagawa, et al. (2019b) were the first to introduce the insights of psychology to future studies. They suggested that individuals who consider the perspectives of the future generations tend to consider long-term implications and therefore come to prefer political options which minimize the inaction regret which may be perceived by future generations, rather than sticking to the status quo. In this context, the preset study adopts the working definition that a political option to be adopted by the present generation is sustainable (and may benefit future generations) if they expect that the option is likely to minimize inaction regret expected to be perceived by the future generation. Thus, the aforementioned hypothesis can be refined as follows:

Hypothesis (refined): When individuals are exposed and transported to a visual narrative containing a protagonist who takes intrinsic interest in assuming the perspectives of future

generations, they come to identify with the concerns of the protagonist and acquire a positive attitude towards existing political options that that are more likely to avoid inaction (rather than action) regret expected to be perceived by the future generation.

The aim of the present study is to verify this refined hypothesis. In case it is verified, the present study also aims to verify if generativity and critical thinking disposition (see section 3.5), which are known to facilitate the perspective taking of the future generation (Nakagawa et al., 2018; 2019), serve as mediators of acquiring a positive attitude towards sustainable options indeed.

3. Method

The research was conducted in the Kochi Prefecture, Japan, where locals were invited to participate as subjects. They were recruited through an advertisement in a local newspaper. The following information was included in a 10 cm by 10cm advertisement placed in the newspaper: (i) the date and place of the experiment, (ii) four time slots among which participants were requested to choose, (iii) the objective of the experiment (in order to avoid selection bias and prejudice of the participants, we refrained from providing detailed information and simply mentioned that the experiment was for a behavioral study), (iv) recommendation to introduce this advertisement to family members and friends, (v) an allowance of 5,000 Japanese Yen (nearly equivalent to 45 USD) for each participant, and (vi) eligibility criteria (participants must be of an age between 20 and 70 and not belong to the same university as the first author). Respondents to the advertisement applied via email. The experiment was conducted in a classroom at Kochi University of Technology. Taking into account the schedules of the participants, we assigned each participant to one of the four timeslots in advance. Taking into account the capacity of the room, we arranged for the number of participants in each time slot to never exceed 48 people.

3.1 Experimental Procedure

Our experimental procedure is shown in Figure 1. In order to identify the effectiveness of the visual narrative, the following experimental process was adopted[1].

Steps (1) and (2) comprised the retrospective treatment[2]. Then, in step (3), individuals read the case-method material on the financial issues of Japan (see section 2.3) and chose the most favorable option from the viewpoint of people living 30 years from today. They also answered an open-ended question on the reasons as to why they made the choices. This is called the first choice in this paper. Then the participants watched the picture-story show (see section 3.3) in step (4), which was followed by step (5) where they were requested again to choose the most favorite options from the viewpoint of people living 30 years from today. This is the second choice where participants also answered an open-ended question. Results in steps (6) and (7) were not considered in the present study.

Considering our objective to detect the difference between steps (3) and (5), the retrospective treatment (i.e., steps (1) and (2)) could have been abbreviated. In spite of this, the present study included them where it was expected that without these steps, the research subjects would face greater difficulty in interpreting the guidance in step (3) meant to choose the preferable option from the perspective of the future generation.

3.2 Development of a Visual Narrative

The story to be presented in the experiment were created as follows. Hara et al. (2019) conducted a series of Future Design workshops in the Yahaba (Iwate Prefecture, Japan) municipal government in 2015 and 2016. The municipal government organized these workshops to obtain input

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[1] The experimental procedure of Nakagawa et al. (2019a) was adopted after a minor modification was made to include steps (4) "Watching the picture-story show" and (5) "Individually choosing the most favorable option from a standpoint of the people living 30 years from today."

[2] This treatment was originally developed by Nakagawa et al. (2019b). In this treatment, a newspaper article published 30 years ago was utilized.

as it developed a comprehensive long-term strategy looking toward 2060. Yahaba is in northern Japan, and its local economy has traditionally been based on agriculture, primarily rice cultivation. However, due to its proximity to the major city of Morioka, light industries and warehousing have been increasing in importance. As of 2015, the town had a population of about 27,000 and a population density of 404 persons per km^2, fairly typical of a rural municipality. In these workshops, some of the invited local citizens (approximately 20) were allocated to what Hara et al. (2019) call the "imaginary future generation" groups. They were asked to create visions from the standpoint of a future generation living in 2060, rather than of the current citizens. The authors of the present study requested them to participate in our interview surveys, and two of them agreed to do so. Data of one of these two (named Miho; a pseudonym) was utilized in the present study. In the interviews, they were asked about their experiences of participating in the series of workshops, with a special focus on the processes in which they understood in their way what it was like to stand in the position of future generation people 40 years from now. Based on the transcription of Miho's voices, a nine-paragraph story was edited, and pictures of each of the paragraphs were drawn.

One important thing should be noted on the arbitrariness with which to choose the protagonist of the story. It is true that there is no guarantee that the way she adopted in acquiring the future generation's perspective is the same as those of other workshop participants. However, this does not at all diminish the significance of the present study. The present study seeks to verify the generalizability of the case of Miho, not in the sense that any person aiming to take the perspective of the future generation do so as Miho did, but in the sense that sharing Miho's experience by means of the picture-story show helps such people to be motivated to acquire the perspective in their ways.

3.3 Policy Options

As of 2018, Kochi prefecture has a population of 701,000, and can be considered a typical Japanese prefecture, located far from major cities such as Tokyo, Osaka, and Kyoto, and struggling

with various socio-economic problems such as population decline (10% reduction in the last 10 years) and low regional economic growth. Its fiscal structure is weak; approximately 60% of the prefecture government's revenue is subsidized by Japan's national government, the second highest percentage in the country. It is thus likely that the prefecture would be adversely affected if a fiscal crisis or financial weakening of Japan's national government occurred. In order to provide our participants with the necessary information on the financial situation of the local government of Kochi Prefecture and the national government of Japan, as well as the list of four policy options to be adopted by the present society, a case-method material was provided to the participants[3].

Option 1: Nationally less sustainable, locally less sustainable

The national government continues to subsidize prefectures to secure financial equality among them[4], while Kochi Prefecture continues to subsidize the entire area to ensure equal levels of public service.

Option 2: Nationally more sustainable, locally less sustainable

The national government reduces subsidies to prefectures to avoid a national fiscal crisis[5], allowing inequality, while Kochi Prefecture continues to subsidize the area to ensure equal, local public service levels.

Option 3: Nationally less sustainable, locally more sustainable

The national government continues to subsidize prefectures to secure financial equality among them, while Kochi Prefecture subsidizes limited areas for revitalization, allowing inequality.

Option 4: Nationally more sustainable, locally more sustainable

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[3] This case-method material was created by Nakagawa, Arai et al. (2018).

[4] As of 2018, in Japan, the national government subsidizes all prefectures except for the Tokyo metropolitan government.

[5] Cutting subsidies would be replaced by a large-scale transfer of tax revenue sources to the prefectures. This would transfer the financial risks to the prefectures as well.

The national government reduces subsidies to prefectures to avoid a fiscal crisis[6], allowing inequality, while Kochi Prefecture subsidizes limited areas for revitalization, allowing inequality.

While all of the four options assume a drastic change at the national level (i.e., gradually transferring national tax revenue sources to prefectures), options 1 and 3 can be regarded as closer to the status quo, because it assumes that the national government will provide insurance to partially compensate for a lack of prefectural funds with subsidies from the national government so that equality between prefectures can be ensured. Thus, the possibility of failing to avoid a fiscal crisis for the national government can be greatly increased, and therefore these two options are likely to evoke the future generation's feeling of *inaction* regret. Hereafter they are simply called the less sustainable options at the national level. In contrast, options 2 and 4 are likely to evoke *action* regret, because they more radically advance the financial reform without compensation, and thus the negative side effect (i.e., enlarged disparity between prefectures) may occur, which the generation of the present and near future would suffer from. Although it is possible that the expected outcome will not occur, hereafter they are simply called the more sustainable options.

At the prefectural level, options 1 and 2 are closer to the status quo, because they lay importance on the equality inside the prefecture. Thus, the prefectural budget continues dependent on the national government, and a possible fiscal crisis for the national government is likely to lead to the crisis for the prefectural government as well. Therefore, these options are likely to evoke the future generation's feeling of *inaction* regret. Hereafter they are simply called the less sustainable options at the prefectural level. In contrast, options 3 and 4 are expected to evoke *action* regret, because they more radically advance the financial independence of the prefecture by investing in

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[6] Cutting subsidies from the national government would be replaced by a large-scale transfer of tax revenue to the prefectures, thus transferring financial risks to them.

projects in specific promising regions, and thus the negative side effects. They include the enlarged disparity inside the regions and the failure of the projects, the former of which the generation of the present and near future would suffer from. Hereafter they are simply called the more sustainable options at the prefectural level.

3.4 Measures

After completing the final step (7), a questionnaire survey was conducted. Following Nakagawa, Arai et al. (2018), generativity and critical thinking disposition were measured, along with socioeconomic and sociodemographic characteristics, including age, gender, marital status, employment status, and educational background. It was expected that those who were high in these scale scores were more likely to adopt a new perspective with the help of the visual narrative intervention. Generativity refers to the willingness to attach meaning to one's life in connection with future generations. To measure this, the present study adopted the Generative Behavior Checklist (McAdams and Aubin 1992) with 40 items and 10 filler items. The theoretical range was between 0 and 40.

On the other hand, critical thinking is as a form of open-minded thinking that aims to gain insight into how to improve things, with a focus on criticism and testing of the acquired insight. To measure this, the present study adopted a scale developed by Hirayama and Kusumi (2004) consisting of two subscales (logical thinking and inquisitiveness) and a total of 23 items. The items are listed in Table 1. The five-point scale was adopted, from 1 = "Strongly disagree" to 5 = "Strongly agree", and the scores were summed. The theoretical ranges of these subscales were 13—65 and 10—50, respectively.

3.5 Analysis

To compare the frequency distributions regarding how many participants chose each of the

four options at steps (3) and (5), the chi-square test of independence was applied. After confirming that there was a statistically significant difference, two additional analyses were conducted to better understand the reasons behind the change. First, it was investigated whether (i) the ratio of participants choosing "options 3 or 4" (i.e., sustainable at the prefectural level) and (ii) the ratio of participants choosing "options 2 or 4" (i.e., sustainable at the national level) in step (5) rose significantly compared to what they were in step (3). Second, logistic regression analysis was conducted to explain the research participants' 2nd choices (i.e., in step (5)) in terms of their individual characteristics, controlling for their 1st choices (i.e., in step (3)). This was to identify the direct effect of such characteristics to their 2nd choices by removing the effect via their 1st choices (i.e., to identify who were more likely to be influenced by the visual narrative intervention).

4. Result

4.1 Development of a visual narrative

The pictures and the corresponding paragraphs of the story are shown in Figures 1–3. The story aimed at letting the audience understand what it is like to stand in the position of the future generation. Thus, after providing the background information of the town and the protagonist (scenes 1 and 2), the story described the situation where she is at a loss what to do as a future person (scene 3). In scenes 4 and 5, it is stated that a statement of a member of the same group served as a trigger for her acquisition of the perspective of the future generation. Scenes 6 and 7 describes the vision created by Miho and her group members. In scene 8, she contrasts herself with people in the current generation's standpoint and reflects on how far she has come. Finally, in scene 9, she looks back on her biographical backgrounds, speculates on the reason she could react to the triggering comment of her group member, and concludes her own experience of playing the part of the future generation. To summarize, this narrative shows that Miho's motivation to take the perspective of the

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future generation was stimulated by an elderly man's statement. It brings out her view that the

acquisition of the perspective is consistent with her own beliefs over time. Thus it is confirmed that

the developed narrative meets the objective of the present study. The pictures and the narration of the

story were combined on Microsoft PowerPoint so that each picture was shown in one slide and the

corresponding paragraph of the story was narrated when the "Slide Show" was played[7].

(Figures 2–4 inserted about here.)

In the introduction section, we noted that connectedness was an essential characteristic of

narratives. In the visual narrative created by the present study, the above mentioned scenes were

designed to stress connections among the protagonist's life events and the experience of assuming

the perspective of the future generation, even if the connections did not necessarily represent causal

relationships. For example, scene two demonstrated that before participating in the workshop,

thinking about a public issue was an important opportunity allowing the participant to disengage

from everyday life and the struggles of caring for children. This was interpreted as equivalent to her

success at disengaging from her present self during the workshop in scene five. Note that in

narratology, placing a pair of equivalent scenes is considered a critical device for enhancing the

connectedness of narratives (scenes two and five in this case) and organizing a narrative (e.g.,

Schmid, 2000).

4.2 Experimental results

Summary statistics are presented in Table 2. Concerning age, the most frequent category was 50–

59, to which approximately 34% of subjects belonged. The second frequent category was 40–49, to

which approximately 26% of the subjects belonged. The percentage of males and females were about

25% and 75%, respectively, suggesting that the latter was overrepresented. Almost two-thirds of the

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[7] The slide-show is available in the format of a video from the link below.
https://drive.google.com/open?id=1RHX2U51qXFgDY21ci4MORDXlMP8TUlqV

subjects were married. Approximately 44% had a permanent job and half were university graduates.

(Table 2 inserted about here.)

Table 3 displays the distributions of the most favored policies as chosen by the subjects for their 1st choice in step (3), 2nd choice in step (5), and the 3rd choice in step (7), although our primary focus was on the first two steps where individuals chose options from the future generation's perspective. At the 1st choice (i.e., in step (3)), option 1 (i.e., maintenance of status quo, and is less sustainable both at the national and local levels) was the most popular; 110 among the 186 respondents (59.1%) chose it. However, at the 2nd choice (i.e., in step (5)), the number is reduced to 67 (36.0%). Instead, those who chose option 3 (i.e., sustainable at the prefectural level) and option 4 (sustainable both at the national and prefectural levels) increased by 25 and 20, respectively. The number of people choosing option 2 was almost unchanged (i.e., from 43 to 41). The chi-square test of independence revealed that the two frequency distributions are statistically significantly different (chi-square = 30.38, $p < 0.001$), suggesting that the visual narrative encouraged research participants to prefer sustainable options (i.e., evoking action regret) from the future generation's perspective. In contrast, there was no significant difference between the frequency distributions of the 2nd and 3rd choices ($p = 0.51$).

(Table 3 inserted about here.)

Table 4 displays the transition matrix showing how the research participants changed their preferences between step (3) and step (5). Among the 110 participants who chose option 1 in the 1st choice (i.e., step 3), 61, 17, 23, and 9 chose options 1, 2, 3, and 4, respectively. Overall, 111 (= 61 + 24 + 19 + 7) participants chose the same options, while the rest 75 participants changed their most preferable options. The major flows of respondents who changed their choices were (i) from option 1 to option 3 ($n = 23$; 12.4%), (ii) option 1 to option 2 ($n = 17$; 9.2%), (iii) option 1 to option 4 ($n = 9$; 4.4%), and (iv) option 2 to option 3 ($n = 9$; 4.4%).

(Table 4 inserted about here.)

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Table 5 displays the number of respondents who chose each option, where the four options are classified into two groups according to whether they are more sustainable or not, both at the national and prefectural level. This shows that at the national level, the number of respondents choosing more sustainable options increased from 50 (26.9%) in the 1st choice to 68 (36.6%) at the 2nd choice. The chi-square test of independence revealed that the chi-square statistic was 4.02 and the difference was at a significance of 5% level. At the prefectural level, the number of respondents choosing more sustainable options increased from 33 (17.7%) in the 1st choice to 78 (41.9%) at the 2nd choice. The chi-square test of independence revealed that the chi-square statistic was 26.00 and the difference significance was at the 1% level. These results show that the visual narrative created by the present study was effective as an intervention tool both at the national and prefectural levels.

(Table 5 inserted about here.)

Finally, Table 6 displays the result of the logistic regression analysis, where whether individuals chose sustainable options or not was explained in terms of their individual characteristics, as well as their 1st choices. At the national level, two predictors were significant after controlling for the 1st choice[8]: age (Odds Ratio = 0.69; $p < 0.10$) and generativity (Odds Ratio = 1.64; $p < 0.05$), suggesting that participants who were younger or being high in generativity scale scores were more likely to choose sustainable options, given their 1st choices that were made before the visual narrative intervention. In other words, the observed shift of the frequency distribution in Table 5 (left) is partly explained by the changes in preferences of participants with these two characteristics. In contrast, at the prefectural level, no predictor was found to be significant, suggesting that

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[8] The meaning of controlling for the 1st choice is as follows. For example, at the national level, Table 4 shows that among the 136 (= 110 + 26) participants choosing less sustainable options (i.e., 1 and 3) in the 1st choice, 30 shifted toward sustainable options (i.e., 2 and 4). Also, among the 50 (= 43 + 7) participants choosing more sustainable options in the 1st choice, 38 remained choosing the same group of options. Explaining individuals' 2nd choices in terms of an individual characteristic, controlling for their 1st choice, is to investigate whether the characteristic lets individuals to change their options in the sustainable manner (as the 30 participants did) or to maintain their sustainable options (as the 38 participants did).

individual characteristics not measured in the preset study explains the shift in Table 5 (right).

5. Discussion

The present study aimed to develop a visual narrative to motivate present generation individuals to take the perspective of future generations in their ways and to verify the effectiveness of the narrative as an intervention tool, with the expectation that this serves as a tool to represent the next generation's voices in the present society. The effectiveness was verified indeed, and were ascribed in part to two characteristics of the research participants: generativity and critical thinking disposition. Five things are noted regarding our statistical results.

First, the visual narrative significantly decreased the ratio of individuals choosing the less sustainable options closer to the status quo, which are likely to evoke inaction regret both at the national and the prefectural levels (i.e., options 1). With the psychological argument in mind regarding the dominance of inaction regrets over action regrets in the long time span (Gilovich and Medvec, 1994; 1995), our finding supports that the visual narrative is effective in encouraging research participants to "look back on the preset" from the perspective of the generation that is so far away in the future that the participants wish the present had avoided choices evoking inaction regret.

Second, looking into the details of the data at the national and prefectural levels, the visual narrative was shown again to decrease the ratio of individuals choosing options that are the less sustainable and thus closer to the status quo (i.e., options 1 & 3 and options 1 & 2, respectively). Nakagawa, Arai et al. (2018) utilized the same list of four options in their experiment but found that the retrospective treatment (steps 1 and 2 of this study) alone was effective only at the prefectural level. Drawing on the economic literature of the free-rider problem (Olsen 1965; Esteban & Ray, 2001), they argue that at the smaller scale (i.e., at the prefectural level), individuals are more

motivated to contribute to the sustainability of their government at their own expense than at the larger scale (e.g., at the national level). While Nakagawa, Arai et al. (2018) shows the effectiveness of the retrospective treatment in individuals to take the perspective of future generations, the present study suggests that the visual narrative treatment not only amplifies this effect but also creates a new result. It motivates the present generation to stand in the position of the future generation whose standpoint covers the wider geographical domain than the one the individual belongs. In other words, by the use of this treatment, succeeding in disengagement from "the self *living at present*" can trigger succeeding in the disengagement from "the self *living at a specific place.*"

Third, at the national level, the above mentioned shift of participants' preferences due to the visual narrative intervention was found to be partly accounted for by the changes in participants' choices who were higher in generativity scale scores. It is reasonable that these people were more likely to amend their choices in a more sustainable manner or maintain their sustainable choices with the help of the visual narrative, perhaps by way of feeing sympathy toward its protagonist. Another finding was that younger participants were more sensitive to the visual narrative treatment. This seems to be consistent with the literature demonstrating that the ability of perspective taking declines with age (e.g., Labouvie-Vief, 2003; Maylor et al., 2002; Ruffman et al., 2008, Zhang et al., 2013).

Fourth, the above mentioned findings on the treatment effect of the visual narrative are significant because the significant change in individuals' preferences occurred *after* the retrospective assessment (steps 1 and 2 of this study) was implemented, which is known to change individuals' preferences in a way sympathetic to the future generation (Noblet et al., 2015; Nakagawa, Kotani et al., 2018; Nakagawa, Arai et al., 2018). This may suggest the conceptual distinction between (i) forming sympathetic attitudes to the future generation and (ii) taking the perspective of the future generation. If this distinction is the case, it must be that the treatment for enabling the formation of a sympathetic attitude (i) is not so sufficient in enabling the perspective taking of the future generation (ii) as the treatment designed specifically for enabling the latter. On the contrary, these treatments

can even contradict with each other, because feeling sympathy toward the future generation from the present generation's perspective can make it difficult to accomplish the "disengagement from the present," which is inevitable for (ii). In the field of scenario development, workshop participants' difficulty in doing so is widely recognized (e.g., Vergragt and Quist, 20111; this point will be discussed later in this section). The present study suggests that stimulating motivation to do so by sharing narratives of others who have the experiences of succeeding in doing is a promising strategy.

Fifth, while the retrospective assessment (aiming to change the present generation' preference) and the present study's visual narrative treatment (aiming to let the present generation serve as the proxy of the future generation) have different purposes, as discussed above, it should be noted that the latter can be utilized as an effective tool for the former's purpose. In fact, in our experiment, the research subjects were requested to express their preferences as the present generation at step (7), after experiencing the proxy of the future generation (at steps 3 to 6). It was found that their choices did not significantly change from those in step (5). (See the result of the 3rd choice in Table 3.) This suggests that the experience of taking the future generation's perspective can be *internalized* to affect their preferences as the individual of the present generation.

The present study's findings contain several important implications. First, there is an emerging body of literature indicating the essential role of narrative in attaining sustainability. In a review of such recent studies, Veland et al. (2018) drew on works such as O'Brien (2016) and Wendt (2015) to argue that narratives constitute reality as we know it by making sense of observations, drawing new inferences, and providing models for a path forward. Veland et al. (2018) further argue that narratives serving such functions can be produced by combining scientific knowledge (such as climate change) with other types of narrative (such as local faith-based narrative). Such narratives localize and contextualize scientific knowledge (e.g., Leong & Lejano, 2016; Butcher, 2013; Francis, 2015; Hayhoe, 2013; Lynam & Fletcherm 2015) and offer an alternative to scientific knowledge as

"universal rationality" (Adger, 2013, p. 113). Likewise, Van der Leeuw (2018) stresses that for narratives to play an essential role in improving global sustainability, it is necessary that each culture and society develop its own narratives and that people who identify with different narratives interact with one another. These two studies raise the question as to how each culture and each society can be encouraged to create their own contextualized narratives. This study attempts to provide an answer to this question: what we call meta-narratives can serve as triggers of such attempts. The visual narratives created by the present study were most likely interpreted by the research participants as a meta-narrative (i.e., the narrative of a protagonist creating a narrative of a desirable future for a specific society which the protagonist is a member of). In fact, the subjects of the present study and the protagonists of the narratives belonged to municipalities more than 1,000 km apart from one another. Moreover, if the visual narrative was interpreted as describing a future for the communities of the narrative only, it could have never been perceived as relevant by participants of the study. Serving as a meta-narrative, the visual narrative of the present study has the potential to be applied to various contexts, which is a strength of the present study.

Second, this study's findings hold particular implications for backcasting, which is defined as "generating a desirable future, and then looking backwards from that future to the present in order to strategize and to plan how it could be achieved" (e.g., Quist and Vergragt, 2006; Quist, 2007). In generating such a desirable future, previous literature has recognized the importance and difficulty of participants' disengagement from the present (Vergragt and Quist 2011). In the introduction section, we noted the conflicts existing in the pursuit of welfare for both present and future generations. If this is the case, failure to disengage from the present will inevitably be detrimental to the welfare of future generations. The present study could be seen as an attempt to avoid this failure. Therefore, this study is significant in that it investigates how visual narratives as methods of intervention can encourage individuals to disengage from the present and influence the depicted desirable futures in backcasting practices.

Third, we consider the implication this study holds for the practice of scenario planning. Scenario planning exercises aim to articulate multiple alternative futures in a way that spans a key set of critical uncertainties (Peterson et al. 2003, Kok and Van Delden 2009). In a review of 23 case studies of increasingly popular participatory scenario planning (PSP) practices where stakeholders were involved with fostering social learning and collective action to achieve desired goals, Otros-Rozas et al. (2015) argue that the practice of PSP could be improved by building a community of practice that can share results, methods, and challenges in a comparative way while improving the ability of PSP to bridge scales and cases. With the present study in mind, a narrative of such a participatory process could be developed and presented not only to stakeholders of the case who could not participate in the process in order to allow them to be involved in collective action, but also to people who designed PSP processes in other cases. By doing so, the interrelations between local contexts, adopted methods, scenarios as outputs of PSP, and intangible outcomes (such as fostered social learning and collective action) could be transported to other cases. This could serve as what the present study calls a meta-narrative and be utilized across cases, which could also strengthen the ties of the PSP community.

6. Limitations

The present study has several important limitations. The first limitation is in regard to the experimental procedure. In psychology and experimental social sciences, demand characteristics refer to an experimental artifact where participants form an interpretation of the experiment's purpose and unconsciously change their behavior to fit that interpretation (Rosenthal and Rosnow, 2009; Gomm, 2004). In the present study, the participants may interpret the purpose to identify the effect of presenting a story on their preferred choice of options at (step 5). However, the authors

concluded that this problem could be avoided in the present study for the following three reasons. First, Nakagawa, Arai et al. (2018) adopted an experimental procedure similar to the one of the present study and did not observe the demand characteristics. The participants in the treatment group of their study went through steps (1), (2), (3), (6), and (7). In steps (3) and (7), they were requested to choose their most preferable options individually. The only difference between these steps was that while participants were asked to be in the future generation's perspective in the former, they were asked to be in the current generation's standpoint in the latter. As shown in their Table 3, the frequency distributions obtained in these steps did not differ significantly ($p = 0.197$). Second, in both steps (3) and (5), participants were requested not only to choose an option, but also to answer an open-ended question on the reasons to do so. However, in step (5), it was clearly stated in the answer sheet that they were requested to do so if their choices and the reasons were changed. This strategy was expected to reduce the participants' motivation to express their preferences in consistent with the researchers' purpose. Third, if the demand characteristics are inherent in step (5), then it is natural to assume that the same tendency is innate in step (7). However, after the data collection and statistical analysis, this assumption was rejected. Specifically, it was found by the chi-square test of independence that the frequency distributions obtained in steps (5) and (7) were not statistically distinct from one another ($p = 0.508$). The number of people choosing options 1, 2, 3, and in step (7) were 66, 45, 57, and 18, respectively.

The second limitation concerns measurement. The present study considered individuals' preference for action regret evoking options (rather than inaction-regret-evoking ones) as an indicator that they acquired the perspective of the future generation. However, this is an indicator among many, and future research needs to verify that the effect of the visual narrative intervention can be detected concerning indicators as well. As described in the visual narrative developed in the present study, participants to the workshops of Hara et al. (2019) as imaginary future generations found how they had changed their perspectives when they discussed with participants taking to the

role of the present generation. Given this, it would be beneficial to develop a psychometrically sound scale based on self-reports that directly measures the extent to which they subjectively feel they have acquired a perspective different from the ones they had possessed before experiencing the intervention.

The third limitation concerns sampling bias. The present study selected a woman in her forties as the protagonist of the visual narrative. Thus, although females' sensitivity to the visual narrative was not detected in Table 6, it might be that the female audience is more likely to be immersed in this narrative, particularly when taking into account the extended transportation-imagery model's prediction that participants who identified with the protagonist of our visual narrative were more likely to be transported to the world of the narrative and thus were more sensitive to this intervention. Due to the overrepresented female participants in our sample, the present study might have overestimated the effectiveness of the visual narrative. This said, the limitation does not diminish the significance of the present study. It at least clarified that sharing experiences of others with the same gender is effective in taking the perspective of the future generation. It is important in the future to accumulate knowledge on the conditions under which visual narrative intervention serve as a more useful tools. For example, Brunye et al. (2009) demonstrate that readers of sentences on a simple event sequence embody an actor's perspective when the pronoun is "you" or "I," rather than "he." Such a finding might be utilized in enhancing effectiveness. Also, the percentage of participants with a higher education background (e.g., university graduate or above) was 44.1 percent. This might be because the participants were recruited via an advertisement in a newspaper and thus were people who regularly read newspapers and had stronger reading habits compared to the general sample. Due to this, the effect of the intervention may have been overestimated, considering that the task of understanding the policy options and assuming the perspective of future generations obviously requires higher cognitive abilities.

The fourth limitation concerns the ambiguity of what is meant by the expression "assuming the perspective of future generations." In psychology, some studies make ontological and epistemological assumptions that (i) there is a correct answer to the question of what the preferences, values, and needs of the people of the same era are and that (ii) the subject, who is independent, can perceive the preferences, values, and obligations of the object. Studies to develop a psychometrically sound measure of an individual' ability to partake others' perspectives accurately (e.g., Gehlbach, 2004; Schiffman et al., 2004) are inevitably classified into this group. If the future generation is considered as the object of perspective taking by the present generation, the validity of the above two assumptions become even less visible, not only because future generations are unobservable but also because the attributes of the object as the next generation might be dependent on the subject's (i.e., the present generation's) behaviors and thus undetermined yet. Thus, earlier studies on the benefits of future generations have replaced these assumptions in different ways. In neo-classical economics, the preferences of future generations are unknowable, and thus the present generation must secure the non-declining capital stock (e.g., Solow, 1991). The application of the concept of "veil of ignorance"[9] to intergenerational issues (Rawls, 1971) might be considered as an attempt to take the perspective of future generations without assuming their specific characteristics. The assumption behind this attempt seems to be that individuals from different generations (including future generations) are so homogeneous as to be able to make a consensus on the social arrangement in an "original position;" where their psychological propensities and other characteristics are veiled. Thompson (2010) adopted another strategy by proposing that the present age represents future generations by acting as trustees of the demographic process over time, thereby avoiding the necessity to set strong assumptions on future generations' preferences or individual life plans. In contrast to these earlier studies on future generations, the present study's strategy was to assume that

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[9] Veil of ignorance is a rule that suppresses self-interested behavior on the part of decision makers by means of subjecting them to uncertainty about the distribution of benefits and burdens that will result from a decision (Rawls, 1971).

present and future generations are homogeneous, and therefore, the former can serve as a proxy of the latter in expressing preferences for avoiding action and inaction regrets. Due to this fundamental assumption, we had to narrowly define what we mean by the phrase "a sustainable option" of the present generation.

Sixth, we measured only a limited number of individual characteristics, such as generativity and critical thinking disposition. However, other variables might also be relevant, such as the number of children. It is important in the future to explore such characteristics.

Due to these limitations, it is impossible for this single study to demonstrate that the public has a general tendency to willingly serve as the proxy of future generations. This said, we conclude that the present study demonstrates the possibility that individuals of the present generation can be motivated to take the perspective of the future generation through intervention. It is widely accepted that future generations are under-represented in current political structures and that it is partly due to the short-termism or presentism of the present generation (Thompson, 2010; Jones, O'Brien, & Ryanm 2018). To overcome this trade-off between the present and future generations benefits, the present study proposes an original approach different from the one of the retrospective assessment literature: to activate present generation's intrinsic motivation to take the perspective of the future generation. Governmental institutions to represent future generation that are facing rejections by politicians (Jones, O'Brien, & Ryan, 2018) and other stakeholders can benefit from introducing an equipment to provide their opponents with the opportunity to experience interventions similar to the one of the present study to notice that they can be willing to take the perspective of the future generation, as the protagonist of our visual narrative was.

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Table 1: Critical thinking disposition scale of Hirayama and Kusumi (2004).

A. Logical thinking subscale	
A1	I am good at thinking about complex problems in an orderly fashion
A2	I am good at collecting my thoughts
A3	I am confident in thinking about things precisely
A4	I am good at making persuasive arguments
A5	I am confused when thinking about complex problems
A6	I am the one to make decisions because my peers believe I can make fair judgments
A7	I can concentrate on grappling with problems
A8	I can continue working on a difficult problem which is not straight forward
A9	I can think about things coherently
A10	My shortcoming is that I am easily distracted*
A11	When I think about a solution, I cannot afford to think about other alternatives*
A12	I can inquire into things carefully
A13	I am constructive in proposing alternatives
B. Inquisitiveness subscale	
B1	I want to interact with people with various ways of thinking and learn a lot from them
B2	I want to keep learning new things throughout my life
B3	I like to challenge new things
B4	I want to learn about various cultures
B5	I believe it is meaningful to learn foreginers' ways of thinking
B6	I am interested in people who have different ways of thinking
B7	I want to gain deeper knowledge regarding any issues
B8	I want to learn things as much as possible even if the usefulness is unclear
B9	I enjor discussing with people with different opinions
B10	I tend to ask questions when I have something unclear to me

Note. *: Reversed item.

Table 2. Sample characteristics. The percentages were defined in comparison with the entire sample size (i.e., 186).

	n	%
Age		
≦29	17	9.1
30-39	19	10.2
40-49	49	26.3
50-59	64	34.4
60-69	31	16.7
≧60	6	3.2
Gender		
Male	46	24.7
Female	140	75.3
Marital Status		
Yes	128	68.8
No	58	31.2
Employment Status		
Permanent Job	105	56.5
Other	81	43.5
Education		
Univ. Graduate or above	82	44.1
Other	104	55.9

Table 3. Individuals' most favorite options.

	Option 1	Option 2	Option 3	Option 4	Total
1st Choice					
n	110	43	26	7	186
%	59.1	23.1	14.0	3.8	100.0
2nd Choice					
n	67	41	51	27	186
%	36.0	22.0	27.4	14.5	100.0
3rd Choice					
n	66	45	57	18	186
%	35.5	24.2	30.6	9.7	100.0

Notes.

Option 1 = Less sustainable at the national level and less sustainable at the prefectural level
(≒Maintenance of Status Quo)

Option 2 = More sustainable at the national level and less sustainable at the prefectural level

Option 3 = Less sustainable at the national level and more sustainable at the prefectural level

Option 4 = More sustainable at the national level and more sustainable at the prefectural level

With regard to the diffedence between 1st and 2nd choices, the chi-square test of independence revealed that chi-square statistic was 30.3755, and the p value was < 0.00001. With regard to the diffedence between 2nd and 3rd choices, the chi-square test of independence revealed that chi-square statistic was 2.3269, and the $p = .507387$.

Table 4. The transition matrix.

	1st Choice				
	Option 1	Option 2	Option 3	Option 4	Total
2nd Choice					
Option 1	61	3	3	0	67
Option 2	17	24	0	0	41
Option 3	23	9	19	0	51
Option 4	9	7	4	7	27
Total	110	43	26	7	186

Notes.

Option 1 = Less sustainable at the national level and less sustainable at the prefectural level
($\fallingdotseq$ Maintenance of Status Quo)

Option 2 = More sustainable at the national level and less sustainable at the prefectural level

Option 3 = Less sustainable at the national level and more sustainable at the prefectural level

Option 4 = More sustainable at the national level and more sustainable at the prefectural level

Table 5: The effectiveness of the treatment at the national and prefectural levels.

	National Level		Prefectural Level	
	Less Sustainable (Option 1 or 3)	More Sustainable (Option 2 or 4)	Less Sustainable (Option 1 or 2)	More Sustainable (Option 3 or 4)
1st Choice				
n	136	50	153	33
%	73.1	26.9	82.3	17.7
2nd Choice				
n	118	68	108	78
%	63.4	36.6	58.1	41.9
Chi-square[1]	4.02		26.00	
p value	0.04		< 0.001	

Note. 1: Chi-squalre test of independence between the frequency distributions of the 1st and 2nd choices.

Table 6: Logistic regression analysis results.

Independent Variable	$y = 1$ (Option 2 or 4)[1] vs. $y = 0$ (Option 1 or 3)				$y = 1$ (Option 3 or 4)[2] vs. $y = 0$ (Option 1 or 2)			
	beta	s.e.	OR	95% CI	*beta*	s.e.	OR	95% CI
Age	-0.36 †	0.21	0.69	0.46 — 1.04	-0.12	0.26	0.89	0.54 — 1.47
Gender								
Male (Ref.)								
Female	-0.15	0.19	0.86	0.59 — 1.26	-0.25	0.22	0.78	0.51 — 1.19
Marital Status								
Yes	0.03	0.20	1.03	0.69 — 1.53	0.00	0.24	1.00	0.63 — 1.60
No (Ref.)								
Employment Status								
Permanent Job	0.03	0.20	1.03	0.70 — 1.52	0.10	0.24	1.11	0.70 — 1.77
Other (Ref.)								
Education								
Univ. Graduate or above	-0.31	0.20	0.73	0.50 — 1.08	0.16	0.23	1.17	0.75 — 1.82
Other (Ref.)								
Critical Thinking Disposition								
Logical Thinking Subscale	-0.21	0.21	0.81	0.53 — 1.23	-0.13	0.25	0.88	0.54 — 1.43
Inquisitiveness Subscale	0.13	0.21	1.14	0.75 — 1.73	0.43	0.27	1.53	0.90 — 2.62
Generativigy	0.49 *	0.23	1.64	1.04 — 2.57	0.03	0.26	1.03	0.62 — 1.69
1st Choice								
Option 2 or 4 (Ref. 1 Otion 1 or 3)	1.12 **	0.19	3.05	2.11 — 4.42				
Option 3 or 4 (Ref. 1 Otion 1 or 2)					0.47 *	0.18	1.59	1.11 — 2.29

Notes. 1: Sustainable options at the national level. 2: Sustainable options at the prefectural level. †: $p < 0.10$. *: $p < 0.05$. **: $p < 0.01$.

Figure 1: The procedure. (Steps (6) and (7) are out of the focus of the present paper.)
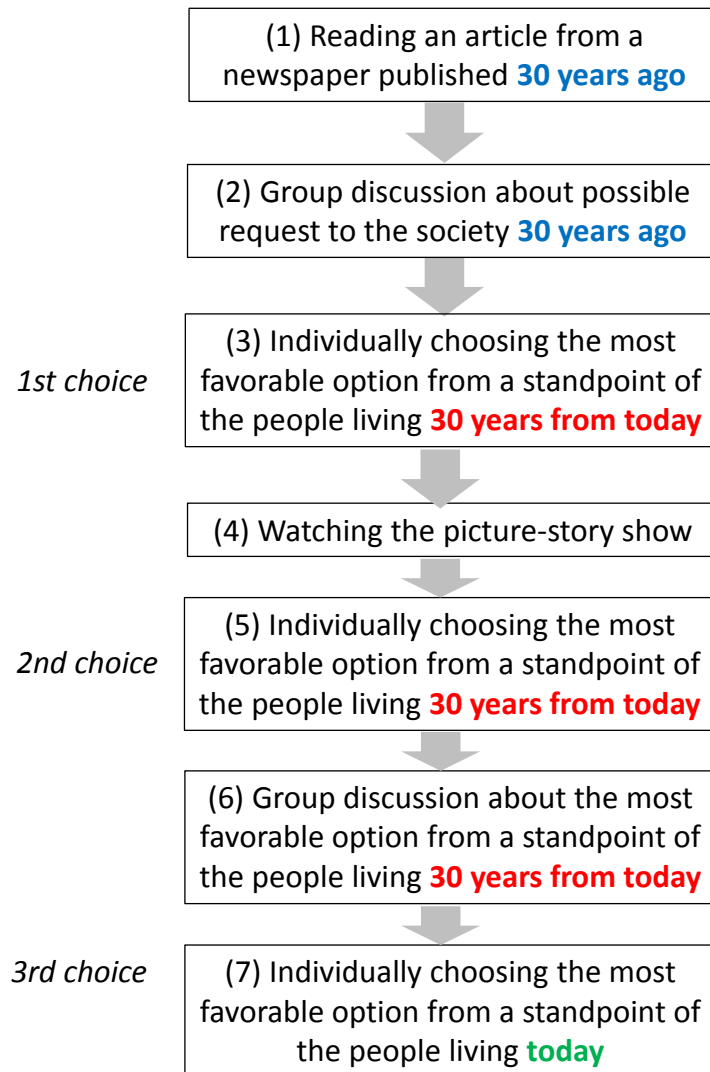
	(1) Reading an article from a newspaper published **30 years ago**
	(2) Group discussion about possible request to the society **30 years ago**
1st choice	(3) Individually choosing the most favorable option from a standpoint of the people living **30 years from today**
	(4) Watching the picture-story show
2nd choice	(5) Individually choosing the most favorable option from a standpoint of the people living **30 years from today**
	(6) Group discussion about the most favorable option from a standpoint of the people living **30 years from today**
3rd choice	(7) Individually choosing the most favorable option from a standpoint of the people living **today**

Figure 2: The story (scenes 1 to 3)

1

Yahaba is a town in Iwate Prefecture with a population of about 28,000. The town is located conveniently about 20 to 30 minutes' drive away from Morioka City with nearly ten times more population than the town, so the town has been developed as a dormitory town for the city. Mt. Nansho, which looks like a symmetrical bell shape, is a symbol of the town. Such a Town Hall decided to hold a series of workshops in an unusual way to create a long-term vision for the town. The contents of the workshops were to have local citizens to act as future persons of the town, envision the town's future and consider what the town should do for realizing the visions from now on. This is a story of Miho who experienced to act as a future person.

2

Miho lives in Yahaba town with her husband and two children. One child is in the first year of junior high school, and the other is in the fourth year of elementary school. Six years ago from now, invited by her friend, she started her activity as a member of the civil panel to study and give opinions on the town waterworks. At that time, she had been overwhelmed with childcare and household chores even more than now and had been frantic to live through each and every day. That is why this activity made her forget temporarily childcare and gave her a fresh experience to make her eyes turn to the other things. Without this activity, she could never have had a chance to know the system of waterworks such as production of tap water and home water supply, which enables us to get clean water just by turning on a faucet routinely. Such a woman, Miho happened to participate in the unusual workshops.

3

On the first day of the workshop, each local citizen participant in a group of six was invited into a room. There were men and women of all ages in the room where Miho was invited. The persons who planned those workshops was Mr. Yoshioka, Yahaba Town Hall personnel. At the beginning of the workshop, Miho and the other participants received the following instructions by those planners. "Imagine if you could time travel 40 years into the future to Yahaba Town with the present your ages and live there. And then, envision the town's future as a group with representing the interests of the future generations 40 years later, and provide ideas for policy measures which we should implement now." However, since Miho who lives in the present could not image at all that she would be a future person, she could not help but participate in the discussion with hesitation. Contrary to the planner' instructions, she tried to imagine herself to be an 80-year-old elderly woman after 40 years from now, but the result was the same.

Figure 3: The story (scenes 4—6).

4 When the discussion had been going on for a while, the group were discussing how high was the priority for the government to tackle childcare supports such as free medical care and ensuring day-care centers. This subject was exactly what Miho had been worrying about as an urgent issue because she had been overwhelmed with childcare. Contrary to her thoughts, Mr. Omura, one of a member of the group and about a 70-year-old man, expressed his opinion. "Since we are future persons, we may think that such issues could be solved in a few years and it would already have been solved 40 years from now."

5 Miho was taken aback by his casual comments. "I had been thinking of issues that I wanted to be solved in the near future since I had been bound myself by childcare too much. That is why I could not be a future person well. The issues like childcare, which I have been worrying about could be solved in a few years, and it would surely have been solved in the world 40 years from now. I'll forget temporarily daily childcare. I'll forget temporarily issues which could be solved in a few years. And then I'll imagine Yahaba town 40 years from now!"

6 After that, Miho thought what kind of town would be interesting when she would be at 80 years old and came to lead the workshop discussion. In that way, one of the ideas the group reached was to create a public transportation network to connect schools, the Town Hall and tourist spots in the motif of "Night on the Galactic Railroad", a children's story by Kenji Miyazawa. Future vehicles might connect those places. Giovanni, the main character of this story, get on the Galactic Train from a small hill with his one friend and finding what a true happiness is, while traveling through various constellations. Giovanni wakes up when he loses sight of the friend and finds out that all the events happened were in his dream world. And in the real world, he was noticed that the friend fell into the river and went missing to save his acquaintance. Mt. Nansho in Yahaba is said to be the model of the hill where the train starts in this beautiful story.

Figure 4: The story (scenes 7—9).

In this way, while Miho was envisioning Yahaba's future 40 years from now and imagining herself at 80 years old, she came to be under the sensation as if she had actually lived in the future world with her present age. She noticed that other members of the group also shared the same sensation. In fact, soon after the start of the discussion, one of the elderly members began to express his opinion with an introductory remark with "I would die by then...", however, while he was immersing himself in envisioning the future world specifically, he came to not use such a remark. In this way, the members of the group gradually and naturally came to follow the instructions by Mr. Yoshioka, "Imagine if you could time travel into the future with the present your ages."

On the other day of the workshop, a debate between the participants of future generations (Miho's group) and the participants of the present generations (the group who ordinarily lived in the present town as the present generations) was held. They discussed the town's policy measures which the town should implement from now. As expected, the present generations insisted that the town should implement the immediate measures such as childcare supports. At that time, Miho thought as follows: "They are still talking about such issues (laughing). Such issues already have been solved in our future world (laughing)." However, that thought is slightly different from looking down on the present generations. Miho herself also had been persisting in solving the immediate issues before she would be the future generations. If she and other future generation members still had been the present generations, they should have thought that the transportation network vision in the motif of "Galactic Railroad" would be only an empty dream. In this way, she realized her own growth.

Now that the series of workshop is over, Miho thinks back to the moment when she could be a future person, triggered by the remark of Mr. Omura, a 70-year-old man. And she felt that she could response to his remark since she had attachment and reliability to the present society. There are difficult situations for working mothers such as chronic shortages of day-care centers and men's still-low involvement in childcare now. However, we must not be so foolish as to leave such issues unsolved in 40 years. We surely can solve such issues in the near future. That is why Miho charged the present generations with finding solutions for such issues, and forgot temporarily such issues and could boldly time travel 40 years into the future world. For her, acting as a future person was an experience enabled by attachment to the present people.