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Climate Change Communication in Portugal

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Summary and Keywords

In Portugal, global politics tend to dominate climate change communication. Policy-oriented news stories prevail, being very much influenced by international events, dynamics, and actors, especially European ones, whereas national politicians and officials tend to be given less space. Climate change is thus mainly (re)presented as a global issue, distant from local realities, in spite of the vulnerabilities that the country faces. National policy makers tend to adopt a technocratic discourse that comes across as “rational” and fairly optimistic, with little contestation by environmental groups or others. A “green economy” discourse has prevailed in the media, with investment on renewable energy being depicted as the way to both stimulating the economy and addressing climate change. Scientific knowledge tends to be represented as consensual and national scientists tend to avoid dramatization. Although public opinion surveys have shown that the population considers climate change a serious problem and skepticism regarding its anthropogenic causes is low, surveys have also revealed high levels of ignorance and self-evaluated lack of information. In spite of a traditionally weak environmental movement and lack of public engagement, the population has shown a consistent sense of collective responsibility to tackle climate change. The economic and financial crisis up until the mid-2010s considerably affected the already fragile media system and turned political and public attention to economy-related topics. News coverage of climate change, in all its complexity, has been constrained by a lack of specialized reporters and increased dependency on the pro-activity of news sources.

Keywords: climate change, communication, media, environment, public engagement, awareness, Portugal

Highly vulnerable to heat waves, droughts, fire hazards, water restrictions, coastal flooding, and climate-related impacts on the economy, among other socioecological disturbances (IPCC, 2014; Santos, Forbes, & Moita, 2002; Santos & Miranda, 2006), Portugal is an interesting case for the analysis of climate change communication. In view of those risks, media coverage is critical and is likely to play an important role in the country’s choices. However, public debate at national and subnational levels on climate change is

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lacking. National climate policies have been mostly developed in response to external influences coming from the European Union, and climate change news coverage seems more driven by global than by national factors.

This article draws on social science research on climate change and, in particular, on studies of media coverage of climate change, public awareness, and engagement with environmental and climate issues. Research on climate change communication in Portugal is still relatively scarce, with the first publications appearing only in 2007. This is mostly due to the small size of the scientific community in the country and especially the reduced number of social scientists specializing on environmental issues.

The article is divided in two parts. The first one provides a background on the sociopolitical context of environmental issues and climate change in Portugal. It starts by describing the main political dynamics of environmental and climate policy and is followed by an analysis of the national media landscape. Then the article looks at how public perceptions and engagement with the environment and climate change have evolved in the last few decades. The second part concerns communication on climate change. The course of media attention over time is analyzed and a discussion of media representations is presented. Newsmaking processes are described next, followed by an analysis of the discourses of social actors and their relations with the media. Finally, the article draws the main conclusions and suggests research questions that should be pursued.

Portugal's Sociopolitical Context

Portugal is located in the westernmost area of the European continent and has a population of around 10 million. With a coastline of over 800 kilometers, its territory is influenced both by the Atlantic and the Mediterranean and has a mild (although diversified) climate. Until the 1980s the country had an incipient industrialization and enduring rural features. Partly due to this, the development of environmental policy in Portugal occurred later than in other Western countries. Whereas highly industrialized areas experienced atmospheric pollution, biodiversity loss, or high generation of waste per capita, for example, these environmental problems were less severe in European peripheral areas like Portugal (Kousis & Eder, 2001). The following section traces the history of climate change and related environmental policies in Portugal.

Environmental and Climate Change Policies

Portugal does not have a strong tradition of environmentalism. The dictatorship that ruled the country for nearly 50 years until 1974 strongly discouraged civic participation and grassroots movements. There were almost no environmental organizations in a context of nearly no citizen-led associations (Figueiredo & Fidélis, 2003; Mansinho &

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Schmidt, 1994; Santos & Nunes, 2004). The first non-governmental organization for the environment (League for the Protection of Nature) was created in 1948. However, political and civic awareness of environmental issues was low and the environmental impacts of economic development were neglected (Mansinho & Schmidt, 1994).

In the late 1960s, there was increasing concern over environmental issues in international organizations such as the United Nations. Helped by a major campaign on behalf of the natural environment led by the Council of Europe, which originated the first European Nature Conservation Year in 1970, as well as Portugal's participation in the Stockholm Conference in 1972, there was a period of increased political awareness of environmental issues at the national level. Concomitantly, public television broadcasted several environment-related programs in 1971–1973, including two national documentary series (Schmidt, 2003).

In 1974 the dictatorship was overthrown and a period of intense political activity ensued during which the environment was far from being a priority. By then, widespread deregulation worsened environmental problems (Mansinho & Schmidt, 1994). A large number of grassroots environmental movements developed; however, they were ephemeral in most cases and focused on local issues. It was only in the 1980s that environmental issues emerged as social concerns (Figueiredo & Fidélis, 2003). Multiple environmental associations were created then including some of the main national ones. However, in the transition to democracy, state centralism was strengthened and the institutional design of environmental policy making reduced mechanisms of participation of non-state actors to a minimum (Nave, 2001).

With integration in the European Economic Community, environmental issues became part of the Portuguese political agenda. The country's participation in the European Year of the Environment in 1987 and in the United Nations Conference in Rio de Janeiro in 1992 (ECO92) had considerable public visibility with a steep increase in the number of television programs broadcasted (Schmidt, 2003; Valente & Ferreira, 2014). Only then, toward the end of the 1980s, did activist environmental organizations acquire some ability to influence public opinion (Figueiredo, Fidélis, & Pires, 2001).

Two external impulses contributed to the development of environmental politics in Portugal: The first one was the participation in the Stockholm Conference (1972), which stimulated the creation of basic political conditions for an environmental policy (Soromenho-Marques, 2007). Nonetheless, the state's priority was large public investment on infrastructures as a stimulus to economic growth rather than environmental protection (Queirós, 2002). The second external impulse was the accession to the European Economic Community (1986), which speeded up the formulation of a national environmental policy (Soromenho-Marques, 2007). Indeed, as a member of the European Union (as it is named since 2007), the state was compelled to transpose to national law the European norms and regulations regarding the environment. Portugal had to meet new standards of environmental quality, but in a context of economic growth (to which European funds contributed greatly) and insufficient control and surveillance, levels of environmental

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degradation and energy waste also increased (Mansinho & Schmidt, 1994; Soromenho-Marques, 2007). In spite of the fact that a large amount of environmental legislation was produced during the 1980s and 1990s, there has been discontinuity and lack of effectiveness in its implementation (Figueiredo & Fidélis, 2003; Mansinho & Schmidt, 1994). This divergence between “law in the books” and “law in action” has jeopardized the enactment of environmental policy as well as other domains of state action (Santos, 1990, cit. in Figueiredo & Fidélis, 2003). Hence, Portugal has not seen a consistent environmental policy put in place (Borrego, 2010).

Portuguese climate change policies seem to follow a similar pattern. Portugal has developed these policies since the early 1990s, mostly in response to EU determinations. The first milestone was the ratification of the United Nations Framework Convention on Climate Change (1992), followed by the signing of the Kyoto Protocol (1998). Due to the country’s comparatively low greenhouse gas emissions and gross domestic product, Portugal benefited from the Burden Sharing Agreement (2002) settled between the EU countries and thus was allowed to increase its emissions within limits. However, given the stage of development of the Portuguese economy, those limitations in the increase of emissions represented a considerable effort, which was further accentuated by a lack of integration in climate-relevant policies (Dessai & Michaelowa, 2001). In the 2000s, again under the EU’s influence, the country developed its climate change policy further and also strongly invested in renewable energy production. Several national programs, plans, and strategies have been set up; however, decisions have lacked consistency, and until 2011 greenhouse gas emissions continued above the national Kyoto Protocol target. The financial and economic crises that led the country to apply for assistance from the International Monetary Fund and the European Union in 2011 compelled it to adopt severe austerity measures, which have also affected the implementation of climate change policies. Nonetheless, the economic slowdown has contributed to reduce the greenhouse gas emissions and in 2012 the country reached its Kyoto targets (Carvalho, Schmidt, Santos, & Delicado, 2014).

In 2015 the main national policy instruments as regards climate change mitigation and adaptation were integrated in the Strategic Framework for Climate Policy. Targets include the transition to a low carbon economy and the reduction of greenhouse gas emissions by 30 to 40% in 2030 (compared to 2005). Although these emission reduction targets are in line with the commitments made within the EU and the United Nations, environmental organizations have claimed that they should be more ambitious because emissions peaked in 2005, and have been decreasing considerably since then, which means these targets only impose minimal cuts and thus more stringent reductions would be possible.

Following the adoption of the Paris Agreement at the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change by the end of 2015, it was ratified in the national parliament. All parties concurred on the relevance of the

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agreement, although the Communist Party abstained from voting because of reservations about the functioning and effectiveness of the EU Emissions Trading Scheme. The Paris Agreement entered into force in the country by November 2016.

Media Landscape

The media landscape in Portugal has been through significant changes in the last few decades. However, it never quite became a robust economic sector. Until 1974, state censorship added to weak organizational structures and low levels of journalist professionalization. There were multiple newspapers with very limited levels of readership and meager advertising revenues. The economic boom in the late 1980s and 1990s brought substantial increases in advertising investment and, together with technological developments, the media system was able to modernize itself. There was an increase in professionalization as well as pluralism, especially after the creation of two private television channels in 1992 and 1993 (thus putting an end to the monopoly of state-controlled public television), as well as new newspapers, magazines, and radio stations. Simultaneously with the market liberalization, there was a process of concentration of ownership in a small number of multimedia groups (Oliveira, 1992). In spite of the commercialization of the media, the market remained small, with low levels of readership and increasing fragmentation of television audiences, and in the following years the media sector would not be able to become economically strong.

From 2008 onward the economic and financial crisis considerably affected media groups. Advertising revenue decreased and newspaper circulation declined, leading to a contraction in the sector, with significant cuts in newsrooms and multiple print media shutting down. As unemployment among journalists rose significantly, their work conditions worsened. Adding to job insecurity, there has also been a trend to replace professional journalists with less experienced ones in precarious work contracts and even interns, thus threatening the quality of the information produced (Bastos, 2014; Pacheco & Rebelo, 2014).

According to Hallin and Mancini's (2004) typology, the Portuguese media can be included in the polarized pluralistic systems of Southern Europe, a category that emphasizes the existence of parallelisms between political parties and the media. The Portuguese case has specificities that should be acknowledged, though, such as the fact that the media's political stances are not usually perceptible to the public, which contributes to making this media system less polarized than those of Spain or Italy (Santana-Pereira, 2016). However, numerous analysts have questioned media pluralism and diversity in Portugal, as well as the independence of media organizations regarding the political system and the financial sector (Domínguez, 2013).

Television has been the main source of information of the Portuguese public whereas the press has traditionally been more targeted at elitist segments of the population than to the masses. According to a recent Eurobarometer survey, 94% of the Portuguese say they

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watch television every day or almost every day, which is one of the highest frequencies among the EU countries; only 26% say they read the print press that often, slightly below the EU average (EC, 2015A).

Public Engagement With the Environment

Sociological research on environmental concern has been mainly based on studies of public opinion. However, in spite of some longitudinal and cross-national studies tracking trends in public concern, as well as increasingly sophisticated methodologies, its operationalization and comparability have not been ideal, and understanding environmental concern still needs clarification (Dunlap, 2017). As pointed out by Shwom and colleagues (2015), a common assumption regarding environmental concern is that it emerges only when societies are wealthy enough not to be concerned with basic material needs and security. However, this assumption—rooted in Ronald Inglehart's (1997) well-known theory of value change toward post-materialist values—has not found strong empirical support, especially regarding climate change.

Indeed, a Gallup survey conducted in 1992 in 24 countries across the world challenged this assumption. Although Portugal was included in the group of industrialized countries, its gross national product per capita was below the wealthiest of the developing countries in the survey. Results showed that Portuguese respondents were in general very concerned about the environment, and when asked how concerned they were personally, they ranked first among the group of industrialized nations (Dunlap, Gallup Jr., & Gallup, 1993).

Eurobarometer surveys conducted for the European Commission among member states in 1986, 1988, 1992, and 1999 also show that environmental issues were an increasing concern for the Portuguese. Still, when compared to other problems, like unemployment and the economic situation of the country, the Portuguese tended to consider environmental problems less immediate and urgent than the average of EU member states (Valente & Ferreira, 2014).

It has been observed that concern for the environment expressed on surveys did not translate into relevant practices or participation in environmental movements (Figueiredo & Fidélis, 2003; Garcia, Barata, & Matos, 2000). For many years the Portuguese public showed little awareness of their role regarding environmental protection, which has been attributed to a traditional lack of public engagement (Valente & Ferreira, 2014). Data suggest that the Portuguese have systematically shown low levels of disposition to actively engage in collective action (Cabral, 2000). However, simplistic readings should be avoided. In a large survey conducted in 2000 with a representative sample of the Portuguese population (1844 individuals), 81% claimed to be sympathetic to environmental non-governmental organizations, albeit not actively supporting any. Moreover, 63% considered that citizens should participate in environmental issues even

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when they are not directly affected and only 13% claimed that only the state has the authority and competence to decide (Nave & Fonseca, 2004).

More recently, data from a Eurobarometer survey conducted in 2014 pointed to a significant increase in the proportion of Portuguese that consider they can personally play a role in protecting the environment (86% whereas the EU average is 85%) (EC, 2014A). Although concern over the environment has been slightly lower in Portugal than in the average of EU countries, that survey showed that 97% of Portuguese respondents consider that protecting the environment is important to them personally, slightly above the EU average (95%) (EC, 2014A). Since individuals with higher levels of education have been found to be more willing to engage in forms of collective action (Cabral, 2000; Nave & Fonseca, 2004), a possible factor contributing to explain these recent data may be the increasing levels of education among the population. Still, data from the International Social Survey Program conducted in 2010 (Guerra, Schmidt, & Valente, 2017) showed that in Portugal low levels of knowledge on environmental issues coexist with very high levels of concern.

Public Perceptions of Climate Change

Although there seems to be increasing concern about climate change across the globe, there are still gaps in understanding variations in public opinion, either across countries or sociodemographic and political characteristics (Shwom et al., 2015). Among European Union member states, for example, there seems to be increased concern about climate change in southern countries, although this is more generally expected in northern ones (Lorenzoni & Pidgeon, 2006).

The salience of climate change in public opinion seems particularly challenged by limited understandings of its anthropogenic causes. This becomes more problematic given the difficulties involved in communicating the risks, uncertainties, and overall complexity of climate change to the public (Pidgeon & Fischhoff, 2011).

An early Gallup survey conducted in 1992 with representative samples of the population of Canada, the United States, Mexico, Brazil, Portugal, and Russia showed that although global warming was perceived as a serious problem, other global environmental problems such as rain forest loss, water pollution, loss of ozone, and air pollution were considered more serious. In Portugal 72% (the highest proportion among the six countries) considered global warming a very serious world environmental problem (Dunlap, 1998).

However, results of the first national study on the representations and practices related to the environment, which was conducted in 1997 among a sample of 2450 individuals (representative of the Portuguese population older than 15 years) showed that public awareness was low: When asked about the main environmental problems the world was facing, only 5.9% of the respondents mentioned climate change and/or greenhouse effects (Lima, 2000). More than 60% of respondents said they did not know or had very little

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knowledge about the greenhouse effect, which is not surprising considering that this study also showed that levels of information and knowledge on environmental issues were low, especially among older people and those with lower education and less qualified jobs (Nave, Horta, & Lorga, 2000). This low level of information and knowledge was consistent with the results of the second national study, conducted in 2000 (Nave & Fonseca, 2004). Earlier, in 1991, a Eurobarometer survey had already shown that 49% of Portuguese respondents said they had never heard of climate change, whereas the average of EU countries was 15% (Schmidt & Delicado, 2014). Also the Gallup survey showed low levels of self-reported understanding of global warming or the greenhouse effect, as well as a poor understanding of its causes, which was in consonance with prior literature on public understanding of complex scientific issues (Dunlap, 1998). In an open-ended question about the causes of global warming, pollution was the most frequent response by the Portuguese. Similar results were observed using the method of free word association in two studies conducted in 2005 and 2007. Examining the connotative meanings of climate change, these studies have shown that respondents tend to focus on the effects rather than on the causes of climate change, and to consider themselves victims of climate impacts instead of agents of resolution of the problem (Cabecinhas, Carvalho, & Lázaro, 2011).

More recent Eurobarometer surveys have shown that, although skepticism regarding climate change among the Portuguese is low (and similar to the EU average), levels of self-reported knowledge are systematically lower in Portugal: In 2009, for example, 68% said they had no or very little knowledge about the causes of climate change, whereas the EU average was 46%. Levels of self-reported knowledge were lower among less educated people, older, and women (Schmidt & Delicado, 2014). Nevertheless, concern with climate change has increased and, in 2015, when asked how serious a problem climate change was, 78% of Portuguese respondents claimed it was very serious, whereas the EU average was slightly lower—69% (EC, 2015B).

In terms of responding to climate change, in spite of a traditional lack of public engagement mentioned in the literature, the Portuguese show a consistent sense of collective responsibility. In fact, Eurobarometer surveys have shown that when asked who is responsible for tackling climate change, Portuguese respondents are those who most say (spontaneously) that all actors are, well above the EU average (EC, 2011, 2014B, 2015B). The Portuguese also claim to have personally taken some action to fight climate change, slightly above the average of EU countries (EC, 2011, 2014B, 2015B).

A citizen consultation on climate change and energy policy issues conducted in 76 countries on the same day in 2015 indicated that Portuguese respondents (108) were above both the EU and world average in considering that climate change is not a national priority but should be one. Results also pointed to a stronger emphasis on mitigation efforts than on adaptation measures among national respondents (Schmidt, Delicado, & Fonseca, 2015).

Public Participation in Action on Climate Change

In spite of citizens' views on collective responsibility for tackling climate change, structural features of the Portuguese society seem to undermine public participation and engagement with action on climate. A survey conducted in 2011 with 643 individuals in three coastal areas that are particularly affected by coastal erosion and climate change has shown that there is widespread concern about the risks faced, and over 95% of respondents claimed citizens should have a say on coastal management. However, less than 5% of respondents in each area had participated in public meetings on coastal management. Various "blockages to participation" identified include lack of publicity and information about public consultations, lack of transparency of state programs and processes, and officials' underestimation of local communities' capacity to understand the issues. In addition, citizens from local communities expressed distrust in the way authorities have been addressing coastal problems (Schmidt, Gomes, Guerreiro, & O'Riordan, 2014). In the interviews conducted, local residents claimed that decisions have already been made prior to public hearings and that citizens' opinions are not recorded or taken into account (Delicado & Horta, 2013).

Also findings from interviews conducted with policy experts and officers made evident that current models of coastal management do not actually consider the involvement of local communities. Even though public participation is a legal requirement, decision makers privilege scientific and technical views (Schmidt, Prista, Saraiva, O'Riordan, & Gomes, 2013). Officers also claimed that it would be unwise to alarm local communities (Delicado & Horta, 2013).

Based on an analysis of documental sources such as official documents, legislation, and reports, Oliveira and Carvalho (2015) also observed that in spite of an effort to follow participatory practices common in North European countries, Portuguese universities and other research-related bodies still have a technocratic design resistant to including citizens in decision making, as well as a limited view of its potentiality.

Based on focus groups, a study of the factors that influence public engagement with climate change (and more specifically, with research on climate change) indicated that Portuguese citizens' perceive a resistance by decision makers to democratizing public debates and implementing participatory mechanisms. Moreover, difficulties in accessing information and in the communication between scientists and citizens were also mentioned. Respondents also pointed to scientific illiteracy and lack of interest for scientific issues as challenges (Oliveira & Carvalho, *IN PRESS*). Several processes thus combine to not effectively encourage participation.

Research on Climate Change Communication in Portugal

Social science research on climate change in Portugal has been expanding significantly in recent years; however, systematic analyses of communication on climate change are still scarce. Two research projects have focused specifically on media coverage of climate change in the country. The first was focused on the discourses that circulate in the public sphere, as well as on social representations (*The Politics of Climate Change: Discourses and Representations*), and the second one compared media coverage and climate change policy networks across several countries (COMPON—Comparing Climate Change Policy Networks). In addition, other social science research projects on issues related to climate change have included analysis of communicative dimensions that also contribute to a better knowledge of the issue. The main findings on media coverage of climate change and on discourses of social actors are presented in the following sections.

Attention to Climate Change in Portuguese Media

Although it is usually accepted that anthropogenic climate change emerged in public agendas in the 1980s (Moser, 2010), suspicions and worries about changes in the planet's climate due to human activity had been raised among scientists for several decades before (Weart, 2008). A study of environmental content in Portuguese television (Schmidt, 2003) from 1956 (when the national public broadcaster RTP initiated its transmissions) to 1995 provided an overview of how climate-related contents evolved. Non-news programs focused on environment-related issues had many ups and downs but there was a clear increase since the 1980s. The number of news pieces related to environmental issues broadcasted in the evening news bulletins also increased in this period, although with more marked fluctuations. Since the mid-1980s both local/national and global issues gained more salience in the news. Whereas the most frequent focus of environmental programs was the animal world, natural catastrophes and energy issues had a prominent role in the news—in particular due to the oil crises in 1973–1974 and 1979–1982, the Chernobyl nuclear accident in 1986, and international debates on nuclear energy. Climate-related catastrophes (mostly storms and floods) had a significant and constant presence in the news throughout this period but reports on climate change only rarely appeared. However, it is interesting to note that in the first decades of broadcasting there used to be television programs announcing the beginning of a new season of the year but this eventually faded away and in the 1990s the topic of weather disruptions emerged.

In multiple countries, the volume of media attention to climate change has fluctuated considerably in the last three decades (Schäfer, Ivanova, & Schmidt, 2012). Some scholars have argued that there is a cyclical evolution in media coverage (McComas & Shanahan, 1999) whereas other studies have associated levels of media attention with acts or events

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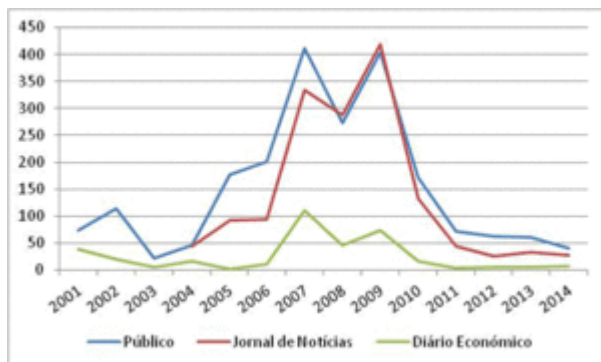
promoted by social actors (Carvalho & Burgess, 2005). Carvalho, Pereira, Rodrigues, and Silveira (2011) examined the evolution of climate change coverage in four Portuguese print media between 1990 and 2007: daily quality newspaper *Público*, daily popular newspaper *Correio da Manhã*, weekly newspaper *Expresso*, and news magazine *Visão* (which, together, represented a significant part of the press market and a range of editorial lines). Their analysis focused on “critical discourse moments” (Chilton, 1987), such as UNFCCC’s Conferences of the Parties, the publication of IPCC reports, the launch of national policy proposals, and extreme meteorological events. They found that both key national policy moments and extreme meteorological occurrences (searched in connection with climate change) captured little media attention, which was mostly focused on the Rio and Kyoto intergovernmental summits (1992 and 1997) and on the 2007 IPCC report. In an analysis of climate change in *Público* from April 1991 to April 2000, Dessai, Branco, and Doria (2001) also found that news coverage was mostly centered on international conferences and few articles had a national scope.

Horta, Carvalho, and Schmidt (2014) mapped coverage in *Público*, the mid-market newspaper *Jornal de Notícias*, and the business newspaper *Diário Económico*. The raw number of articles mentioning climate change in the three newspapers between 2001 and 2014 shows a clear trend (Figure 1): From 2001 to 2009, coverage rose, peaking in 2007 and 2009, followed by a decline in 2010. The 2007 peak coincided with a confluence of international factors, including the dissemination of the Stern Report, the release of the IPCC Fourth Assessment Report, the Bali Climate Change Conference (13th Conference of the Parties to the UNFCCC), and the mega-event created by Al Gore’s conference in Lisbon (2007) after he was nominated for the Nobel Peace Prize and had launched the climate change book and documentary *An Inconvenient Truth*. This combination of factors appears to have contributed to the newsworthiness of numerous stories on international negotiations and governmental positions toward climate change agreements, functioning as a news peg that triggered media attention (Schmidt, 2008). The 15th Conference of the Parties to the UNFCCC, held in Copenhagen in 2009, generated another peak of media attention. The decline from 2010 occurred as the international economic crisis came to the fore and as many political actors and observers regarded with lasting skepticism the failed negotiations of Copenhagen on the global scale.

This fluctuation has been observed in many other countries, as shown by Schäfer, Ivanova, and Schmidt’s (2012) comparative analysis of 26 countries and the COMON cross-national analysis of 17 cases (Broadbent et al., 2016). University of Colorado’s (McAllister et al., 2017) regular tracing of media coverage of climate change shows that world coverage was more or less stable between 2011 and 2014. In the case of Portugal the tendency for decline persisted in *Público*, an influential newspaper. A possible explanation for this may be the hardship experienced from 2011, when the country saw the beginning of a harsh Economic Adjustment Program. The radical changes and austerity measures that the Portuguese government was compelled to undertake did not just have an impact on the economy and society but also on media attention and issues covered. Indeed, cuts on public spending, unemployment, strikes, demonstrations, 12

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visits, and evaluations by the “troika” of lenders to assess the implementation of reforms, etc., overflowed the media and public discourse in general. As Frank Geels (2013, p. 69) notes, “historical evidence provides some indications of negative relations between economic crises and attention to environmental problems.” Notwithstanding, the explanation does not seem to be so simple.



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Figure 1. Number of articles mentioning climate change (2001–2014).

Source: Adapted from Horta, Carvalho, and Schmidt (2014).

Peaks in press coverage seem closely linked to international events involving high-profile summits and figures. Conversely, national events of potential significance in the politics of climate change, such as the approval of the National Program for Climate Change (PNAC) in 2004 and 2006 (and their prior public presentations) and

of the National Strategy for Adaptation to Climate Change (EN AAC) in 2010 garnered very little media attention. The volume of coverage of climate change thus suggests that the Portuguese press tends to reproduce the international agenda and the power of its biggest players.

Although the business newspaper followed the overall trend, the raw number of articles on climate change was smaller and its coverage trends sometimes diverged from the others. In fact, in 2002 and 2005, there was a decrease in *Diário Económico*'s coverage of climate change while other newspapers peaked. Nevertheless, the 2007 confluence of events had a visible effect in this newspaper's volume of coverage. Since 2010, when financial markets were already strongly pressuring Portugal's debt by rising interest rates for government bonds, and economic agents' uncertainties and concerns intensified, *Diário Económico*'s climate coverage dropped significantly, suggesting a devaluation of climate change newsworthiness from an economic point of view.

Analysis of the press coverage of renewable energies between 2001 and 2013 (Delicado et al., 2015) shows the same trend in volume: The number of news stories relating investment in these energy sources (especially wind and solar) to tackling climate change peaked in 2007 and 2009.

Media Discourses

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Behind their apparent reflection of reality, news stories involve a series of selection criteria that are put in place by individuals and organizations in view of a variety of constraints, interests, and ideological preferences (Galtung & Ruge, 1965; Tuchman, 1978). Likewise, media portraits of climate change are the product of a process of reconstruction of meaning that is shaped by professional, institutional, and cultural factors. The main traits of media coverage in Portugal will be analyzed, including the dominant discourses, themes and issues, the visibility awarded to different social actors, and the spatial scales of representation of climate change. Afterwards, these data will be discussed in relation to newsmaking processes and wider sociopolitical contexts.

Science is an unquestionably important dimension of analysis regarding climate change. Whereas a significant number of studies have examined media representations of scientific knowledge in the United States, United Kingdom, Canada, and elsewhere, and have shown a significant emphasis on controversy (with a disproportionate weight given to skeptical views) (Antilla, 2005; Boykoff, 2007; Broadbent et al., 2016), studies in Germany (Peters & Heinrichs, 2008), Greece, Brazil (Broadbent et al., 2016), and other countries suggest that science tends to be represented as consensual. Painter (2011) found profound international differences in the presence of skepticism in the media, with France, India, China, and Brazil only seldom reporting on climate change skeptics. In the Portuguese media, scientific knowledge has been generally represented as consensual with only a few instances of skepticism (Carvalho et al., 2011; Carvalho & Pereira, 2008).

Analysis of climate discourses in the United Kingdom suggested that representations of climate change fell into two main types of “linguistic repertoires”¹: *alarmist* and *optimistic* (Ereaut & Segnit, 2006). Alarmist tones have occasionally also appeared in Portugal’s popular media. The headline “Moving Towards Climate Disaster” (“A caminho do desastre climático,” I. Ramos, February 3, 2007) in the *Correio da Manhã* tabloid provides an example of language tinted with fatalism. However, such practices have not been the norm. For example, the summer of 2003, which registered record high temperatures, forest fires, and a large number of deaths due to the heat wave, could have spurred highly dramatic journalistic discourses on climate change but that was not the case. In Carvalho and Pereira’s (2008) study, the vast majority of articles did not cultivate fear in relation to climate change but (not necessarily well-founded) hope regarding the possibility of successfully reducing the greenhouse effect. For instance, at the height of media interest in 2007, it was suggested that this could be done by purchasing hybrid cars, which had become “fashionable” with famous people (“A moda dos híbridos,” R. Montez, *Visão*, February 15, 2007), in a clear example of techno-optimism based on individual actions. Technological optimism was also found in connection with policy measures related to renewable energies (e.g., “O risco e o desafio,” F. Duarte Santos, *Expresso*, February 3, 2007). Other times, news texts fit into other reformist discourses on the governance of environmental problems, such as—in the terms advanced by Dryzek (1997)—administrative rationalism (which turns the state and technical experts into the main agents to address environmental problems) or economic rationalism (which trusts market forces to offer effective “solutions”). Overall, however, the prevailing discourse in

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the press was ecological modernization with its focus on the “green economy” and the promise of win-win responses to protect the environment and provide economic gains. In many respects, the press reproduced “official” discourses, especially the government’s, regarding the possibility of addressing climate change, and, at the same time, to stimulate the economy via deployment of renewable energy (technological) “solutions.” While appealing, the “green economy” discourse has been considered vague, misleading, and riddled with fallacies (Kenis & Lievens, 2015). Mainstream media have nevertheless embarked in this attractive narrative and rarely accounted for alternative views.

The analysis of media silences is often as telling as the analysis of what is said. Critical Discourse Analysis of key moments in the 1990s and 2000s revealed that analyses of political alternatives and of potential impacts of the government’s measures were quite rare in the press. Monitoring of policy implementation and respective efficacy or of corporation performance with regard to greenhouse gas emissions was virtually absent. Nevertheless, *Público* stood out with more analysis and in-depth discussion of climate policies than other titles, especially through the work of journalist Ricardo Garcia.

Press Coverage of Policy Making

More extensive and quantitative data analyses have also offered revealing overviews. Carvalho et al. (2011) found a predominance of political topics and voices, especially international ones, in the Portuguese media discourse on climate change between 1992 and 2007. With science as a background rather than a battleground, policy making and policy makers have clearly dominated the media stage. Analysis by Horta, Carvalho, and Schmidt (2017) showed that between 2007 and 2014 policy making corresponded to 45.9% of news coverage of climate change. Other themes ranked much below: economic and energy interests–15.6%; science and technology–14.1%; ecology/meteorological–11.0%; civil society–9.0%; culture–4.4%. Although comparison with data from other countries is only possibly for 2007–2008 (Broadbent, 2012), in that period, the Portuguese press gave more space to policy making (48.6% vs. 36.2%) and to science and technology (13.0% vs. 11.5%) and less to economic and energy interests (17.4% against 21.8%) and to ecology/meteorological frames (7.7% against 13.1%) than the foreign press average.

In the same line, Horta, Carvalho, and Schmidt (unpublished research) found that the main issues covered in the Portuguese press in 2007–2014 were multilateral treaties and European/national policies on climate change. Another facet of the dominant journalistic focus on policy making is the reference to actual policy proposals and/or debates in 54.3% of all articles. Again, the most frequently mentioned policy matters concern the international level (topped by the need for a post-Kyoto agreement and the settlement of goals to reduce GHG emissions). Cooperation with those countries most vulnerable to climate change—another multilateral debate—was also salient.

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Frame analysis indicated that mitigation has been the most frequent angle of media coverage of climate change (Horta et al., 2017). Three mitigation-related frames (“policy measures,” “ways to mitigate,” and “reasons for and against”) added up to 61.3% of the 2007–2014 coverage while adaptation frames (“policy measures,” “ways to adapt,” and “reasons for or against”) corresponded to only 7.1%. The focus on mitigation is in line with the international regime on climate change. “Consequences of climate change” was the second most frequent frame (19.8%) in that period.

Arguments and perspectives advanced by a series of social actors—in the fields of science, politics, economics, civil society, etc.—come together in media representations of climate change. However, the definitional power of each social actor is rather different. In Carvalho et al.’s (2011) study, the number of mentions of political actors (comprising national governments and intergovernmental organizations) largely superseded any other social actors. Scientists and other research-related actors (e.g., universities) featured close to corporations. Non-governmental organizations were relatively obscured; and local government, a potentially relevant social actor in the politics of climate change, was nearly absent in the press.

In their analysis of the period 2007–2014, Horta and colleagues (2017) found that political actors corresponded to around 61% of all the actors mentioned: foreign governments–22.6%; international organizations–14.1%; European institutions–11.2%; national government and central/regional administration–9.1%; political parties–1.9%; local authorities–1.7%. The distribution of the remaining mentions to social actors was as follows: scientists and experts–17.6%; companies and economic agents–8.3%; NGOs and associations–8.1%; media–1.9%; celebrities–1.6%; citizens–.6%; others–0.7%. Political actors have been shown to acquire a strong discursive space in the media in other studies focused on a variety of countries (United States—Trumbo, 1995; United Kingdom—Carvalho & Burgess, 2005). However, other voices have also gained prominence in some countries (Greece—Gkiouzepas & Botetzagias, 2015; South Korea—Yun et al., 2012).

The analysis by Horta and colleagues also shows a clear prevalence of international actors: Jointly, international organizations, European institutions, and foreign governments corresponded to 48% of all mentions. In contrast, local authorities received only 1.7% of citations. Taking into account the nationality of the actors, an even clearer picture emerges: 71.5% of all actors mentioned were foreign.

This all fits into a trend that has already been alluded to above: the dominance of global politics in the Portuguese media representations of climate change. Although it is normally referred to as a global problem, climate change is rooted in spatially located practices and structures. Numerous analysts have pointed out the relevance of inscribing climate change communication in local realities (e.g., Scannell & Gifford, 2013), although this should not be assumed as a panacea. The links between climate change and the local scale are often invisible in media(ted) communication. The situation is different in terms of connections between climate change and the national scale as research has shown that media coverage of climate change has been domesticated in several countries (Eide &

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Ytterstad, 2011; Kunelius & Eide, 2012; Olausson, 2014). In a study of 19 countries, Kunelius and Eide (2012) found that national politics strongly influenced media coverage. In the case of Portugal, an express analysis of the geographical scale clearly showed the press's preference for the international level with articles concerning Portugal corresponding to 21.5% of the total (Horta et al., 2017). The local and subnational scales were hardly accounted for in press coverage (2.2 and 2.8% respectively).

Climate Change in Television

So far, this article has been centered on the press. Research on television coverage of climate change in Portugal, as in many other countries (Schäfer & Schlichting, 2014), is very scarce, despite the fact that television is the main source of information on the issue (Cabecinhas, Lázaro, & Carvalho, 2008). An exploratory study by Carvalho and Pereira (2008) focused on a sample of news reports broadcast by RTP (public service television) and SIC (one of the most popular private channels) and found that representations of climate change were, as in print media, frequently populated by elite actors, namely, politicians and well-known scientists. Moreover, associations between renewable energies, innovation, economic competitiveness, and environmental protection configured an ecological modernization discourse also found in the press. Two traits set television depictions of climate change apart from the press's: a more explicit connection between weather events and climate change and a more dramatic tone. The first journalistic option may in part result from the nature of the medium, that is, television's vital need for images leading to a focus on actual occurrences rather than on (or at least together with) projections of climate impacts. From here results more than an air of urgency: The "materiality" of climate change (whether or not a given meteorological event results from the enhanced greenhouse effect) makes it "real" and may suggest that it is inevitable, thus potentially compromising citizens' sense of agency.

An analysis of television coverage of energy issues in the first half of 2006 (when oil prices reached historical highs) showed that prime time news bulletins of the three main free-to-air channels (RTP1, SIC, and TVI) focused on reporting the rocketing oil prices, dramatizing implications for the cost of living. Adding to a lack of analysis and broader discussion of the problem (context, causes, alternatives), the most frequent actor intervening in news pieces on oil were anonymous citizens (42.9% of all cases)—most often drivers at gas stations expressing feelings of injustice and criticism against the government and oil suppliers (Horta, 2008A). Further analysis showed that the main news frame used in reporting oil-related issues was that fuel prices were unfair, especially in comparison with neighboring Spain due to high taxes and market cartelization in Portugal, and because the use of the car is portrayed as a need for which citizens see no alternatives (Horta, 2012). In a longer period of analysis of RTP1 prime time news bulletins—from September 2007 until December 2009—climate change appeared in connection with energy issues, but only in a residual number of news reports. However, fuel prices continued to be the main theme reported and news items on decreasing fuel consumption

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(due to record high prices) had a negative slant (Horta & Schmidt, 2010). Indeed, as a journalist specialized on energy coverage noted in interviews conducted in 2008, the media tended to adopt a news frame that portrayed road traffic in a positive way: “I never hear saying ‘Lisbon has less cars—great!’ It’s always ‘loss of 12%’ ... as if it were a bad thing ... (...) I’ve never seen a headline saying ‘Great! Lisbon is cleaner! ...’” (Horta, 2008B). Thus, restrictions to driving tended to be reported as unwelcome, even in a period when media attention to climate change was at its peak.

Newsmaking

Climate change poses multiple changes to journalists and editors (e.g., Smith, 2005). Its complex, multi-scalar, and multidimensional nature means that “news pegs” have to be found in different types of issues and occurrences. With “invisible causes” (to our senses), “distant impacts,” and “delayed or absent gratification for taking action” (Moser, 2010), climate change may indeed appear difficult to grasp. Back in 1990, Wilkins and Patterson noted that, to become news, climate change (and other slow-development environmental problems) had to “find an event.” The research about Portugal reported here suggests that newsmaking on climate change has also had a strong event orientation with international “high-level” events exerting especially strong agenda-setting and frame-setting effects.

Based on interviews and focus groups with journalists in Portugal, Carvalho, Pereira, and Cabecinhas (2011) realized that there was a significant dependency and even a conscious reliance on the communication pro-activity of news sources (i.e., on receiving press releases, reports, and other documents). Ease of access and availability of sources was another valued factor. Together with preconceptions on the credibility of certain sources and a tradition of deference to authority, this leads the media agenda to be strongly influenced by institutional/official bodies as suggested by the previous analysis of issues, frames, and voices in the media.

As organizations and other social actors have become increasingly media savvy (Ribeiro, 2009), journalists have engaged less and less in independent research and investigation. The range of voices that gets to be heard and amplified subsequently decreases. This may also help understand why, in the little space given to non-governmental organizations, Quercus was nearly the sole voice, as it has been the environmental NGO with the strongest communication structure in Portugal (Carvalho et al., 2011).

The economic situation of the Portuguese media may also explain the adherence to the discourses of the most powerful social actors. Whereas the role of advertising revenue can be evoked, perhaps more even important is the serious shortness of human resources and time pressure on journalists. Sharp drops in print circulation, the transfer of readers to digital platforms, and the severe economic crisis that Portugal endured means that, for a number of years, newsrooms have gravely shrunk and are mostly composed of young temporary hires with the pressure to produce more and faster for less and less pay (Garcia, 2009). In these circumstances, reproducing elite discourses becomes the norm. With regard to climate change, this is accompanied with strong reliance on international news agencies feeds.

Interviews showed that journalists from “quality” newspapers were more reflexive and analytical of their professional practice (Carvalho, Pereira, & Cabecinhas, 2011), which is in line with differences found in content, especially in *Público*, as already stated.

Social Actors' Discourses on Climate Change

"Who speaks for the climate?" Borrowed from Boykoff (2011), this question intends to highlight the fact that the meaning of climate change very much depends on the individuals, groups, and institutions that define it. It is therefore worthwhile mapping the social actors that advance given understandings of climate change and analyzing what those views/discourses are and how they are communicated.

In published research, most attention has been paid to those actors that have attempted to socially construct the "non-problematicity" of climate change (Freudenburg, 2000), in other words, the so-called skeptics or—maybe more accurately—denialists (McCright & Dunlap, 2000). A multitude of corporations and think tanks in the United States have been shown to invest strongly in media campaigns, publication of books, organization of conferences, etc. (Oreskes & Conway, 2010) to deviate attention away from anthropogenic climate change or generate confusion.

The situation in Portugal is different. Carvalho (2007) searched the Web for references to climate change in Portuguese sites and found a strong presence of environmental NGOs, clearly dominated by Quercus, normally considered the most influential in the country. Coming second in terms of ownership of web-based materials on climate change was the government. Much less frequent were, in decreasing order, interest groups/professional associations, corporations, universities/research units, and local government. Although there was a number of blogs and other websites promoting denialist views, those were kept by relatively fringe groups or single individuals (with some exceptions as in the "Blasfémias" and "O Insurgente" blogs).

In terms of topics, politics was the dominant facet of climate change found on the Portuguese web and the discourses of administrative rationalism and ecological modernization (Dryzek, 1997) prevailed over others. This is consistent with the tendencies found in the media, suggesting that journalists draw strongly on the discourse of (other) social actors. However, unlike other countries where news coverage of climate change has focused mainly on sources such as national governments, research has shown that in Portugal international actors predominate in media reports (Carvalho et al., 2011; Carvalho & Pereira, 2008; Horta et al., 2017), as stated. News professionals seemingly see international elites as credible sources whose views are in line with Portugal's best interests (Horta et al., 2017).

A few studies on how Portuguese social actors relate to climate issues have shed light on their relations with media. In consonance with the observation that local authorities only have a residual presence in Portuguese media (Horta et al., 2017), research on coastal governance has shown that coastal management institutions are not sufficiently organized to adapt to coastal change, in spite of growing awareness of climate-related vulnerabilities and risks. Media presences and absences also reflect the fact that climate change policies have had scarce participation of other stakeholders than ministries and

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governmental agencies (O’Riordan, Gomes, & Schmidt, 2014). Further research on Portuguese municipalities has also shown that, for most, climate change is not a key issue in their agendas, and they are not effectively being involved in the implementation of climate change policies (Campos et al., 2017). This suggests a low drive toward mobilization of civil society and also seems to be related to their lack of engagement with the media regarding climate change.

Low involvement in communication with the public about climate change has also been found in a recent study about the organizations most directly related to climate policy. Indeed, a survey conducted in 2016 with 58 representatives of public administration, research and development institutions, businesses, non-governmental organizations, and political parties found that only 13% claim to engage frequently in media and publicity-related activities (Schmidt, Delicado, & Junqueira, 2016). Only a residual number (3%) said they often participate in public mobilization activities. Notwithstanding their low engagement in communication activities, when asked about the factors that hinder climate change abatement, lack of public concern and unwillingness of consumers to change their consumption behavior were the two factors that got most agreement from respondents (almost half of them agreed with these statements). And 21% also agreed with the statement that biased media representations hinder climate change abatement. Regarding their views on climate change, most of them agreed that it is currently happening, will have negative impacts in the country, and human activities are an important driver of current climate change. In a context of economic crisis, only 13% disagreed with the statement that there are other policy issues more urgent than climate change for Portugal. In accordance with the predominance of an ecological modernization discourse in the media found by Carvalho et al. (2011), most representatives of these organizations are optimistic and believe that, in the long term, the economy will profit from the transition to renewable energies and the reduction of greenhouse gas emissions will create opportunities for economic growth.

A prior study based on interviews with some of these actors provided deeper insights into their relations with media. Pereira (2009) identified the social actors whose voices had been most often reported by two newspapers (*Público* and *Correio da Manhã*) in the first three months of 2007. Interviews were then conducted with 11 of these actors (researchers and representatives of environmental organizations, government, public administration, European institutions, and the business sector). Although the interviewed actors declared to be available and prepared to talk to journalists about climate change, only the representatives of environmental organizations took on a pro-active role as sources of information who promote events or try to influence the news. In spite of acknowledging the need to bring information about climate change to the public, most interviewees seemed to prefer to be contacted by journalists, instead of seeking the media themselves. These actors tended to be skeptical on the role of the media in informing citizens about climate change, mainly due to what they consider to be the lack of a comprehensive approach, shallowness, and sensationalism or dramatization around catastrophes. Even representatives of environmental organizations, who try to promote

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the issue on the news, showed concern about sensationalism, and a few interviewees were very critical regarding the accuracy of news pieces. These views suggest that scientists and other social actors have a more negative image of the press than what was found in the research discussed earlier (e.g., Carvalho & Pereira, 2008). Some mentioned they have had to learn how to deal with journalists in order to avoid having their words misrepresented in the news. Concern about reporters' time constraints and lack of skills needed to cover the scientific dimensions of climate change were also pointed out. Several of these actors were doubtful that current media coverage of the issue might raise awareness among citizens of the implications of climate change for everyday life. For that to happen, in many of these actors' views, television would have to broadcast documentaries and other programs dedicated to climate change more often.

Focusing specifically on scientists' views about the promotion of public engagement with climate change, Oliveira (2015) interviewed 12 Portuguese researchers. These pointed out several factors that hinder this kind of action, such as the scarcity of resources (both human and financial) available in universities. Communications staffs in universities were often described as inefficient and passive toward the engagement of science with society, which leaves researchers in the position of having to do it themselves, in spite of their lack of time, lack of funding for that purpose, and absence of institutional acknowledgment and rewards. In a context of high precariousness in research, motivation to engage in these actions tends to be low.

Research on climate change communication has focused almost exclusively on journalism. Horta and Alexandre (2012) turned to advertising and found that in advertisements in *Visão* (the most widely read weekly newsmagazine) from 2007 to 2010, energy efficiency, use of renewable energies, and reduction of greenhouse gas emissions were the most frequent advertising claims that pointed to specific environmental attributes of products. Vague claims of fighting climate change had a significant presence, and it is noteworthy that unspecified claims of environmental friendliness came second after energy efficiency. Although some of these claims can be considered "greenwashing," the responsiveness of advertising to a public agenda where climate change was being given attention indicates that business actors considered it an opportunity to sell their products, which has also been observed by Linder (2006).

Outlook

As many other areas of social science, research on climate change communication in Portugal is still a new field. So far, systematic analyses of media coverage of climate change have focused almost exclusively on the press. Only very few studies have approached the main news source of the population—television—and (the increasingly important) contents on the Internet. Research on communication in social media, as well

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as in newsmagazines and radio, is also lacking.² Another research gap is on how audiences make sense of media contents about climate change.

However, extant research has revealed important processes that should be acknowledged and taken into account by policy makers in order to promote public engagement with debates and action toward tackling climate change. Research on the Portuguese case is also interesting from a cross-national point of view, since it illustrates how the interplay between country-specific and international dynamics can result in a form of news coverage of climate change where local vulnerabilities are downplayed in favor of reports focused on the discourse of powerful global actors.

The main features of media coverage of climate change can be synthesized as a tendency to focus on international events and policy actors, near absence of debates on local vulnerabilities and processes of adaptation, reliance on ease of access and availability of sources, governments' and other officials' lack of engagement with communication with the public, and low pro-activity of scientists as media sources. This set of features seems to render climate change portrayals in the media dependent on socioeconomic and political circumstances—such as the economic and financial crises around the 2010s—in which it is curtailed to the benefit of other priorities. This is also relevant considering the economic weakness of media companies and a very reduced number of reporters specialized in environmental issues, whereas public relations on behalf of businesses are increasingly professional and sophisticated.

Another important feature is a predominantly optimistic discourse that advances the green economy as the solution for climate change. Besides a lack of information on and discussion of local issues, findings also point to other silences in media coverage of climate change, such as lack of discussion of political alternatives, impacts of current policies, monitoring policy measures, or implications of everyday practices and consumption patterns (as it was clear with regard to the use of the car).

This particular set of conditions seems to contribute to low levels of awareness of the country's vulnerability to climate change and a lack of effective measures to deal with its impacts, in spite of the fact that Portugal is a member of the European Union, which is watchful and a "frontrunner" regarding climate change.

The occurrence of a forest fire in June 2017 where 64 people were killed has spurred extended media coverage and public debate where climate change has often been mentioned. Whether this tragic event could signal the beginning of sustained attention to Portugal's climate-related vulnerabilities remains to be seen.

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Suggested Reading

Carvalho, A. (Ed.). (2008) Communicating climate change: Discourses, mediations and perceptions. Braga, Portugal: Centro de Estudos de Comunicação e Sociedade, Universidade do Minho. E-book available at http://www.lasics.uminho.pt/ojs/index.php/climate_change.

Carvalho, A., Schmidt, L., Santos, F. D., & Delicado, A. (2014). Climate change research and policy in Portugal. *Wiley Interdisciplinary Reviews: Climate Change*, 5, 199–217.

Horta, A., Carvalho, A., & Schmidt, L. (2017). The hegemony of global politics: News coverage of climate change in a small country. *Society & Natural Resources*. E-print published online March 22, 2017. Available at <http://www.tandfonline.com/eprint/VbhXMdX2v5b86jrVSZKw/full>.

References

Antilla, L. (2005). Climate of skepticism: U.S. newspaper coverage of the science of climate change. *Global Environmental Change*, 15, 338–352.

Balbé, A. D., & Carvalho, A. (2017). As mudanças climáticas no Twitter: A ascendência da mídia e da política. *Desenvolvimento e Meio Ambiente*, 40, 141–161.

Bastos, H. (2014). Da crise dos media ao desemprego no jornalismo em Portugal. *Parágrafo: Revista Científica de Comunicação Social da FIAM-FAAM*, 2(2), 38–46.

Borrego, C. (2010). A política ambiental de Portugal no espaço europeu: Atitudes e desafios. *Europa: Novas Fronteiras Portugal*, 25, 177–182.

Boykoff, M. (2007). From convergence to contention: United States mass media representations of anthropogenic climate change science. *Transactions of the Institute of British Geographers*, 32(4), 477–489.

Boykoff, M. (2011). *Who speaks for the climate? Making sense of media reporting on climate change*. Cambridge, U.K.: Cambridge University Press.

Broadbent, J. (2012). *Divergent agendas: Climate change newspaper discourse in fifteen societies*. Paper presented at Planet Under Pressure Conference, London, U.K.

Broadbent, J., Sonnett, J., Botetzagias, I., Carson, M., Carvalho, A., Chien, Y.-J., ... Zhengyi, S. (2016). Conflicting climate change frames in a global field of media discourse. *Socius: Sociological Research for a Dynamic World*, 2, 1–17.

Climate Change Communication in Portugal

Cabecinhas, R., Carvalho, A., & Lázaro, A. (2011). Representações sociais sobre alterações climáticas. In A. Carvalho (Ed.), *As alterações climáticas, os media e os cidadãos* (pp. 177-194). Coimbra, Portugal: Grácio Editor.

Cabecinhas, R., Lázaro, A., & Carvalho, A. (2008). Media uses and social representations of climate change. In A. Carvalho (Ed.), *Communicating climate change: Discourses, mediations and perceptions* (pp. 170-189). Braga, Portugal: Centro de Estudos de Comunicação e Sociedade, Universidade do Minho. E-book available at http://www.lasics.uminho.pt/ojs/index.php/climate_change.

Cabral, M. V. (2000). O exercício da cidadania política em Portugal. *Análise Social*, 35(154-155), 85-113.

Campos, I., Guerra, J., Ferreira, J. G., Schmidt, L., Alves, F., Vizinho, A., & Lopes, G. P. (2017). Understanding climate change policy and action in Portuguese municipalities: A survey. *Land Use Policy*, 62, 68-78.

Carvalho, A. (2007). As alterações climáticas no ciberespaço português: Mediações dos saberes e dos poderes'. *Revista de Comunicação e Linguagens*, 38, 253-263.

Carvalho, A. (Ed.). (2011). *As alterações climáticas, os media e os cidadãos*. Coimbra, Portugal: Grácio Editor.

Carvalho, A., & Burgess, J. (2005). Cultural circuits of climate change in U.K. broadsheet newspapers, 1985-2003. *Risk Analysis*, 25(6), 1457-1469.

Carvalho, A., & Pereira, E. (2008). Communicating climate change in Portugal: A critical analysis of journalism and beyond. In A. Carvalho (Ed.), *Communicating climate change: Discourses, mediations and perceptions* (pp. 126-156). Braga, Portugal: Universidade do Minho. Retrieved from http://www.lasics.uminho.pt/ojs/index.php/climate_change.

Carvalho, A., Pereira, E., & Cabecinhas, R. (2011). O trabalho de produção jornalística e a mediatização das alterações climáticas. In A. Carvalho (Ed.), *As alterações climáticas, os media e os cidadãos* (pp. 145-173). Coimbra, Portugal: Grácio Editor.

Carvalho, A., Pereira, E., Rodrigues, A. T., & Silveira, A. P. (2011). A reconstrução mediática das alterações climáticas. In A. Carvalho (Ed.), *As alterações climáticas, os media e os cidadãos* (pp. 105-144). Coimbra, Portugal: Grácio Editor.

Carvalho, A., Schmidt, L., Santos, F. D., & Delicado, A. (2014). Climate change research and policy in Portugal. *Wiley Interdisciplinary Reviews: Climate Change*, 5, 199-217.

Chilton, P. (1987). Metaphor, euphemism, and the militarization of language. *Current Research on Peace and Violence*, 10, 7-19.

Delicado, A., & Horta, A. (2013). *Alterações climáticas e erosão costeira: Participação pública e representações mediáticas*. Paper presented at Seminário COMPOLIS—

Climate Change Communication in Portugal

Comunicação e Envolvimento Político com Questões Ambientais, Instituto de Ciências Sociais da Universidade do Minho, Braga.

Delicado, A., Truninger, M., Figueiredo, E., Silva, L., Junqueira, L., Horta, A., ... Soares, F. (2015) *Terras de sol e de vento. Dinâmicas sociotécnicas e aceitação social das energias renováveis em Portugal*. Lisbon, Portugal: ICS.

Dessai, S., Branco, K., & Doria, M. (2001). *Climate change and media in Portugal: Preliminary results*. Poster presented at the conference on Climate Change Science, Economics and Politics, Lisbon.

Dessai, S., & Michaelowa, A. (2001). Burden sharing and cohesion countries in European climate policy: The Portuguese example. *Climate Policy*, 1, 327–341.

Domínguez, J. M. M. (2013). Parallel paths, converging interests: Trends and changes within media groups in Spain and Portugal (1995–2010). *International Journal of Iberian Studies*, 26(3), 173–188.

Dryzek, J. (1997). *The politics of the earth: Environmental discourses*. Oxford: Oxford University Press.

Dunlap, R. E. (1998). Lay perceptions of global risk: Public views of global warming in cross-national context. *International Sociology*, 13(4), 473–498.

Dunlap, R. E. (2017) A brief history of sociological research on environmental research. In A. Telesiene & M. Gross (Eds.), *Green European: Environmental behaviour and attitudes in Europe in a historical and cross-cultural comparative perspective* (pp. xix–xxvi). London: Routledge.

Dunlap, R. E., Gallup, G. H. Jr., & Gallup, A. M. (1993). Of global concern. Results of the health of the planet survey. *Environment*, 35(9), 7–39.

Eide, E., & Ytterstad, A. (2011). The tainted hero: Frames of domestication in Norwegian press representation of the Bali climate summit. *International Journal of Press/Politics*, 16(1), 50–74.

Ereaut, G., & Segnit, N. (2006). *Warm words: How we are telling the climate story and can we tell it better*. London: Institute of Public Policy Research.

EC (2011). *Climate change. Special Eurobarometer 372*. European Commission.

EC (2014a). *Attitudes of European citizens towards the environment. Special Eurobarometer 416*. European Commission.

EC (2014b). *Climate change. Special Eurobarometer 409*. European Commission.

EC (2015a). *Media use in the European Union. Standard Eurobarometer 84*. European Commission.

Climate Change Communication in Portugal

EC (2015b). *Climate change. Special Eurobarometer 435*. European Commission.

Figueiredo, E., & Fidélis, T. (2003). «No meu quintal, não!» Contributos para uma análise dos movimentos de raiz popular em Portugal (1974–1994). *Revista Crítica de Ciências Sociais*, 65, 151–173.

Figueiredo, E., Fidélis, T., & Pires, A. R. (2001). Grassroots environmental action in Portugal (1974–1994). In K. Eder & M. Kousis (Eds.), *Environmental politics in Southern Europe: Actors, institutions and discourses in a Europeanizing society* (pp. 197–221). Dordrecht, The Netherlands: Kluwer Academic.

Freudenburg, W. R. (2000). Social constructions and social constrictions: Toward analyzing the social construction of “the naturalized” as well as “the natural.” In G. Spaargaren, A. P. J. Mol, & F. H. Buttel (Eds.), *Environment and global modernity* (pp. 103–119). London: SAGE.

Galtung, J., & Ruge, M. (1965). The structure of foreign news. *Journal of Peace Research*, 2(1), 64–90.

Garcia, J. L. (2009). *Estudos sobre os jornalistas Portugueses: Metamorfoses e encruzilhadas no limiar do século XXI*. Lisbon, Portugal: Imprensa de Ciências Sociais.

Garcia, J. L., Barata, P., & Matos, G. (2000). Orientação, cidadania e responsabilização. In J. Ferreira de Almeida (Ed.), *Os Portugueses e o ambiente—I inquérito nacional às representações e práticas dos Portugueses sobre Ambiente* (pp. 145–184). Oeiras, Portugal: Celta.

Geels, F. (2013). The impact of the financial-economic crisis on sustainability transitions: Financial investment, governance and public discourse. *Environmental Innovation and Societal Transitions*, 6, 67–95.

Gkiouzepas, G., & Botetzagias, I. (2015). **Climate change coverage in Greek newspapers: 2001–2008**. *Environmental Communication*, 11(4), 490–514.

Guerra, J., Schmidt, L., & Valente, S. (2017). Dilemmas of sustainability in turbulent times: The Portuguese case in context. In A. Telesiene & M. Gross (Eds.), *Green European: Environmental behaviour and attitudes in Europe in a historical and cross-cultural comparative perspective* (pp. 221–242). London: Routledge.

Hallin, D. C., & Mancini, P. (2004). *Comparing media systems. Three models of media and politics*. Cambridge, U.K.: Cambridge University Press.

Horta, A. (2008a). A tematização televisiva da “crise petrolífera.” In M. L. Martins & M. Pinto (Eds.), *Comunicação e Cidadania. Actas do 5º Congresso da Associação Portuguesa de Ciências da Comunicação* (pp. 2107–2118). Braga, Portugal: CECS/UM.

Climate Change Communication in Portugal

Horta, A. (2008b). *The production of news about energy as an environmental issue. Communication Policies and Culture in Europe. ECREA Barcelona 2008. Programme, abstracts, posters and papers.* Barcelona: ECREA.

Horta, A. (2012). Automobilidade e mediatização do preço dos combustíveis. In J. Azevedo & M. L. Martins (Eds.), *Atas. 7º Congresso da SOPCOM. Meios Digitais e Indústrias Criativas—Os efeitos e os desafios da globalização* (pp. 3739–3750). Porto, Portugal: Associação Portuguesa de Ciências da Comunicação/CETAC.Media/Universidade do Porto.

Horta, A., & Alexandre, S. (2012). Greenwashing na publicidade associada ao consumo de energia e às alterações climáticas. *Atas do VII Congresso Português de Sociologia. Sociedade, Crise e Reconfigurações—2012.* Lisboa, Portugal: Associação Portuguesa de Sociologia.

Horta, A., Carvalho, A., & Schmidt, L. (2014). *Climate change in Portuguese media: Global politics and the vanishing national reality.* Paper presented at the XVIII ISA World Congress of Sociology, Yokohama.

Horta, A., Carvalho, A., & Schmidt, L. (2017). The hegemony of global politics: News coverage of climate change in a small country. *Society & Natural Resources.* E-print published online, March 22, 2017.

Horta, A., & Schmidt, L. (2010). *Prime time news and public awareness on energy efficiency: The Portuguese case.* Paper presented at Communication and Citizenship, International Association for Media and Communication Research (IAMCR) Conference 2010, Braga, Portugal.

Inglehart, R. (1997). *Modernization and postmodernization: Cultural, economic, and political change in 43 societies.* Princeton, NJ: Princeton University Press.

IPCC (2014). *Intergovernmental Panel on Climate Change, 5th Assessment Report, WGI, WGII and WGIII.* Retrieved from <http://www.ipcc.ch/report/ar5/>.

Kenis, A., & Lievens, M. (2015). *The limits of the green economy.* London: Routledge.

Kousis, M., & Eder, K. (2001). Introduction. EU policy-making, local action, and the emergence of institutions of collective action. A theoretical perspective on Southern Europe. In K. Eder & M. Kousis (Eds.), *Environmental politics in Southern Europe: Actors, institutions and discourses in a Europeanizing society* (pp. 3–21). Dordrecht, The Netherlands: Kluwer Academic.

Kunelius, R., & Eide, E. (2012). Moment of hope, mode of realism: On the dynamics of a transnational journalistic field during UN climate change summits. *International Journal of Communication, 6,* 266–285.

Climate Change Communication in Portugal

Lima, A. V. (2000). Representações e valores sobre natureza e ambiente. In J. F. de Almeida (Ed.), *Os Portugueses e o Ambiente. I Inquérito Nacional às Representações e Práticas dos Portugueses sobre o Ambiente* (pp. 7-31). Oeiras, Portugal: Celta.

Linder, S. (2006). Cashing-in on risk claims: On the for-profit inversion of signifiers for “global warming.” *Social Semiotics*, 16(1), 103-132.

Lorenzoni, I., & Pidgeon, N. (2006). Public views on climate change: European and USA perspectives. *Climatic Change*, 77, 73-95.

Mansinho, I., & Schmidt, L. (1994). A emergência do ambiente nas ciências sociais. *Análise Social*, 29(125-126), 441-481.

McAllister, L., Nacu-Schmidt, A., Andrews, K., Boykoff, M., Daly, M., Gifford, L., & Luedecke, G. (2017). *World newspaper coverage of climate change or global warming, 2004-2017*. Center for Science and Technology Policy Research, Cooperative Institute for Research in Environmental Sciences, University of Colorado Web.

McComas, K., & Shanahan, J. (1999). Telling stories on global climate change: Measuring the impact of narratives on issue cycles. *Communication Research*, 26(1), 30-57.

McCright, A., & Dunlap, R. (2000). Challenging global warming as a social problem: An analysis of the conservative movement’s counter-claims. *Social Problems*, 47(4), 499-522.

Moser, S. (2010). Communicating climate change: History, challenges, process and future directions. *Wiley Interdisciplinary Reviews: Climate Change*, 1(1), 31-53.

Nave, J. G. (2001). Environmental politics in Portugal. In K. Eder & M. Kousis (Eds.), *Environmental politics in Southern Europe: Actors, institutions and discourses in a Europeanizing society* (pp. 343-364). Dordrecht, The Netherlands: Kluwer Academic.

Nave, J. G., & Fonseca, S. (2004). Entre a cultura ambiental e o efeito nimby: As várias faces de uma cidadania para o ambiente. In J. F. Almeida (Ed.), *Os Portugueses e o Ambiente. II Inquérito Nacional às Representações e Práticas dos Portugueses sobre o Ambiente* (pp. 237-335). Oeiras, Portugal: Celta.

Nave, J. G., Horta, A., & Lorga, C. (2000). Informação e cultura ambiental. In João Ferreira de Almeida (Ed.), *Os Portugueses e o Ambiente. I Inquérito Nacional às Representações e Práticas dos Portugueses sobre o ambiente* (pp. 103-144). Lisboa, Portugal: Celta.

Olausson, U. (2014). The diversified nature of “domesticated” news discourse. The case of climate change in national news media. *Journalism Studies*, 15(6), 711-725.

Oliveira, J. M. P. (1992). A integração europeia e os meios de comunicação social. *Análise Social*, 118-119(4-5), 995-1024.

Climate Change Communication in Portugal

Oliveira, L. (2015). *As universidades e a participação pública em ciência. Percepções e práticas de cientistas, profissionais de comunicação e cidadãos em Portugal e Espanha*. Ph.D. thesis, Braga, Portugal: Universidade do Minho.

Oliveira, L., & Carvalho, A. (2015) Public engagement with science and technology: Contributos para a definição do conceito e a análise da sua aplicação no contexto português. *Observatorio (OBS*) Journal*, 9(3), 155–178.

Oliveira, L., & Carvalho, A. (in press). *Comportamentos e percepções acerca da participação pública em ciência e tecnologia nas alterações climáticas: Os casos de Portugal e Espanha*.

Oreskes, N., & Conway, E. (2010). *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. New York: Bloomsbury Press.

O’Riordan, T., Gomes, C., & Schmidt, L. (2014). The difficulties of designing future coastlines in the face of climate change. *Landscape Research*, 39(6), 613–630.

Pacheco, L., & Rebelo, J. (2014). The predicament of young journalists: The study of Portugal. *Observatorio (OBS*)*, 8(2), 83–109.

Painter, J. (2011). *Poles apart: The international reporting of climate skepticism*. Oxford, U.K.: Reuters Institute for the Study of Journalism.

Pereira, E. (2009). *Comunicação ambiental—as alterações climáticas nos jornais*. Master’s thesis, Aveiro, Portugal: Universidade de Aveiro.

Peters, H. P., & Heinrichs, H. (2008). Legitimizing climate policy: The “risk construct” of global climate change in the German mass media. *International Journal of Sustainability Communication*, 3, 14–36.

Pidgeon, N., & Fischhoff, B. (2011) The role of social and decision sciences in communicating uncertain climate risks. *Nature Climate Change*, 1, 35–41.

Queirós, M. (2002). O ambiente nas políticas públicas em Portugal. *Finisterra*, 37(73), 33–59.

Ribeiro, F. V. M. (2009). *Fontes sofisticadas de informação*. Lisbon, Portugal: Media XXI.

Santana-Pereira, J. (2016). The Portuguese media system and the normative roles of the media: A comparative view. *Análise Social*, 221(4), 780–801.

Santos, B. S. (1990). *O Estado e a sociedade em Portugal (1974–1988)*. Porto, Portugal: Afrontamento.

Climate Change Communication in Portugal

Santos, B. S., & Nunes, J. A. (2004). Introduction: Democracy, participation and grassroots movements in contemporary Portugal. *South European Society and Politics*, 9(2), 1–15.

Santos, F. D., Forbes, K., & Moita, R. (Eds.). (2002). *Climate change in Portugal: Scenarios, impacts and adaptation measures, Project SIAM I*. Lisbon, Portugal: Gradiva.

Santos, F. D., & Miranda, P. (Eds.). (2006). *Alterações climáticas em Portugal: Cenários, impactos e medidas de adaptação, Projecto SIAM II*. Lisbon, Portugal: Gradiva.

Scannell, L., & Gifford, R. (2013). Personally relevant climate change: The role of place attachment and local versus global message framing in engagement. *Environment and Behavior*, 45(1), 60–85.

Schäfer, M., Ivanova, A., & Schmidt, A. (2012). Media attention for climate change. Klimacampus, Germany: University of Hamburg. Available at <http://www.klimacampus.de/mccc.html>.

Schäfer, M., & Schlichting, I. (2014). Media representations of climate change: A meta-analysis of the research field. *Environmental Communication*, 8(2), 142–160.

Schmidt, L. (2003). *Ambiente no Ecrã. Emissões e demissões no serviço público televisivo*. Lisbon, Portugal: ICS.

Schmidt, L. (2008). Comunicar a ciência: O papel dos media e os problemas científico-ambientais. In L. Schmidt & J. P. Cabral (Eds.), *Ciência e Cidadania. Homenagem a Bento de Jesus Caraça* (pp. 85–112). Lisbon, Portugal: ICS.

Schmidt, L., & Delicado, A. (2014). Alterações climáticas na opinião pública. In L. Schmidt & A. Delicado (Eds.), *Ambiente, alterações climáticas, alimentação e energia. A opinião dos portugueses* (pp. 113–143). Lisbon, Portugal: ICS.

Schmidt, L., Delicado, A., & Fonseca, S. (2015). *Consulta mundial sobre clima e energia: A opinião dos portugueses. Observa Policy Brief 2015*. Lisbon, Portugal: ICS.

Schmidt, L., Delicado, A., & Junqueira, L. (2016). *Climate change policy networks in Portugal*. Paper presented at the Third ISA Forum of Sociology, The Futures We Want: Global Sociology and the Struggles for a Better World, Vienna.

Schmidt, L., Gomes, C., Guerreiro, C., & O’Riordan, T. (2014). Are we all on the same boat? The challenge of adaptation facing Portuguese coastal communities: Risk perception, trust-building and genuine participation. *Land Use Policy*, 38, 355–365.

Schmidt, L., Prista, P., Saraiva, T., O’Riordan, T., & Gomes, C. (2013). Adapting governance for coastal change in Portugal. *Land Use Policy*, 31, 314–325.

Climate Change Communication in Portugal

Shwom, R. L., McCright, A. M., Brechin, S. R., Dunlap, R. E., Marquart-Pyatt, S. T., & Hamilton, L. C. (2015). Public opinion on climate change. In R. E. Dunlap & R. J. Brulle (Eds.), *Climate change and society: Sociological perspectives* (pp. 269–299). New York: Oxford University Press.

Smith, J. (2005). Dangerous news: Media decision making about climate change risk. *Risk Analysis*, 25(6), 1471–1482.

Soromenho-Marques, V. (2007). The environment. In A. Reis (Ed.), *A portrait of Portugal. Facts and events* (pp. 181–190). Lisbon, Portugal: Instituto Camões/Círculo de Leitores/ Temas & Debates.

Tuchman, G. (1978). *Making news. A study in the construction of reality*. New York: Free Press.

Valente, S., & Ferreira, J. G. (2014). Ambiente: Das preocupações às práticas. In L. Schmidt & A. Delicado (Eds.), *Ambiente, alterações climáticas, alimentação e energia. A opinião dos portugueses* (pp. 31–74). Lisbon, Portugal: ICS.

Weart, S. (2008). *The discovery of global warming*. Cambridge, MA: Harvard University Press.

Wilkins, L., & Patterson, P. (1990). Risky business: Covering slow-onset hazards as rapidly developing news. *Political Communication and Persuasion*, 7, 11–23.

Yun, S.-J., Ku, D., Park, N. B., & Han, J. (2012). A comparative analysis of South Korean newspaper coverage on climate change: Focusing on conservative, progressive, and economic newspapers. *Development and Society*, 41(2), 201–228.

Notes:

(1.) Linguistic repertoires are “systems of language that are routinely used for describing and evaluating actions, events, and people. A repertoire might include a distinctive lexicon; a set of grammatical or stylistic features; or particular images, metaphors, idioms, stories, and categories” (Ereaut & Segnit, 2006, p. 12).

(2.) However, an ongoing study on climate change communication in the Portuguese language on Twitter suggests a relatively low expression of national actors (Balbé & Carvalho, 2017).

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