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# *Plastic Pollution & Human Behaviour*

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BrEPS May 2022

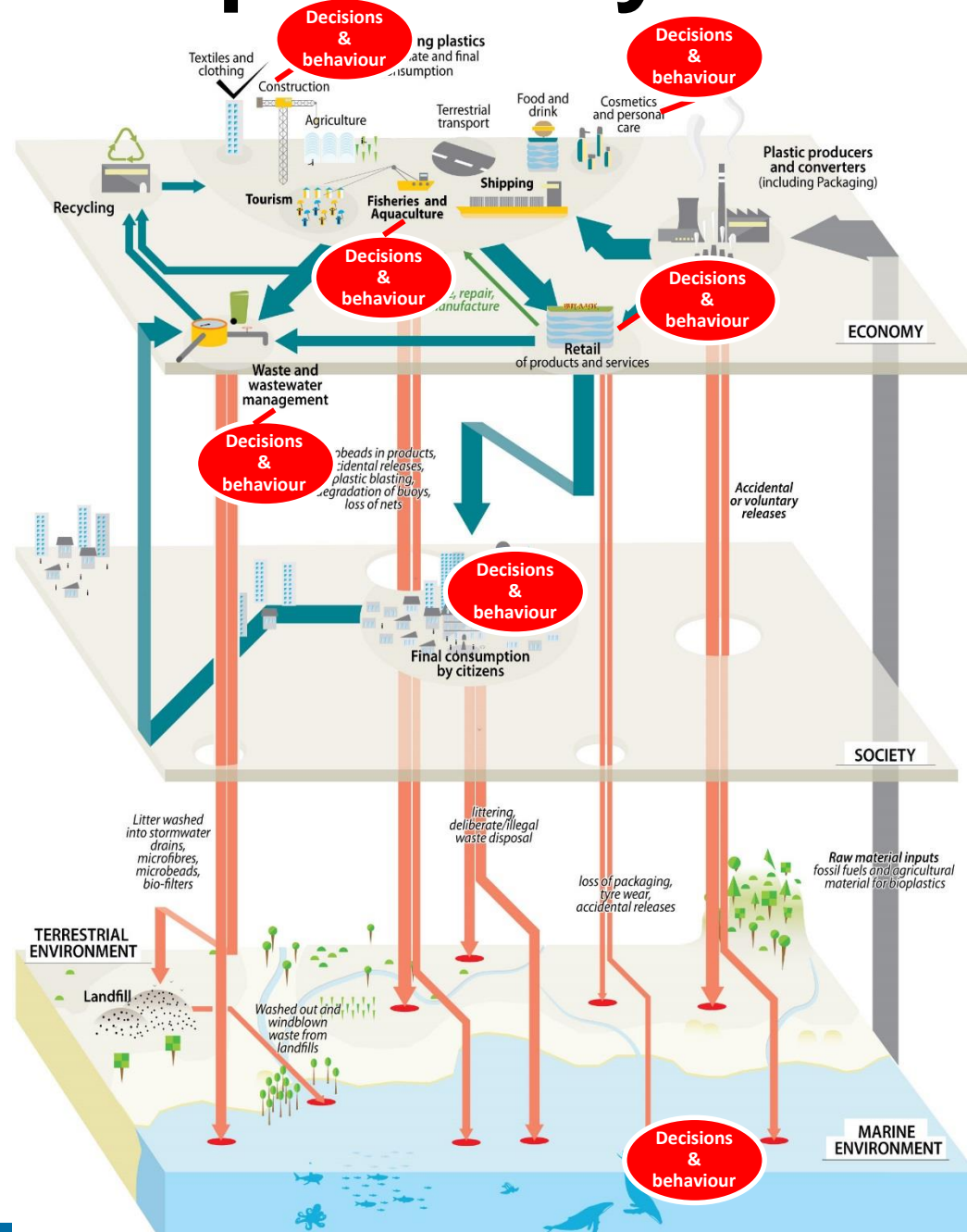


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# The plastic system



**Decisions & behaviour are central**

**(all actors, not just 'general public')**

**constrained by existing system**

**need joined-up solutions**

**Different mechanisms of change**



Pahl et al., 2020, Human Perceptions and Behaviour Determine Aquatic Plastic Pollution  
DOI 10.1007/698\_2020\_672

Credit: GRID-Arendal and Maphoto/Riccardo Pravettoni  
<http://www.grida.no/resources/6908>

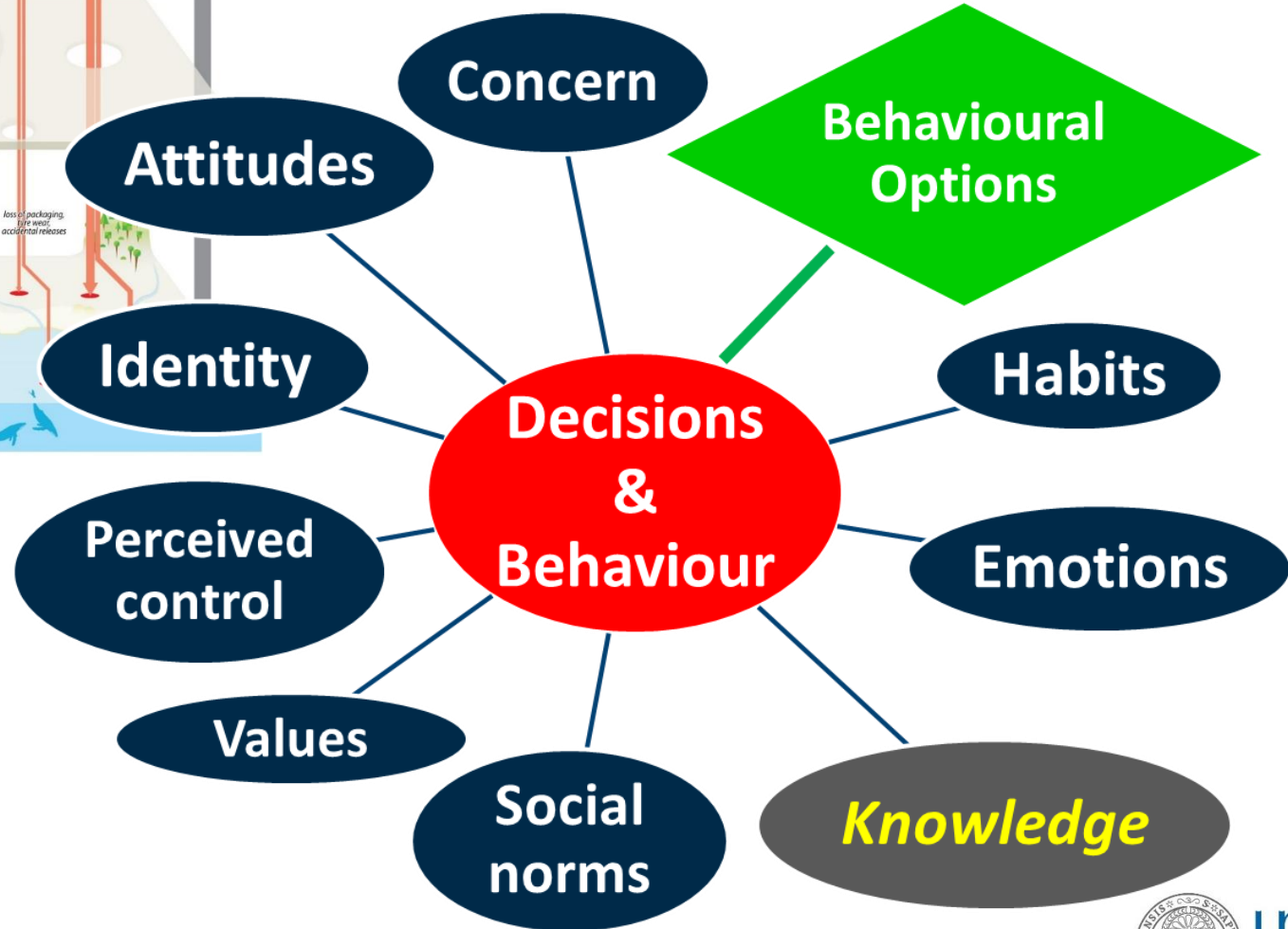
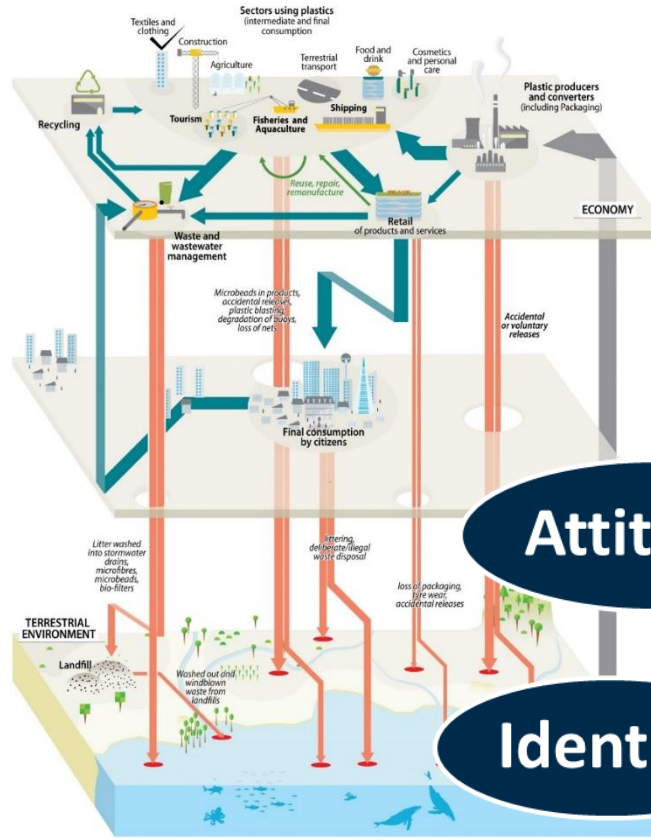


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# Which psychological factors drive decisions and behaviours?



from the social & behavioural sciences (selection)

Pahl & Wyles, 2016, Analytical Methods, DOI: 10.1039/C6AY02647H



## nature human behaviour

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Comment | Published: 18 September 2017

## Channelling passion for the ocean towards plastic pollution

Sabine Pahl , Kayleigh J. Wyles & Richard C. Thompson

*Nature Human Behaviour* 1, 697–699(2017) | [Cite this article](#)

1078 Accesses | 28 Citations | 50 Altmetric | [Metrics](#)

**Plastic pollution is caused exclusively by humans. It poses growing global threats to both the ocean and society, and requires urgent action. Using psychological principles can motivate and implement change by connecting symptoms and sources.**

E.g., intrinsic rather than extrinsic motivation, ocean connectedness highly relevant in the context of plastic

comment



**Fig. 1** | An illustration of visual communications added to consumer items. This type of approach has the potential to link people's love for the ocean to everyday decisions, and so motivate behaviour change. Left to right: Paulo Oliveira/Alamy Stock Photo; Avalon/Photoshot Licence/Alamy Stock Photo; apomares/E+/Getty.



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# Ocean Connectedness



Photos by permission of Dr. Srividya Ramasubramanian



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# Sohvi Nuojuua's PhD

## Ocean connectedness and product responses

- We measured **ocean connectedness** by self-report
- We varied **recyclability**:  
recyclable or non-recyclable  
via recycling symbol
- Different drinks and materials
- Unfamiliar brand

*N* = 512 general public sample via  
online panel survey



Nuojuua et al. (2022), accepted, JEV

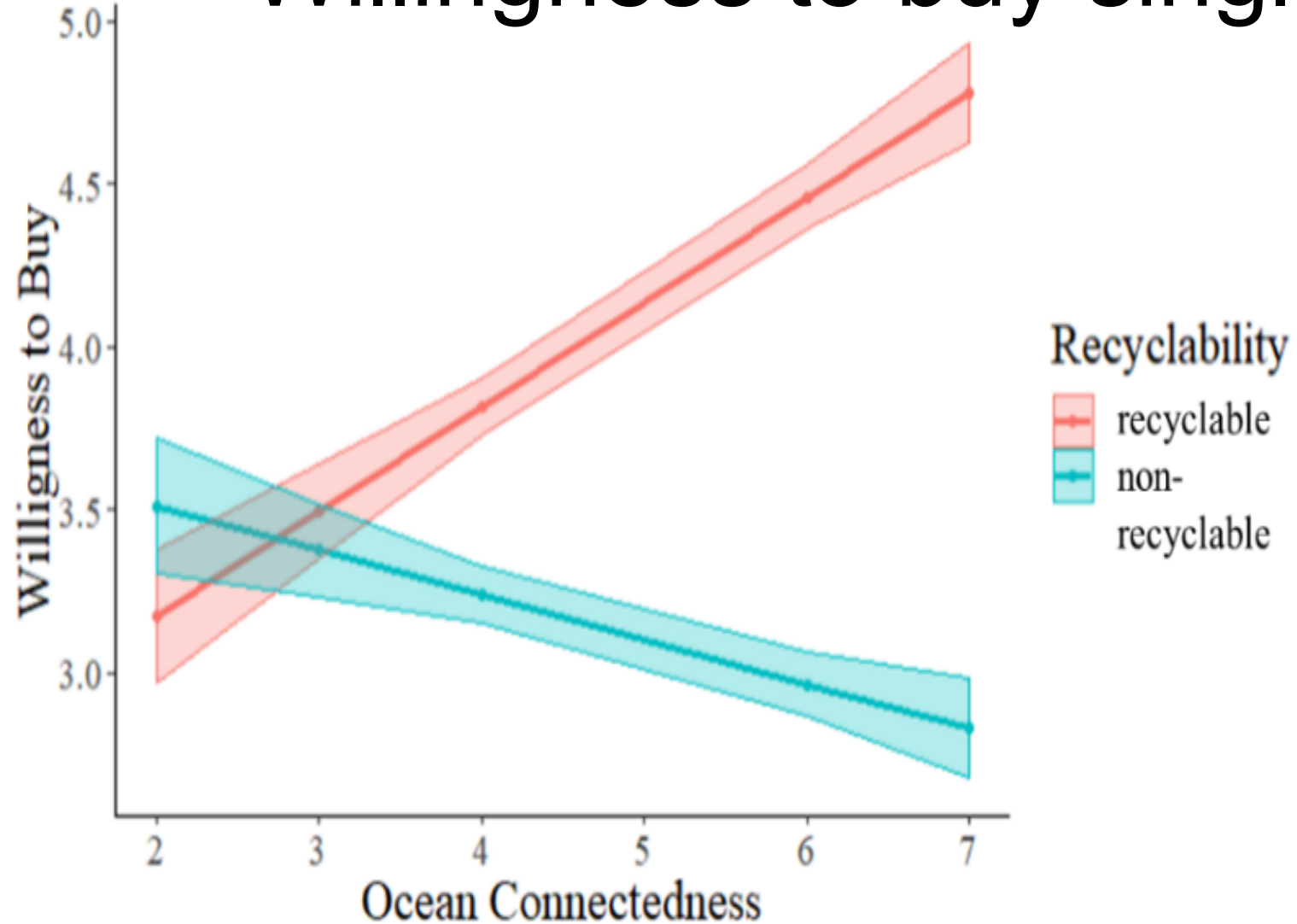


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# Willingness to buy single-use



People with high ocean connectedness were more willing to buy recyclable packaging / less willing to buy single-use packaging.

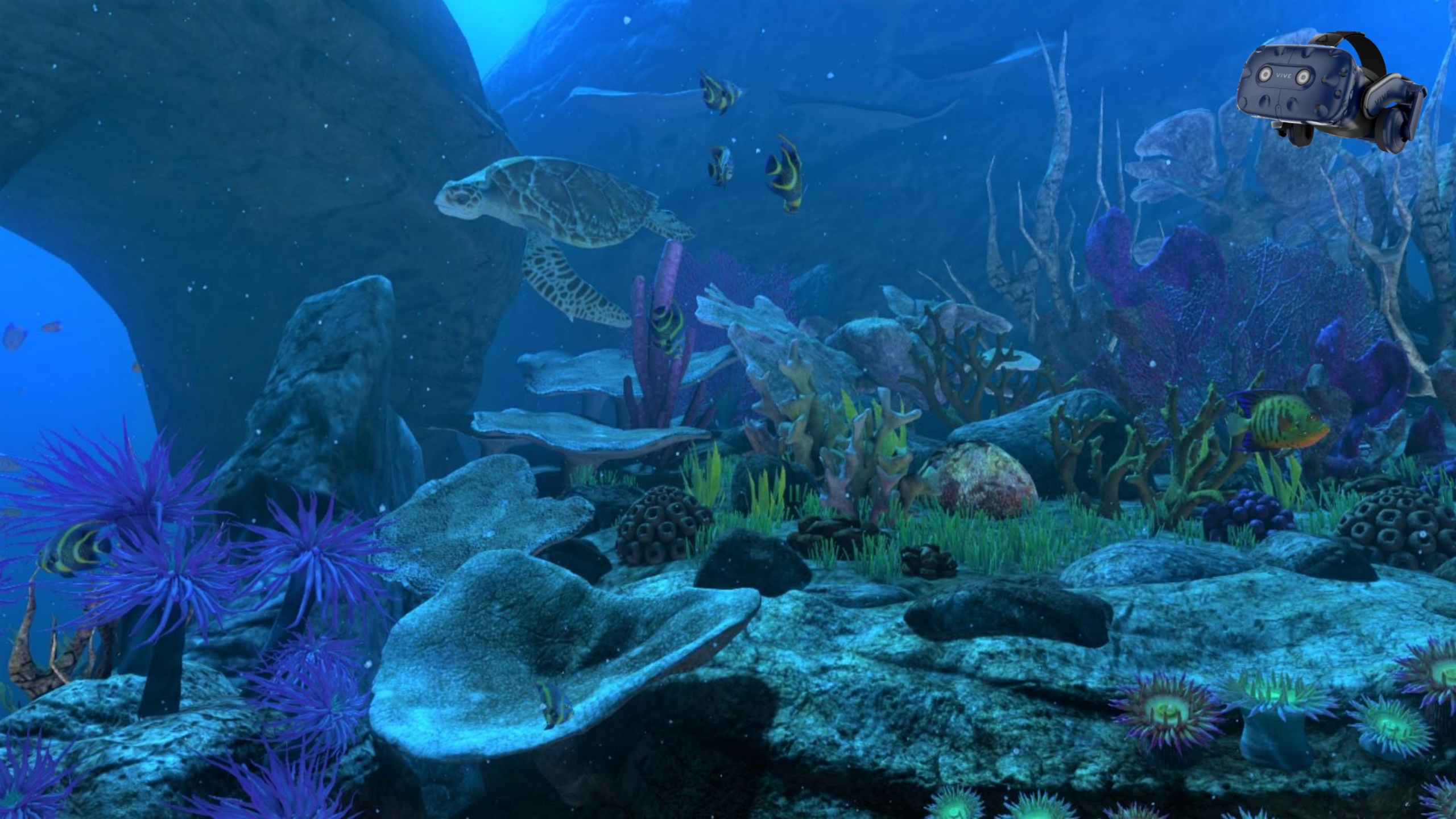
Correlational!  
Causality?

# Using Virtual Reality to connect with the ocean



Sohvi Nuojua's PhD ctd.









# Field study Signage in Office Building

- 8 floors approx. 100 employees on each
- Randomly allocated to 1/4 conditions

Improved signage



Signage + pledge



Signage + animal



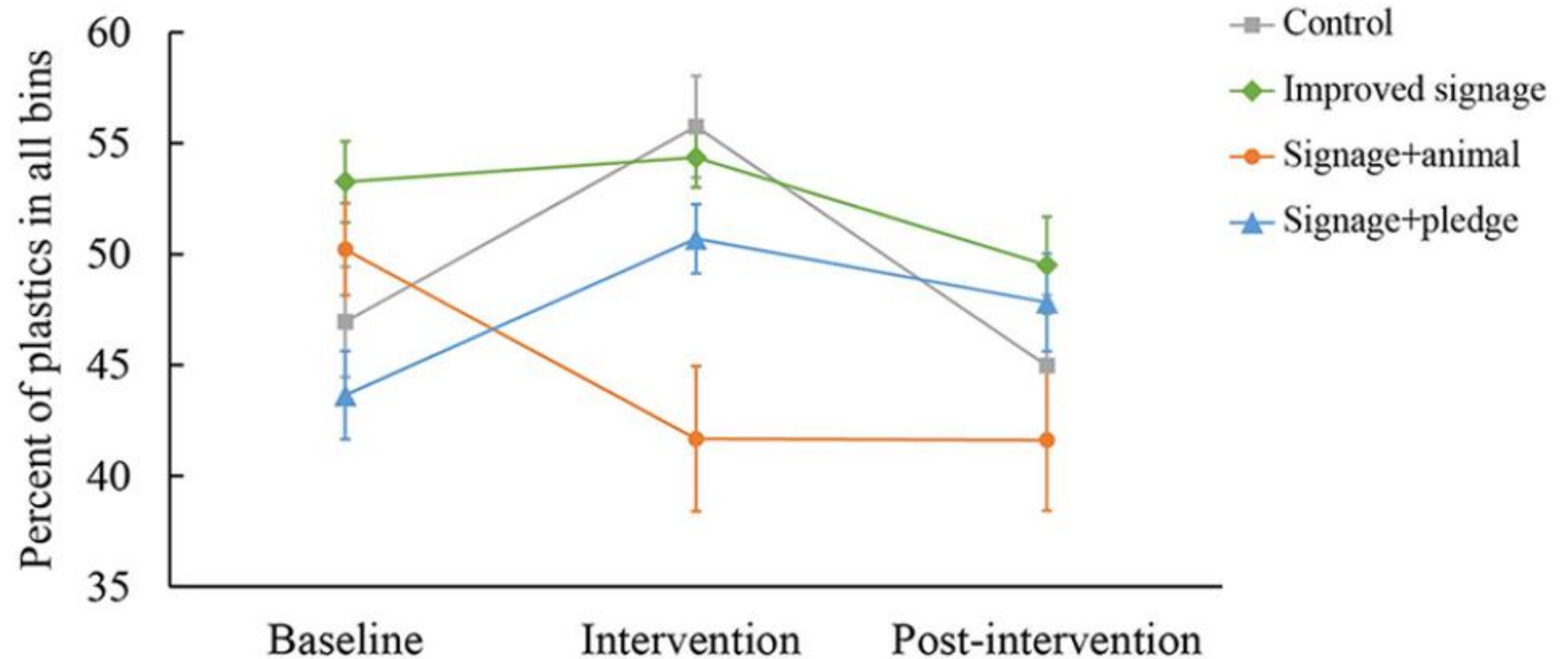
Control



- Counted plastic items in bins (DV % plastic in all items)
- 9 weeks (3 weeks baseline, 4 weeks intervention, 2 weeks post)

# Visualising marine impacts reduced plastic use

## a) Percent of plastic items in all bins



# How visual images may trigger behaviour

## Impact visualisation



## Immediate reaction

*Viewer: That's awful! I ought to be more careful with plastics*

## Later consequences (vivid image comes back)



*Cue: Person preparing for shopping trip*

*I must remember to take my own bags – that looked terrible*

*Cue: Person seeing plastic bag in the environment*

*I think I'll pick that up before it does more damage*

**End result: Reduced plastic waste**



UK Research  
and Innovation



GCRF  
Global Challenges  
Research Fund





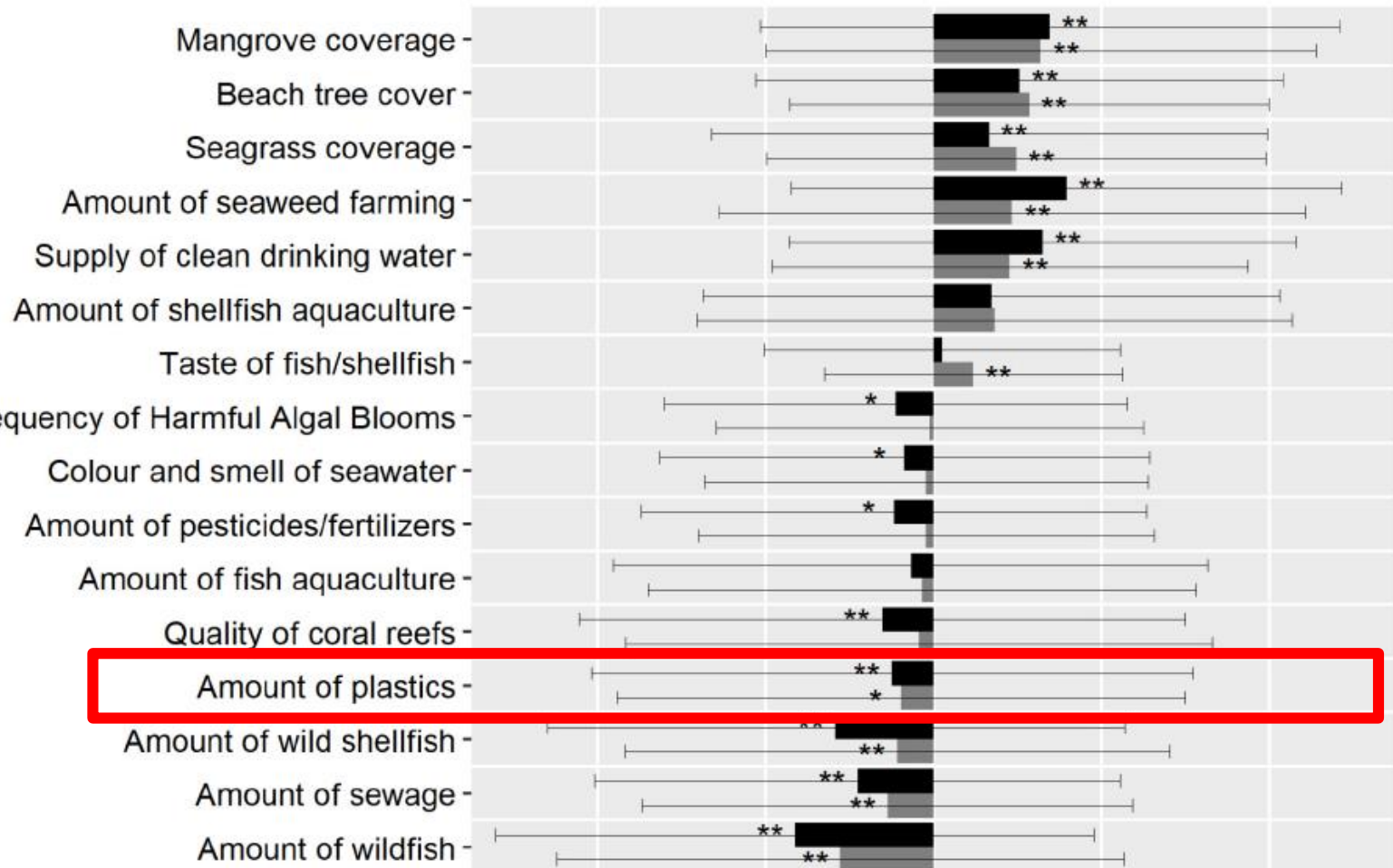
UK Research and Innovation



GCRF Global Challenges

Present perceptions Future expectations

Issues



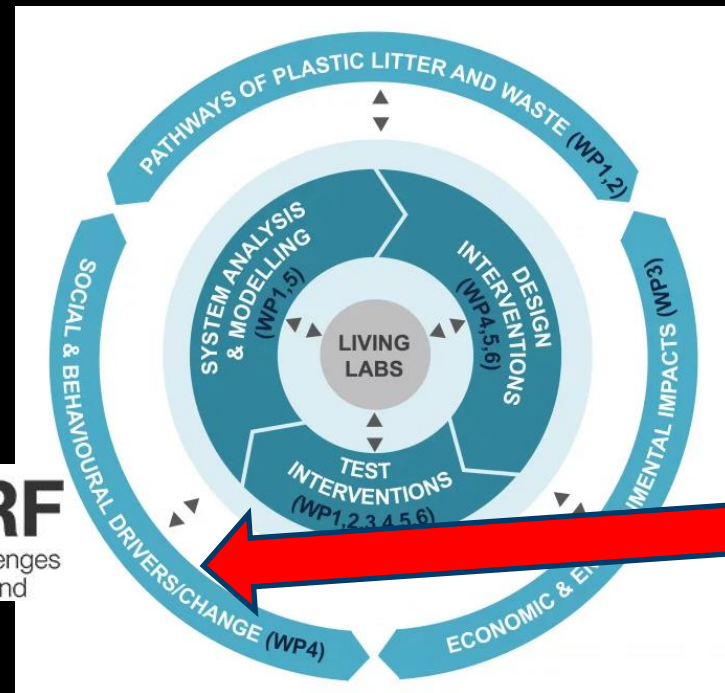
Palawan, Philippines,  
N = 431, diff ages,  
gender, ethnic groups;  
>50% less than 154  
USD income pm



# PISCES

RESEARCH. INNOVATION. ACTION.

PREVENTING PLASTIC POLLUTION FOR THE BENEFIT OF ENVIRONMENT AND SOCIETIES



- A collaborative, inclusive, interdisciplinary partnership
- Academic researchers, business, industry, governments, NGOs, & civil society
- To inform, complement, and catalyse national and global action programmes
- To provide evidence-based solutions and system-change interventions
- To support real change in government policies, industrial practices, and consumer behaviour.

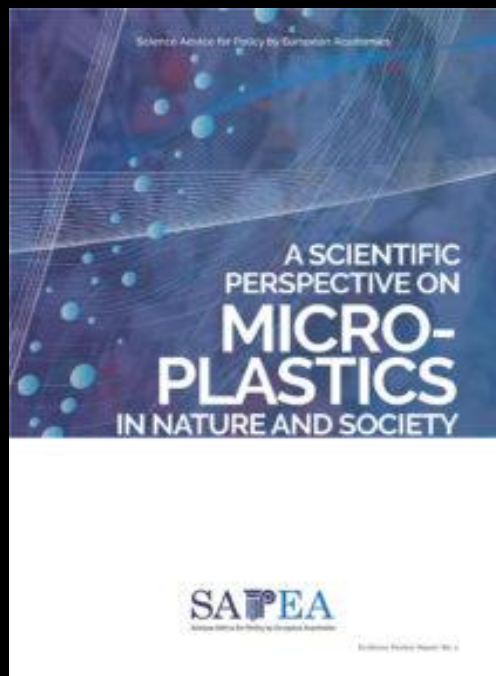


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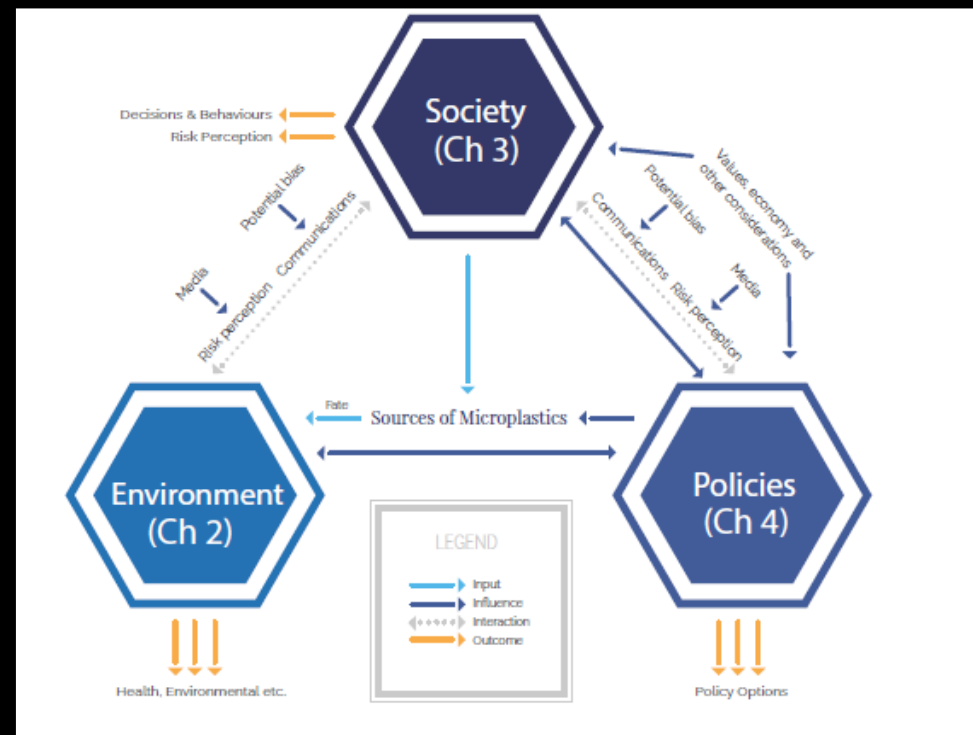


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# SAPEA Evidence Review Report



<https://www.sapea.info/topics/microplastics/>



EC Chief Scientific Advisors; G7; DEFRA



UNEP  
stocktake

<https://www.unenvironment.org/events/un-environment-event/third-meeting-ad-hoc-open-ended-expert-group-marine-litter-and>

# Key messages

- Human decisions and behaviours are at the core of plastic pollution
- Psychological & social factors can explain decisions and behaviour and inform interventions
- But it's not the “*fault*” or *responsibility* of individual consumers
- Interventions need to be evaluated, incl. side effects and co-benefits
- Research needs to consider diverse communities and be sensitive to cultural, economic and systems contexts
- We need to work together & share the responsibility



# Thank you

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Kayleigh Wyles



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Analytical  
Methods

TUTORIAL REVIEW



Cite this: DOI: 10.1039/c6ay02647h

## The human dimension: how social and behavioural research methods can help address microplastics in the environment

S. Pahl<sup>\*ab</sup> and K. J. Wyles<sup>cd</sup>

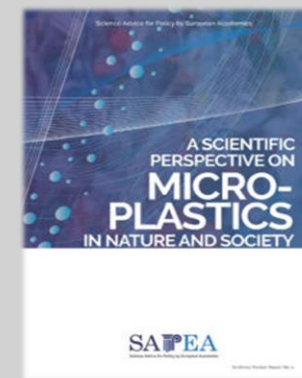
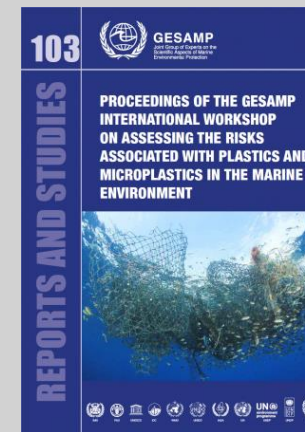
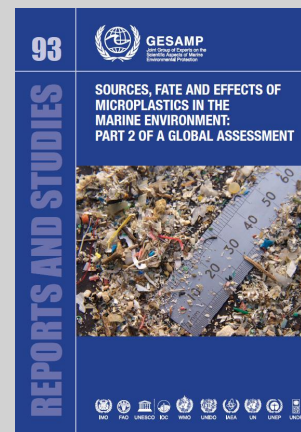
The present paper illustrates the breadth of research methods in the Social and Behavioural Sciences and how these may be applied to the issue of environmental microplastics. Microplastics are a human-caused problem and we need to understand the human dimension in order to address it. Nine key points are emphasised in this paper and follow from the key observation that humans, through their perceptions, decisions and actions, are pivotal to the issue of primary and secondary microplastics in the environment: (1) human perception and behaviour can be subject to systematic and rigorous scientific study, using theory-based hypothesis testing, measurement and statistical analysis; (2) qualitative methods can explore new areas of research and provide novel, in-depth insights; (3) best practice and recommendations exist for measuring social data; (4) quantitative cross-sectional approaches can test how important social factors are for key outcomes (e.g., the role of perceived risk, values, social norms for behaviour); (5) experimental quantitative approaches can compare randomised groups and study cause-effect relations; (6) certain limitations and challenges are unique to research with people; (7) communications and interventions (e.g., change campaigns, new regulation, education programmes) should be developed based on scientific insights into human thought and behaviour and then evaluated systematically; (8) social researchers should work towards developing standardised tools and protocols; and (9) social research on microplastics and its determinants is in its

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