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Editorial

Pr. Dr. Christine Roland-Lévy, IAAP Past-President (2022-2026)

This third issue of Volume 5 of *Applied Psychology Around the World* is dedicated to a very important topic: “*Applied Psychology of Sustainable Consumption: contributions from economic and environmental psychology*”. Thus, this Special Issue is a joint venture between members of two of IAAP Divisions, as it combines environmental issues and economic ones, which cover the interests of both Division 4 and Division 9. The topic of *Sustainable Consumption* is definitely a very strong matter for Applied Psychology.

Indeed, as Marino Bonaiuto, President-Elect of Division 4, and Edoardo Lozza, President-Elect of Division 9, the two guest editors, whom I thank very much in the name of IAAP, very well describe it in the opening of their introduction:

Sustainable consumption is undoubtedly a paramount concern in today's world. It probably epitomizes, more than any other contemporary issue, the tension among economic and environmental sustainability, and the global societal need for balancing among them and with the broader social scenario. The 2030 Agenda for Sustainable Development, adopted and endorsed by the United Nations Member States in 2015, places significant emphasis on the importance of sustainable consumption. In particular, goal #12 of the Sustainable Development Goals (SDGs) agenda, aptly titled 'Responsible Consumption and Production,' acknowledges that consumption and production patterns lie at the core of global sustainability issues. Indeed, the promotion of sustainable consumption stands as a pivotal element of sustainable development, hinging on the attainment of long-term economic growth that can simultaneously

meet environmental and social needs for both present and future generations.

This issue is, as usual, commenced by *A Message from the President of IAAP*, Lori Foster, followed by an introduction to the topic prepared by Marino Bonaiuto and Edoardo Lozza, and a series of eight articles on this appealing topic, around sustainable consumption, decision making and behavior.

Before letting you appreciate this Special Issue, allow me to remind you that our 3rd *Early Career Marathon: Integrating research and Practice* is coming soon; it will take place from Saturday, November 11 at 9:00 AM London and end on Sunday, November 12 at 9:00 AM London time. Do not hesitate to join, and be part of the discussions with the presenters, as this is for ALL IAAP members, whether you are a longstanding member of IAAP, or a recent one, whether you are a researcher or a practitioner, this *Marathon* is for YOU!

Meanwhile, I hope that you will enjoy reading this third issue of Volume 5, and note that there will be an [IAAP webinar of the same topic on October 25th](#).



The Sixth P: Psychology and Sustainable Consumption

Lori Foster, IAAP President (2022 - 2026)

As I have often emphasized, the UN's Agenda 2030 addresses People, Planet, Prosperity, Peace, and Partnerships—the 5 Ps. But to make the ambitious Sustainable Development Goals achievable, a Sixth P—Psychology—needs to be woven into the strategies and policies we develop and adopt. Without understanding human behavior, beliefs, and attitudes, attempts at change will remain incomplete at best. This is true for all aspects of Agenda 2030, including goals focused on the environment, such as SDG 12, Responsible Consumption and Production. As this special issue of *Applied Psychology Around the World* (APAW) demonstrates, psychological research, theory, and best practices connect to environmental sustainability goals in a number of meaningful ways.

Partnerships for the Goals

The United Nations 17th Sustainable Development Goal (SDG 17) emphasizes Partnerships for the Goals. For example, Target 17.17 urges us to “Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships” (United Nations General Assembly, 2015, p. 27).

Partnerships for the goals can take many forms. There are two kinds of partnerships I would like to highlight here. First, let's consider partnerships *within* psychology associations such as the International Association of Applied Psychology (IAAP). IAAP has 18 divisions representing many applied psychology specializations and includes individual members spanning the globe. These aspects of IAAP offer tremendous opportunities for the cross-fertilization of ideas. The SDGs are complex, interconnected, and often require psychological insights from more than one psychological subdiscipline. This special issue of APAW, led by IAAP Division 4 (Environmental Psychology) and Division 9 (Economic Psychology), offers a compelling example of what is possible when

different specialty areas come together to advance our collective thinking and global agenda.

Second, partnerships *between* psychology associations are also important. Several weeks ago, I had the honor of presenting at an invited session at the European Congress of Psychology in collaboration with the President of the International Union of Psychological Sciences (IUPsyS), Germán Gutiérrez. Our joint session, titled “*International Psychology for a Sustainable World*,” discussed the concepts of psychological diplomacy and the role of psychology associations in accomplishing sustainable development. IAAP and IUPsyS have a long history of collaboration, and I enjoyed this opportunity to continue working together. This relates to the second of my two points about partnerships. Psychology associations have much to offer. Coordinating, harmonizing efforts, and partnering to accomplish shared aims will move the world forward much farther and faster than would otherwise be possible.



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Psychology and Environmental Sustainability: Two Notable Frameworks

As this special issue of APAW considers how psychology can contribute to sustainable consumption, I want to direct your attention to two relevant frameworks: the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns (10YFP) and the Global Psychology Alliance's forthcoming Population Climate Action Framework.

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If you look closely at the SDGs, you will see that Target 12.1 urges the implementation of the 10YFP (United Nations General Assembly, 2015). Pre-dating the SDGs, the 10YFP was established in 2012 at the RIO+20 Conference on Sustainable Development. While the 10YFP was adopted in 2012, don't let the "10-year" descriptor fool you into thinking it expired. In 2021, it was extended. A [ministerial declaration](#) emerging from the United Nations 2021 High-Level Political Forum describes member states' continued commitment to this framework going forward (Economic and Social Council, 2021). More recently, an [August 2023 progress report](#) on the 10YFP offered a comprehensive update on the latest advancements in the 10YFP's implementation and unveiled a [Global Strategy on Sustainable Consumption and Production \(SCP\)](#) mapped out for 2023 to 2030 (One Planet Network, 2023).

The 10YFP highlights the importance of stakeholder cooperation and the usage of scientific knowledge bases in our aims to achieve sustainable consumption and production. The framework's multi-disciplinary approach leaves room for insights from various scientific fields, including psychology.

How might psychology contribute? Let's consider a forthcoming paper: "Psychology and the Climate Crisis – A Population Climate Action Framework." Initiated by the Global Psychology Alliance (GPA), the paper provides a comprehensive framework for psychologists globally to address climate change mitigation, adaptation, and justice. This includes, but is not limited to, sustainable consumption. The objective of this document is to view climate change through the lens of human well-being. It outlines ways for the global psychology community to collaborate effectively against climate challenges. Additionally, it underscores the importance of incorporating strategies that honor underrepresented groups, Indigenous wisdom, and diverse cultural perspectives. This paper is due to be finalized in the fourth quarter of 2023 and will be shared when available.

The Demand for Psychological and Behavioral Insights

Naturally, psychological solutions will only effect meaningful change if they are recognized and implemented. Are the perspectives of psychologists being sought? To some degree, yes. There appears to be an increasing demand from global bodies like the UN for actionable psychological and behavioral insights that can directly inform policy and inspire change. I've had the privilege of working with a number of UN entities over the years; many of them are keenly interested in behavioral insights.

One clear illustration of this demand comes from the UN Environment Programme (UNEP). UNEP is closely connected to the 10YFP, serving as the 10YFP's Secretariat, and also facilitating the One Planet Network, a global community focused on implementing the 10YFP and achieving sustainable consumption and production patterns.

In 2017, UNEP produced a report titled, "[Consuming Differently, Consuming Sustainably: Behavioral Insights for Policymaking](#)," which was developed with the support of the European Commission, under the supervision of the Secretariat of the 10 Year Framework of Programmes on Sustainable Consumption and Production patterns (10YFP on SCP), in cooperation with the 10YFP Programme on Consumer Information for SCP as well as a nonprofit organization called ideas42. This publication offers valuable ideas for using behavioral insights to encourage sustainable consumption. For instance, the "No Ridiculous Car Trips" case study described in the report cleverly employed and tested psychological insights such as the principle of reciprocity to discourage unnecessary automobile usage and promote a biking culture in Sweden (Aibana, Kimmel, & Welch, 2017).

A few years later, UNEP zeroed in on college campuses, publishing the "[Little Book of Green Nudges](#)" (UNEP et al., 2020). A collaboration between UNEP, GRIDARendal, and the Behavioural Insights Team, the *Little Book* includes 40 sustainable consumption solutions

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that can be applied on university campuses. They are based on behavioral insights, nudges, which can be implemented at a grassroots level. The book focuses on nudging in eight areas: Energy conservation, water conservation, sustainable diets, reduced material consumption, sustainable and reduced travel, reduced food waste, recycling, and engagement and support for change.

Quite recently, the 10 YFP's 2023 Progress Report suggests several areas where psychology could play a role in sustainable consumption, including but not limited to nudges (One Planet Network, 2023). For example, the report describes pilot studies in Sweden assessing the impact of green nudges on the utilization of single-use cups. In addition, a 'Green Jobs for Youth Pact' is highlighted as a part of the 10YFP's commitment to establish and revamp millions of green jobs by 2030 and provide support for young green entrepreneurs. This initiative emphasizes reskilling and upskilling to ensure enduring employment within a circular economy, areas where applied psychology could play a role. The report also describes the One Planet Network's launch of collaborations, programs, and tools to encourage sustainable living and behavioral change, such as the Sustainable Lifestyles Action academy and the My Sustainable Living Challenge.

As the preceding examples illustrate, momentum and demand for psychological insights exist. Indeed, the final paragraph of the 10 YFP's 2023 Progress Report foregrounds the importance of behaviorally informed policy, as follows:

"Policies that can effectively drive behavioral change towards sustainable outcomes need to be prioritized. These should be based on the polluter pays principle and on the evidence of their impact across lifestyles domains, and target the full lifecycle (from design, production, retail, consumption to final disposal). Such policies could focus on sectors, which have a disproportionate influence on consumer choices. Governments can enable and encourage sustainable consumption including by deploying nudges and incentives, grounded in

empirical and scientific evidence, behavioral, ecological and other related sciences. Governments in partnership with the private sector can also reframe approaches to consumption to make them sustainable, inclusive, affordable and accessible to increase the uptake of sustainable lifestyles" (One Planet Network, 2023, p. 11).

Clearly, policymakers and others are calling for psychological contributions. This special issue of APAW helps answer that call. It offers new perspectives on how psychological science can support environmental aims. I encourage every reader to examine the articles in this APAW issue closely. They delve into a range of important topics, from strategies for promoting responsible consumption to preparing the upcoming generation of psychologists to incorporate sustainability in their work. Together, this collection offers a wealth of ideas, approaches, and solutions that can make a real difference.

Conclusion

In conclusion, this special issue of APAW, focused on sustainable consumption and jointly led by IAAP's Environmental and Economic Psychology divisions, is not just a collaboration between divisions: It is a fusion of vital approaches toward sustainable development. I have no doubt there is something new and thought-provoking on the following pages for each APAW reader - students, academicians, practitioners, policymakers, UN leaders, and their partners.

As we turn the page toward the future, we may find our inner optimists and pessimists fully engaged and on alert. If you're like me, you will toggle between hope and the sobering realities we face. Yes, psychology offers valuable tools for advancing sustainable development and tackling the complex problems associated with it. I appreciate our contributions to date and am optimistic about what we can accomplish together. However, let's not overlook the immense challenges that lie ahead. The issues bound up with the Sustainable Development Goals are deeply interconnected and often entrenched in economic, social, and political systems resistant to change. Our

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climate crisis is worsening, social inequalities persist, and time is not on our side.

In facing these urgent challenges, the power of collaboration among IAAP divisions and psychology associations worldwide becomes not just beneficial but essential for driving meaningful change. Our planet depends on it. Together, we can amplify our impact, bridging the gap between research, policy, and action to forge a more sustainable and equitable world.

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Introduction: Sustainable Consumption from the Perspective of Both Economic and Environmental Psychology

Marino Bonaiuto¹ & Edoardo Lozza²

Sustainable consumption is undoubtedly a paramount concern in today's world. It probably epitomizes, more than any other contemporary issue, the tension among economic and environmental sustainability, and the global societal need for balancing among them and with the broader social scenario. The 2030 Agenda for Sustainable Development, adopted and endorsed by the United Nations Member States in 2015, places significant emphasis on the importance of sustainable consumption. In particular, goal #12 of the Sustainable Development Goals (SDGs) agenda, aptly titled 'Responsible Consumption and Production,' acknowledges that consumption and production patterns lie at the core of global sustainability issues. Indeed, the promotion of sustainable consumption stands as a pivotal element of sustainable development, hinging on the attainment of long-term economic growth that can simultaneously meet environmental and social needs for both present and future generations.

While technological advancements and policy measures play pivotal roles in promoting sustainable consumption – provided they are supported by an adequate social acceptance process which cannot be taken for granted and it rather needs to be understood and managed (Bonaiuto et al., 2023) – the psychology of sustainable consumption is crucial for achieving a sustainable lasting change. This special issue of AP:AW compiles a series of essays exploring the psychological factors that underpin sustainable consumption patterns and the behavioural shifts required to mitigate the human footprint on the environment for a more sustainable future.



Marino Bonaiuto



Edoardo Lozza

Applying psychology to the concept of sustainable consumption presents a particularly complex challenge. This challenge becomes apparent when we acknowledge that the very idea of sustainable consumption constitutes an **oxymoron**. The contradiction is evident both etymologically, as consumption historically (especially, or at least, in the modern industrial and post-industrial western conception) implies using something until it is depleted or destroyed: such a conception is inherently incompatible with the target of sustainability. Moreover, in practical terms, sustainable consumption not only involves changing consumption patterns, such as replacing unsustainable products and services with more efficient and less polluting alternatives, but also, quite simply... consuming less or abstaining from consumption altogether. As Thøgersen (2023, p. 2) observes, "making people change to a more sustainable consumption pattern is difficult, but for most people it is even more difficult to accept reductions in their consumption level". Despite these undeniable complexities, this is a challenge worth addressing,

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utilizing the tools of Economic Psychology and Environmental Psychology. The contributions presented in this collaborative special issue of AP:AW would like to represent a first brief attempt to join these two perspectives in order to address sustainable consumption from a psychological evidence-based standpoint.

The joint perspective of both Economic Psychology and Environmental Psychology can be vital in this regard, for at least two reasons.

Firstly, this joint perspective is significant because delving into the psychology of sustainable consumption brings us into the realm of **Consumer Psychology**, which can also be viewed as a sub-field of Economic Psychology, since consumption is a specific aspect - along with, for example, savings, money management, or tax compliance - of economic behavior. However, it is worth noting that this matter is intricate and subject to debate. In reality, many economic psychologists may not readily identify themselves as consumer psychologists, mainly because Consumer Psychology is often linked to marketing and advertising efforts that often encourage (unsustainable) consumption practices.

Nonetheless, while Consumer Psychology can undeniably provide insights that benefit marketing and advertising, it also harbours a remarkable potential for positively shaping individuals' choices towards more conscious and sustainable consumption decisions. In essence, the very theories and concepts that marketers can leverage to encourage excessive and unsustainable buying can also be harnessed to promote ecologically efficient, less polluting goods and services, or even... to reduce overall consumption (coherently with social marketing and environmental marketing).

In other words, the insights of Economic Psychology concerning the psychological factors that facilitate or impede consumption choices can be harnessed by Institutions to advance consumer well-being and promote environmental, social, and economic

sustainability. Simultaneously, consumers themselves can apply these insights to enhance the sustainability of their own consumption behaviours.

Consumers' choices are a hot topic for Environmental Psychology too, as purchase, consumption, and all the chain of any products' or services' life cycle (re-use, recycle, reduction) represent a huge arena for behavioural changes aiming to mitigate the human environmental footprint, across all contemporary societies and cultures. Consumer decisions already became a pivotal dependent variable in many Environmental Psychology studies given the huge pervasive penetration of consumptions in everyday lifestyle at any latitude and in any geographical context, with their 360° impact on environmental sustainability (food, dress, home and work energy, urban and extra-urban transportation, residential arrangements, etc.). More and more, for Environmental Psychology, mitigating the human footprint on the environment (in terms of CO₂ emissions, biodiversity loss threat, water and soil pollution, etc.) is a matter of understanding and intervening in order to change any area of the human consumption patterns and habits.

An illustrative example of these potential applications, by both Institutions and consumers themselves, of insights from Economic and Environmental Psychology is readily evident in the utilization of nudges to encourage sustainable consumption. The concept of a 'nudge' originated in the field of Behavioral Economics, serving as a complementary facet to Economic Psychology, and it was later adapted and largely applied within the realm of consumer behavior, for some of the aims of Environmental Psychology too (mainly for achieving mitigation targets by means of more sustainable human behaviours). In the context of sustainable consumption, Institutions often employ nudges to encourage environmentally friendly choices. For instance, they introduced labeling systems that highlight the environmental impact of products, nudging consumers toward more sustainable choices (sustainability labelling per se can drive consumer food choices, e.g., Bonaiuto et al.,

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2012). Or they considered nudges aimed at promoting energy conservation: utilities and governments have for example used insights from Economic and Environmental Psychology to encourage energy conservation or to reduce their energy use (such as, in terms of real-time normative feedback via smart-meters monitoring everyday residential energy consumptions, De Dominicis et al. 2019). In this scenario, we are discussing the concept of 'consuming less,' which is essentially the opposite of the drive towards increased (and unsustainable) consumption that occasionally leads academics to be skeptical about Consumer Psychology.

On the other hand, consumers can also apply these insights in their daily lives. Consider the concept of 'self-nudge' (see Torma, Aschemann-Witzel, & Thøgersen, 2018), wherein consumers create personal nudges, like setting reminders to recycle or reduce energy consumption. By comprehending their individual decision-making biases and applying principles from Economic Psychology, consumers become better equipped to make sustainable choices in their consumption patterns (which indeed satisfies one of the scopes of Environmental Psychology).

These examples illustrate how the principles of Economic Psychology can be utilized to enhance consumer well-being and advance sustainability, thus creating synergy with one of the core missions for Environmental Psychology. This application of insights from Economic Psychology underscores the potential for collaboration between institutions and consumers to foster a more sustainable and environmentally conscious society, which is in synergy with Environmental Psychology's vision.

A second reason why Economic Psychology can be valuable in promoting sustainable consumption is its capacity to **broaden the scope** of sustainable consumption, which is often primarily (and at times exclusively) associated with **environmental** concerns. While it is undeniable that environmental concerns are pressing, given the looming threats of climate change, resource depletion, and habitat destruction,

the concept of sustainability is undoubtedly broader, encompassing social and economic impacts as well. Therefore, while safeguarding the environment is undoubtedly a critical component of sustainability, it is equally essential to recognize that sustainability encompasses not only the ecological dimension but also the **social and economic dimensions**.

Social sustainability involves the effect of consumer behaviours on society and population, enhancing living conditions and ensuring equal opportunities. It encompasses factors such as equity, social justice, and the protection of human rights. Neglecting this dimension in sustainable consumption studies risks perpetuating social inequalities and injustices. For instance, an exclusive emphasis on reducing carbon emissions might inadvertently disregard the welfare of marginalized communities disproportionately affected by environmental degradation.

Similarly, economic sustainability involves the responsible use of resources, promoting fair economic practices, and ensuring long-term economic stability. This dimension encompasses issues like fair wages, labour rights, and equitable distribution of wealth. A narrow focus on environmental sustainability alone can inadvertently disregard economic factors that are integral to achieving sustainability. For instance, an overemphasis on reducing consumption without considering the economic implications may lead to job loss and economic instability.

An exemplary illustration of (un)sustainable consumption that engages all three dimensions is the counterfeit market: its repercussions are both environmental (e.g., non-compliance with emissions regulations, use of toxic materials), social (e.g., exploitation of underpaid workers, lack of workplace safety), and economic (e.g., tax evasion). On the contrary, a product reputation's pillars in the eye of the global consumers, include, among other things, all those aspects, namely, environmental, social, and economic impacts (as for example, in the case of food products and categories reputation, both original and counterfeit; De Dominicis et al, 2020; Bonaiuto et al., 2021).

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The three dimensions of sustainability—environmental, social, and economic—are interconnected and interdependent. Neglecting any one of those dimensions can undermine the overall goal of sustainability. Nevertheless, three recent systematic reviews on sustainable consumption (Quoquab & Mohammad, 2020; Sesini, Castiglioni & Lozza, 2020; Nangia, Bansal & Thaichon, 2023) have consistently revealed a predominant focus on studies that delve into the environmental aspect of sustainability, often neglecting the social and economic dimensions. However, studies in Environmental Psychology, bridging social and developmental psychology perspectives, suggest that more sustainable individual consumption choices can have social roots in the present (e.g., social norms) as well as in the past (social norms and experiences within the family or at school in childhood; Molinario et al., 2020); and that environmentally sustainable lifestyles and choices of a person include social and economic features of that personal profile too (Scopelliti, et al., 2018). Moreover, when coming to the process of social acceptance of new renewable and sustainable energy technologies, data speaks in favour of public and stakeholders being sensitive to all such three features: namely, environmental, social, and economics impacts of the innovation to be adopted (e.g., Dessi et al., 2022).

This special issue of AP:AW, by bringing together contributions from experts in both Economic Psychology (and even Economics) and Environmental Psychology, strives to take steps towards adopting a more holistic approach. It aims to acknowledge the interdependence of environmental, social, and economic sustainability in order to genuinely pave the way for a comprehensive sustainable future.

Lastly, another significant challenge in this field involves **broadening the range of socio-cultural and geographical contexts** in which we can apply the psychology of sustainable consumption. Indeed, as indicated by the literature reviews mentioned earlier, there is a predominance of studies on sustainable consumption in WEIRD contexts (i.e., data from

samples and contexts referring to Western Educated Industrialized Rich and Democratic areas). This highlights the imperative need to conduct more research in less developed or underdeveloped regions of the world, which may exhibit distinct specificities in terms of values, cultures, politics, consumption patterns, environmental awareness, or even the availability of resources for sustainable consumption. The challenge in this case involves adapting theoretical models and constructs to suit the diverse socio-cultural and economic contexts: this is evidenced by some contributions in this Special Issue of AP:AW, a characteristic approach of Applied Psychology.

The proposed contributions are ordered from a starting point granted by those that focus more on broader and general concepts and models, to continue with those that strive for an applied transformation of the scientific knowledge into successful interventions in favour of more sustainable consumption behaviours across different cultures; up to the last contribution which focuses on training and education for psychologists preparing for boosting sustainability.

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Promoting Sustainable Consumption Behaviour

Linda Steg¹

Human behaviour plays a critical role in causing environmental problems. For example, driving a car contributes to climate change, meat consumption contributes to climate change and biodiversity loss, and using plastic products causes pollution. This implies that environmental problems would be reduced when people engage in sustainable consumption behaviour (IPCC, 2022). Changes in a wide range of consumption behaviours are needed to limit climate change to below 2°C (IPCC, 2022). Therefore, it would be important to identify and target general antecedents that encourage many different types of sustainable consumer behaviours.

Biospheric values are a relevant general antecedent of sustainable consumer behaviour. People with strong biospheric values strive to enhance the quality of nature and the environment, and are more likely to attend to and consider the environmental consequences of their actions (Steg, 2023). Indeed, the more strongly individuals endorse biospheric values, the more likely they are to acknowledge that their actions contribute to environmental problems, and to engage in a wide range of sustainable consumption behaviours (Steg, 2023).

Not only individual biospheric values, but also perceived biospheric values of others may affect sustainable consumption behaviour. Individuals are likely to internalise the goals (and thus values) of the groups they belong to, which motivates them to act in line with the perceived group values (Jans & Fielding, 2019). Different groups may be relevant in this respect, including community groups, organisations, and political parties and their leaders. For example, involvement in community sustainability initiatives motivates sustainable behaviour (Sloot et al., 2019).

Similarly, the more strongly employees and customers believe their organisation cares about protecting nature and the environment, the more likely they are to act sustainably (Ruepert et al., 2017; Van der Werff et al., 2021), because they internalise the values of their organisation (Sharpe et al., 2022). Also, political elite cues, such as press releases by political parties and roll call votes on climate change bills, can strengthen public environmental concerns and pro-environmental actions (Dietz et al., 2015; Jensen & Spoon, 2011).



Interestingly, perceived group biospheric values particularly encourage sustainable behaviour when individuals do not strongly care about nature and the environment themselves (Ruepert et al., 2017). These findings suggest that emphasising and communicating the extent to which different groups endorse biospheric values can be an effective way to motivate sustainable actions among individuals that are not strongly motivated to protect nature and the environment themselves. This is particularly relevant, as many people tend to underestimate the extent to which other people care about nature and the environment and support sustainable change (Bouman & Steg, 2019; Hanel et al., 2018; Sparkman et al., 2022). Correcting such misperceptions by communicating

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the extent to which others care about nature and the environment (as well) can promote sustainable behaviour, not only because people are motivated to act in line with the values of the group they identify with, but also because this may reassure them that others would approve of such behaviour, and that their own actions are useful (Bouman & Steg, 2019).

Yet, people may not engage in sustainable consumer behaviour, even when they strongly endorse biospheric values, and/or believe others strongly care about nature and the environment, when doing so is rather costly and inconvenient. Indeed, sustainable behaviour is not only influenced by motivational factors, such as values, but also by structural factors, such as which technology, products, services, infrastructures and facilities are available, and current price regimes, institutions, laws and regulations (Steg, 2023). Such structural factors define the relative attractiveness and feasibility of sustainable consumption behaviour. Hence, system changes may be needed to facilitate and enable consumers to act sustainably. Such system changes require actions of many different actors, including government, industry, businesses, trade organisations, the financial sector and NGOs. This implies that sustainable consumption behaviour is not the sole responsibility of consumers, but requires coordinated actions by a wide range of actors. Yet, consumers can influence the likelihood that system changes take place, by urging and pressuring other actors to take relevant actions, for example by voting for parties that are likely to implement environmental policies, by protesting to urge for pro-environmental change, by boycotting organisations or products that have a high negative environmental impact, by choosing suppliers with a good environmental performance, or by supporting NGOs that urge and negotiate for pro-environmental change (Steg, 2023). Notably, such system changes can have wide reaching effect, as they may not only make sustainable consumption more attractive and feasible, but also signal that others care about nature and the environment (thereby strengthening perceived biospheric group

values), signal which behaviour is (dis)approved of (i.e., change social norms), and reassure consumers that their own sustainable actions are useful because others will act sustainably as well.

System changes are more likely to be implemented when they are supported by the public. Public support will be higher when the changes or policies have more positive and less negative impacts for self, others and the environment, and when the consequences are distributed fairly across different groups in society (Drews & Van den Bergh, 2016). Moreover, public support for system changes will be higher if fair and unbiased decisions making procedures have been followed, and when the public is offered the opportunity to express their opinion, to have a voice and is treated with respect (National Research Council, 2008; Perlaviciute, 2021)

In conclusion, sustainable behaviour change is a collective responsibility that requires coordinated actions by many different actors, including consumers, businesses, industry, governments, banks and NGOs, among others. Clearly communicating that many actors care about nature and the environment, are motivated and willing to act, and already are taking actions could be critical to motivate all to take coordinated actions to mitigate the urgent environmental problems the world is facing today.

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Environmental Motivation: A driving force in decision making

Caroline L. Noblet¹

Why Environmental Motivation

Policy tools designed to promote sustainable consumption and behavior have often employed incentive interventions to provide financial or other external reasons for making pro-environmental choices. However, evidence suggests that these external reward systems may not lead to long-term behavior change (De Young, 2000). Successful behavioral interventions will need to account for differences among people including the potential that some individuals would prefer not to engage in sustainable behaviors, but rather are only responding in the short term to perceived social norms associated with external interventions. Thus, while some individuals are motivated to conform to these sustainable behavior social norms due to external pressure, others may be motivated by personal values to engage in sustainable behaviors. Differing levels and sources of motivation to engage in sustainable behaviors may be an important driver of decision making. My curiosity regarding the role of environmental motivation kicked off a 10-year research program. Here, we review three studies that examine the role that environmental motivation may play in sustainability decisions surrounding energy choices, charitable donations and responses to carbon dividend funds.

Motivation and Moral Licensing

An important open question in the sustainable behavior literature is the impact a prior sustainable behavior may have on an individual's "next" behavior. Research has repeatedly demonstrated that engagement in an *initial* sustainable behavior may act to create a positive or negative spillover - either enhancing or decreasing the likelihood of *future* sustainable choices. These spillover effects have been noted

across multiple sustainability realms including renewable energy support (Thøgersen & Noblet, 2012).

Researchers have long theorized and tested multiple explanations for moral balancing behavior. Skills may be learned when an individual engages in sustainable behavior, making other such behavior easier in the future (De Young, 2000; Thøgersen 1999). When an individual performs sustainable behavior, their self-identity may be strengthened and they may experience changes in attitude towards a behavior and related behaviors, yielding changes in an individual's values (Thøgersen & Ölander, 2002). In contrast, individuals may also view sustainable behavior as contributions of time, resources and restraint, where prior engagement in a sustainable behavior yields feelings that they have made their contribution. Explanations have also included the moral credits or moral credentials models (Miller & Effron, 2010). While a credit based model may allow a person to "earn" credits from past pro-environmental behavior, this also allows using these credits as payment for future transgressions. A credentials model theorizes that past behavior changes how future behavior is viewed, allowing past sustainable behavior to bolster pro-environmental credentials. However, the credential model also recognizes that individuals



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who engage in less sustainable behavior are building their own self-identity that does not include sustainable behavior. These latter individuals would therefore require external factors to force a change in behavior. Motivated by the potential for source of environmental motivation (i.e. intrinsic or extrinsic) to offer an additional contribution in explaining moral licensing behavior, we began to design and implement studies to test this theory.

In the first study examining the potential importance of environmental motivation, we simultaneously sought evidence of a relationship between recall of one's own prior sustainable behaviors and future sustainable choices (i.e. moral balancing) and investigated whether these relationships differed by perceptions of past behaviors, domain (here, an energy focus) and source of environmental motivation (Noblet & McCoy, 2018). We hypothesized that the source of an individual's environmental motivation could alter the impacts of domain-specific licensing. We embedded an experiment in mail surveys sent to residents of Maine, USA seeking their interest in supporting a (hypothetical) policy investing in renewable energy. The survey design allowed us to capture both stated prior environmental behaviors and source of environmental motivation (intrinsic and extrinsic) on a novel scale. To our great interest, we did find evidence of domain-specific licensing but only for individuals low in intrinsic motivation. That is, individuals *low* in intrinsic environmental motivation, who previously reported sustainable energy behaviors, were statistically *less* likely to support the energy policy scenario posed to them. In contrast, our *high* intrinsic environmental motivation respondents were *more* likely to support the scenario, even if they had engaged in sustainable energy behaviors previously. These exciting findings indicated that environmental motivation may explain conflicting licensing behavior!

Motivation and Response to Environmental Valuation Information

In efforts to reach across a heterogeneous society, with very different backgrounds and desires regarding sustainable behavior, we see information becoming an important behavioral change tool. The use of economic valuation information for the environment, often in the form of ecosystem service valuation, has grown in popularity particularly among environmental nonprofits seeking contributions to their respective causes. However, concern exists that expressing the value of natural resources in monetary terms may 'crowd out' support for the environment and erode intrinsic motivations to support the environment (Neuteleers and Engelen, 2015). Those in favor of using valuation information hope that the information would encourage those already engaged (i.e. past donors) to continue their contributions and simultaneously entice others to begin donating. Importantly, it is likely that those who supported the environment in the past through donation are more intrinsically motivated to support the environment. Those who did not make charitable donations in the past are likely to have lower intrinsic motivation. If motivation crowding is indeed occurring with the provision of economic valuation information, we should expect to see that those who donated towards the environment in the past experience decreases in intrinsic motivations as a result of exposure to the information.

In the second study examining the potential importance of environmental motivation, we carried out a lab and natural field experiment focused on charitable donation in Maine (Goff, Noblet & Anthony, 2021). Participants in our lab control group received a narrative explaining the benefits of Maine's public lands and environmental resources, while our treatment group received this narrative plus economic valuation of a resource and then were asked to make donation decisions. Participants in our natural field experiment received a letter requesting funds for our non-profit partner and an infographic, where the infographic for those in the treatment group contained valuation information. In the lab experiment, respondents in our treatment group who had donated in the

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past 12 months to an environmental cause reported a higher intrinsic motivation than those in the control (though we find some interesting lab-field gaps that require additional research). We were delighted to find that once again, environmental motivation appeared to play a role in decision making, this time in processing information.

Motivation, Moral Licensing and Information - Response to Carbon Dividends

In continued efforts to address our world's reliance on fossil fuels, decision makers have begun to propose the initiation of Carbon Taxes, and a related Carbon Dividend Trust fund which would return funds to citizens to offset higher energy costs, but currently there would be no restrictions on how individual households may spend their funds. The potential thus exists for the Carbon Dividend Act to yield moral licensing. On the hopeful side, previous literature has noted that people's behavior is often less self-interested (i.e. more prosocial) when they have experienced unexpected compensation or a 'windfall'; but this may depend on the source of the funds where funds framed as a bonus are more likely to be spent, in comparison to rebates or refunds (Epley & Gneezy, 2007). To simultaneously test potential relationships between stated uses of windfall funds and (a) future sustainable choices (i.e. moral balancing), (b) information about the source of funds and (c) environmental motivation, we designed a third study examining the potential importance of environmental motivation (McDermott & Noblet, 2023). With a U.S. resident sample, we provided participants with information about receipt of funds (varied amounts) under three conditions: tax refund from the government, subsidy from a sustainable energy non-profit or no information on fund source. Respondents then noted their intended use for the windfall funds. We expected negative spillover behaviors from the windfall where participants who stated an intention to spend the funds on environmental and energy projects would then be less likely to agree to engage in future sustainable actions. Our expectations were

driven by the literature on information processing and sustainability behavior. The Attitude Accessibility Model (Bargh, Chaiken, Govender, and Pratto, 1992) notes that participants whose attitudes toward the environment are more salient will have their environmental attitudes activated by information related to the environment, such as information about the source of their funds. Cognitive accessibility models note that when an individual 'looks back' at their prior behavior the ease of accessing past environmental choices and linking them to current information may play a key role in explaining sustainability behavior (Sintov, Geislar and White, 2019). We also note that internal environmental motivation may be considered a form of this accessibility.

Environmental motivation was key to explaining the findings of this study. Internally motivated respondents in part drove a significant 'source of information' finding, when faced with the subsidy funder source were more likely to state future engagement in Sustainable Transportation. Internally motivated individuals also increased their willingness to participate in non-transportation related sustainable behaviors, supporting the prior research that individuals with high internal environmental motivations are less likely to exhibit moral balancing behavior. In contrast, a higher compensation amount led externally motivated individuals to report a higher rate of Sustainable Transportation Behavior intentions confirming that these individuals respond to external incentives. Thus it appears the environmental motivation helps to explain moral balancing choices and responses to information.

Conclusions and Call for Future Work

Taken collectively, the above work indicates that environmental motivation may play an important role in explaining the conflicting information on moral balancing and heterogeneous responses to sustainability information across a suite of sustainability choices. For policy makers, the role of motivation is particularly important as sustainability policies that may simultaneously employ informational campaigns

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intended to tap into pro-environmental motivation and external incentives are considered. Important future work could improve our understanding of why some individuals hold high internal motivation for sustainable behaviors, but others experience high external motivation.

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The role of consumer goals for pro-environmental behavioral spillover

John Thøgersen

Pro-environmental behavior can “spill over” to other behaviors sharing the same higher-order goal (Maki et al., 2019; Thøgersen & Crompton, 2009). Theories on goal-directed behavior (Fishbach et al., 2006; Kruglanski et al., 2002) and self-efficacy (Bandura, 1982) predict positive spillover between different behaviors that are instrumental for the same goal, such as mitigating climate change or a circular economy.

To illustrate the importance of consumer goals for pro-environmental behavioral spillover, I present a recent study showing that recycling makes a person more likely to also buy circular products, and to some extent also vice versa (Stangherlin et al., 2023). In this study, we examined the spillovers between these two behaviors, which can in principle be both positive and negative (Maki et al., 2019; Thøgersen & Crompton, 2009).

A number of different theories suggest either positive or negative spillover between different pro-environmental behaviors (Truelove et al., 2014). Both recycling and buying circular products are instrumental for achieving circular economy goals such as waste reduction and saving resources and therefore we assumed that they are both at least partly motivated by these goals. Theoretically, the performance of a behavior could both increase and decrease the likelihood of performing another behavior sharing the same higher-order goal (Truelove et al., 2014). Most spillover research has found positive spillover effects, where one behavior increases the likelihood of another behavior (Maki et al., 2019), but sometimes negative spillover has been found, reducing the total environmental benefits (Sorrell et al., 2020). Hence, it is important to consider when and why positive or negative spillover effects are likely to occur (Truelove et al., 2014).

The most commonly cited explanation for negative spillover between pro-environmental behaviors is “psychological licensing,” suggesting that a “good deed” can grant a person some



slack concerning future behavior (Miller & Effron, 2010). For example, individuals may feel that if they recycle they get a “moral license” to not buy products with reused materials (Mazar & Zhong, 2010). However, there is limited evidence of psychological licensing leading to negative spillover between pro-environmental behaviors (Gneezy et al., 2012).

Fishbach and Dhar (2005) proposed a different mechanism that might lead to negative spillover namely that perceived progress regarding the attainment of a goal tends to reduce further effort toward that goal. They also proposed a mechanism that might lead to positive spillover, namely that actions expressing goal commitment can reinforce the strength of the goal and increase further efforts toward the same goal. This implies that the likelihood of negative versus positive spillover depends on whether the actor frames the behavior in terms of progress towards the attainment of a specific goal or in terms of commitment to a superordinate goal (Fishbach et al., 2006). Similarly, Thøgersen and Crompton (2009) argue that positive spillover is likely between behaviors that consumers perceive as complementary and negative spillover between behaviors perceived as substitutes.

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Regarding recycling and buying circular products, this implies that when individuals are focused on a superordinate goal, such as waste reduction or environmental protection, for which several behaviors are instrumental, they are likely to view these behaviors as complementary, and thus positive spillover between them is likely. However, if they are focused on their successful goal achievement, this may reduce further efforts toward the same goal.

Note, however, that whereas the first of these two propositions seems uncontroversial, the second one is not. Others have found that perceived successful action toward a goal increases perceived goal efficacy and therefore may lead to positive spillover effects (Staples et al., 2020).

Goal theory proposes that individuals' many interconnected goals are mentally represented as a goal system (Kruglanski et al., 2002). A specific behavior may be relevant for many goals and many behaviors may be relevant for the same goal (Bagozzi & Dholakia, 1999). Hence, goal theory suggests that people are likely to make mental associations between two behaviors sharing the same goal, such as recycling and buying circular products (Dhar & Simonson, 1999; Lanzini & Thøgersen, 2014). This inference is supported by research finding that positive correlations between pro-environmental behaviors can be accounted for by their link to the same superordinate pro-environmental goals (Sharpe et al., 2021; Thøgersen & Ölander, 2006).

When behaviors are instrumental for the same goal, commitment to this goal should increase the likelihood of positive spillover between the behaviors (Fishbach et al., 2006). Both recycling and buying circular products are solutions to waste problems and share the goals of waste reduction and saving resources, and, for the individual, buying circular products supports recycling (Hamzaoui-Essoussi & Linton, 2014; Jacobsen et al., 2022). Consistent with this, in a two-wave panel study in two countries (Denmark and Portugal), we found that individuals who recycle tend to increase their purchase of circular products.

We also found that individuals who purchase circular products have a (weak) tendency to increase their recycling in Portugal. In addition, we found that the more individuals have performed the two behaviors in the past, the more important are resource conservation and waste prevention goals to them (goal commitment) and the more successful they feel regarding waste prevention and resource conservation (perceived goal progress). And the more important these goals are to them and the more successful they feel with respect to these goals, the more they perform the two behaviors in the future. Hence, we conclude that the spillover between the two circular economy behaviors is due to doing one of them activating or reinforcing waste prevention and resource conservation goals that are shared by the two behaviors and reinforcing perceived goal efficacy (i.e., perceived success in striving for the goal). Hence, at least in this case, pro-environmental behavioral spillover could be explained by the first behavior affecting how important a goal shared by the behaviors in question is to the actors (goal commitment) and how effective they feel they are in their striving for the goal (perceived goal progress).

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Using Behavioral Insights to Promote Sustainable Consumer Decisions

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Abstract

A shift towards more sustainable consumer behavior is a necessary condition for a successful transition to net zero emissions. However, psychological barriers related to bounded rationality can hinder sustainable decisions. Behavior change interventions based on choice architecture (or “nudging”) take these limitations into account and aim to promote sustainable consumer behavior by (re)designing the physical, social, or psychological environment. Here we illustrate the potential of different types of choice architecture interventions to promote more sustainable consumer decisions. Interventions that aim to overcome (i) consumers’ limited access to or understanding of decision-relevant information, (ii) consumers’ limited capacity to evaluate and compare the different choice options, and (iii) consumers’ limited attention and self-control all can result in more sustainable consumer decisions. However, more research is needed to consolidate and quantify the real-world potential of choice architecture interventions in promoting more sustainable behaviors, in particular by accounting for the observed effect size heterogeneity and publication bias in the literature.

Climate change increasingly reveals its devastating effects on human lives all over the planet. Extreme weather events such as wildfires, floodings, hurricanes and droughts are documented at increasing frequency and scale, causing material damages, migration, and death (IPCC, 2023; WMO, 2020). Scientific evidence leaves no doubt as to the anthropogenic causes of climate change: emissions of greenhouse gases, in particular from burning fossil fuels, are the main contributor to global warming (IPCC, 2023). Public administrations have started implementing



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a wide range of climate policies, such as supporting renewable energy production and sales of electric vehicles, to curb carbon emissions. However, current efforts remain insufficient to reach ambitious emission reduction targets on time (Matthews & Wynes, 2022).

Research suggests that the insufficient effectiveness of existing climate policies may partly be explained by the neglect of the role of the individual, its psychology and behavior, in the transition to a net-zero society (Stern, 2011). Individuals can play a central role in climate mitigation by adopting behaviors that directly and indirectly lead to emission reductions (Creutzig et al., 2018; Nielsen, Nicholas, et al., 2021). Shifting behaviors related to the consumption of goods and services towards low emission options provides a particularly important opportunity to rapidly reduce direct greenhouse gas emissions (White et al., 2019). It has been estimated that about 20% of direct emissions could be avoided by adopting available low-emission technologies and changing some daily behaviors, which would result in a reduction of

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up to 7.4% of U.S. total emissions (Dietz et al., 2009). The mitigation potential of shifting consumer demand toward more sustainable alternatives has been estimated at between 41% and 78% across the sectors of industry, food, land transport, and building (Creutzig et al., 2022).

However, individuals are often slow and hesitant to adopt low-emission behaviors and technologies. This phenomenon is extensively explored by research in environmental and consumer psychology (Nielsen, Clayton, et al., 2021; Steg, 2023; Thøgersen, 2021). This research has in particular underlined the influence of bounded rationality on sustainable consumption and behavior (Cinner, 2018; Dietz, 2014; Weber, 2017). In contrast to rational agent models of decision making, which assume that individuals base their decisions on stable preferences that maximize their self-interest (i.e., utility; von Neumann & Morgenstern, 1944), bounded rationality acknowledges that individuals' ability to make rational decisions is only limited (Kahneman & Tversky, 1984; Simon, 1955). Limited time, limited access to information, and limited cognitive capacities frequently oblige deciders to rely on imperfect information processing in the form of heuristics. As a result, cognitive biases and specific characteristics of the decision context can greatly influence our judgments and decisions (Gigerenzer & Gaissmaier, 2011; Lichtenstein & Slovic, 2006).

The importance of accounting for boundedly rational reasoning to understand sustainable consumption has been extensively demonstrated. For example, individuals have been shown to refrain from the higher upfront costs of more efficient technologies, even if they would be more advantageous for them (and the environment) in the long run (Kaenzig & Wüstenhagen, 2010). Moreover, when thinking about how to save energy in their homes, consumers more readily think of curtailment behaviors (e.g., turning the light off), but neglect the much higher impact of energy efficiency investments such as improving their home isolation (Attari et al., 2010). So, while individuals may in principle be motivated to choose sustainably,

often their cognitive shortcomings prevent them from aligning their actions with their goals.

Over the last two decades, researchers and policy makers have explored the potential of behavior change interventions based on choice architecture (or "nudging"), which take these limitations into account and aim to change behavior by (re)designing the physical, social, or psychological environment in which people make their decisions accordingly in order to promote specific decision outcomes while preserving freedom of choice (Thaler & Sunstein, 2008). Drawing on more than 200 studies reporting over 440 effect sizes, we recently provided a comprehensive meta-analysis of the effectiveness of choice architecture interventions (Mertens et al., 2022). Across different types of interventions and across diverse behavioral domains such as environment, health, food, and finance behavior, the choice architecture interventions were found to result in the desired overall behavior change with a small to medium effect size (Cohen's $d = 0.43$).

These interventions can moreover be categorized based on the specific psychological barriers they address (Münscher et al., 2016). For instance, individuals' decisions may be suboptimal because of limited access to or understanding of decision-relevant information. Choice architecture interventions based on providing decision information try to counter this psychological barrier by increasing the availability, comprehensibility, or personal relevance of information. For example, individuals may have only a limited understanding of the amount of energy they consume in their household, and even when they are provided with objective energy consumption information (i.e., in kWh per year), this information may not be very meaningful to them. Revealing household energy consumption while at the same time increasing the meaning of this feedback may therefore drive individuals to save energy. The effectiveness of this approach was demonstrated in a large-scale field trial comprising around 600,000 households from across the United States (Allcott, 2011). While households in the control condition received their

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regular electricity bill, households in the treatment condition additionally received information about how their energy consumption compared to that of similar neighbors, summarized in a rating (above average = “Great JJ, about average = Good J, and Below average). This social comparison, in combination with personalized energy saving tips, reduced energy consumption by an average of 2% which was estimated to be equivalent to a short-run electricity price increase of 11 to 20% (for heterogeneity analyses see Allcott & Rogers, 2014; Andor et al., 2020).

Decisions may moreover be impacted by a limited capacity to evaluate and compare the different choice options presented to a person. Decision structure interventions aim to address this barrier by altering the utility of choice options through their arrangement in the decision environment. For instance, when cognitive resources are limited due to time pressure, multi-tasking, or simply a low prioritization of the decision at hand, individuals tend to stick to the status quo that does not require them to actively take a decision. Choice defaults – probably THE most effective choice architecture intervention – leverage this tendency: preselecting a green electricity tariff as a default choice instead of a tariff with a conventional energy mix increased the proportion of individuals and businesses signing a green electricity tariff from 10% to about 80%. This shift was estimated to avoid up to 90% of energy-related household CO₂ emissions in countries where fossil energy has a considerable share in the conventional energy mix, as for example in Germany (Liebe et al., 2021; for a heterogeneity analysis by socio-economic status see Ghesla et al., 2020).

The implementation of concrete decisions and intentions may suffer from limited attention and self-control. For instance, individuals may value environmental protection and may be inclined to behave pro-environmentally, but may lose focus of this general goal in a specific situation and therefore take decisions that are not aligned with their goals. Choice architecture interventions providing decision

assistance aim to address this psychological barrier by facilitating self-regulation. Reminding individuals of their goal to be mindful of the environment, or facilitating their commitment to a specific sustainability target may help them realign their actions with their goals. Research demonstrated the success of this approach in a hotel context, where the daily replacement of towels can be an important driver of energy consumption (Baca-Motes et al., 2013). In order to increase the reuse of towels, some hotel guests were prompted at their arrival to commit to saving energy and water by reusing their towels and were provided with a lapel pin to symbolize this commitment. In comparison to a control group, hotel guests having committed to reusing their towels during their stay were over 25% more likely to hang at least one towel for reuse, increasing the total number of towels hung by over 40% (Baca-Motes et al., 2013).

When comparing the effectiveness of interventions from the three categories, we found that interventions providing decision information and decision assistance showed an overall somewhat smaller effect on behavior change than interventions targeting decision structure. One possible explanation for this difference is that decision structure interventions require less elaborate information processing, while decision information and decision assistance interventions require the evaluation of the presented information in terms of individuals values and goals (Mertens et al., 2022). In addition, the meta-analysis identified a number of gaps and challenges in the choice architecture literature. Despite the inclusion of grey literature, the analysis indicated the presence of publication bias, with an overrepresentation of interventions that found a positive effect on behavioral change (Mertens et al., 2022). Although the positive effect persisted when applying corrections for publication bias (except in a reanalysis by Maier et al., 2022), the findings do not allow for predictions about the success of specific intervention strategies in novel contexts. Moreover, the analysis shows considerable heterogeneity in the effect sizes of interventions, and more research is needed to investigate

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the underlying processes of choices architecture interventions. Addressing these gaps and facilitating the publication of unsuccessful interventions will be crucial to make the field of choice architecture research continue to improve and grow.

In an effort to tackle the psychological barriers to positive behavioral change, the field of choice architecture research has received considerable attention over the past decades from both research and practice. The need for this trend to continue with a focus on sustainable behavior, in the domain of consumption behavior, but also citizen, investor, and organizational behavior (Nielsen, Nicholas, et al., 2021), is greater than ever, to ensure a successful net-zero transformation.

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Marketing Sustainability: Designing Appeals for Sustainable Consumer Behavior

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Human behaviors are leading to substantial biodiversity loss as well as ecosystem degradation and instability (IPCC, 2022a; Lenton et al., 2019; Ripple et al., 2014; Schill et al., 2019; Steffen et al., 2019), and are largely triggered by activities at the individual and household levels (Dubois et al., 2019; Rockström et al., 2009; Steffen et al., 2015). In fact, individual- and household-level consumption patterns around housing, transportation, food, and material goods account for over 60% of global greenhouse gas emissions (GHG) (Hertwich & Peters, 2009; Ivanova et al., 2016). Changing daily consumption decisions can greatly mitigate disastrous climate change. As suggested in the Avoid-Shift-Improve model (Creutzig et al., 2021), climate-change mitigation could be pursued through a wide breadth of behaviors—avoiding highly emitting behaviors (e.g., curtailing material consumption), shifting to more sustainable alternatives (e.g., adopting electric vehicles), and improving the efficiency of existing behaviors (e.g., recycling). The grand goal of avoiding environmentally harmful behavior and shifting to pro-environmental behavior is arguably the most pressing goal of this century (Chapman, 2012; IPCC, 2022b; McKenna et al., 2020; Peters et al., 2012).

Individuals can engage in pro-environmental behavior in various roles they may hold, including citizen, investor, employee or manager, and even role model (Balmford et al., 2021; Nielsen et al., 2021), with some socio-demographic groups being more impactful in these roles than others (Nielsen et al., 2021). However, all individuals hold frequent, environmentally consequential opportunities to engage in pro-environmental behaviors as consumers. Consumer decision making includes purchasing decisions, use and maintenance decisions, as well as discarding



decisions. My own research (Ozanne et al., 2020), as well as others' (Font Vivanco et al., 2022; Meshulam et al., 2022), shows that consumers have substantial environmental impact in various consumption decisions that span the marketing value cycle. For example, consumers not only choose whether to buy efficient or high-quality products, they also choose whether to rent those products instead of purchase them, and whether to repair, return, share, or discard these products (Luchs & Mick, 2018; Ozanne et al., 2020).

Importantly, throughout the marketing value cycle, marketing appeals can be designed to promote desired sustainable consumer behaviors. This endeavor, if successful, has three critical contributions: (1) building and expanding psychological theory (particularly in the domains of environmental, consumer, and economic psychology), (2) developing recommendations for marketing and social-marketing professionals, thus supporting good practice in the field, and (3) reducing consumers' harmful environmental impact and supporting lifestyle changes that enhance environmental protection.

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My own work has examined sustainable consumer behaviors across the marketing value cycle, designing and testing appeals that support avoidance, shifting, and improvement consumer behaviors. For example, in a multi-national study with a majority of European participants, my colleagues and I assessed different intervention appeals to encourage avoidance behavior—the curtailment of material consumption (Herziger, Berkessel, et al., 2020; Herziger et al., 2017). The research specifically assessed whether biospheric or egoistic appeals (de Groot & Steg, 2007; van den Broek et al., 2017) were more effective in promoting consumption curtailment in a sample of self-identified over-consumers. In a controlled lab study, we found that biospheric appeals (e.g., environmental protection) were ineffective in increasing engagement in consumption curtailment, even for highly biospheric participants. In a follow-up field study, the same appeals were tested in a week-long mobile intervention and revealed that biospheric appeals were no more effective than a control condition in promoting behavior change or increasing participants' motivation to curtail their consumption. Conversely, we found that egoistic appeals (e.g., reduce stress) increased participants' motivation to curtail their consumption (Herziger, Berkessel, et al., 2020). These findings suggest that appeals for avoidance behavior—such as avoiding excess material consumption—may benefit from egoistic framing, and that “green” messaging is not always effective.

In a separate stream of work, I examined experiential appeals that could shift consumers toward the adoption of sustainable product alternatives. Namely, my colleagues and I tested the influence of a vehicle test-drive in shifting behavior—promoting the adoption of electric vehicles (Herziger & Sintov, 2023). The study was conducted with a US-sample of drivers, and again was designed to support the reliability and ecological validity of the findings by integrating lab- and field-study designs. This research demonstrated that testing a novel green product, such as an electric vehicle, can lead consumers to express a product-congruent and desired identity (e.g.,

early technology adopter), which in turn makes that identity more salient to the consumer and promotes identity-congruent behavior—product adoption intent (Herziger & Sintov, 2023). This research also advanced theory by extending Identity Based Motivation Theory (Oyserman, 2009) and clarifying the understanding of the symbolic value in electric vehicles (Belk, 1988; Richins, 1994; Schuitema et al., 2013).

In yet a third stream of research, I focus on improving the efficacy of current consumer behaviors, examining appeals that could increase appropriate and effective recycling (Herziger, Donnelly, et al., 2020; Herziger et al., 2023). In a recent project, for example, we examine firms' engagement initiatives as appeals to increase consumer participation in take-back programs (Herziger et al., 2023). Such programs appeal to consumers to return their used products and packaging to be re-introduced into the firm's production cycle, thereby benefiting the firm's financial and sustainability goals. Across four lab and online studies conducted in the US, we used incentive-compatible designs through either real-behavior or consequential choices to measure participation in take-back programs. We find that inviting consumers to vote for what their recycled product will become increased their sense of meaningful goal attainment and empowerment, subsequently increasing participation in take-back programs. However, when voting did not allow recycled products to be transformed into a different product (e.g., transforming a used plastic bottle into another bottle, rather than a pen or park bench), consumers perceived their participation to be less meaningful, mitigating the effectiveness of the take-back appeal. Thus, we offer the practical implication that the success of firms' material recovery campaigns could be improved by consumer voting but is highly dependent on the choice sets offered to consumers.

Finally, my research, as well as others', offers the insight that designing appeals for sustainable consumer behavior entails understanding broad and fundamental drivers of consumer behavior. For example,

understanding consumer habits (Herziger & Hoelzl, 2017; Verplanken & Wood, 2006; Wood & Neal, 2009) as well as the impact of sustainable behaviors on consumers' subjective well-being (Binder & Blankenberg, 2017; Herziger, Claborn, et al., 2020; Verhofstadt et al., 2016) is pertinent to designing effective appeals. By focusing on a breadth of behaviors (Avoid-Shift-Improve), and using a trans-disciplinary perspective that integrates psychology, marketing, economics, and public-policy disciplines, research could greatly contribute to promoting sustainable behavior change.

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Driving Sustainable Consumption for a Better Future: Lessons learned from a developing country perspective

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Sustainable consumption matters!

The triple planetary crisis - climate change, biodiversity loss, and pollution are mainly caused by unsustainable patterns of production and consumption. The wellbeing of people and achieving the Sustainable Development Goals (SDGs) are threatened by these crises and the associated environmental deterioration. To overcome such threat, in recent years, the notion of *sustainable consumption* has become a top priority for the academicians, practitioners and policy makers. Overall, it promotes maintaining a balanced consumption pattern that is desirable for a sustainable development in all aspects - economically, socially, and environmentally.

In most cases, the notion of sustainable consumption is equated as green consumption. There are plenty of studies focused on ecological behavior, green purchase behavior, and pro-environmental behavior which mostly highlight the environmental aspect of consumption (Quoquab & Mohammad, 2017). However, it goes beyond of the environmental concern. Based on the extensive literature search and Oslo Symposium discussion output which was held in 1994, Quoquab and colleagues (2019, p.796) considered sustainable consumption as “socially and environmentally concerned way of buying, using and disposing goods and services. It advocates for considering quality of life by adopting wise and careful consumption pattern as well as efficient use of goods and services. While it meets the basic needs of the present consumers, it does not jeopardise the need of the future generation.”

Sustainable consumption is an integral part of sustainable development. For any nation, sustainable development will be hampered from achieving its desired state until sustainable consumption is guaranteed. It urges a paradigm shift from the current excessive consumption pattern towards a more environmentally conscious and future-focused consumption. It is such an issue that requires understanding the phenomenon more detail to its depth and breadth. While the concept of sustainability is in the centre of discussion in developed nations, it is neither widely understood nor well explained in developing countries. In this paper I attempt to highlight some basic findings that are related to the sustainable consumption based on a South-East Asian Country perspective like Malaysia.



Drivers of sustainable consumption – a developing country perspective

Though several studies attempted to explore the factors that affect sustainable consumption, what drives sustainable consumption is still not fully unveiled. Many studies have been conducted on developed country perspective, and much more studies need to be conducted based on developing country

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perspective. The factors that are found to drive sustainable consumption can vary based on different industry, country and cultural contexts. As such the findings are inconclusive which call for more research to be conducted to understand it better.

Certain psychological theories such as attribution theory, stimulus-organism-response (S-O-R) theory, theory of planned behavior (TPB), value-belief-norm (VBN) theory help explaining what stimulates consumers to adopt sustainable consumption behavior and how they perceive this phenomenon. Based on the Malaysian context, scholars have investigated the drivers of sustainable consumption behavior in different industry contexts – from paddy industry to sustainable property development sector, tourism, organic food, green cosmetics, energy efficient appliances, single use plastic and second-hand clothing purchase. It is found that psychological aspects play significant role in this regard. Some of these psychological factors are briefly mentioned below.

Tourism industry

Although the tourism industry in Malaysia is booming, it also contributes to considerable environmental degradation because of the excessive use of natural resources, including energy and water. It is reported that hotels generate a huge amount of waste, including food, used soap and shampoo, bottles, linen and glasses which requires hotel guests to adopt a frugal purchase behavior. In examining the drivers of frugal purchase behavior, guided by S-O-R theory, Mohamed Sadom and colleagues (2022) found that environmental advertising and eco-labelling affect individuals' green attitude which in turn lead to hotel guests' frugal purchase behavior. On the other hand, Quoquab and colleagues (2021) found that tourists' psychological engagement matters the most in regard to the ecotourism context.

Agriculture industry

Agriculture is one of the crucial sectors that contribute significantly to the Malaysian economy. In

understanding the paddy farmers' environmental citizenship behavior, Chua and colleagues (2020) considered the VBN theory and found that environmental belief and pro-environmental personal norm are the main two drivers. Again, using TPB, in the context of organic food industry, Saleki and colleagues (2019) revealed that, attitude, subjective norm, perceived behavioral control, moral norm, self-identity, environmental concern, price consciousness affect organic food buying behavior.

Green cosmetics and nutricosmetics industries

In general, the cosmetics products are made of chemical compounds such as synthetics ingredients to increase the instant results on consumers' body. Thus, green cosmetics could be considered as the substitute to boost the health benefit for the long run. Likewise, nutricosmetics also can be a sustainable way to enhance the beauty since it combines "nutrition" and "cosmetics", which is considered as ingestible foods and dietary supplements. In regard to the green cosmetics and nutricosmetics industries, by considering VBN and social cognitive theory, Jaini and colleagues (2020) and Shahrin and colleagues (2020) found that values (altruistic and hedonic), pro-environmental belief, personal norm, compensatory health belief and environmental self-identity, perceived environmental responsibilities are the key psychological factors that affect pro-environmental behavior of consumers.

Home and electrical appliances and sustainable property development sector

Certain energy efficient home appliances (e.g., refrigerators and washing machines) can reduce greenhouse gas emissions, water usage, and the overall dependency on fossil fuels and oils which is beneficial to fight against climate change. Using attribution theory, to understand consumers' energy efficient home and electrical appliances purchase behavior, Sh. Ahmad and colleagues (2022) investigated the role of environmental quality awareness, green trust and green self-efficacy. Again, in the context of

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sustainable property development sector, using SOR theory Sivadasan and colleagues (2020) examined the impact of green branding positioning and environmental advertisement towards attitude towards environmental responsibility and green buying intention.

Single-use plastic bag usage

In the developing countries, use of plastic became a major concern. In managing and controlling the use of plastic bag, government of Malaysia has taken significant initiatives. Some of the major initiatives are not to offer any plastic bags or to charge 20 cents for each plastic bag while shopping in the supermarkets. It is found that in regard to avoid single use plastic, the most important factor is lack of awareness and inconvenience in using paper bag (or other environment free bags) instead of plastic bag (Quoquab & Mohammad, 2020; Saleh Omar et al., 2019).

Mitigating challenges

Myriad of advantages that are highlighted by academicians, practitioners, and policymakers around the world in favor of adopting sustainable consumption practices. It is being considered as a means for eradicating global poverty, among other things. Due to its importance and necessity, it is regarded as one of the main indicators for sustainable development and became an integral part of The UN's SDGs (Responsible Consumption and Production).

Unfortunately, the progress of adopting such behavior is still not much promising. This is mainly because, not many people are aware about the sustainable consumption phenomenon be it Malaysia or other developing countries. Based on a qualitative study Quoquab and Sukari (2017) found that there are five key factors that create barriers to embrace sustainable consumption behavior, namely ignorance, lack of clear policy and regulations, lack of awareness building programs and comfort in maintaining the traditional consumption practices.

Lack of awareness

The notion of sustainable consumption is not widely known among all Malaysians. Not only Malaysia, the people of most of the developing countries are not well aware about it. The socioeconomic structure of developing nations differs from that of developed nations. When individuals are to strive to get their basic rights, the thought about sustainability become less important. Due to their struggle for survival, individuals do not consider the environment or the welfare of future generations. Nevertheless, highly educated people are more concerned about it.

Lack of clear policy and regulations

Though the Malaysian government put emphasis on sustainability and SDGs in recent years, there are yet to be implemented any definite sustainable consumption policies. In order to educate the next generation about the value of engaging in such purchasing behaviour, the Malaysian government may consider incorporating a discussion of sustainable consumption into high school and college textbooks in order to make the new generations aware about the necessity of practicing such. Consumers are enticed to buy more by the appealing commercials, which goes against the idea of sustainable consumption. The inclusion of such a discussion in the early childhood textbook may give the right understanding about the importance for being careful in the consumption pattern since it is found that children are more likely to have a carefree consumption style.

Lack of promotional efforts

The policy makers should take social marketing campaign to educate the public about the negative effects of excessive consumption. In this case, consider opinion leaders might be helpful. Famous actors or musicians, for instance, might be considered to generate short-term buzz on national television networks regarding this subject. More coverage of it in the public media is needed to raise awareness among the greater public. Use of radio, TV, and social media can be benefiting in this regard. To illustrate this problem and raise awareness among children in their early stage of life, cartoon series could be

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produced.

Compliance with conventional purchase habit

Most of the Malaysians are too accustomed to the way things are and indulge excessively without considering how their actions can affect others. Reducing consumption (or being frugal) and/or adopting environmentally friendly behavior sometimes can cause discomfort. Sometimes

Moral disengagement

Sometimes individuals are not morally motivated to sacrifice or change for others. Thus, sustainable consumption can be hampered by the lack of moral engagement with the cause. Moreover, sustainable consumption entails a certain amount of expense. This is mostly because ecologically friendly products are likely to be more costly than conventional goods. As a result, those with lower income and big family might not find it alluring.

Conclusion

It is believed that consumers play key role in sustainable production and sustainable development. However, neither all consumers pay attention to it, nor they find this concept appealing; thus it remains an agenda for further discussion. Moreover, how this concept is understood and practiced in developed country differs from developing nations.

Certainly, sustainable consumption necessitates a systemic viewpoint where waste production, consumption, and disposal are all integrated into a single system. It demands a significant effort and a cultural shift. To make it happen, all sectors must work together). It is directed at everyone, including individuals, advertisers, and governments, and it targets all industries and all countries. While consumers must have control over and oversight over their daily consumption decisions, marketers must develop an effective business plan to speed up the adoption of sustainable consumption practises. Conversely, government must recognise and address the challenges

that prevent sustainable consumption from progressing.

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Creative Engagement with Future Scenarios as a Catalyst for Behaviour Change

Isabel Richter¹

Abstract

Engaging with the future helps us make smarter choices today, especially when it comes to sustainable development and tackling climate change. The anticipation of future consequences, positive or negative emotions connected to the future or goal setting processes make future thinking a crucial part of sustainable change. Collective creativity can evoke a feeling of individual and group efficacy and responsibility, strengthen social networks, and create a common language. Bringing both, future thinking, and creative collaboration, together to elaborate on specific solutions and actions can lead to substantial sustainable shifts, predominantly at the community level. When communities co-create solutions tailored to their distinct challenges, especially in regions like the Global South or among marginalized groups, they can feel empowered to become change agents. Insights from psychology can help maximising the effectiveness of bringing together future scenarios and creativity by integrating emotions, narratives and visuals and tailoring to local circumstances. This technique is also pivotal in promoting sustainable consumer decisions. I present qualitative and quantitative studies from Indonesia, Malaysia, the Philippines, Vietnam, South Africa, and Norway to illustrate the process, its effects and my theoretical and practical lessons learned for sustainable change.

Introduction

Future scenarios

Traditional scenario planning, as exemplified by institutions like the IPCC, typically encompasses elaborate timelines and detailed graphs. While the construction of these future scenarios is grounded

in scientific rigor, their presentation often overlooks the limitations of human perception and cognition, including cognitive biases (Richter et al., 2023). Empirical studies suggest that such intricately designed scenarios can be challenging to comprehend for lay people but also for scientists from other fields.



Furthermore, they might induce counterproductive emotions like reactance, making individuals to feel overwhelmed, disengaged, and powerless. The extended timeframes, such as those stretching to 2050 or the century's end, can be especially abstract, given the principle of 'psychological distance'—the cognitive gap individuals experience when relating to external concepts or events (Liberman et al., 2007; Maiella et al., 2020). While the primary aim of scenarios crafted by natural scientists and environmental economists is to inform global and national policies, neglecting psychological aspects of future visioning and communication can impede their effective reception by citizens and policymakers and diminish their potential impact.

This cognitive challenge is amplified in regions where meeting basic needs is paramount, as it is the case in many developing nations. A globally framed future scenario might lead to cognitive disconnect due to its vast geographic and thematic scope. The value of future scenarios lies in their ability to combine projections across multiple dimensions, offering a

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synthesized vision of potential futures. Thus, there's a pressing need to harvest the power of future scenarios, by rendering them more cognitively accessible, ensuring they are not only easier to process but also empower individuals.

Future scenarios are invaluable in visualizing sustainable consumption paths, pointing towards diverse choices consumers make. For instance, visualizing a world where vegan and vegetarian diets are not just commonplace, but the standard could encourage a shift in societal values and the environmental implications of dietary choices. Creating a future scenario where the market is dominated by sustainability labels could encourage consumers to pay attention to these labels in their own buying decisions. Another scenario could picture synthetic meat as a typical product and thereby showcase advances in food technology and changing consumer tastes. Future scenarios help us when to depict potential shifts in consumer behaviour, such as a world where sustainable products become the mainstream choice, or carbon-neutral transport is sought after. These scenarios not only capture possibilities but also stress the crucial role of both individual and collective decisions in shaping a sustainable future.

Creative engagement

Creative engagement refers to the production of novel and useful ideas by an individual or by a group of individuals working together" (Zhang & Bartol, 2010, p. 107). Engaging in creative activities has been shown to be related to positive emotions (Amabile et al., 2005), (long-term) engagement and the ability for problem-solving (Jindal-Snape et al., 2013). For instance, interactive engagement with environmental issues such as marine litter has been shown to effectively increase marine litter concern and awareness and reported actions to reduce marine litter (e.g. picking up litter, encouraging others) (Hartley et al., 2015).

Creativity and productivity can be bolstered by social interactions and teamwork (Rosso, 2014).

Additionally, social interaction can be a key factor of enjoyment (Fjællingsdal & Klöckner, 2017). A recent study also showed that people who are already engaged in environmental conservation groups were also confident that people and institutions could and would take effective action (Kácha et al., 2021). Finding solutions collectively most likely induces emotions such as hope and belonging which consequently elicit emotional flow from negative to positive emotions (Avry et al., 2020). This community spirit and emotional flow can serve as a springboard for behaviour change.

Creative engagement fosters innovative thinking, allowing communities to reimagine consumption patterns. By collaborating, individuals can conceptualize out-of-the-box solutions, such as products without packaging or envisioning self-sufficient communities. This collective brainstorming and ideation can drive sustainable consumption by challenging traditional norms and emphasizing alternative, eco-friendly lifestyles.

VisionLabs around the World

Future scenarios as well as collective, creative engagement by themselves are effective drivers of behaviour change processes. Thus, it is not surprising that the combination of both elements is found to be even more powerful. Over the course of six studies using different variants of combining future scenarios with collective, creative engagement, in the following called VisionLabs, I will illustrate methodologies, effects and practical implications. The studies are ranging from exploratory designs to controlled experimental studies, from qualitative to quantitative evaluation. All these studies have relations to sustainable consumption, be it in form of reducing plastic usage, sustainable fishing methods or alternative lifestyles in a more general perspective.

Study 1

The first study I would like to present was conducted on Selayar Island, part of the Sulawesi archipelago in

Creative Engagement cont.

Indonesia (Maharja et al., submitted). 24 young adult community members were given the autonomy to select their own creative activity, eventually deciding to produce three short films about the future. To support their effort, they were provided with a comprehensive workshop and all necessary filmmaking materials. The self-chosen themes for these films revolved around pressing environmental concerns: the rampant issue of littering and plastic pollution on the island, the exploration of alternative livelihoods in light of depleting fish stocks, and the challenges of water scarcity coupled with forest fires. Participant feedback illuminated several predominant themes. They emphasized future-oriented thinking, characterized by both concern and optimism. Group cohesion was evident in their collaborative spirit, shared responsibilities, and the balance between cooperation and free riding. The project seemed to bolster their self-efficacy, making them feel empowered with tangible solutions at hand. Emotions played a pivotal role, with participants expressing both positive and negative feelings about the future, spanning hope, fear, and anger. Notably, discussions frequently veered towards the ascription of responsibility, oscillating between individual selfishness and collective altruism. An encouraging outcome was the noticeable shift in behaviour following the project. Participants reported increased sustainable actions, like promoting eco-friendly habits and reducing littering. There was also a marked rise in their interest in learning about sustainable practices. Most significantly, their consideration of future consequences saw a notable upswing.

Study 2

To further substantiate the outcomes of the Selayar Island study, we undertook a parallel investigation in the coastal town of Kristiansund in Norway, involving 36 fifth graders (Löfström et al., 2021). Their chosen creative task was to gather beach litter and curate photo collages portraying the future. This

qualitative study, focused on plastic pollution, aimed to understand the perspectives of young adults. We adopted the “Nature In Your Face” (NIYF) methodology (Löfström & Klöckner, 2019), a departure from the gentle, gradual approaches traditionally believed to effect societal change. This workshop aimed to harness the power of disruption, thinking about positive and negative futures and fostering a space for co-creation. Our analysis revealed that the technique of combining future thinking and creative efforts in groups evoked potent emotions like fear and anger in the children, but also made them feel empowered and ready for change. Using these emotions as a catalyst, the workshop transitioned from framing the problem to the children innovatively “twisting” it by crafting their unique solutions.

Three salient themes emerged in the children’s discussions around plastic pollution such as their emotional reactions, their attitudes towards plastic, and their perceptions of where plastic misuse was most extreme. From a psychological standpoint, the themes mirrored phenomena like eco-anxiety, denial, cognitive dissonance, and a growing sense of self-efficacy. In conclusion, our findings suggest that VisionLabs can spark robust emotional reactions in children, subsequently channeling these feelings into collaborative ideation.

From the first two studies applying the VisionLabs methodology, we can conclude that participants in both settings were immersed in future-oriented thinking and emphasized the importance of strong group cohesion in their collaborative projects. Emotional responses, from hope to fear, were pronounced, reflecting deep connections to environmental issues. This emotional engagement bolstered a sense of empowerment and self-efficacy, spurring a sense of responsibility for instigating local change (see also Figure 1). These studies highlight the transformative potential of community-led, emotionally-charged initiatives in promoting sustainable behaviors.

Creative Engagement cont.



Figure 1: Overview over common themes emerging in study 1 (Selayar island, Indonesia) and study 2 (Kristiansund, Norway).

Study 3

In Study 3, the VisionLabs approach was quantitatively examined using a larger sample from the village of Taytay, Palawan, the Philippines (Richter et al., 2021). We recruited 109 high school students for a one-day workshop. Participants co-developed three future scenarios for their village: a realistic one (Business as Usual), an optimistic one (Vision), and a pessimistic one (Apocalypse). These scenarios were synthesized into narratives together with the researcher team, each featuring a fictional local protagonist created by the students. Subsequently, these narratives were visualized as detailed murals (refer to Figure 2). Using a 3x2 experimental design, each student group's interaction with the scenarios was measured twice. Selected variables are behavioural intentions, emotions, responsibility, self-efficacy, future thinking, and group cohesion based on findings from Study 1 and 2.

Results indicated that the emotional scenarios

(Vision and Apocalypse) enhanced behavioural intentions and emotional engagement. All scenarios prompted participants to reflect more on future consequences, reinforcing the idea of current actions influencing future outcomes. Notably, the Vision scenario had a pronounced effect on empowerment and behavioural intentions.

Study 4

In Study 4, the research design closely resembled that of Study 3, but with a modification to accommodate three different villages simultaneously, leading to a 3x3x2 experimental design (Nguyen et al., submitted). The focus shifted to the Cu Lao Cham Biosphere Reserve in Vietnam, where 78 adults from three distinct villages participated. The primary objective was to assess the psychological and emotional impacts of creative engagement. Unlike the previous study, participants opted for theatrical plays as their medium of creative engagement with the future. Results paralleled those of Study 3: emotional scenarios



Figure 2: Murals visualising three different future scenarios for the village of Taytay, in the Philippines

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enhanced intentions and amplified considerations of future consequences. Additionally, emotional scenarios fostered a heightened sense of empowerment and elicited positive emotions. Interestingly, negative emotions diminished in the worst-case scenario group, while they escalated in the Business-as-usual group. Two novel findings emerged from Study 4: participants felt the future was more imminent, as reflected by a decrease in the perceived number of years the future felt distant, and across all groups, there was a pronounced reduction in ambiguity regarding future outcomes.

Study 5

In Study 5, focused on the context of plastic pollution, stakeholders collaborated to produce narratives for two videos addressing plastic bag consumption in South Africa (Neef et al., 2023). Two videos were developed: one illustrating the current state (status quo) and another projecting a positive future vision (see Figure 3). These videos were presented to a representative cohort of 350 individuals. Post-viewing results indicated that watching both videos heightened intentions, bolstered positive emotions, and diminished negative feelings. Additionally, there was a noticeable increase in perceived behavioural control. However, a significant observation was the lack of change in the felt responsibility among viewers. This suggests that pre-made creative materials may not evoke the same depth of individual and collective responsibility as content self-produced, potentially due to the personal time and effort invested in the latter.



Figure 3: Snippet of the positive vision video on plastic bag consumption in South Africa

Study 6

In Study 6, centred in Borneo, Malaysia, the impact of a co-created, educational comic book on sustainable alternatives to dynamite fishing (see Figure 4) was examined both over time and across generations. A total of 240 participants were involved, comprised of 120



Figure 4: Front page of the co-created comic book *Lumba Lumba Pulanglah*, on sustainable alternatives to dynamite fishing.

young adults aged 15-18 and 120 of their family members. Approximately 70% of these family members were female and around 50% relied directly on fishing for survival. Key measures included knowledge acquisition, intention to advocate for sustainable fishing, and intention to discontinue dynamite fishing. Over time, the treatment group exhibited heightened knowledge and intentions. Furthermore, an intergenerational transfer of this knowledge and intention was observed. However, nuances emerged: lower-stake items and statements, such as discussing fish bombing with peers, resonated more with those not directly dependent on fishing. In contrast, more consequential items, like committing to stop using dynamite for fishing, displayed a 'boomerang effect.' Engaging with the comic book creatively was found to mitigate this backlash. This underscores the potential risks in challenging individuals on illicit practices without providing an open dialogue or avenues for solution.

What do we learn from this for sustainable behaviour change and sustainable consumption?

From the series of VisionLabs studies spanning diverse geographies and themes, several implications arise. Firstly, the inclusion of participants in the co-creation process fosters a heightened sense of ownership and connection to the project. The act of collaborating on meaningful projects like filmmaking, photo

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collages, theatre plays, and comic books enhances empowerment, strengthening both individual and collective self-efficacy. The focus on future thinking, whether through envisioning optimistic, pessimistic, or business-as-usual scenarios, deepens the participants' engagement and heightens their consideration of future consequences. Thinking about the future, both good and bad, makes participants reflect on how today's actions impact tomorrow, which can be applied to sustainable consumption. Reflecting on present consumption patterns in the context of their future ramifications can pave the way for more sustainable choices.

Each community is unique: An approach that works in one place might not work in another. For example, a fishing community in Borneo, Malaysia, has different concerns than young people talking about plastic waste in Norway. It's important to understand and adapt to these local differences.

Lastly, when working with sensitive topics, such as illegal practices, care is needed. If people feel attacked or judged, they might react in the opposite way to what's intended, like the 'boomerang effect' seen in Borneo. So, while using creative projects can inspire change, it's important to be respectful, listen to the community, and offer ways to talk about solutions together.

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Training Future Psychologists Able to Promote Sustainable Behaviours: Challenges and Opportunities

Guendalina Graffigna¹

The urgency to change consumer's behaviours

According to a report by the Food & Agricultural Organization (FAO, 2009), by 2050 the world population will reach 9.1 billion, 34% more than today and will increase mainly in developing countries. To feed this larger, more urban and wealthier population, it is estimated that food production will have to increase by 70%, particularly in the cereal sector (from 2.1 to 3 billion tons) and in annual meat production, which will have to increase by more than 200 million tons to reach the 470 million needed. Currently, the agri-food sector is responsible for 30% of global greenhouse gas emissions, a phenomenon that will increase following the growing demands for food and the massive use of vehicles for the transport of food in various countries. By 2100, global surface temperatures are projected to increase by 1.4° to 4.4° with severe ecosystem impacts. Climate change, in fact, increasingly threatens the planet, with unusual and extreme weather conditions, which involve not only adaptation difficulties on the part of living beings, but also alterations in the balance of dry-rainy seasons and the increase of weeds and of parasites (Intergovernmental Panel on Climate Change, 2021).

These challenges not only require a profound reconfiguration of production processes, which must become increasingly respectful of the environment and sustainable, but also suggest the need to operate a widespread education of consumers on responsible and sustainable consumption behaviors.

Thus, food consumption behaviors, health behaviors and lifestyles as well as “pro” environmental sustainability behaviors are crucial areas of analysis and intervention. It is therefore evident that psychological training is now necessary and a priority for future



professionals capable of understanding the behavior of citizens-consumers in a timely manner and of guiding awareness-raising and involvement initiatives. In particular, food consumption today constitutes an increasingly central area of individuals' lives, which is configured on the basis of individual experience, as well as social and organizational dynamics and the contexts of belonging. From the point of view of companies, the citizen-consumer is therefore not a mere target of technological innovation actions in the production chain but a key actor to be understood and involved for the effectiveness and sustainability of the production chain (FAO, 2020).

The understanding of consumers and their behaviors (such as the choice, preparation, consumption of food, as well as the management of waste connected to them) is an increasingly central element of the agri-food system. Consumers make their choices influenced by a complex set of cultural, socio-economic, political, psychological factors, but at the same time, with their behaviors, they influence the entire production chain.

Studies on consumption dynamics show that the citizen-consumer is increasingly interested and

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attentive in his choices and purchases in the food and health sector, concerned about the environmental impact of his lifestyle, open to experimenting with new foods but at the same time concerned and skeptical of certain product categories (e.g. agricultural genetics, meat substitute proteins, technological applications to agri-food production...).

In this area, psychologists who are experts in behavior analysis and modification can make an important contribution. In addition to the psychological intervention aimed at the individual, the actions that a psychologist can undertake can be contextualized at various social levels, including group, organisational, social and community interventions, as well as policy guidelines at local and national level.

But given these premises, *how to successfully equip of theoretical and technical skills future psychologists able to deal with such challenges? How to train a future generation of professionals experts in behavioural change in sake of better sustainable consumption and life styles?*

Current training offer in the area of sustainable consumption.

The urgency to professionally equip future applied psychologists able to deal with such global challenges drove us in reviewing the current training offer at the post bachelor level in the scope of behavioural change and consumer psychology.

More than 30 training proposals have been identified, mainly located in Europe, which can be categorized into four main areas (see fig. 1 for a selection of some exemplificative training programs open to psychologists):

- Psychology of marketing and consumption;
- Applied psychology (may include elements of technology);
- Food Psychology and nutrition (physiological, chemical and biochemical aspects) aimed at non-psychological professionals;
- Health Psychology.

Among the others, the MSc Behavior Change from University College London is a one-year postgraduate

Master's program that focuses on applying a systematic approach to behavior change in the social, health and environmental fields. It is aimed at graduates in the social or behavioral sciences and faculty represent a variety of disciplines, including psychology, behavioral economics, health informatics and public health. The strengths of the MSc Behavior Change are the synergy with a recognized research center in Behavior Change at the same institution. Another relevant two years program in the area is the Master's Program in Human Nutrition and Food-Related Behavior at the University of Helsinki. It has a strong multidisciplinary imprint and focuses on elements related to the physiology of nutrition and the psychological, sociological and cultural aspects related to food consumption, as well as the implications for environmental sustainability and public health. Among the strengths of this training proposal, is the focus on the theme of nutrition and food. Finally, worthy to be mentioned is the annual Master's program in Social, Health and Organizational Psychology of Utrecht University, with a high scientific and didactic quality

A new Master's program in Consumer Behaviours applied to food, health and environment.

As mentioned above, in this challenging context, psychology can deploy knowledge and methods capable of directing intelligence strategies on people's behavior, but also designing communication, awareness-raising and involvement interventions aimed at modifying such behavior in the direction of greater sustainability social and environmental. However, from our perspective, in this context not only the psychological skills to read and modify behaviors are important, but it is necessary to equip future professionals with knowledge and technical.

Those are the considerations that moved us to take the challenge of designing and launching a brand new international Master's Program for applied psychologists, expressly devoted to train future professional able to sustain behavioural change and better sustainable consumption. More into details, this new Master Program in Consumer Behaviour: Psychology applied to Food, Health and Environment is provided by the Università Cattolica del Sacro Cuore in

Training Future Psychologists cont.

Cremona (Italy) and it aims to train psychologists experts in understanding, predicting and changing consumption and health behaviors of individuals, groups and organizations. The graduate will be a professional psychologist capable of directing intelligence strategies on people’s behavior but also competent in behavioral change strategies aimed at promoting a positive change in consumption behaviors. They will also be able to deal with the planning of health promotion interventions and pro-environmental communication campaigns. They will also be able to promote and manage citizen’s engagement and participation processes.

In terms of employment opportunities, these professional figures will be variously employed in social and market research institutes, in manufacturing companies, in institutional contexts, in non-profit organizations, in foundations and consultancy companies, in social-health services.

From our perspective, the innovative value on the educational level will be to complement psychological knowledge, linked to the study of behaviors

and their modification, with the scientific-technical knowledge of Agricultural, Food and Environmental sciences according to a OneHealth logic, as well as advanced knowledge and skills of data analysis and management.

It is indubitably a big training challenge, but we truly believe it is worthy since as applied psychologists we need to orient our professional and academic activities in the light of the new the urgencies aroused by the context in which we operate.

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University	Country	Program Name	Scope	Lenght
	Finland	Msc Human Nutrition and Food-Related Behaviour	Nutrition and public health, environment, nutrition physiology. Social sciences applied to food choice	2 ys
	UK	Msc Behaviour Change	Health and behavior change	1 y
	NL	Msc Social, Health and Organisational Psych	Social influence, health promotion at work and in organisations	1 y
	UK	Msc Nutrition and Behaviour	Nutrition and health/pathology, neuroscience, physiology/biochemistry nutrition	1 y
	FR	Msc Physiological and psychological food choice determinants	Food sciences, physiology, chemistry, microbiology, nutrition	2 ys
	UK	Msc Marketing and Consumer Psychology	Marketing and Consumption psychology	1 y
	China	International Master of Applied Psychology(IMAP)Program	Engineering Psychology, Ergonomics, Social Psychology and Human-Computer Interaction (HCI) and User Experience	1 y
	Italy	Consumer Behaviours: psychology applied to food, health and environment	Applied psychology to food consumption, life styles and pro-environmental behaviours	2ys

Figure 1 - Selection of Master’s Programs in the scope of sustainable consumption

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