

# How can psychology help with coastal and marine issues?

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University of Plymouth, UK

January 2020, London, UK

*Please no twitter of unpubl. data slides*



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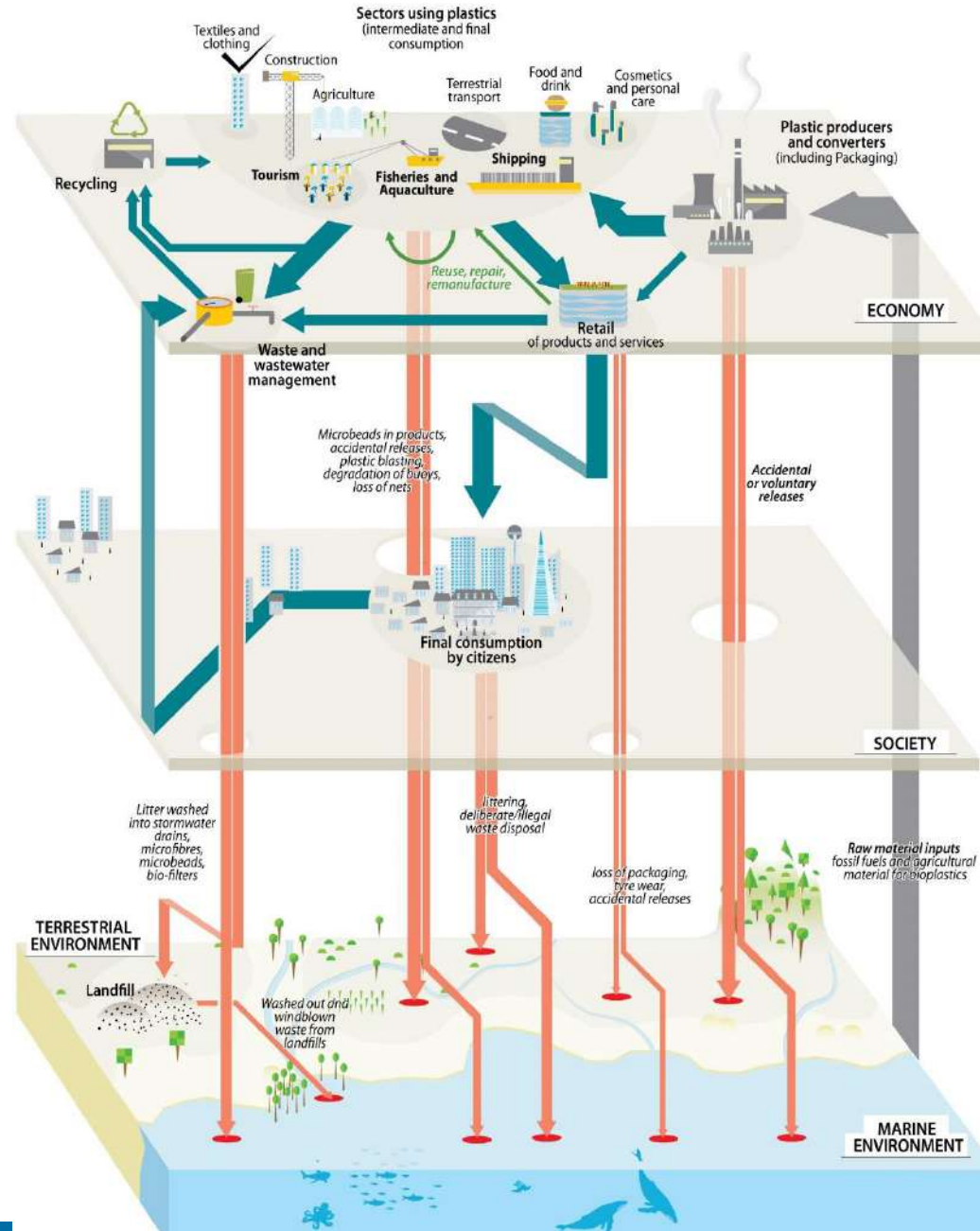
# Plastic as a system

# The plastic system

**Economic  
sectors**

**Society**

**Environ-  
ment**



**Macro-  
Micro-  
Nano-  
Plastics**

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



[illegible]

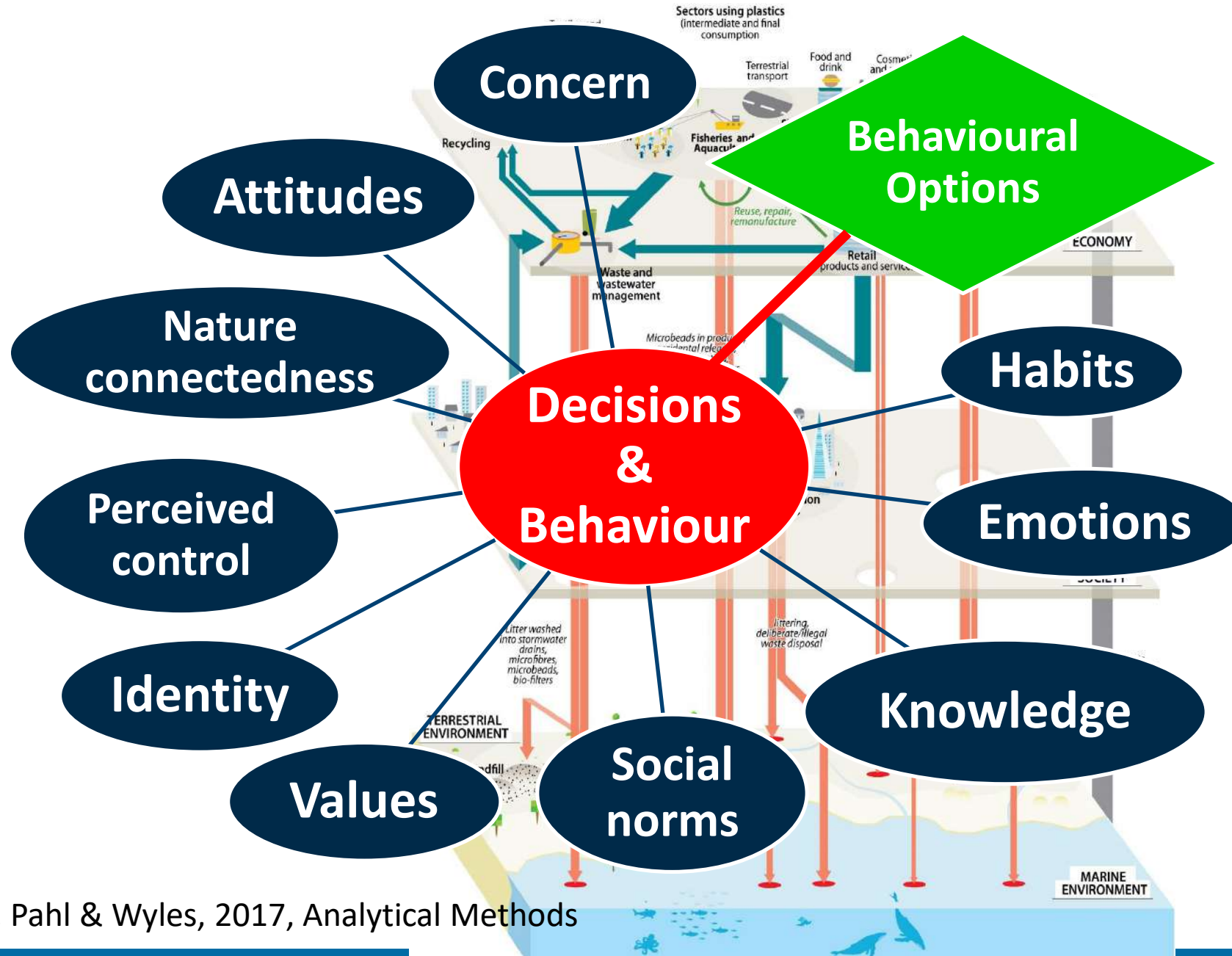
## ***Environment***

# Not just 'general public'



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# The plastic system



**Social /  
Behavioural  
science  
approaches  
e.g.,  
Psychology**

# What can social data tell us about plastic?

# Perceptions - Concern

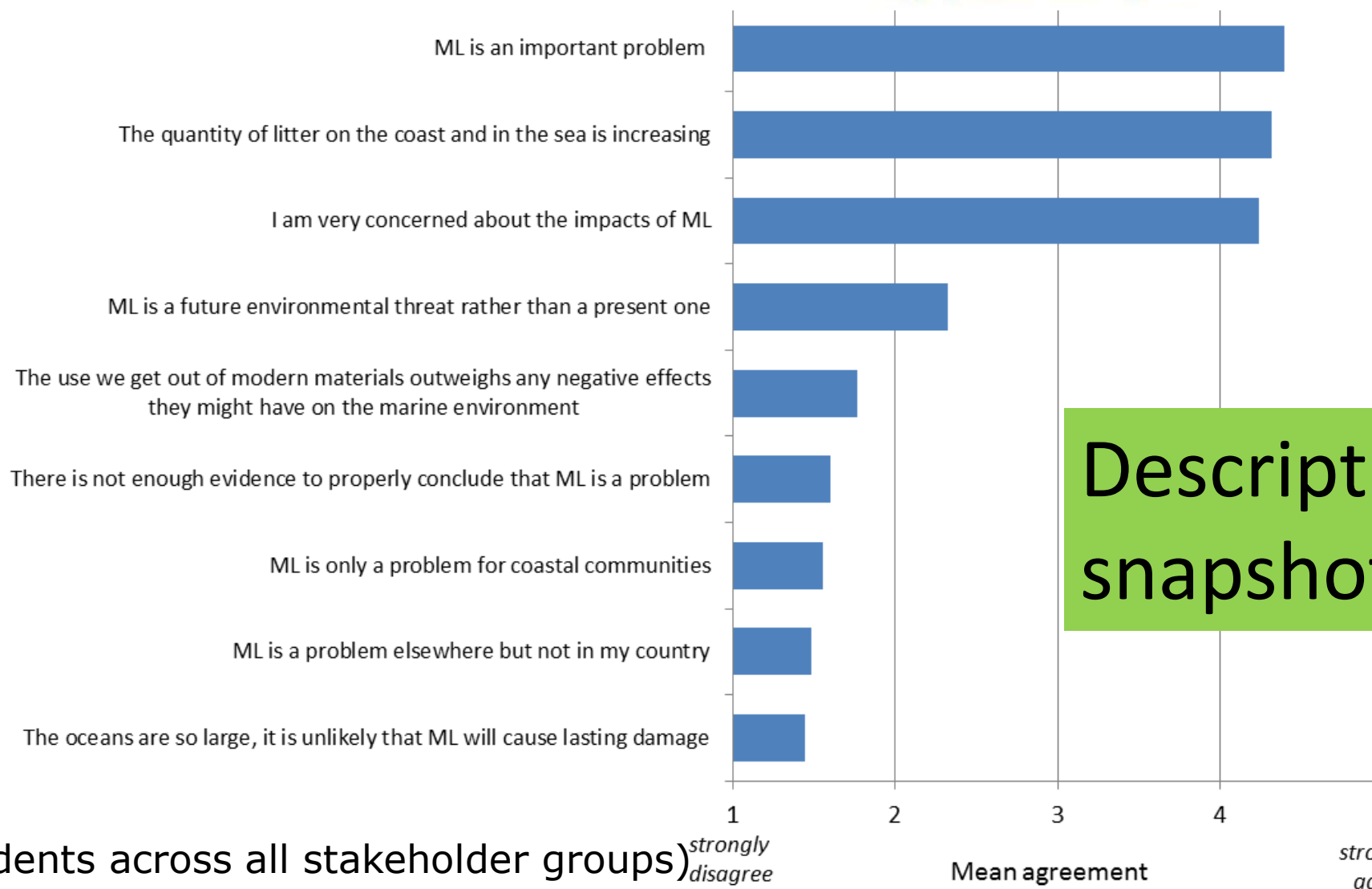
Marine Litter in European Seas - Social Awareness and Co-Responsibility

MARLISCO



Stopping Marine Litter Together

People are concerned; there's no 'denial' or polarisation



N = 3748 (all respondents across all stakeholder groups)

# Predicting Behavioural Intentions

Marine Litter in European Seas - Social Awareness and Co-Responsibility



**Table 3.** Hierarchical Regression Analysis for Variables Predicting BEHAVIOURAL INTENTIONS (N=1118)

Variable	Model 1				Model 2				Model 3				Model 4				Model 5			
	B	SEB	$\beta$	t	B	SEB	$\beta$	t	B	SEB	$\beta$	t	B	SEB	$\beta$	t	B	SEB	$\beta$	t
<i>Demographics:</i>																				
Age	0.01	0.00	0.15	5.12***	0.01	0.00	0.15	5.09***	0.01	0.00	0.14	4.98***	0.01	0.00	0.11	3.99***	0.00	0.00	0.06	2.39*
Gender (1=M, 2= F)	0.25	0.05	0.15	5.39***	0.26	0.05	0.16	5.56***	0.27	0.05	0.17	5.76***	0.26	0.05	0.16	5.61***	0.15	0.04	0.09	3.60***
Education level	0.13	0.01	0.27	9.74***	0.12	0.01	0.26	9.07***	0.12	0.01	0.25	8.81***	0.12	0.01	0.24	8.50***	0.06	0.01	0.12	4.33***
<i>Accessibility &amp; experience:</i>																				
Proximity to the coast 0-5km					0.10	0.05	0.06	1.91 <sup>†</sup>	0.03	0.06	0.02	0.49	0.03	0.06	0.02	0.45	-0.03	0.06	-0.01	-0.44
Proximity to the coast >5-20km																			0.03	1.17
Freq. of coastal visits																			0.01	-0.32
Freq. notice litter at coast																			0.10	3.78***
<i>Psychological variables:</i>																				
Concern and perceived risk																			0.15	5.10***
Responsible (self)																			0.04	-1.37
Competent (self)																			0.09	2.77**
Motivated (self)																			0.18	6.11***
Responsible (general public)																			0.01	-0.43
Competent (general public)																			0.00	-0.07
Motivated (general public)																			0.00	0.10
Altruistic-biospheric value																			0.13	3.72***
Egoistic value																			0.11	3.22**
Social norm – important																			0.00	-0.06
Social norm – support																			0.11	3.87***
R <sup>2</sup>																				
F for change in R <sup>2</sup>																				
Model F	53.08***				33.00***				28.26***				30.26***				30.39***			

<sup>†</sup>p<.10. \*p<.05. \*\*p<.01. \*\*\*p<.001.

Putting lots of aspects together – which are important? How good are they at explaining our outcome? E.g.,  
 Sociodemographic factors,  
 access / experience factors and  
 psychological factors

**N = 1,118 general public respondents across EU**

Altogether the variables explain 33% of the variation in intentions



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Hartley, Pahl  
et al., 2018



# Predicting Behavioural Intentions

Marine Litter in European Seas - Social Awareness and Co-Responsibility



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Model F	53.08***				33.00***				28.26***				30.26***				30.39***			

\*p<.10. \*\*p<.05. \*\*\*p<.01. \*\*\*\*p<.001.

With all variables entered, the biggest predictors ( $\beta \geq .10^{***}$ ) were

- **education level** (sociodem factors),
- **frequency of noticing litter** (experience factors)
- **concern/ perceived risk, motivation, values and social norm** (psychological factors)

These are potentially changeable!

**From description  
to intervention**

**N = 1,118 general public respondents across EU**

Hartley, Pahl  
et al., 2018



# Good for the environment, but what about the volunteers?

A multi-year examination of the impacts of beach cleans on the volunteers

Dr Kayleigh J. Wyles, Dr Sabine Pahl, Lauren Eyles

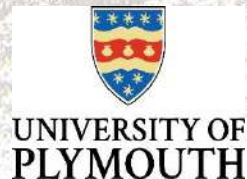
**PRELIMINARY**

K.Wyles@surrey.ac.uk

@KJWyles



- Data from 962 volunteers 2016-2018
- ca. 64% female; most > 40 years old; ca. 35% volunteered before
- Before – after survey





**PRELIMINARY**

## Preliminary results

Comparing **before** and **after** the beachclean:

- Well-being increased
- Nature connectedness increased
- Behavioural intentions increased



# Connectedness to nature



# nature human behaviour


Altmetric: 42

[More detail >>](#)

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) | [Download Citation](#) 

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.



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# Sohvi Nuojua's PhD (paper under review)

## 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

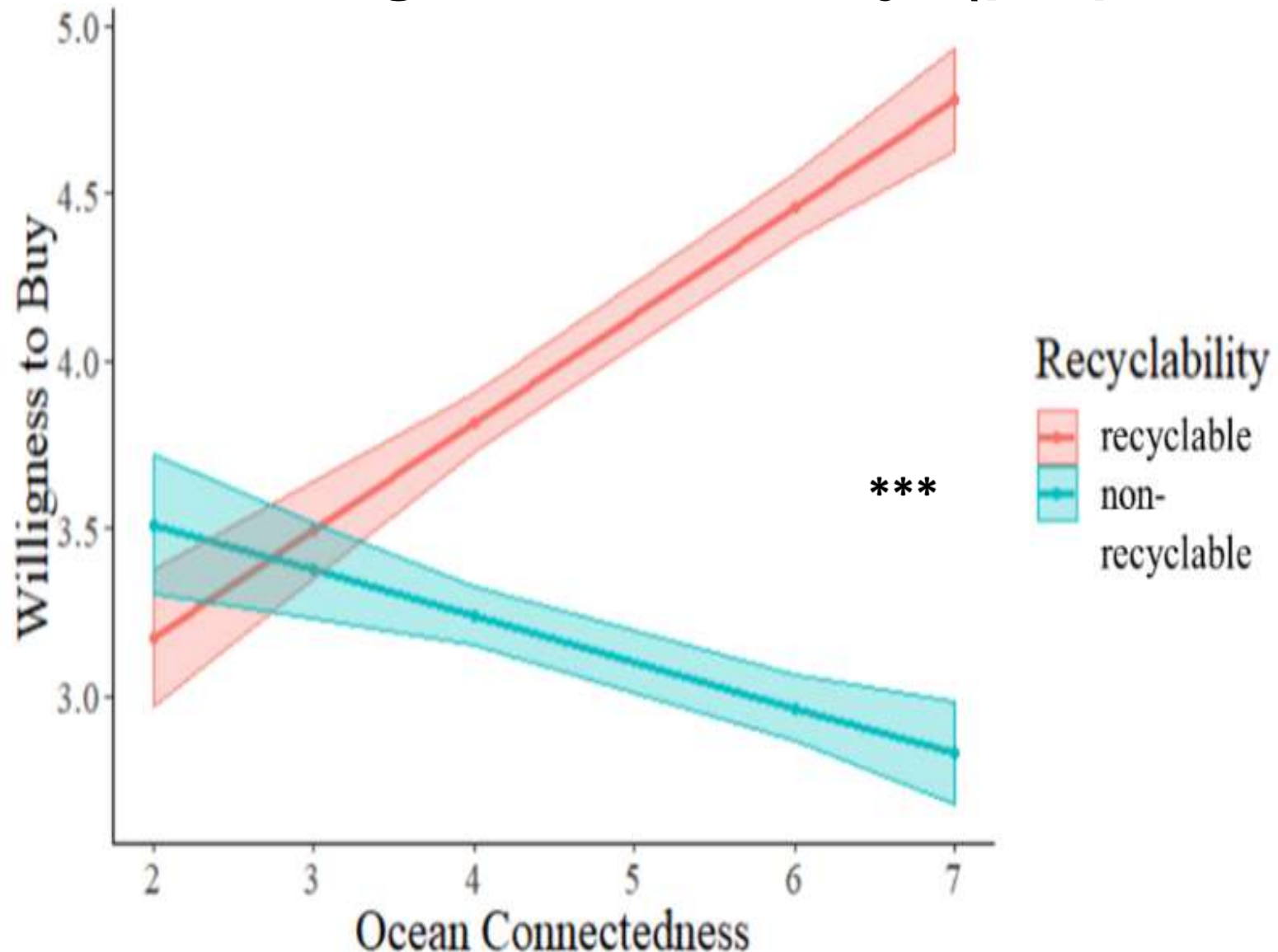
Nuojua, Pahl & Thompson, under review



# Willingness to buy (paper under review)



Nuojua, Pahl & Thompson, under review



$N = 512$  general public sample

**People with high ocean connectedness were more willing to buy recyclable packaging and less willing to buy non-recyclable packaging.**

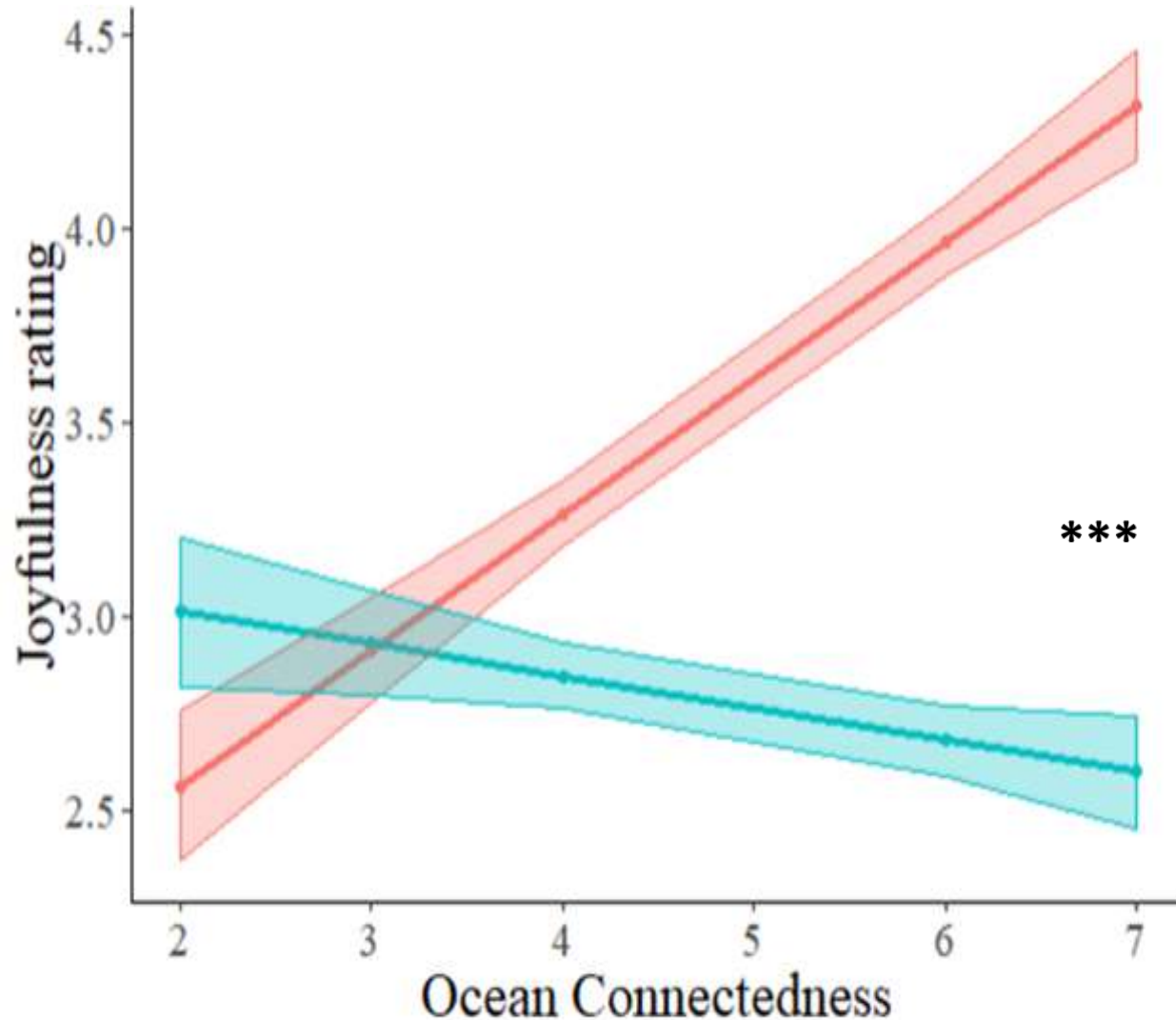
*correlational*



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# Emotion: Joyful (paper under review)



*N* = 512 general public sample

**People with high ocean connectedness were more joyful when choosing recyclable packaging.**

*correlational*



# Luo, Douglas, Pahl, Zhao (prelim.)

Control



Improved signage



Signage+animal



Signage+pledge

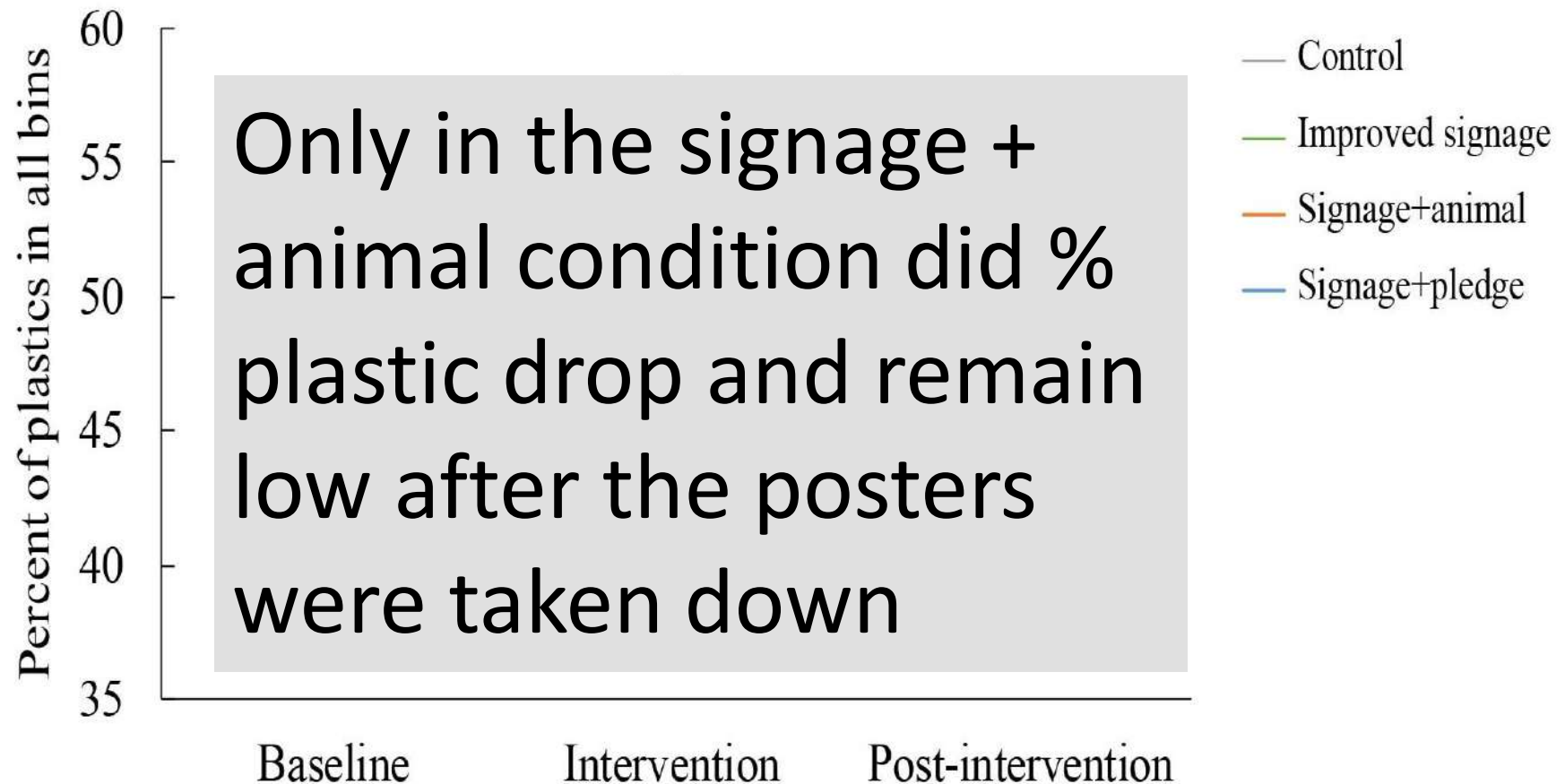


Randomly assigned to floors in large office building housing consultancy



# Luo, Douglas, Pahl, Zhao (prelim.)

## b) Percent of plastic items in all bins



# Final thoughts and conclusions

## Pursuant to UNEA Resolution 4/6\*



Subparagraph 7(a):

*“Take stock of existing activities and action by governments, regional and global instruments, international organizations, the private sector, non-governmental organizations and other relevant contributors to reduce marine plastic litter and microplastics with the aim of the long-term elimination of discharge into the oceans;”*


\*(UNEP/EA.4/Res.6)

**Invitation to submit**

First deadline: 31<sup>st</sup> January 2020



← → ↻ 🏠 📄 papersmart.unon.org/resolution/stocktaking ⭐ Ⓢ ⋮



# UN Environment Assembly Papersmart Portal

**Contacts:**

For any questions relating to these submissions, please write an email to:

[unenvironment-gpml@un.org](mailto:unenvironment-gpml@un.org)  
[stephanie.vanderpoel@un.org](mailto:stephanie.vanderpoel@un.org)

[Home](#)

## Voluntary inputs to the report on stocktaking

Start Complete

**This section requests the inputs based on the following operative paragraph of UNEA 4 resolution 6:**

7. Decides to extend until its fifth session the mandate of the ad hoc open-ended expert group on marine litter and microplastics established by its resolution 3/7, and requests the expert group, building on its previous work, to:

(a) Take stock of existing activities and action by governments, regional and global instruments, international organizations, the private sector, non-governmental organizations and other relevant contributors to reduce marine plastic litter and microplastics with the aim of the long-term elimination of discharge into the oceans;

**MAKING SUBMISSIONS:**

*Submissions can be made through the two options below:*

**Option 1: Submit your inputs through a questionnaire on the link below:**

[Submission link](#)

**RESOLUTIONS**

[1/6. Marine plastic debris and microplastics](#)

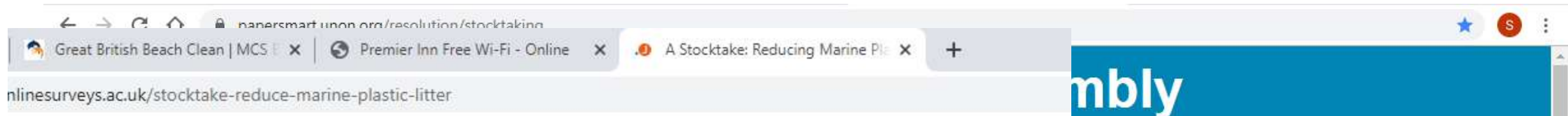
[2/11. Marine plastic litter and microplastics](#)

[3/7. Marine litter and microplastics](#)

[4/6. Marine Plastic Litter and Microplastics](#)

Invitation to submit





# A Stocktake: Reducing Marine Plastic Litter and Microplastics

**Invitation to submit  
Guidance:**

[https://papersmart.unon.org/resolution/uploads/guidelines\\_for\\_marine\\_plastic\\_litter\\_stocktake\\_survey\\_2\\_hs1.pdf](https://papersmart.unon.org/resolution/uploads/guidelines_for_marine_plastic_litter_stocktake_survey_2_hs1.pdf)

**Survey link:**

<https://plymouth.onlinesurveys.ac.uk/stocktake-reduce-marine-plastic-litter>

We invite you to contribute to a voluntary online survey aimed at taking stock of existing activities and actions (starting from 1st January 2018) to reduce marine plastic litter and microplastics.

problem but we would like to know more about these and other initiatives. We want to learn from countries about their challenges and solutions, about existing activities and actions and showcase best practices.

mbly

## RESOLUTIONS

1/6. Marine plastic debris and microplastics

2/11. Marine plastic litter and microplastics

3/7. Marine litter and microplastics

4/6. Marine Plastic Litter and Microplastics

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Complete

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# Key messages

- People's **decisions and behaviours** play a key role in environmental challenges
- Social/behavioural sciences **research** can inform action
- We need to do more research on **interventions & change**
- Change needs to happen at the individual / community / system level – it's not either/or!
- We need to do more **evaluation**
- Let's work together!



# Thank you

Contact: [sabine.pahl@plymouth.ac.uk](mailto:sabine.pahl@plymouth.ac.uk)



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Bonny Hartley



Matt Holland



Kayleigh Wyles



Sohvi Nuojua



Jiaying Zhao



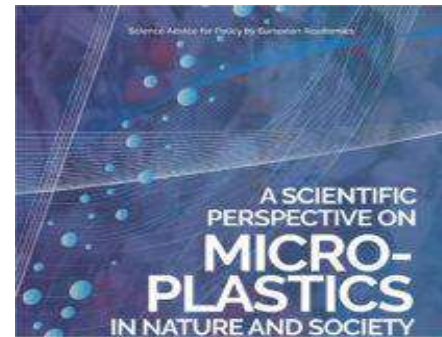
Richard Thompson

**International Marine Litter Research Unit**  
Furthering our understanding of litter on the environment and defining solutions

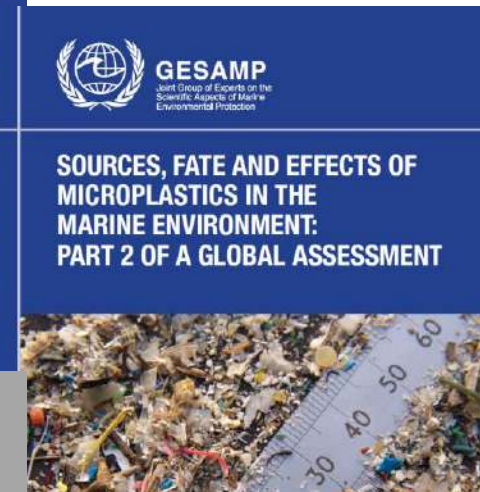
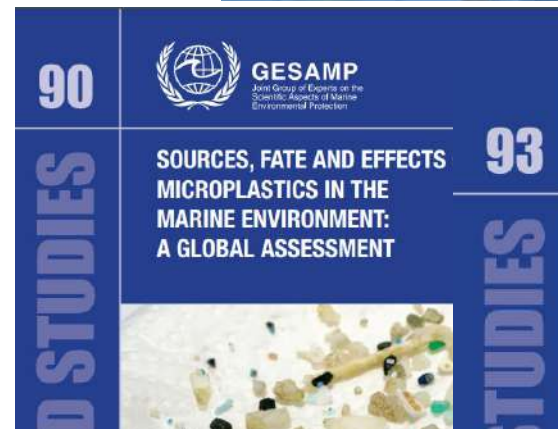
## New EU Funding:

*H2020 Marie Skłodowska Curie ITN: Limnoplast: MP in Freshwater ecosystems (2019-2023)*

*Interreg Preventing Plastic Pollution UK / France (2019-2022)*



SAPEA



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