

# Mixed Methods Research

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## Welcome to the [Identity, Culture, and Environment Lab](#)

We are a part of the [Department of Psychology](#) at [Seton Hall University](#).

The goal of our research is to explore the complex relationships between cognitive and socio-cultural constructs and how these constructs contribute to social values and identity development between Eastern and Western adolescents and emerging adults.

Our participants include children, adolescents, and adults from different countries (USA, Canada, and China).

We are deeply grateful to the individuals who participate in our research.



The picture is drawn by a student, Elyn Zhang



The logo is designed by Yuan Wang

# Mixed Methods

Using both quantitative and qualitative methods to explore the same research question

Why?

# General Procedure

Braun and Plano Clarke (2013). Successful Qualitative Research: Practical Guide for Beginners.

Creswell and Plano Clark (2017). Designing and Conducting Mixed Methods Research

QUAL + QUAN: equal importance of the two approaches and their concurrent use

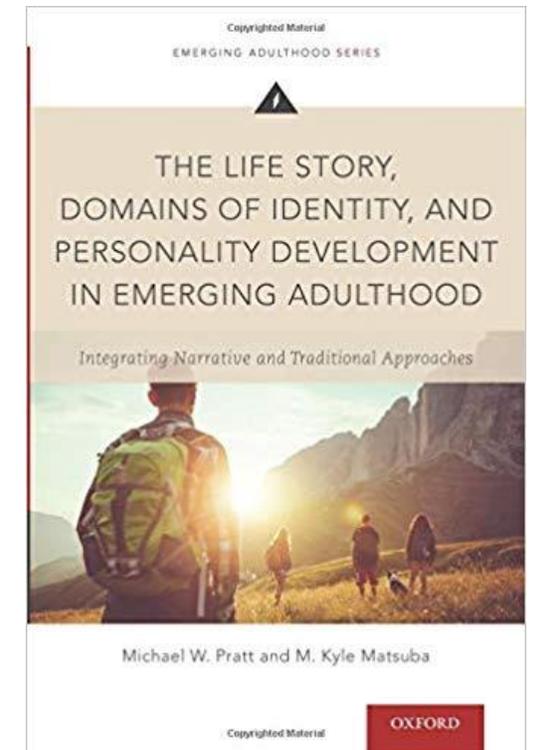
QUAN (qual): qualitative methods embedded within a primarily quantitative project

QUAL (quan): sequenced use, with qualitative methods given priority

# The Life Story, Domains of Identity, and Personality Development in Emerging Adulthood

## Environmental Involvement in Emerging Adulthood (Chapter 9 Narrative Environmental Identity)

- Environmental Questionnaires and Interview
  - Generativity and environmental narratives – Jia, Alisat, Soucie, & Pratt (2015), *Emerging Adulthood*
  - Development of generative concern and its relation to environmental narrative identity – Jia, Soucie, Alisat, & Pratt (2016), *International Journal of Behavioral Development*
  - Moral identity and environment – Jia et al., 2017, *Journal of Environmental Psychology*
  - Environmental engagement and well-being – Jia et al., 2021, *International Journal of Environmental Research and Public Health*



# Reviewers' Comments

"I am not sure I agree with your equating narrative with qualitative methods... It seems to me that you have taken qualitative data and quantified it, analyzing it with traditional quantitative techniques. ... without more comparative data we do not know if this is simply the association" -- *Journal of Research in Personality*

"The study uses both qualitative and quantitative data, but the qualitative data have been completely quantified for use in the regression models. I do really like the narrative codes used as outcomes in the regression models – this is a strength of the paper for sure...but I do think that the narratives are rich and give an added qualitative perspective shedding light on generativity and environmentalism." – *Emerging Adulthood*

"I do agree that the current manuscript is distinct from your earlier publication. I think you do provide a neat summary of the rationale in the letter" – *IJBD*

"To help illustrate these coding systems, they might consider including a table containing examples of narratives high and low on each dimension." -- *IJBD*

# Environmental Involvement in Emerging Adulthood

Dr. Pratt's Longitudinal Data from 1997 (Age 17) to 2011/2012 (Age 32)

**Table 1.** Descriptive sample across three waves.

Wave	<i>N</i>	Mean age ( <i>SD</i> )	Gender (% women)	At least 1 child	Education	Employed
2003	287	23.04 (.77)	73%	7%		85%
2006	104	26.46 (.87)	68%	16%	74% <sup>a</sup>	93%
2011	112	31.59 (.87)	71%	51%	74% <sup>a</sup>	95%

<sup>a</sup>Completed university or college degree.

Environmental Questionnaires & Interviews at age 32

# Environmental Questionnaires

The New Ecological Paradigm Scale (NEP) Dunlap, Van Liere, Mertig, & Jones, 2000

“Plants and animals have as much right as humans to exist.”

The Environmental Identity Scale (EID) Clayton (2003)

“I think of myself as a part of nature, not separate from it.”

The Environmental Inventory of Involvement Scale (EII) Matsuba et al., 2012

“Recycled newspapers, glass, or other items”

# Narratives Environmental Identity

Six stories: key environmental scene, moral courage, moral coward, turning point, teaching story, future story

Narrative Identity Code	Description	Levels
Meaning-making	How the event connects to the life story	0 -3 (no meaning to insight)
Vividness	Level of descriptive detail	1-5 (little or no details given, to very detailed description)
Impact	Extent to which the story was described as enhancing a commitment to further involvement	1-5 (no or negative to high positive impact)

3 for **meaning**, 5 for vividness, and 4 for **impact**:

“I’ve been involved in the climate change, international climate change negotiations for some time, the first one I went to was 2005, which happened to be in Montreal, it was nice because I was working with this international network of different environmental justice activists, who were all coming to Montreal, and I was sort of the lone Canadian wolf in this group, so I kind of had was hosting everybody. You involved, you know, really in looking at this issue not just as an environmental issue, which you know, climate change is certainly, that’s the way it’s often seen, but in a way it’s **a justice issue, as an issue of you know, people’s, who’ve contributed the least to the problem, thinking anything from Canadian Inuit to, small pacific islanders, who are being the most affected by it...** I mean **that was a big event for me, and certainly got me much more deeply involved, even though I was already pretty deeply involved, got me much more involved on that issue, and trying to find ways to contribute more to it.**”

**Table 2.** Correlations Among Key Variables.

	1	2	3
1. Envir. Narr age 32	—		
2. Environmental identity age 32	.54** ( <i>n</i> = 108)	—	
3. Environmental involvement age 32	.45** ( <i>n</i> = 108)	.62** ( <i>n</i> = 112)	—
4. Environmental attitude age 32	.37** ( <i>n</i> = 108)	.56** ( <i>n</i> = 112)	.49** ( <i>n</i> = 112)

Envir. Narr = index of meaning-making + vividness + impact

# Generativity and Environmental Stories

## 1. Wanting to feel more empowered to help the environment

- *“... I felt helpless. I think I was really intimidated by her and I didn’t believe I could stand up to her and I didn’t say anything and I regret that moment to this day. I think it led me into studying water quality in the end.”*

## 2. Having children as a focus for crystallizing environmentalism

- *“...Now that I have children, I’ve really started to be more conscientious of, especially, climate change and things like that. And I think more not for myself but sort of looking at my kids and wondering how things will be as they grow up and then their children, and sort of more in a long-term scale. Like what can I be doing now to ensure that things aren’t incredibly messed up for them as they get older.*

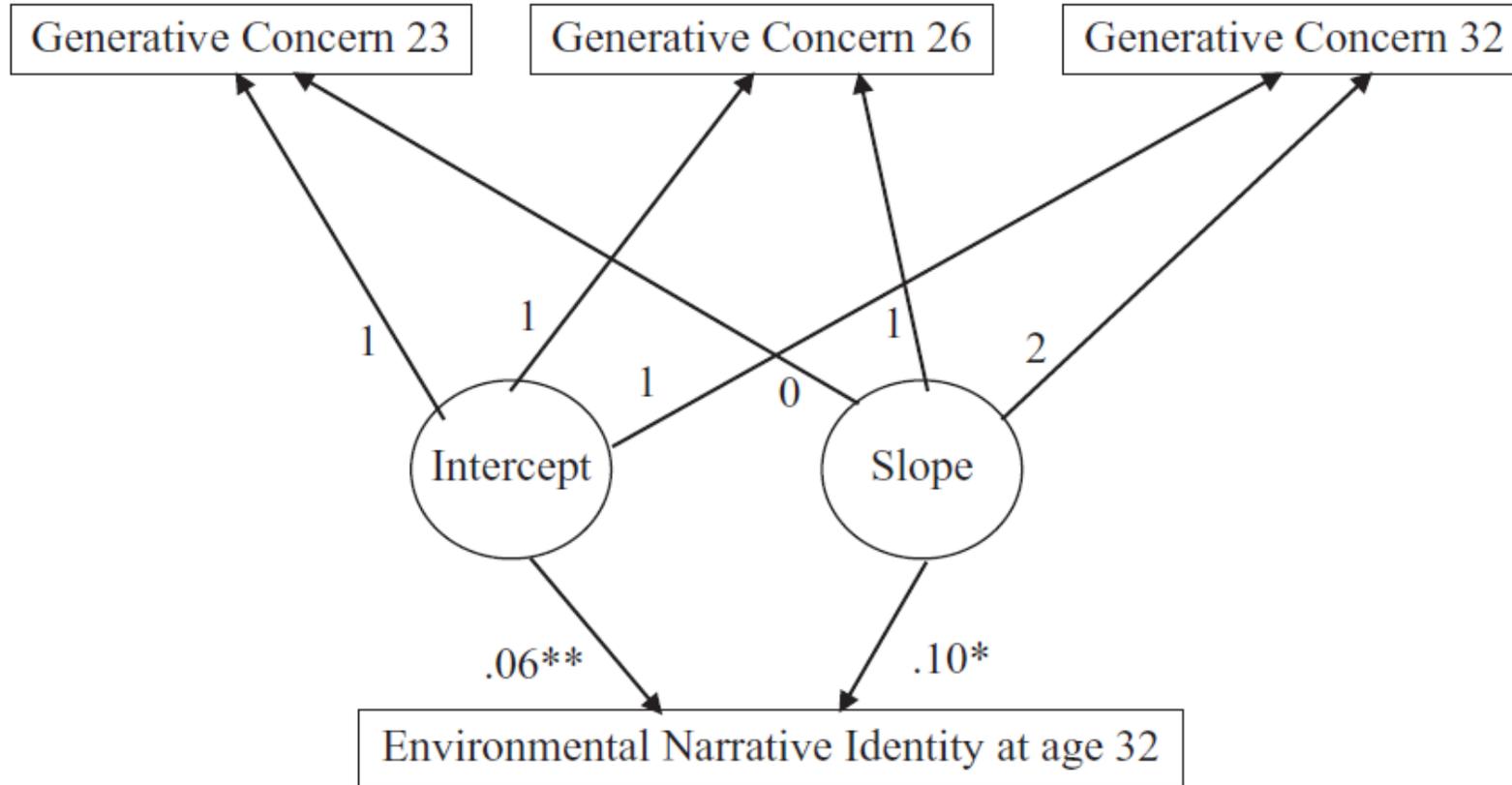
## 3. Passing on of specific family traditions

- *“...I come from a family who has farming in their background, so as a kid we kind of grew up learning how to plant a garden and care for a garden... So those were just values that were instilled in me when I was young. Growing up now, there’s things that I’ve taken on as an adult, and growing now you know my own family, kind of encouraging those same things.*

# Generativity and Environmentalism

## Generativity

- Concern and care for future generations, and a way to leave a legacy of the self (Erikson, 1963)
- High generativity – social support; meaningful identity; healthy emotions, psychological well-being; and possibly caring for the environment
- Generativity correlated with different measure of environmentalism (identity, attitude, involvement, narratives)  
 $r = .23$  to  $.46$ ,  $p < .01$



**Figure 1.** Latent growth model with generative concern intercept and slope predicting environmental narrative identity.

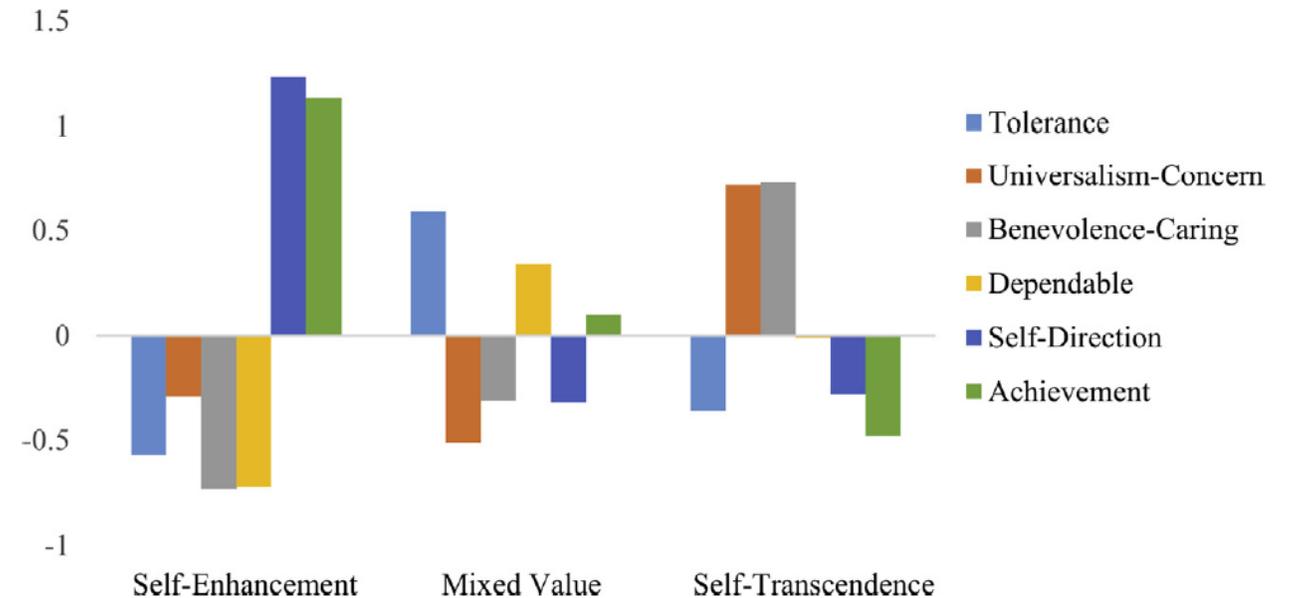
\* $p < .05$ ; \*\* $p < .01$ ;  $N = 287$ .

# Study 1: Moral Values and Pro-Environmental Behaviors

**Table 1**  
Value domains and Attributes defining individuals' moral identity.

Value Domain/Attributes
<p><b>Dependability: Being a reliable and trustworthy group member</b></p> <ul style="list-style-type: none"> <li>Dependable, faithful, genuine, honest, loyal, reliable, responsible, sincere, trustworthy, truthful, credible, incorruptible</li> </ul>
<p><b>Tolerance: Acceptance of those who are different from oneself</b></p> <ul style="list-style-type: none"> <li>Accepting, listens, non-judgmental, open-minded, patient, respectful, tolerant, understanding, wise</li> </ul>
<p><b>Benevolence-caring: Devotion to the welfare of ingroup members</b></p> <ul style="list-style-type: none"> <li>Altruistic, benevolent, caring, forgiving, generous, helpful, kind, loving, selfless, sharing, warm-hearted</li> </ul>
<p><b>Universalism-concern: Commitment to equality, justice and protection for all</b></p> <ul style="list-style-type: none"> <li>Fair, just, compassionate, peaceful</li> </ul>
<p><b>Conformity-rules: Compliance with rules, laws and formal obligations</b></p> <ul style="list-style-type: none"> <li>Follows the rules, law abiding, obedient, ethical, principled</li> </ul>
<p><b>Achievement: Success according to social standards</b></p> <ul style="list-style-type: none"> <li>Hard-working, perseveres, proud, self-disciplined, educated, intelligent, diligent, motivated, ambitious</li> </ul>
<p><b>Conformity-interpersonal: Avoidance of upsetting other people</b></p> <ul style="list-style-type: none"> <li>Considerate, cooperative, courteous, conscientious, friendly, sociable, civilized</li> </ul>
<p><b>Humble: Recognizing one's insignificance in the larger scheme of things</b></p> <ul style="list-style-type: none"> <li>Humble, modest, grateful, dedicated</li> </ul>
<p><b>Self-direction: Cultivate one's own ideas and determine one's own action</b></p> <ul style="list-style-type: none"> <li>Confident, consistent, courageous, independent, rational</li> </ul>
<p><b>Face: Maintaining once public image and avoiding humiliation</b></p> <ul style="list-style-type: none"> <li>Exemplary, honorable</li> </ul>
<p><b>Security: Safety and stability in one's immediate environment and the wider society</b></p> <ul style="list-style-type: none"> <li>Clean, healthy, patriotic, solidaric, prudent, careful</li> </ul>
<p><b>Hedonism: Pleasure and sensuous gratification</b></p> <ul style="list-style-type: none"> <li>Fun, happy</li> </ul>
<p><b>Tradition: Respect of the customs and ideas that traditional culture</b></p> <ul style="list-style-type: none"> <li>Religious, Filial piety</li> </ul>

F. Jia et al. / Journal of Environmental Psychology 52 (2017) 104–113



**Table 2**  
Mean scores of environmental involvement across clusters.

Self-transcendence (N = 62)	Self-enhancement (N = 32)	Mixed (N = 70)
2.78 (1.00)	2.37 (0.98)	2.39 (0.68)

$$F(2, 161) = 3.69, p = .027, \eta^2 = .044$$

# Study 2: Environmental Stories: Activists – Transcendence

## 1. Concern for other species

- *“I wrote poetry about animal rights and got in an animal rights book, and it was just kind of a pivotal moment, because I realized what effect humans had in the bigger picture, not just you know, a human centric world but complete environmental landscape. I realized our impact, what we took for granted and really the interplay of the environment on humans' lives and, how we used it and abuse it and what we can change.”*

## 2. Vigilance for the environment

- *“...I'm at the mall, or on the street and I see people have thrown bottles into the garbage, like I did [put] my hand into the garbage and put them into a receptacle, and I usually do it in a way, I shouldn't do this, this is terrible, but I do it in a way that makes it obvious to the person who's just put it in the garbage, like oh, this doesn't go here, please use the recycling box next time ... In my mind, I thought that if I called people out on these things, then they would be better to the environment, or at least the next time they did it, they would think twice.”*

## 3. Personal disgust towards environmentally irresponsible others

- *“...I see people have thrown bottles into the garbage, like I did [put] my hand into the garbage and put them into a receptacle, ... I do it in a way that makes it obvious to the person who's just put it in the garbage, like oh, this doesn't go here, please use the recycling box next time ... In my mind, I thought that if I called people out on these things, then they would be better to the environment, or at least the next time they did it, they would think twice.”*

# Study 2: Environmental Stories: Non-Activists - Enhancement

## 1. Self-Interest Stories

*“I knew that my car wasn't gonna be great on the environment. I wanted that car ... that's not something I'm gonna worry about when I'm out, when I'm driving around I guess. It's just nothing that really kind of hits home to me or makes me ... think about. Not enough to maybe inconvenience my life for or something like that. I bought my truck and I kind of greedily wanted it, as opposed to worry about if it affected anybody, or anything else... and what does it say about me as a person? That the environment doesn't really rate at the top of my priority list, I guess.”*

## 2. Apathy

*“really don't have any strong feelings for the environment. I guess I fell out of that category if somebody else will take care of that, or it's going to take care of itself and what I do as an individual doesn't affect the world as a whole. ... There is other things to worry about. You know you're wasting your time on trying to recycle one more bottle or recycle that, or save that tree from being cut down”*

# Environmental Behavior -- Generativity -- Loneliness

**Table 2.** Model parameters for mediation analysis on loneliness.

<b>Loneliness</b>	<b><i>b</i> (<i>SE</i>)</b>	<b>LLCI</b>	<b>ULCI</b>	<b><i>t</i></b>	<b><i>p</i></b>
Constant	--	1.92	2.99	9.19	0.000
Pro-Environmental Engagement	-0.01 (0.05)	-0.11	0.10	-0.17	0.87
Gender	0.19 (0.04)	0.04	0.39	2.46	0.016
Number of Children	-0.17 (0.05)	-0.19	-0.01	-2.28	0.025
Index of Mediator	-0.21 (0.06)	-0.33	-0.10	--	--

Final model  $R^2 = 0.40$ ,  $p < 0.01$ .

- Responsibility to teach the next generation about the environment
- Deep appreciation for and connection to nature
- Renewed agency through self-directed learning
- Changed from a negative belief such as helplessness to searching for positive solutions

# Religious Identity and Commitment

Religious Fundamentalism at age 23—RI 23—RI 26—RI 32—Religious Commitment at age 32

**Table 2.** Mediation Model of Religious Identity From Ages 23 to 32.

Religious Commitment Age 32	<i>b</i>	<i>SE</i>	LLCI	ULCI	<i>t</i>	<i>p</i>
Constant	.24	.28	−0.3211	0.8073	0.87	.39
Fundamentalism age 23	.59	.35	1.403	2.833	6.01	.00
Religious identity age 23	.15	.38	−0.2813	1.274	1.30	.20
Religious identity age 26	−.08	.45	−1.197	0.6306	−0.63	.53
Religious identity age 32	.40	.36	0.5481	2.018	3.54	.00
Index of mediation #7	—	—	0.0202	0.2000		

*Note.* The mediation #7 is religious fundamentalism at age 23—religious identity at age 23—religious identity at age 26—religious identity at age 32—religious commitment at age 32. There was no multicollinearity between the two predictors (VIFs are between 1.36 and 2.39 < 5; tolerance scores are between .42 and .74 > .1).

# Religious Stories: Meaningful Life Events

High Commitment Individuals:

Baptisms/godparents/ conversions, explorations of faith, and other significant life events (e.g., having a child, a religious marriage ceremony, and death).

Low Commitment Individuals:

Rejecting/turning away from religion, spiritual tourism, and experiential connections

# Parental Involvement in Environment (PIE) Project

“Passing on of specific family traditions”

Parent-child environmental “ACE” (action, communication, engagement) (Jia & Yu, 2021)

What environmental activities do parents involve? (Jia, Sorgente, Yu, in prep)

- Very limited research in the literature (surprisingly!)
- Parental interview
- Scale development and Validation

How do children express the environmental worldview? (Jia et al., in prep)

- Environmental essays
- Quantitative measures

# Discussion

Advantages/Disadvantages; Future Research

How can we integrate the mixed-methods research in an experimental design?

# Key References

Braun, V., & Clarke, V. (2013). *Successful qualitative research: Practical guide for beginners*. Sage.

Creswell, J. W., & Plano Clark, V. L. (2017). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications.

Pratt, W. M., & Matsuba, M. K. (2018). *The life story, domains of identity, and personality development in emerging adulthood: Integrating narrative and traditional approaches*. Oxford University Press.

# Identity, Culture, and Environment (ICE) Lab

1. Environmental Behaviors and Culture

2. Values and Environmentalism

3. Morality, Religion and Environment

<https://jiaf.weebly.com/>

# Big Blue Goes Green

Department of Psychology  
Environmental Club Newsletter



## Welcome!

We are excited to introduce the first issue of the Department of Psychology's Environmental Club newsletter! For those of you who are unaware, a small group of graduate students have come together under the guidance of Dr. Fanli Jia in an effort to make our department more environmentally friendly. In order to spread awareness of current initiatives and upcoming events, we decided to create a monthly newsletter. We will also include current research regarding social and cultural psychology and environmentalism.

## On the Horizon

Recently, we have created a list of initiatives to help our department Go Green! Our primary focus this semester is to limit the amount of paper waste and facilitate recycling efforts. We recently met with the Ecology Club, the undergraduate division at Seton Hall headed by Professor Wanda Knapik, and asked for guidance and support. She volunteered to donate recycling bins to our department. Thanks to planning by Dan Curtin, recycling bins will be added to high traffic areas where garbage bins already exist. New recycling bins will be placed outside of Room 380 and Room 350 and by the service elevator. We are hoping that the increased presence of recycling bins will increase participation in our effort.

## Join the Green Team!

Being a part of the movement to be environmentally conscious may seem like a daunting task when you consider your impact on a global scale. You might ask how adding a recycling bin or opting not to print out a ten-page research article will reduce carbon emissions. Well, it won't. At least not right away. However, these simple actions can provoke others to engage in a similar behavior. This chain reaction is what leads to change on a larger scale. We believe that our efforts are small, but important (hence our motto: Major Impacts in Minor Ways).

We also believe that everyone can contribute in their own way. Whether it's modifying your day-to-day habits or encouraging your colleagues, you can join the Green Team!



If you are interested in joining the Psychology Department's Environmental Club, please contact us at [EnvironmentalClubSHU@gmail.com](mailto:EnvironmentalClubSHU@gmail.com).