Imagining 2060: A Cross-Cultural Comparison of University Students' Perspectives

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Abstract

This study is an investigation into the preferred images of the environment in 2060 held by a cross-cultural cohort of undergraduate students at Tamkang University, Taiwan. The findings indicate that students believe they have a low level of agency to bring about their desired futures, although they are confident in the power of technology to achieve them. The study uses a combination of survey, imaging through drawing, and causal layered analysis (CLA) to deconstruct the current dominant options around climate change and the environment, and reconstruct future anticipations.

Keywords: 2060, Causal Layered Analysis, Climate Change, Cross-Cultural Research, Curriculum Design, Images of the Future, Surveys.

Introduction

The 2018 UN Intergovernmental Panel on Climate Change (IPCC) Special Report warned that only a dozen years' window remains for humanity to act to keep global warming to a maximum of 1.5°C and avoid the catastrophe of extreme heat, drought, floods and poverty (IPCC, 2018). In my years of teaching futures studies at Tamkang University, climate change and its impact on the living environment has been an important area of concern for many of my students, and it is with this circumstantial knowledge that a deeper inquiry into students' environmental attitudes is needed. College students are underrepresented on research dealing with environmental attitudes (Wilcox, 2014). While many students face the future with hope, goals, and success, others associate the concept of the future with fear and uncertainty (Zaleski, 2005). Future anxiety and 'climate grief' have been seen to exact an emotional toll creating depression and resignation about the future (Scher, 2018).

According to a 2018 Yale survey (Leiserowitz et al., 2018) anxiety is rising in the US over the climate. Sixty-two percent of people surveyed said they were at least 'somewhat' worried about the climate. Those who described themselves as 'very' worried accounted for 21 percent, about twice the rate found in a similar study

in 2015. Worryingly, the survey found that only 6 percent believed that humans can and will reduce global warming (Leiserowitz et al., 2018). In Asia, Ono (2005) surveyed youth in Japan from 1998-1999 and again in 2000, where only 34 percent of youth professed optimism about the future, and 64 percent believed that the environment would worsen within 20 years. Di Giusto, Lavallee and Yu (2018) investigated climate change knowledge, concern and behavioral change among students at nine universities in Taiwan. They found that Taiwanese students had a high level of knowledge and concern about climate change, but that this concern has not translated into action, perhaps in response to the conflict between economic growth and the environment which requires more policy leadership.

While Greta Thunberg, the 16-year-old Swedish climate activist has called for change to our economic and political systems (Rigitano, 2018), many of my university students, although sympathetic to Ms. Thunberg's concern, have expressed the belief that they don't have the agency or the understanding of what a new system would look like. This lack of a preferred image of the future leads to a kind of ambivalence toward 'fixing' the problem of climate change. The work of Kaboli and Tapio (2017) argues that "the images of the future of the contemporary young adults are influenced by the characteristics of the current era…the social reality and the images of the future reinforce each other through a feedback loop" (p. 33). One of the pervasive issues affecting any attempt to design and pursue preferred futures collectively, which also affects the teaching of futures thinking at the scale of the classroom, is that people are bound by and biased toward present circumstances; a fundamental problem when engaging in issues related to environmental sustainability (Saijo, 2015; Kamijo, Komiya, Mifune, & Saijo, 2016).

My own style of teaching is to engage students in thinking about long-term futures and foresight strategies through active learning and gaming. This allows students to internalize knowledge, communicate and share ideas, and broaden participation to create new futures knowledge and build agency (Raford, 2012; Chen & Hoffman, 2017). In the first week of class I immediately engage the students to think about their own future using a game inspired by Wheelwright (2010) from his book *It's Your Future… Make it a Good One!* The students are given some foundational concepts from futures studies and are asked to think about their own lives and the actions they will take today to shape the future they desire in 20 years' time (Chen & Hoffman, 2017). They are prompted to think about images of the future, and how those images impact the way we see and act in the present. To start the conversation, a quote from Polak is used that has been found to resonate quite strongly (Chen & Hoffman, 2017):

> *The rise and fall of images of the future precedes or accompanies the rise and fall of cultures. As long as a society's image is positive and flourishing, the flower of culture is in full bloom. Once the image of the future begins to decay and lose its vitality, however, the culture does not long survive. (Polak, 1973, p. 19).*

In the last three years, nearly 90% of students submit a conventional, present-based image of their future in 20 years' time: go to school, find a good job, get married, have children or pets.

In the second week of class each semester, students' attitudes are further examined by playing 'The Polak Game', as described by Hayward and Candy (2017). In this activity they arrange themselves by degrees on a vertical axis according to how optimistic or pessimistic they are about their future and the state of the world. On the horizontal axis they are then asked to show how much agency they have to influence the future they wish to see. While the activity is limited in that it represents a pair of relatively simple spectrums, subsequent discussion of where students locate themselves and why provides the opportunity to surface individual concerns about the future and how much power they believe they have to influence what they often see as an inevitable path. In three years of doing this activity, two major areas of concern have generally been revealed: artificial

intelligence and climate change. As well, usually about half the students believe they have agency over their own future, while the other half think they cannot influence their own futures, as a product of societal pressures, nor can they influence society itself. Usually only one or two believe that their actions can change the course of their future as well as have an impact on society.

In both games, students often seem to follow the same pattern observed by Toffler in 1974:

> *No matter how turbulent a world they pictured, no matter how many new technologies might appear or what political revolutions might take place, the way of life foreseen for themselves as individuals seldom differed from the way of life possible in the present and actually lived by many today.*

And Galtung in 1976:

> *…the future seems somehow to be synonymous with a technological future…But it seems more probable that they have only been trained to think technologically and have no other types of thoughts as a response to the stimulus 'future'; or at least have not been trained to express any other thoughts.*

University students represent an important cohort of the population, including leaders of tomorrow; individuals likely to play a key role in decision-making regarding climate change mitigation, adaptation, and policy. They are also the next generation of citizens (voters) and consumers. This is the first study to ask cross-ethno cultural groups and a variety of majors and degrees studying in Taiwan about their beliefs concerning climate change through the lens of a futures framework, causal layered analysis. Students come from 24 different countries broadly categorized by their origin, location, and comparable geographical assets: Taiwan, Asia (Japan, Hong Kong, Macau, China, Indonesia, Malaysia), Africa (Eswatini, Malawi, Burkina Faso), Caribbean and South & Central America (Mexico, El Salvador, Nicaragua, Peru and Paraguay, Haiti and Saint Lucia), Europe (Italy and Russia), the United States and Pacific Islands (Solomon Islands, Marshall Islands, Kiribati and Nauru). It is assumed that students from low-lying Pacific Islands and Caribbean countries would consider themselves more vulnerable to the near term future manifestations of climate change because of their proximity to and reliance on natural ecosystems (Scott-Parker & Kumar, 2018).

Research Questions and Methodology

The aim of the study was to examine the perceptions of international undergraduate university students in Taiwan towards climate change and the environment. It is well known that images of the future precede action, and a number of studies have sought to gauge the similarities and differences between such images (Chen, 2016; Ono, 2005; Hicks, 1996). In a world of unknowns, especially for young students, it is important to understand their perceptions of the future as well as their perceived ability to shape it (Polak, 1973).

The exploratory study used a survey format administered in the second semester of 2019 across three classes called "Political Futures", an English-language course attracting a cross-section of Taiwanese domestic and international students. A total of 77 surveys were administered with 11 questions, a mix of multiple choice and short answer, and the students were given one week to complete the task outside of the classroom. International students are particularly attracted to the class because it is taught in English, and this adds to the variety of students. Majors included English, Spanish, German, Chinese Literature, Civil Engineering, International Business, Business Administration, Finance, Diplomacy and International Relations, Computer Science. There were forty-five female and thirty-two male participants.

This survey was slightly different in that the students were also asked to draw a picture of what their preferred environmental future in 2060 would look like. The time horizon of 2060 was chosen to give the students enough runway to break from business-as-usual climate change visions, to something that could be remarkable and transformative. While the UN IPCC provides a 12-year timeframe in which to make the necessary changes, the intended outcomes themselves would take longer to emerge. Although this study does not specifically address postmaterialist values as described by Ronald Inglehart (1971) — when material affluence increases, quality of life issues tend to replace economic and physical security — the findings do point toward increasing postmaterialism and greater concern for the environment, albeit with the help of technology.

Asking the students to draw a preferred vision for 2060 is a technique to investigate their conceptions of images of the future. Drawings are widely assumed to represent thinking about, and interaction between, a person's inner and outer worlds (Kress & van Leeuwen, 1996; Liu & Lin, 2018). The thinking was further developed through causal layered analysis (CLA) to expand the range and richness of the envisioned scenarios (Inayatullah, 1998). The combination of visioning and CLA allows further insight into the students' fears and desires, and the opportunity to learn how much power they believe they have to influence climate change. The four layers of CLA include, first, the *litany* – the visible quantitative trends and problems depicted in the media often on the aspects of the issue which simulate the feelings of helplessness and apathy (Inayatullah, 1998; Riedy, 2008). The second layer is concerned with the *system* of social problems and those who would 'fix' or create those problems; the role of the state and government and other actors is explored here. The third is the *worldview* that supports and legitimizes the issue. The fourth level is the *myths and metaphors* – the "deep stories, the collective archetypes, the unconscious dimensions of the problem" (Inayatullah, 1998, p.820).

Results and Discussion

The survey questions were also categorized using CLA, a framework for exploring images of the future and their underlying meanings on different levels. The first four questions discussed below probe the student's understandings of the current state of the environment and their preferred images of 2060.

Research Questions 1 and 2: "How concerned are students about the current (2019) and future (2060) state of the environment and climate change?"

While the majority of students were either 'extremely' or 'moderately' concerned with the present and future state of the environment, what's interesting is that they were *less* concerned about the future than about the current state. Not one student across all the classes was completely unconcerned by the present state of the environment, and only one was unconcerned about its state in 2060. This counterintuitive result appears to be largely explained by students' confidence that progress in technology and science would be a major factor in 'solving' climate change. This can be seen in their response in the systemic solutions to climate change analyzed further in the CLA section.

Eight of twelve students from the Pacific Islands were extremely concerned about the current state. One from Tuvalu said, "It will be really different from today, because from what I know there's lots of things that are changing, so maybe by 2060 I will migrate to another country because of climate change". Some appeared less concerned about the future state than we might have expected, and again, confidence in technology was a major reason. Among those who declared themselves extremely concerned about the future state, there was the belief that "the world started a little too late". A common element across all Pacific Island students' drawings was a desire to live in harmony with nature with the assistance of technology, or to go back to nature. Turning to other

low-lying countries vulnerable to rising seas, the student from Saint Lucia was more concerned about the sun's rays and proposed living under a dome. The student from Haiti was concerned about preserving nature through community action, for example, protesting against cutting down trees.

Of the four students from Africa, only the two from Malawi were 'extremely' concerned about the current state of the environment. They differed on the future state, with one being only 'slightly' concerned and believing that technology will play an important role in reducing pollution by 2060.

Of the 22 students from the rest of Asia, only five were extremely concerned about the present state of the environment. One said "global warming remains unsolved and it gets worse with each passing year. Our actions and reluctance to radically change our lifestyle for the better of the environment will drastically impact our future". When thinking about the future state of the environment the remainder were moderately concerned (n=9), somewhat concerned (n=6) and slightly concerned (n=2). Advancement in technologies was given as the reason.

Of the seven students from Central and South America and the Caribbean, four were extremely concerned about the present but only two were similarly concerned about the future. One remarked, "even though we have made progress with fighting climate change through environmental awareness, international summits and taking real action to lower our emissions, there is still a lot to be done. Only if there is real compromise from powerful countries such as the US and China will the world have real chance of transforming our environment".

Of students from the USA and Europe, just one was extremely concerned about the current state of the environment, and none about its future. The US student remarked, "The future is going to be green and people's desire to help the environment is on the rise." This specific recognition of global human agency was unique among responses, with others reflecting a faith in the power of technology to "promote harmony between man and nature".

Taiwanese students were somewhat outliers compared to the rest, in relation to these two questions. They expressed more concern with the future state of the environment than with its present by a factor of one. For the present, only three said they were 'extremely' concerned. Nine were 'moderately' concerned, fourteen 'somewhat' and three 'slightly'. As for the future state of the environment, four were 'extremely' concerned, nine 'moderately', seven 'somewhat', seven 'slightly' and one 'not at all'. Again technology was reported as the key reason for students' belief that the future would be better than the present, but one extremely concerned about the future cited "greed, power, money, too little time and always something more desirable to an individual, leading them to opt out from choosing what is best for society".
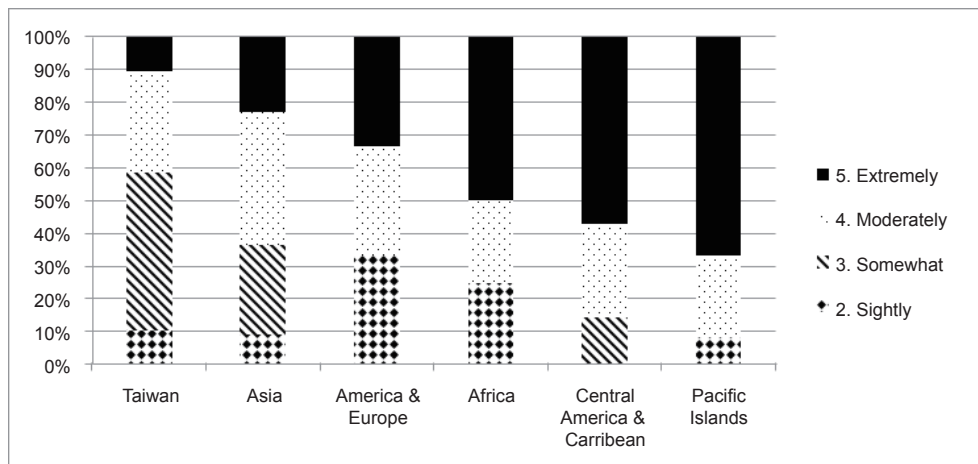

Figure 1. Cross-cultural comparison of level of concern for the current (2019) state of the environment
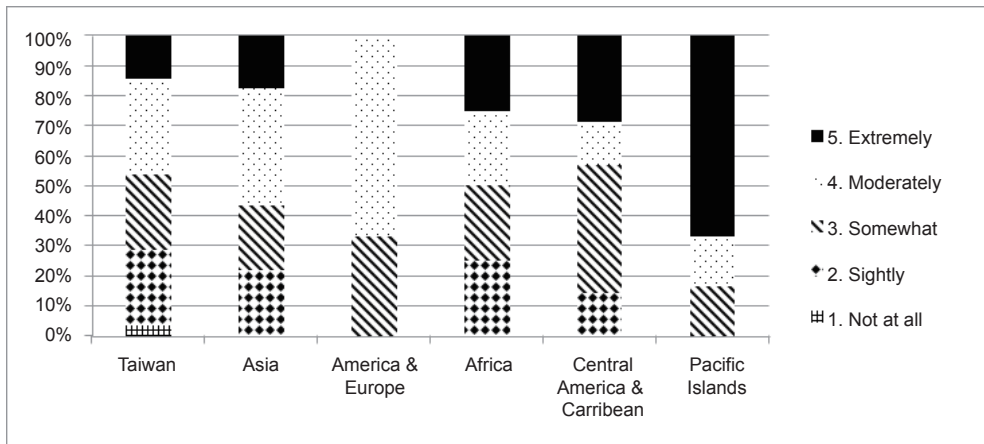
Figure 2. Cross-cultural comparison of level of concern for the future (2060) state of the environment
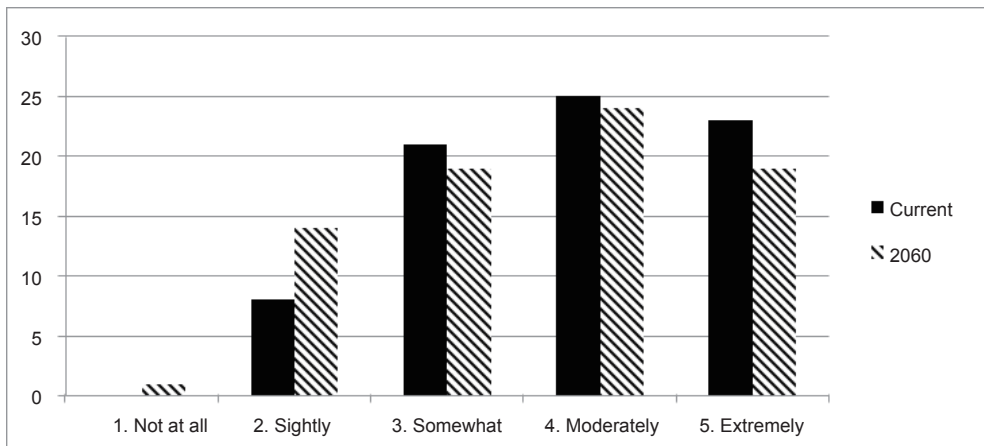

Figure 3. Comparison of concern levels for current (2019) and future (2060) environmental states

    Part of this discrepancy is accounted for in the answers to question 3 (Figure 2): "How likely do you think your preferred future will happen in 2060?" About half the students believed their preferred future was either 'likely' or 'extremely likely' to happen, as opposed to 'extremely unlikely', 'unlikely', or 'neutral'. The cited reasons were techno-scientific in character, including that "AI will be extremely well developed at that time", "more scientific discoveries and technologies will happen in the future" and "with advanced technology everything can be built to an advanced level".

    Among those more pessimistic about the likelihood of their preferred future eventuating came from the Pacific Islands: "Kiribati is one of the most vulnerable countries to climate change. Based on what I have seen and learned, my preferred future cannot happen unless we take action right away"; "With technology advancing everyday, homes surrounded by forest or by the ocean won't be an option. My country (Marshall Islands) is one of many that face the threat of sea level rising" and "advanced countries focus their research on electronic machines".

Research Question 3: "What are the images of preferred futures for 2060?"

Analysis of the images showed found that they fell into five broad categories: Altered City; Technology Improvements; Environmental Quality; Relocation; and a few that did not neatly fit among these other four (see Table 1).

The majority of students (49%; n=38) envisioned their preferred future as an altered city landscape that included solar panels, electric cars, wind farms and other uses of green technology. Although this category also incorporated many technology improvements and environmental quality elements alike, there were enough images featuring technological improvements *outside* the context of the city that this was deemed a separate category of future image.

The students frequently drew energy efficient buildings with rooftop solar panels, and abundant trees and parks, even in a technologically-altered landscape. Flying cars and high-speed rail, considered to be environmentally friendly, were common features. One student was very specific in articulating that within the dome, there would be room for wild animals, rivers, mountains and lakes, while outside the dome would be skyscraper workspaces.

Four students envisioned a domed city as part of their preferred 2060 state, to protect humans from ultraviolet rays.

The second highest number of responses fell under the category of 'environmental quality' (25%; n=20). They include natural landscape such as trees, lakes, streams, fish, mountains, etc.

Three students (two female, one male) believed that relocation to Mars was the only option for humanity. This could be partly due to high awareness within this cohort about Elon Musk and his desire to colonize Mars (Solon, 2018), while also suggesting a fear of worsening environmental conditions and lack of hope for a solution.

Three students also indicated that only simplifying life and returning 'back to nature' could save humanity and the planet; ideas representing a dramatic change to how the current world economy works, and also perhaps a rejection of technology as planetary savior. There were two students who could not see anything but disaster.

A point of difference was among the students from the Pacific Islands: Solomon Islands, Kiribati, Nauru and Marshall Islands who saw their preferred future in terms of physically losing their island homes, and as more than one student said, "don't need to apply to be a climate refugee".

The categorization of these images is shown in Table 1.

Table 1. *Students' preferred environmental futures*

| Category	Topic
Altered City	• Electric cars/driverless vehicles/no carbon cars • Flying cars • Solar and windmills in the city • Trees and plants everywhere • Lower buildings / no more high rise apartments • Dome city • Recycling centers in the city
Technology Improvements	• Solar panel farms • Robots everywhere doing work • Wind power • Technology helping nature
Environmental Quality	• Clean air and water • More trees • Forests, mountains and lakes • Blue skies • Abundant food resources
Relocation	• Mars • Space settlement / Stanford Torus • Floating island
Others	• Back to nature • Disaster • Humans become altered to survive pollution
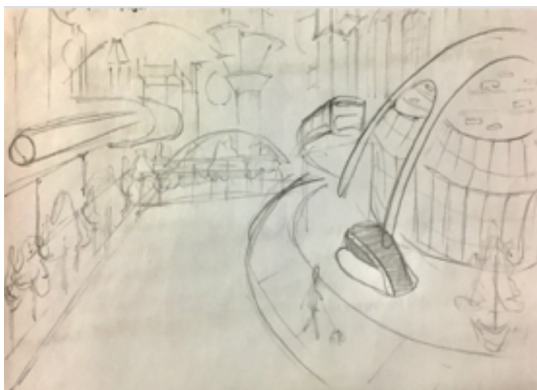
A   B

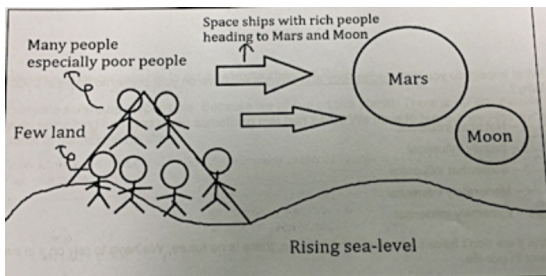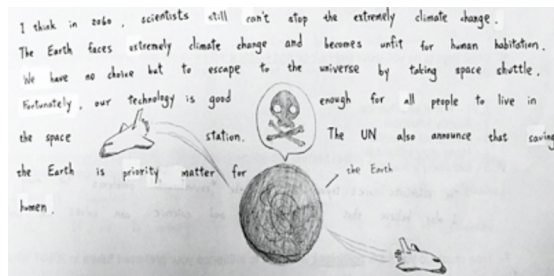*Image 1*. Altered City
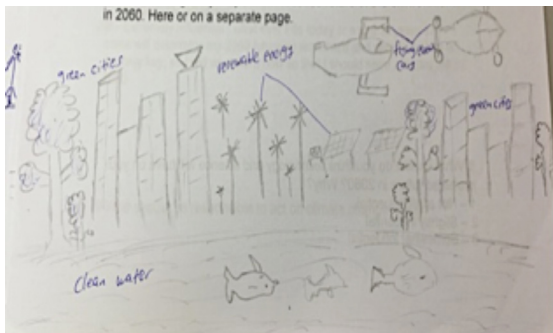
A
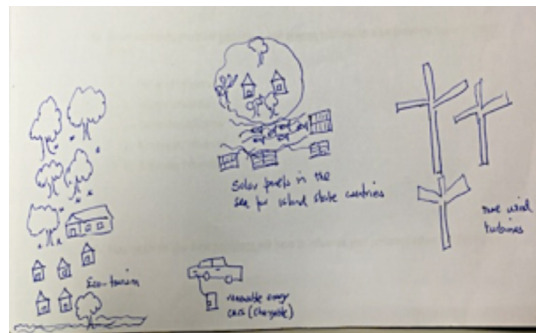
B

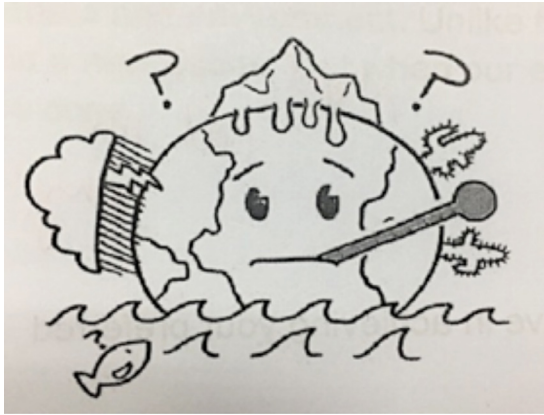*Image 2*. Technology Improvements

A
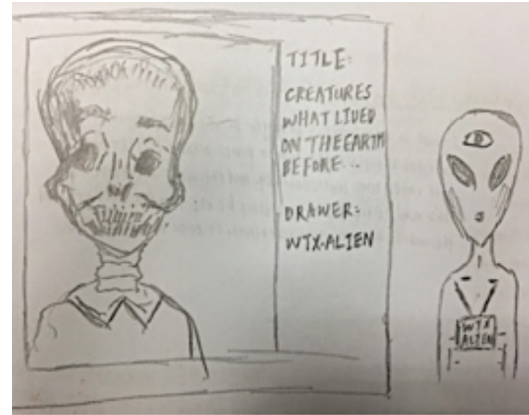
B

Image 3. Environmental Quality

A

B

Image 4. Relocation

A　　　　　　　　　　　　　　B

Image 5. Others

Research Question 4: "How likely do students perceive their preferred version of 2060 to be?"

More than half of the students (n=44) believed their preferred environmental futures were 'extremely likely' or 'likely' to happen. The primary reasons given were techno-science related. Notably, many of those who answered in this hopeful mode cited reasons for that hope relating more to their own personal future than to the collective register of climate change. The students with 'unlikely' or 'neutral' responses (n=33) described concerns that society was not sufficiently determined to change behaviors, or that technology would not be advanced enough, or might itself create new problems.

An example of the students' faith in technology as a significant factor in achieving their preferred futures, one student said, "My preferred future is full of high tech devices. And the current technology is advancing, so I think my future is quite possible". (Image 2A) Another student who believed their preferred future was extremely likely said, "I do believe in humans that they are still good and can build a better future for our survival". (Image 3B)

'Neutral' respondents appeared to feel a lack of agency. One said, "What I want is to have technologies to monitor and help the future. I think it will happen – if humans haven't destroyed the environment first". Another said, "…because the variation of the future is uncountable, there are too many possibilities about the future, so I could not say that it is likely or unlikely, just neutral and go with the flow".

Those who judged their preferred 2060 'unlikely' were consistent in their belief that it is too late to halt climate change, and that it's more likely humans will adapt rather than take 'extreme' action in the present. A female from Malaysia said, "…more scientific discoveries and technologies will happen so it will be more convenient for us, but we will somehow lose interaction with people around us".

Another female student from Malaysia, whose image of the future showed improved environmental quality with open space and trees, considered it 'extremely unlikely', "because nowadays people look forward to AI, so they will build more factories".
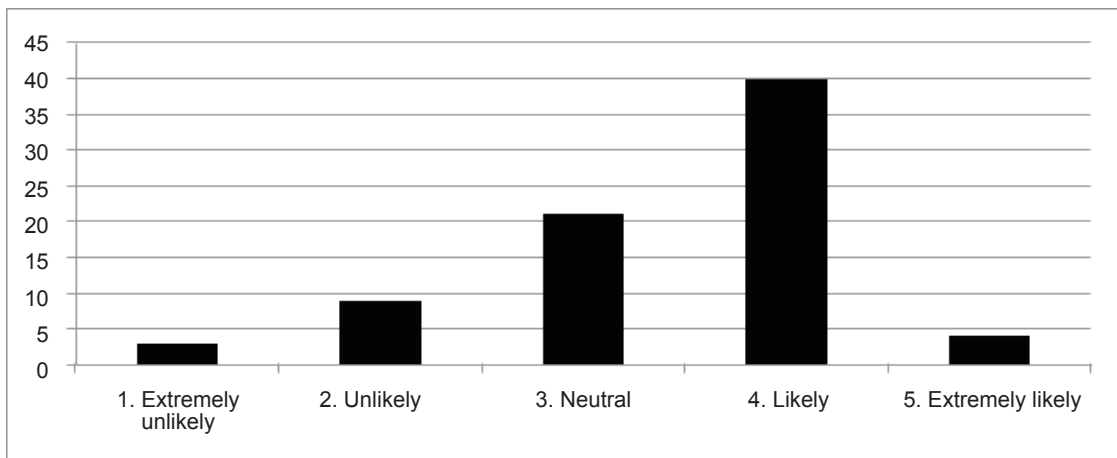
Figure 4. Students' estimated likelihood of their own preferred futures (2060)

Causal Layered Analysis

In order to better understand the relationship between students' preferred images of the environment in 2060 and their levels of social learning and agency, questions were asked to unpack their hidden assumptions (Bussey, 2014). Questions 1, 2 (state current and future environmental concern levels), 3 (draw preferred image) and 4 (likelihood) gauged concerns, provided a snapshot of the preferred future, and measured their perceptions of likelihood, the explanations of which helped illuminate their perceived level of agency in relation to achieving it. Questions 5 through 11 were sequenced around the progressive unpacking of CLA's layers, moving from (a) considering the litany of conventional perceptions of reality, the most visible and obvious elements, as given by the media and generally accepted within the dominant viewpoint, to (b) identifying the structural role of various actors that the respondents believe to be responsible for creating and acting to 'fix' climate change, to (c) questioning their own worldviews as well as those of others they believe are responsible to act, and finally to (d) exploring the myths and metaphors that constitute our deepest emotional stories, which validate the world we create and the circumstances by which we live (Inayatullah, 1998).

Students' litany-level answers show that they are aware of climate change and believe it is real, but a number of answers also suggest that some are confused by what they hear in the media and from politicians. Technology and science was perceived to be a far greater influence on achieving students' preferred futures than politicians (Figure 5). It was commonly believed that future technology will be better, and that this is the key to addressing climate change, providing improved quality of life and convenience, and bringing us a brighter future. Only two students indicated that technology and science would not be influential in this way (but unfortunately one response was unintelligible, and the other did not explain why). Overwhelmingly, respondents were suspicious of politicians' ability to act on climate change to achieve their preferred futures. US President Donald Trump and his denial of climate change featured in four responses. Many of the students come from countries with high levels of corruption and saw climate change-denying politicians, and "right wing social media [that] might support this…to ignore the fact", as embodying a form of moral corruption.

There does not appear to be a strong correlation between the future image that students desired and their self-assessed ability to influence it becoming a reality. Some misunderstood the question and addressed their own 'life' image of the future only, rather than that of the environment more

broadly. Half of the students who judged that their own actions would be 'extremely' influential said so because they would work hard to achieve their goals.

The majority were somewhat apathetic about their ability to influence the future. One said, "I don't think anything will happen or change because of me. I still have so much to learn". Another echoed this by saying, "I don't think my actions will influence the future much. Because I don't really understand the technology thing". One student who evaluated their own actions as only 'slightly' influential admitted, "Being honest, most of the times I do not care too much about the environment and the consequences from my actions, but I am in the process of changing to help produce the desired future. In summer I go to clean the streets and I recently started to recycle, but changing my bad habits is somewhat hard". These conflicting comments align with research suggesting that in this rapidly changing world — Bauman's (2012) 'liquid modernity' — "some young adults are floating between what they desire and their fears of the hazardous, more than ever uncertain future" (Kaboli & Tapio, 2017, p.41).

This dissonance is further elaborated by the question of who students believed should be responsible for acting on climate change. A full 95 percent answered 'everyone' or 'everybody' or 'all the people on earth'. Polak (1973) argued that the image of the future has two main dimensions: *essence* and *influence*; essence being the unchangeable course of events, and influence referring to the power that individuals have over their own destiny. The students seem to believe that although they had limited control over achieving their desired future, 'everybody' is needed to make change. They also appeared to believe that technology and science would provide the 'essence' of change to achieve their desired image.

The metaphors used to express current environmental reality, the fourth CLA layer, show great concern for the current health of the planet. All these metaphors also reflected the need for urgent action on climate change: "moment of change", "now or never", "big hole everyone tries to mend", "elephant in the room", "a train that is halfway to hell". It was encouraging that the metaphors for 2060 reflected not only technology's role, but a desire to live in ways more reflective of Gaia, the ancestral mother of all life: "peaceful, cool and clean", "Genesis" (of new technology, energy policy to save the earth), "before the industrial revolution", "sweet ending but rough trip", "a great sunflower field". Sunflowers stand tall and find the sunlight; likewise the earth and human beings should learn from the spirit of sunflowers.
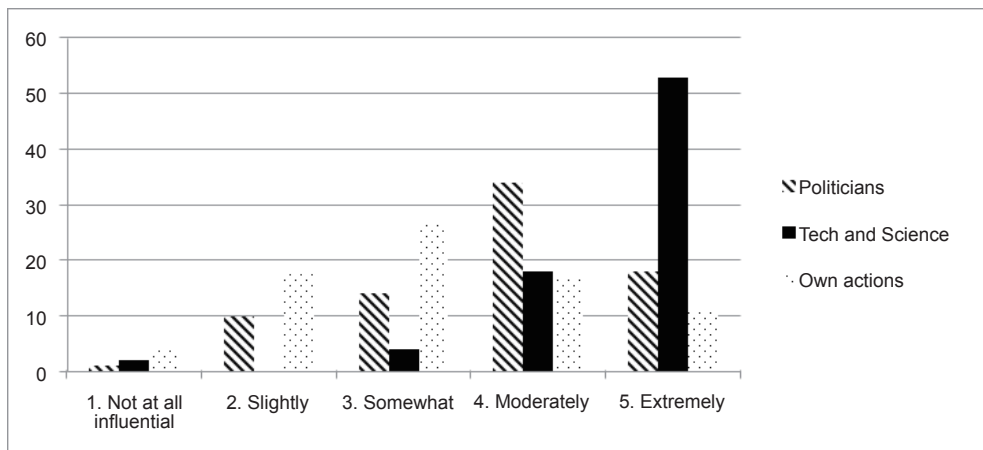

Figure 5. Comparison of perceived levels of influence in achieving preferred future: Politicians vs Technology and Science vs Own actions

Table 2. *Causal Layered Analysis*

Layer	Current	2060
Litany	Rich are getting richer. We are polluting the earth and humans causing global warming, natural disasters more common. Politicians are lying to us. Too far out. Biggest crisis for mankind.	Hard to imagine. Future oriented policies – for the future generations. We have done it!
System	Technology can bring destruction or can help us. Fake news is popular. People are unconnected. Politicians don't care. They control the media, internet. Try to control the elections.	Our leaders have a desire for postmaterialist values. We live better and healthier lives through the work of technology and science. Internet, social media help us connect with politicians and make people feel empowered.
Worldview	I don't feel empowered to help. My actions are too small. We need to work together.	I work in a technology company that will focus on developing innovations to save the earth. Teach young children to respect the earth. Everyone, everybody, all the people work together.
Metaphor	The earth is gasping. Like wearing headphones and people screaming "watch out for that hole in front of you!" Flying on an old but comfortable airplane. Our activities are loosening the rivets that hold the plane together, but many on the plane don't know about it.	Heaven on earth. On top of a mountain with the beauty of nature and sun. Hearing birds chirp and flying above and everything is fine. Passengers fix the plane until it is a new airplane.

Conclusion

This study examined the perceptions toward climate change and the environment held by international and domestic undergraduates, with various cultural backgrounds, studying in Taiwan. The results were calculated through a Likert-scale survey instrument, through individuals drawing their vision of a preferred future, and through use of causal layered analysis (CLA) for making sense of both the depth and breadth of answers given.

Technological solutions to climate change appear to give the student participants in this research a kind of preferred certainty. Rather than relying on politicians, whose influence is eroding and who provide little if any reassurance, students seem to look to technology as creating the conditions to solve environmental problems; solar panel farms in cities, driverless electric vehicles, relocating to Mars. Answers given throughout the CLA reflect Bauman's observation that:

> *Living under liquid modern conditions can be compared to walking in a minefield: every-*
> *one knows an explosion might happen at any moment and in any place, but no one knows*
> *when the moment will come and where the place will be (Bauman, 2012, p. xiv).*

The conclusion from the analysis of this survey agrees with Liu and Lin (2018), that students who hold a positive view about techno-science believe their preferred environmental futures will happen, and the corollary, that they are also less concerned about the environment.

The perceived lack of agency and sense of powerlessness in the face of climate change was surprising, although environmental awareness in Taiwan is high. Students whose lives are more apt to be immediately impacted by climate change — from the Pacific Islands of Tuvalu, Nauru, Marshall Islands and the Solomon Islands — did not appear to have any great sense of agency.

While respondents' own drawings of their preferred futures served very well as one of the points of departure for this study, it remains to be explored in future research how the use of other forms of media, arts, and design (Van Leemput, 2019) might add dimensionality and power to students' images of the future, using an experiential futures-based curriculum design (Dunagan et al., 2019) or ethnographic experiential futures intervention (Candy & Kornet, 2019).

Meanwhile, what the CLA analysis does find is that universally, students are hopeful, either in relation to their own actions, or in relation to the action of technology, about solving climate change. Postmaterialist values are strong. What is needed is for students to be encouraged toward positive-agency oriented roles, where they believe they can act towards achieving their preferred futures.

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