Introduction

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Biographical notes: Inês Crespo is the Information Manager of the FP7-funded project NMI3 at the Technical University of Munich. Currently, she is responsible for all the dissemination material of the project, including communication on varied scientific fields to a range of audiences, and networking activities. Previous to her position with NMI3, she worked for four years at the European Commission Joint Research Centre carrying out research on science communication and public reception of the media. In particular, her research focused on the role of movies in the communication of climate change issues. She is a graduate in environmental engineering.

Ângela Guimarães Pereira is a Scientific Officer of the European Commission at the Joint Research Centre. She holds a PhD in Environmental Science. Her research focuses on multiple forms in which interfaces between science and society occur, covering aspects of public engagement, ethics dialogues and communication about techno-science developments. Through a number of European projects, she has conducted research on how films inform publics about science and technology. She has published widely and is co-editor of a number of books, namely *Interfaces between Science and Society* with Greenleaf and *Science for Policy* with Oxford University Press.

Sofia Guedes Vaz holds a PhD in Environmental Political Philosophy focusing on responsibility and virtue politics. She worked on environmental consultancy (six years) and at the European Environment Agency in Copenhagen (six years), specialising in environmental policy and emerging issues. She co-edited the books *Interfaces between Science and Society* (2006) and *Environment. Why Read the Classics?* (2012), and co-authored the book *Environmental Ethics Handbook* (2010) and a book on *Food Waste in Portugal* (2012). She is a researcher on sustainable consumption, environmental communication, food

waste and environmental ethics. She was involved in the organisation of a one year long film cycle on environment at the Portuguese Cinemateca. She is involved in environment communication both as a practitioner and as a researcher.

We all like a good story, and the entertainment industry has become a master storyteller. We live in a multi-sensorial world where the visual is prominent, making movies and other forms of popular culture gain a powerful influence on how we sense and tell about reality (including the observed and the experienced). The way movies depict certain themes also informs and influences our political and ethical thinking. Indeed, communication formats influence perceptions about the issues addressed and their appropriation by the public (Boer, 2008; Foust and Murphy, 2009; Morton et al., 2011; Nisbet, 2009; Priest, 1994; Spence and Pidgeon, 2010).

When we talk about the environment, we are not just talking about the 'natural' and the visible, but about a critical number of dimensions, namely of social, political, cultural, ethical, economic and social nature. Moreover, environmental issues are often framed in scientific terms. All this complexity makes environmental issues appealing to storytelling, and therefore, it is not surprising that such a laden theme as 'the environment' introduced itself into the seventh art. In fact, environmental issues have inspired good storytelling in both big and small budget movies during the last decades. Box office numbers account for millions of viewers for feature movies such as *An Inconvenient Truth, March of the Penguins, The 11th Hour, The Age of Stupid, Erin Brockovich*, etc., and smaller budget movies such as *The Big Ask*, (http://www.thebigask.eu/) featured at COP15 in Copenhagen (2009 United Nations Climate Change Conference), or *The Story of Stuff* (http://www.storyofstuff.org/). Many of these movies are viewed in movie theatres or at home, but they are also used in other contexts, such as educational settings, NGOs' environmental campaigns, and even by politicians who engage in environmental sustainability debates. We could argue that *An Inconvenient Truth* is the ultimate epitome of this type of practice.

According to the Eurobarometer survey (Spadaro and European Opinion Research Group, 2002), together with newspapers, movies and television are Europeans' favourite media for receiving information on environmental issues. However, few studies have been carried out on the role played by the performing arts in the conversations about these issues. In research fields such as Earth sciences, human cloning, and mental illness, a number of studies suggest that movies have influenced the construction of imaginaries and perceptions about the issues portrayed (Barnett et al., 2006; Wahl and Lefkowits, 1989; Wellcome Trust, 1998). When it comes to climate change, the movies *The Age of Stupid* (2009), *The Day After Tomorrow* (2004), and *An Inconvenient Truth* (2006) seemed to have influenced audiences' attitudes in Australia, the UK, the USA and Germany (Beattie et al., 2011; Howell, 2011; Leiserowitz, 2004, 2006; Lowe et al., 2006; Nolan, 2010; Reusswig et al., 2004; Smith and Hargroves, 2007).

Nevertheless, cinema and environment do not share the same structure or own conventions as they represent two different cultures. Movies' stories negotiate and transform many issues of human life, and environmental issues are not different in this respect. Hence, environmental messages, environmental principles, even its scientific framings, are told into visual stories that might depict certain facts and uncertainties differently from when they are told through other media. Movies can create images of the

natural world that might shape how audiences think about and perceive nature and environmental issues, as well as how publics react to it. We would argue that movies constitute ways of knowing in their own right, and therefore this sector needs attention from the point of view of the knowledge-action gaze (see for example, Pfeffer and Sutton, 2000; Blake, 1999). We argue that movies and other forms of popular culture need to be interrogated with regards to their role in communicating environmental issues to their audiences, their role in raising awareness of and initiating debates about sustainability issues, as well as their role in developing agency and collective action concerning the sustainability stories they tell. These intriguing issues are relevant to those engaged in movie script writing, storytelling and public engagement in sustainability conversations.

This special issue brings together work that explores the role of movies, TV series and other video in conversations about environmental sustainability, unveiling and critically discussing what narratives frame the sustainability discourses expressed in those stories. The tales explored here include movies and drama series that use diverse frames, levels of reality, and approaches to address a range of environmental issues, such as climate change, mountaintop removal, sustainability and water issues.

Critically showing environmental issues, trying to raise awareness or contributing to change behaviour often constitute major objectives of these types of tales. Through their imagery, music, dialogues, and characters, these movies, TV series and other video-based pieces have the power to evoke emotional experiences among the audiences, which may contribute for messages to come across with subtlety and in an entertaining way.

In this view, in their paper, Schwarze et al. analyse how the movie *Last Mountain* (2011) uses environmental melodrama to define the complex issues arising from mountaintop removal and create identity between victims of this issue and viewers. The authors explore and explain how the movie could have had a stronger sustainability narrative if it had maintained greater fidelity to the melodramatic form.

However, as McGreavy and Lindenfeld suggest, the emotions fostered by movies might include problematic stereotypes. By conducting a discursive analysis and ideological critique of stereotypical representations in three climate change movies: *The Day after Tomorrow* (2004), *Sizzle: A Global Warming Comedy* (2008) and *An Inconvenient Truth* (2006), the authors demonstrate how climate change entertaining stories potentially affect the audiences' environmental values.

This is the case with Howell's contribution to this special issue. Using four climate change movies as illustrations (*The Day After Tomorrow*, 2004; *An Inconvenient Truth*, 2006; *The Age of Stupid*, 2009; *Just do It*, 2010), she explains how the trans-theoretical model of behavioural change (a six stage process through which individuals change their behaviour and ten associated processes of change) can be applied to identify the processes of change employed or depicted by sustainability communications, with regards to encouraging viewers to change their behaviour. Using this model, the paper concludes with recommendations for how movies may be used more effectively as a tool to inspire climate change mitigation action.

Gutiérrez-Pérez' paper is a contribution to environmental education in the classroom. By focusing on the Cochabamba water war in Bolivia and on the consequent movie *Even the Rain* (2011), the paper describes a process of active viewing that prompted students to perform a critical analysis of the environmental conflicts portrayed and to identify different models for sustainable development. This more educational dimension

of movies, and in particular of documentaries, is a dimension that has been increasing in this century, and is worth continuing to analyse as to improve its efficacy and quality. Moreover, with the rise of social media and in particular with video-sharing websites, raising awareness campaigns about the environment have been democratised, the popularity of ideas and values they transmit being measured by number of hits, likes and dislikes.

Reinermann et al. bring 'mass-mediated storytelling' other than movies to this special issue. The authors argue that the entertainment-education (E-E) communication's strategy represents an engaging and innovative approach in sustainability communication. This paper highlights the role that the E-E strategy can play in fostering environmental behaviour by describing the theoretical foundations of this strategy, presenting E-E effects on audiences and collaboration research, and raising ethical considerations with regards to E-E use. The negotiation between science and entertainment is an ongoing tension that might be overcome by mediation between scientists who understand the potential of the entertainment industry and by members of this industry with a genuine interest in science. Compromises are difficult to obtain but it might be worth the effort, given the power that the performing arts might have in contributing to research and political agendas, and even in promoting active citizenship.

The paper by Krauß introduces a non-Western movie industry, contributing, as does Gutiérrez-Pérez, to the movie richness of other cultures for this conversation. Krauß explores how to analyse environmental issues in the Hindi cinema and suggests that an ecocriticism approach could gain from applying perspectives from postcolonial studies. This essay outlines important developments in the contemporary Hindi movie industry and investigates the movies *Lagaan: Once Upon a Time in India* (2001) and *Peepli Live* (2010). According to the author, even though it does not seem to be the producers' intention, these two movies could arguably be read as depictions of sustainability.

The entertainment industry might be as good as a link between environmental issues and society, and therefore, the role of mass-media communications is worth being investigated. This special issue is a contribution to environmental communication studies by integrating a broad range of environmental issues, varied formats for communicating these issues, as well as diverse cultural backgrounds. However, this type of research is ongoing and by no means does this special issue exhaust the panoply of possibilities of the entertainment industry and the more amateur endeavours. We have noticed a gap with regards to studies that actively engage audiences in environmental communications through movies and video and investigate actual reactions to the issues portrayed on the screen. We hope that the works presented in the following pages will foster further research on these subjects, so that the role of movies in the communication of sustainability issues may be better understood.

Disclaimer

The opinions on this paper are those of the authors and cannot be considered as official positions of the European Commission.

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