

**“See the World with Both Eyes”: Using EPPM to Evaluate the Impact of Constructive  
Journalism on the Intention of Pro-Environmental Behaviors in Microplastics Issue**

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## **“See the World with Both Eyes”: Using EPPM to Evaluate the Impact of Constructive Journalism on the Intention of Pro-Environmental Behaviors in Microplastics Issue**

### **Introduction**

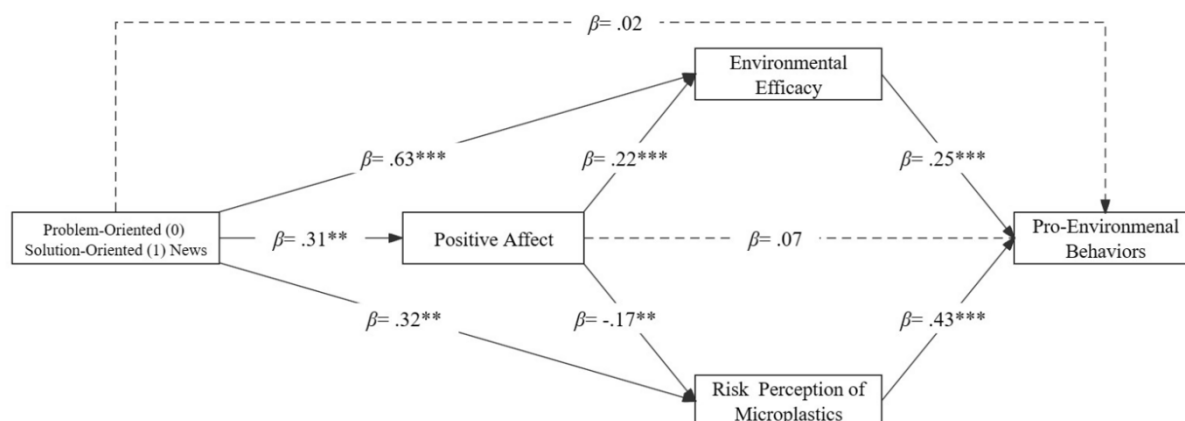
In the climate change topic, microplastics, plastic particles <5 mm including nanosized plastics <1 mm (Vethaak & Legler, 2021), is a concrete serious issue. The direct climate change impact of airborne microplastics has been proven (Revell et al., 2021), which means microplastics are having terrible impacts on climate and human health (United Nations Climate Change, 2021). Previous research has consistently indicated that media are the public’s primary information source about risks (Sellnow & Seeger, 2021) and have the potential to prompt pro-environmental behaviors (Huang, 2016). But traditional news, whose content and report tone have a bias towards negativity (Baden et al., 2019), may cause climate fatigue (Constructive Institute, 2023) and learned helplessness (Galician & Pasternack, 1987) in the audiences and reduce their motivation to act (O’Neill et al, 2010). “Constructive journalism” is an alternative journalistic approach, which applies positive psychology techniques in an effort to publish more productive, solution-focused stories (McIntyre and Gyldensted 2017). Although there has been increased recognition of the role that positive affect resulting from constructive news plays in shaping the public’s climate change-relevant decision-making and collective action (Baden, 2019; Thier & Lin, 2022), the negative outcomes of positive affect and positive outcomes of negative perception are not given sufficient attention (Schneider et al., 2021), leading to a “tyranny of the positive”. But rather than abandoning the presentations of climate risks to avoid generating negative feelings in audiences, constructive journalism pursues a balance between representing problems and providing responses, as Constructive Institute (2023) claims “see the world with both eyes”. To fill the gap, the study combined the broaden-and-build theory of positive emotions (Fredrickson, 2001) and the Extended Parallel Process Model (Witte, 1992) to explore how constructive journalism influences the public’s pro-environmental behaviors (PEBs) through the mediation of positive affect, environmental efficacy, and risk perception of microplastics.

### **Method and Results**

We conducted a between-subjects experiment on WenJuanXing from September to October 2023 in Mainland China and the study is still ongoing. In selecting stimuli, two news stories regarding microplastics were chosen, one incorporating aspects of constructive journalism—solution-frame and positive tone—and the other negative news including a problem-oriented framework and pessimistic tone. The news articles were formed by rewriting several specialized news reports according to constructive journalism writing standards (Constructive Institute, 2023), including Xinhua Net’s “*Japanese researchers find microplastics in clouds*”(2023), Sixth Tone’s “*After recording all the plastics used in a 14-day period, what have we found?*”(2021) and UN News, “*Historic moment in the fight against plastic pollution: countries commit to the legally binding agreement*”(2022). These are referred to as either “solution-oriented news” or “problem-oriented news” for ease of understanding. After exposure, participants answered a questionnaire measuring the following constructs: positive affect ( $\alpha=.95$ ), negative affect ( $\alpha=.88$ ), environmental efficacy ( $\alpha=.86$ ), risk perception of microplastics ( $\alpha=.87$ ) and pro-environmental behaviors ( $\alpha=.86$ ). The items can be found in

**Appendix A.** Of the participants who signed the informed consent form ( $N=341$ ), we excluded those who failed the attention check ( $N=78$ ), resulting in a sample of 263 where slightly more participants were randomly assigned to the solution-oriented condition ( $N=135$ ) than the problem-oriented condition ( $N=128$ ).

The structural equation modeling was employed using PROCESS v4.2 Model 81 (see Figure 1). Although problem-oriented or solution-oriented news is a dichotomous variable rather than a continuous variable, it can be treated as a dichotomous independent variable in PROCESS as Hayes (2017, pp.86-91) suggested. The findings indicated that no direct association between constructive news and PEBs ( $\beta=.02$ ,  $p>.05$ ) in contrast to problem-orientated journalism. However, environmental efficacy and risk perception of microplastics positively mediated this relation, indicating that solution-oriented news increased environmental efficacy ( $\beta=.63$ ,  $p<.001$ ) and risk perception of microplastics ( $\beta=.32$ ,  $p<.01$ ) compared to problem-oriented news. Subsequently, environmental efficacy ( $\beta=.25$ ,  $p<.001$ ) and risk perception of microplastics ( $\beta=.43$ ,  $p<.001$ ) elicited by solution-oriented news positively associated with the intentions of PEBs compared to problem-oriented news. Ultimately, the findings showed that, using problem-oriented news as a contrast, the serial mediation of positive affect and environmental efficacy ( $\beta=.019$ , 95%CI=[.003, .046]) or microplastic risk perceptions ( $\beta=-.019$ , 95%CI=[-.041, -.002]) in the relation between solution-oriented news and PEBs was significant (see Table 1).



**Figure 1.** Research model with path coefficients.

**Table 1.** Testing for indirect effect.

Path	Indirect Effect	Percentile 95% CI [Lower, Upper]	Result
PSO $\rightarrow$ EE $\rightarrow$ PEBs	.1252	[.059, .206]	Significant
PSO $\rightarrow$ RPM $\rightarrow$ PEBs	.1112	[.032, .197]	Significant
PSO $\rightarrow$ PA $\rightarrow$ PEBs	.0194	[-.008, .056]	Not Significant
PSO $\rightarrow$ PA $\rightarrow$ RPM $\rightarrow$ PEBs	-.0190	[-.041, -.002]	Significant
PSO $\rightarrow$ PA $\rightarrow$ EE $\rightarrow$ PEBs	.0197	[.003, .046]	Significant

**Note.** PSO = Problem-Oriented or Solution-Oriented News; PA = Positive Affect; EE = Environmental Efficacy; RPM = Risk Perception of Microplastics; PEBs = Pro-Environmental Behaviors.

## Contributions

This study has the following contributions to research. First, this study not only supports previous research that solution-oriented news enhances the intention of PEBs through the mediation of environmental efficacy (Baden, 2019), but also indicates that solution-oriented news negatively links the intention of PEBs via serial mediation role of positive affect and risk perception of microplastics compared with problem-oriented news. This contrasts with previous studies, as Baden(2019) only emphasized that solution-focused stories increased the public's pro-environmental intentions. Although Overgaard (2023) found negative affect can also enhance self-efficacy, indicating the positive outcome of negative perception, the negative outcomes of positive affect still have been neglected. The finding of the study, solution-oriented news negatively associated with PEBs through serial mediation role of positive affect and risk perception of microplastics, could fill this gap in research on constructive environmental coverage.

Additionally, surprisingly, solution-oriented news is positively associated with the risk perception of microplastics, subsequently intensifying the intention of PEBs. The result supported the Constructive Institute's practice principle, which says constructive journalism should "expose problems and look for possible solutions" to strike a balance between too much hope-ism and too much fear-mongering in environment coverage (Constructive Institute, 2023).

Furthermore, the constructiveness of journalism is a crucial yet frequently overlooked news tradition in China's journalism industry (Wang, 2020; Xu et al., 2020), which can be traced back to Qichao Liang, the first person with specialized newspaper ideas in China (Huang, 1998). In his article "*The Usefulness of Newspapers in Public Affairs*", published in *The ShiWuBao* in 1896, the "constructive utility" of journalism to society was placed great importance. However, a striking shortcoming of the current research is that it almost exclusively tests constructive news effects in Western industrialized nations (Schneider et al., 2021), and research on the effects of constructive journalism in China is limited (Xu et al., 2020), especially amidst growing environmental concerns. In this regard, This study contributes a complementary perspective from outside the West.

## Appendix A. Measurement of constructs.

Construct	Item
Positive Affect	PA1: (This report makes me feel) Happy
	PA2: Lively
	PA3: Cheerful
	PA4: Energetic
	PA5: Delighted
	PA6: Excited
Environmental Efficacy	EE1: The advice in this report works in avoiding microplastic pollution.
	EE2: This report taught me to know that how to reduce the influence of microplastic pollution.
	EE3: This report offers me effective solutions to avoiding microplastic pollution.
	EE4: This report offers me useful solutions to avoiding microplastic pollution
	EE5: It's convenient to reduce microplastic pollution.
	EE6: I am able to reduce the influence of microplastic pollution on me.
Risk Perception of Microplastics	RPM1: I am at risk of microplastic pollution.
	RPM2: I am probably affected by microplastic pollution.
	RPM3: I am easily threatened by microplastic pollution.
	RPM4: Microplastics can cause health problems to me.
	RPM5: Microplastics issues are severe environmental problems.
	RPM6: Microplastics can lead to severe negative outcomes.
Pro-Environmental Behaviors	PEB1: (In the next six months) I am willing to discuss the environmental issues of microplastics with my friends or family.
	PEB2: I am willing to bring my own shopping bag when I shop at the supermarket.
	PEB3: I am willing to reuse or recycle plastic bags.
	PEB4: I am willing to buy environmentally friendly products
	PEB5: I support the state in introducing laws and regulations on environmental protection.
	PEB6: I support the state investing money in environmental protection issues.
	PEB7: I am willing to donate money for environmental protection.

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