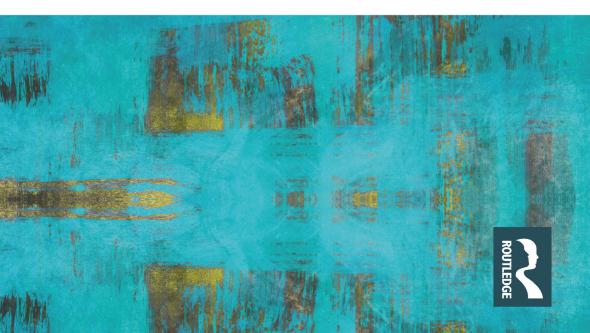


Routledge Explorations in Environmental Studies

# SATIRE, HUMOR, AND ENVIRONMENTAL CRISES

Massih Zekavat and Tabea Scheel



## Satire, Humor, and Environmental Crises

Satire, Humor, and Environmental Crises explores how satire and humor can be employed to address and mitigate ecological crises at individual and collective levels.

Besides scientific and technological endeavors, solutions to ecological crises must entail social and communicative reforms to persuade citizens, corporations, organizations, and policymakers to adopt more sustainable lifestyles and policies. This monograph reassesses environmental behavior and messaging and explores the promises of humorous and satiric communication therein. It draws upon a solid and interdisciplinary theoretical foundation to explicate the individual, social, and ecospheric determinants of behavior. Creative works of popular culture across various modes of expression, including The Simpsons, Last Week Tonight with John Oliver, and The New Yorker cartoons, are examined to illustrate the strong if underappreciated relationship between humor and the environment. This is followed by a discussion of the instruments and methodological subtleties involved in measuring the impacts of humor and satire in environmental advocacy for the purpose of conducting empirical research. More broadly, this book aspires to participate in urgent cultural and political discussions about how we can evaluate and intervene in the full diversity of environmental crises, engage a broad set of internal and external partners and stakeholders, and develop models for positive social and environmental transformations.

This book will be of great interest to students and scholars interested in environmental humanities, communication science, psychology, and critical humor studies. It can further benefit environmental activists, policymakers, NGOs, and campaign organizers.

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### Massih Zekayat and Tabea Scheel





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### 1 Introduction

### **Background**

Discussions about climate change have been on the rise in political and public spheres. Many associations, organizations, NGOs, and movements are dedicated to raising awareness about environmental crises and impending catastrophes. The media also regularly features stories on ecological problems. These attempts have been successfully translated into legislation in some countries around the world. Given the scale of the problem and its rate of aggravation, pro-environmental accomplishments, however, have been so far inadequate. While many people around the world are struggling with the consequences of climate change in their daily lives as in experiencing droughts, crop failures, floods, pandemics, and diseases, collective action has failed to proportionately and effectively respond to the problem. While some people make sacrifices, others continue to capitalize on natural resources or even manipulate the general sense of crisis to boost their economic or political gains.

Some world leaders may deny climate change, yet scientific evidence and our lived experiences provide concrete, overwhelming evidence for the urgency of ecological crises (see Intergovernmental Panel on Climate Change (IPCC) reports; https://www.ipcc.ch/reports/). Yet, previous attempts to convince citizens, corporations, and decision-makers of this threat have not yet been fully successful. Attempts to reduce CO<sub>2</sub> emissions, for instance, have been rather slow and less than effective as some countries are concerned about its impacts on their economic growth. As a species, therefore, we have failed to take timely and proportionate action to address the urgency of ecological crises.

Ecocriticism, later expanded into environmental humanities, was (post)humanities' response to the crises; however, much more remains to be done in the Anthropocene of fake news and post-truth. This book investigates the potentials of humor and satire to overcome the existing barriers that withhold citizens, corporations, and political elites from taking concrete, meaningful, and proportionate pro-environmental action. This approach is particularly timely as the world emerges from the COVID-19 pandemic: positive and

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enjoyable communication is more likely to engage the public at a time when much of society is fatigued by serious social and economic strife.

Scientific endeavors rarely avail themselves to the full diversity of resources and potentials proffered by arts and cultures. More specifically, engaging with imagination and topics germane to the experiential, affective, visceral, emotional, tangible, and aesthetic lives of individuals, and a willingness to engage with bottom-up and participatory methodologies to understand these topics can increase the actual impact of ecological and pro-environmental attempts. Humor and satire are among the topics that have been largely ignored in both environmental humanities and scientific endeavors despite their prevalence and multilayered appeals (Boykoff, 2019). While several disciplines, like psychology, have attempted to employ humor for the well-being of humankind, very little is done in order to investigate how humor can address and alleviate climate crises as momentous challenges that threaten the well-being of all species. This interdisciplinary and transdisciplinarity book aims to resort to literary and cultural studies, psychology, and communication science in order to illustrate how humor and satire can be employed to address ecological issues at individual and collective levels.

Most experts agree that attempts limited to scientific and technological fixes in technocracies are insufficient to address ecological crises and insist that solutions must entail cultural, political, social, and communicative reform to persuade people and policymakers to adopt more sustainable lifestyles and policies (Abrahamse, 2019; Center for Research on Environmental Decisions, 2009; Chatto & Feldman, 2020; Glotfelty & Fromm, 1996; Haraway, 2016; Heise, 2008; Hoffman, 2015; Kerridge & Sammells, 1998; Markley, 2012; Seymour, 2018; Walker, 2014). The uneasy relationship between ecological attempts and scientific and technological advancements has a clear ramification: science and technology are not enough to address and solve ecological problems; rather, they have caused them in the first place. This book contends that popular culture exerts an untested influence on ecological attitudes and the promotion/demotion of critical environmentalism. While consumerism can further exacerbate the ecological crises, other aspects of popular culture can be wisely employed for consciousness-raising and promoting ecological responsibility at individual and public levels. This is even more significant when considering the adaptive functions of humor and satire (Bergson, 1917; Boyd, 2004; Carrell, 2008; Carroll, 2004; Heintz & Ruch, 2018; Kozintsev, 2010; Lefcourt, 2001; Martin & Ford, 2018; McGraw & Warner, 2014; McGraw & Warren, 2010; Meeker, 1974; Morreall, 1983, 2008, 2009a, 2009b; Provine, 2000, 2012; Sørensen, 2016; Taels, 2011; Twark, 2007; Zekavat, 2017, 2022).

### Statement of the Problem and Objectives

In our pioneering attempt, we contend that satire and humor can be effectively employed to intervene in ecological and environmental issues. This book explores new ways to confront, address, and respond to key

environmental and ecological challenges, while avoiding the pitfalls of naïve environmentalism as in its metaphysics, its gender and racial politics, and its troubling relationship with colonial and neo-colonial histories. It aspires to actively participate in urgent cultural and political discussions about how we can evaluate and intervene in the full diversity of ecological crises, engage a broad set of allies, partners, and stakeholders, and develop alternative models for sustainable transformations. It seeks to put forth a more realistic picture of the problem without reducing its intricacies and looks for pragmatic, partial, and contingent solutions for ecological crises. More specifically, we will contend that cultural assumptions and productions play a significant role in the way environmental issues are conceptualized, represented, communicated, and treated. Given that humor and satire are prevalent in different cultures (for example, Chen & Martin, 2007; Kazarian & Martin, 2007; Weisfeld et al., 2011), we argue they should be wisely employed to advance ecological causes.

This holistic approach seeks four primary objectives. First, it strengthens knowledge capacity and fills knowledge gaps through making theoretical investigations on the determinants of human behavior at individual and collective levels, the gaps between the presence of these determinants and absence of behavior (that is, inhibiting factors), and the interventions that humor and satire are capable of making in this model. Second, it strives to suggest alternatives to anthropocentrism by acknowledging and integrating the symbiotic relationships between various species and diffusing agency through the ecosphere, while emphasizing the role of anthropogenic disruptions in the Anthropocene and eschewing from devesting Homo sapiens from their agency and responsibility. While underscoring personal factors that determine behavior, this book goes beyond individual psychology to include external factors (see chapters 3 and 4 for a full discussion).

Third, it proposes an alternative approach to pro-environmental communication. Focusing on humor makes it possible to propose an alternative to the prevalent dystopian and alarming messages to change environmental behavior. This alternative approach relies on the potentials of humor and satire to promote and facilitate pro-environmental behavior in a positive manner. Fourth, it facilitates a green, just, inclusive, and sustainable transition. The proposed model and methods can be employed to co-create pro-environmental messages with citizens, groups of interest, and pertinent stakeholders. They can be tailored to prominent local environmental challenges, the communities that have greater shares in causing and perpetuating them, the communities that suffer the most from them, and their contexts. The bottom-up approach in initiating just and inclusive transformations based on participation and engagement will embark societal and behavioral transformations that will benefit everyone and leave no one behind. Since humor and satire are ubiquitous in everyday lives of people, both citizens and public outlets including the media, NGOs, governing bodies, and systems of education can integrate these findings to raise consciences and mobilize collective action.

#### 4 Introduction

Transition toward sustainability as envisioned in the European Green Deal (EGD), European Climate Pact (European Commission, 2020a, 2020b), and United Nations' Sustainable Development Goals (SDGs, UN, 2021) inevitably requires the engagement and participation of both policymakers and the full diversity of citizens and stakeholders. As citizens are immersed in their communities, their behaviors are regulated by both internal and external factors, and their intersubjective relationships are mediated and regulated by social and cultural norms. Individuals are molded by biology and culture; they also (re)shape culture and their environment. All this is made possible by our embeddedness in the ecosphere. As a result, any sustained behavioral change inevitably requires transformations at individual and psychological levels, on the one hand, and at collective, societal, cultural, and political levels, on the other.

Such transformations are most effective when endorsed and enacted upon by all citizens. While the success of a transformative project depends on universal engagement and participation, all citizens do not enjoy similar privileges nor do they face comparable impediments and barriers. This adds another layer of subtlety and complexity to ecological attempts. People of different genders, sexual orientations, age groups, races, ethnicities, social classes, nationalities, and faiths fare differently in different contexts and have access to disparate sets of resources. However, a sustainable transformation is not possible without the participation and engagement of a wide diversity of citizens. In other words, a sustained green transformation inevitably requires equality, inclusion, justice, reckoning with, and amending injustices (see Romanello et al., 2021). Ecological issues cannot be separated from other contingent and contiguous issues; moreover, the notion of justice extends to environmental justice as underprivileged, underrepresented, and suppressed communities are more likely to be affected by ecological crises, and their members are more susceptible to their impacts.

Such a transition requires ambitious, holistic, and interdisciplinary research and innovation to instigate and maintain behavioral, cultural, social, and political sustainable transformations by considering contingencies among different communities. In other words, instead of prescribed (hypocritical) panaceas, transformations to a more sustainable, healthier, safer, and fairer world should rely on contingent solutions that, instead of excluding certain communities and deepening inequalities, cherish and encourage diversity and inclusion to ensure optimal citizen engagement and participation. Pro-environmental attempts, therefore, should entail subjective, social, and ecospheric implications to mitigate the footprints of Homo sapiens at individual and collective levels. Every community is to make sacrifices proportionate to its capabilities and to the damages it has caused; all citizens are to be informed, empowered, and motivated to take action, and all must equally and equitably enjoy the benefits of the transformation.

This book aims to address sustainable transformations at individual and collective levels through investigating the enabling psychological, social,

and ecospheric determinants of behavior. It identifies the inhibiting factors that encumber pro-environmental behavior even when the determinants of behavior are present (that is, intention-action, attitude-behavior, and similar gaps), and discovers and fine-tunes ways through which humor and satire can influence these determinants and breach the gaps. By employing a holistic and interdisciplinary approach, exploring novel ways to engage citizens and stakeholders, and through proposing effective communicative strategies to tailor pro-environmental messages to their contexts, this book strives to develop means of empowerment for everyone. The different approach, the ubiquity of humor in everyday life, and its social and psychological impacts suggest concrete solutions to the objectives that UN SDGs and the EGD envision.

Putting citizens first and bringing them together in their full diversity can ensure a just and inclusive transition toward sustainability. Paying special attention to what has been ignored in determining behavior, this book considers psychological factors alongside intersecting denominational factors including, but not limited to, gender, sexual orientation, age, race, ethnicity, religion, nationality, class experience as social and political determinants of behavior. Instead of merely blaming citizens for aggravating ecological crises, we acknowledge and explicate the complexities involved in the etiology of these challenges. We believe that no single universal panacea can be prescribed to solve ecological crises. While middle-class citizens can be encouraged to support environmental causes like organic farming through making economic sacrifices, for instance, lower classes or refugees might not be able to afford to support ecological causes in the same way. This, however, should not exclude them by any means.

Communicative efforts, therefore, should be tailored to each target community and context for successfully bringing about behavioral change. They should address specific local environmental challenges and engage with carefully identified target communities. This cannot be prescriptive, we will still try to convey how humorous, satiric, or comic creative works that might include shows, theater, stand-up comedy events, cartoons, advertisements, social media campaigns, drawings, paintings, and reading sessions can contribute to such an inclusive and targeted approach. These attempts intend to provide stakeholders with appropriate tools and information and facilitate connecting these processes with decision-making bodies.

We will pay particular attention to the inclusion and participation of vulnerable groups, which are not necessarily identical across different national and regional contexts. Gender roles, for instance, seem to be prominent barriers against the allocation of a fair share of power and ecological resources and an important determinant of behavior across many national boundaries. Yet, different countries are hardly comparable when it comes to other topics like refugees, asylum seekers, and the less than privileged. Considering these contingencies and striving to connect to different communities can facilitate equitable and inclusive sustainable transformations.

The primary objective of this book is to propose more effective, just, and inclusive ways of changing behavior at individual and collective levels. Until now, most scientific projects were not able to bring about drastic behavioral changes in consumers. This is partly due to disciplinary conventions and the demands of scientific methods that mandate delimiting the focus of investigation to a single topic. Moreover, methodological conveniences have driven most research to primarily focus on individuals. This, however, has sometimes led to putting unrealistic and implausible demands on citizens for carrying all the burden of initiating and maintaining the transformation and compensating for its costs. Furthermore, several such attempts have ignored other important determinants of environmental behavior and the plethora of contingencies in the circumstances of individuals by their sheer focus on the psychology of the individual and disregard of the embeddedness of individuals in the society and ecosphere. All these have led to over-demanding and hypocritical prescriptions that place the responsibility on citizens, threatening an apocalypse will descend upon the world unless they comply.

While some citizens anxiously toil to minimize their footprint, they witness that politicians fail to take proportionate action or, at some cases, even deny the severity of the situation, and some corporations occasionally shun responsibility altogether as in the falsification of emission data by the automotive industry in the case of Volkswagen emissions scandal. Other citizens refuse to accept scientific findings and adamantly insist that climate change is fake news. Such discouraging revelations are amplified by witnessing coterminous injustices that might further dismay committed citizens. One way that can ease the burden on citizens and help realize the concrete results of their efforts, commitment, and abstinence is to persuade organizations and politicians to act more responsibly.

Relocating the subject in the society and ecosphere, we endeavor to consider contingencies, shed light on injustices, and provide a strategy for citizens to voice their discontent with current practices, policies, corporate, social, political, racial, gender, economic, and geopolitical injustices and discriminations. This will not only empower citizens but also perpetuate a rhetoric of trust and hope as promulgated by the light-hearted nature of humor. Such an alternative approach can draft a broad spectrum of communities to support the EGD and SDG targets (for example, #3: good health and well-being, #12: responsible consumption and production, #13: climate action) and to engage in co-creating and co-implementing transition pathways. Therefore, this book encompasses theoretical, applied, qualitative, and quantitative research to explicate the variables that make it possible to design and communicate effective messages for different contexts and tailor them to different target groups. The humor and satire, for instance, that can successfully persuade men with prominent masculinity features are less likely to have the same impact on women (Abel & Flick, 2012). Children and young adult environmental humor should usually be different from the one addressed to an adult audience (Martin & Ford, 2018). Humor also varies across cultural boundaries, for instance between Eastern and

Western cultures (Jiang et al., 2019), and even between neighboring countries that speak the same language like Germany and Austria (Scheel et al., 2016). Likewise, the type of humor and satire that might persuade upmarket consumers to invest in clean energy or buy organic products is unlikely to persuade the down and out to change their consumer habits. In other words, theoretical retrospections and the development of a comprehensive model will make it possible to tailor environmental messages to the requirements and circumstances of different communities for addressing specific local environmental challenges. This is particularly significant in the age of rhizomatic decentralization and social media.

Besides multifaceted, interdisciplinary approaches to behavior and its transformation across literary and cultural studies, social and environmental psychology, and engaging with significant pertinent issues like justice, this book also studies and improves on information provision and communication of science. Information provision has been a major strategy for environmental campaigns, yet it is hardly sufficient to instigate and perpetuate pro-environmental behavior at individual and collective levels. Many policymakers are fully informed about the scope and immediacy of the ecological problems; nonetheless, they do not take proportionate action. Many citizens are also aware of the urgency of the situation and the grim consequences it will bring in future but fail to change their behavior for a variety of reasons. This book aims to explicate the mechanisms for effectively communicating pro-environmental messages by investigating their content, medium, tone, language, producer, and recipient, among others.

Particular attention will be given to the reciprocally constitutive interactions between individual behavioral change and transformations in the larger context. For example, it will be conveyed that institutions like race or social constructs like class partly determine environmental behavior. This extends to the study of interactions at broader institutional levels like legislative, economic, and financial policies that enable or encumber collective environmental behavior. Our reasoning, therefore, will have strong implications for policymaking.

We believe any sustainable transformation should relate to pre-existing conditions including different forms of inequality and exclusion. This, therefore, provides an opportunity to make sure that the costs sustainable transformation incurs are not disproportionately imposed on peripheral groups and communities that already feel excluded while denying them its future benefits. On the contrary, a green transformation is an opportunity not only for a sustainable future but also for connecting people and communities through a fairer and more balanced process.

### Significance and Relevance in Current Scientific Discourse

The active role of citizens and their direct involvement are essential to address climate change and other human actions that upset the delicate environmental balance. It is not possible to bring changes in citizens' and consumers'

behaviors without directly involving them, while considering their diversity and aiming for inclusiveness and justice. This is particularly significant because disadvantaged and vulnerable social groups and communities need special attention. There are many reasons for the ineluctability of such special treatments: first, vulnerable groups are usually most affected by the ecological crises; this is while they only have access to meager, if any, resources to encounter them, and their voices are muffled in major decision-making processes. In other words, the type and amount of support different communities need for an embryonic transformation to commence varies greatly. Besides, any set of realistic expectations for a transformation differs across the socio-economic spectrum of its context and should integrate the disparities in how different communities perceive the ecological crises and their priorities. In addition to acknowledging contingencies and inclusiveness, any sustainable transformation needs to make sure that its benefits are fairly distributed and that no one is left behind in enjoying them.

Furthermore, individuals should not, and indeed cannot, bear the burdens of this transformation alone. The scales and impacts of organizational, corporate, and political decisions and behaviors are vast when compared to individual actions. Organizations and corporations, for instance, frequently resort to falsification and co-opt ecological pretensions in order to expand their markets and profits. Greenwashing, for instance, is common in PR and marketing (Mahoney et al., 2013). Those that decently strive to be a part of a sustainable transition, on the contrary, encounter many challenges that jeopardize their position in increasingly competitive markets. Some of these impediments can be ameliorated by adopting more effective policies and offering well-thought-out protective measures. Thus, individuals, organizations, corporations, and policymakers should all take responsibility for transformations to a green and sustainable future. This is particularly evident in democratic societies where changes in consumer or voter behavior can lead to changes in organizational and political decisions, behaviors, and structures.

This unprecedented project aims to fill gaps in knowledge and proposes a novel alternative approach in trying to bring about sustainable transformations. Due to the diversity of stakeholders, the contingencies of their circumstances, and the varying immediacy of local ecological problems, the modes of participation and engagement differ across contexts. This book, therefore, intends to locate individual and collective behaviors in a more comprehensive picture that not only includes individual subjects but also acknowledges their being immersed in their societies. The interactions between individual psychology and social factors in determining environmental behavior take place in the larger ecosphere, of course. This project resorts to literary and cultural studies, social and environmental psychology, as well as communication studies to devise a more effective, inclusive, and fairer approach in communicating environmental messages, hence bringing about this transformation. The significance of this study lies not only in its attempt to make social and political interventions in ecological problems, but also in

the prevalence of humor. Humor can be employed for different, even contradictory purposes. One needs to think of advertising and fashion industries to see how frequently humor is manipulated in capitalist systems to promote consumerism regardless of its negative ecological impacts. However, humor does not inevitably lead to acquiescence and indifference. When employed wisely, humor and satire can also facilitate a fresh approach to dealing with ecological crises. Instead of laughing off the problem, the rhetoric of humor and satire can disparage environmentally damaging attitudes and policies, encourage a change of attitude and behavior in their audience, and promote critical ecological engagement.

In order to respond to and support EGD, SDGs, Horizon Europe call and missions, European Semester, European Climate Law, Climate Target Plan, and the European Climate Pact (for example, European Commission 2020a, 2020b, 2020c; UN, 2021), this book sets out to draw on environmental and social psychology, cultural studies, and communication science in order to develop a more comprehensive model for individual and collective behavior. To identify and integrate pertinent variables, it will take a transdisciplinary approach to persuasion and behavioral change, looking at system dynamics and integrating historical, cultural, societal, economic, and psychological perspectives. It takes into account the determinants of behavior from the perspective of social and environmental psychology (that is, enabling factors) and discusses gaps between the presence of behavioral determinants and lack of behavior (that is, inhibiting factors). The potential impacts of humor and satire will be discussed within the framework of the proposed model to analyze how they can influence the determinants of environmental behavior.

The model allows us to investigate both individual and organizational behavior and actions. It acknowledges and builds upon the reciprocally constitutive relationship of individual psychology and the external world of society and ecosphere. The model is then applied to understanding case studies and examples, and we reflect on the dynamics of cultural production and on the factors that influence the perception of ecological crises by different communities. We take it upon ourselves to meet people where they are instead of imposing prescriptive and homogenizing approaches on them. Therefore, a vast diversity of contingencies that vary by time and context will be studied to compensate for what previous models have overlooked. These include contingencies across denominations and minority communities. Insights from cultural studies foreground vulnerable and marginalized groups. Special attention will be paid to gender, sexual orientation (including lesbian, gay, bisexual, transgender, transsexual, intersex, queer, questioning, two-spirited, and ally communities), age, socioeconomic status, religion, race and ethnicity (including labor mobility as in the case of postcolonial and/or migrant workers), and nationality. The richness and intricacy of these contingencies facilitate tailoring messages and solutions to different contexts, communities, and local challenges.

Another important feature of our attempt is that besides the determinants of behavior, it will also investigate the reasons why the presence of such determinants does not necessarily lead to behavioral change. We will explore the gaps between the presence of behavioral determinants and inaction and show how humor and satire can breach and/or bridge these gaps. Exploring cognitive biases, for instance, can address dilemmas and find ways of dissonance reduction. It will also scrutinize how humor and satire can intervene in messaging in order to address trade-offs, side and rebound effects. Humor can be used, for example, in intra- and interorganizational communications to persuade and actively set or diminish perceived behavioral controls.

Besides suggesting novel ways to encourage pro-environmental behavior, facilitating more effective communication, and providing political strategies to give voice to sustainable demands, humor and satire have also community building functions that, alongside the inclusive and just engagement and participation of citizens, can be a further step toward stability and resilience. Moreover, the coping functions of humor can also be employed in fostering resilience against the already irreversible impacts of climate change in citizens.

### Overview

The next chapter opens with the definitions of key terms and a succinct introduction to the major theories of humor. The traditional approaches including superiority, relief, and incongruity theories, as well as more recent theories including the reversal theory and benign violation hypothesis, will receive appropriate attention. Several evolutionary conceptualizations of humor will also be discussed as they are particularly relevant to ecological and ecospheric aspects of pro-environmental behavior. Then, we will turn to the types, styles, and functions of humor that can be employed to fine-tune environmental communication and advocacy attempts.

Having laid out essential preliminaries and fundamental concepts and theories of humor research, we will turn to models and theories of environmental and social psychology. The potential impacts of humor and satire on persuasion and environmental behaviors will be reviewed across communication, literary, and cultural studies. This will expose several inconsistencies in the findings, particularly regarding the role of humor in persuasion and the intention-action gap. The potential impacts of humor and satire on the psychological and social determinants of environmental behavior alongside their role in fostering resilience, coping, and adaptation are further investigated to contend how humorous and satiric massages can proffer effective strategies for environmental advocacy and behavioral change.

From there, we go on to propose a Modular Interdependency Model for the potential impact of humor and satire on environmental behavior (MIM). It encompasses three different but interrelated aspects of behavior, namely, its psychological, social (including cultural, political, and economic), and ecospheric dimensions. This is to ensure that pertinent sectorial, geographic, and demographic variables are taken into account so that individual citizens are

not solely held responsible for addressing ecological problems. This tripartite web of determinants further helps disperse agency through the ecosphere, acknowledging the symbiotic relationships between different species including Homo sapiens. One of the implications of MIM is that human beings are no longer at the center of the universe as it foregrounds their kinship and symbiotic interdependencies with other critters. The chapter concludes by discussing how humor and satire can impact behavioral determinants and what they do to breach the intention-action and attitude-behavior gaps.

Chapter 5 employs the descriptive potentials of MIM to convey how humorous and satiric works can engage the determinants of pro-environmental behavior. *The Simpsons*, a long-running comedy show, *Last Week Tonight with John Oliver*, a late-night show, and a corpus of *The New Yorker* cartoons are analyzed to show how they employ different dimensions of MIM and strive to impact behavioral determinants in order to advocate pro-environmental behavior in their audience.

Chapter 6 discusses some of the methodological and operational intricacies involved in quantitative research design for investigating the environmental impact of humor and satire. The chapter opens by highlighting the subtleties of conducting empirical research before turning to the operationalization of humor, pro-environmental attitudes and behavior, as well as several other variables explicated in the psychological module of MIM. It will further explain fundamental concepts and their implications for designing and conducting empirical studies on the effectiveness and role of humor in encouraging attitudinal and behavioral change. The concluding chapter discusses the theoretical and practical implications of MIM, explores its potential social impacts, and provides suggestions for future qualitative and quantitative research.

#### Note

1 "Multidisciplinarity draws on knowledge from different disciplines but stays within their boundaries. Interdisciplinarity analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole. Transdisciplinarity integrates the natural, social and health sciences in a humanities context, and transcends their traditional boundaries" (Choi & Pak, 2006, p. 351).

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## **Conclusion and Implications**

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