

Framing the Flames and Floods: Unravelling Media's Role in Shaping Disaster Response in Sicily and Sardinia

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Abstract: The article analyzes the mechanisms used by news media to define and classify environmental disasters and weather warnings in Sardinia and Sicily, employing the sociocultural profiling method of Emotional Text Mining applied to 166 articles covering a 24-month period from January 2022 to December 2023. A sociocommunicative perspective is adopted in the article, using the Social Amplification of Risk Framework and agenda-setting in order to satisfy two research questions.

Keywords - risk communication, environmental disasters, ETM, media coverage

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INTRODUCTION

Over the past four decades, the issue of risk, as a feature of contemporary society, has become central to international debate [1] and is linked to how societies manage and cope with climate, technological and social change.

Environmental issues constitute a concrete example of this thematization. Environmental disasters - both those related to natural factors and those caused by human activity - have become, increasingly frequently, the subject of analysis in sociology and for communication studies, with the development of autonomous strands of research dedicated to risk, crisis

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and emergency communication [2] that have led to the emergence of specific sections within the main scientific associations on communication at the international level. In this context, and within a broader research project on risk communication in the insular context [3] the article analyzes the mechanisms through which journalistic media define and classify environmental disasters and weather warnings related to the territories of Sardinia and Sicily (Italy) by employing the sociocultural profiling method of Emotional Text Mining

Interest in insular risk communication [3] emerges as an inherent need in overcoming the dynamics of visibility and invisibility to which islands are subjected. This is an aspect that has already found interest within the project INSULANDER - Investigating the Strategic role of commUnication for resiLient islAnds copiNg DisastErs Risk Management (Prin 2022 PNRR, Next Generation EU).

LITERATURE REVIEW

The perspective of this study is the sociocommunicative one, with a focus on those contributions that emphasize the action of the media in shaping risk perception and related responses. Along this line, one of the first contributions to be confronted is the Social Amplification of Risk Framework (SARF). A meta-theory that aims to make available a set of tools to identify, classify and order the relevant individual and social phenomena used by institutions, groups and individuals to define and act towards risk. One is in the presence of an analytical framework that allows an easy understanding of the communicative processes related to risk; defining risk and responses to it as socially constructed processes. The perception of risk is influenced by psychological, social and cultural factors and it has been probed both from the point of view of the reception, thus of citizens, and with respect to the issuer, understood in the dual capacity of public and private actors deputed to the communication of risk and related disaster events; nonetheless, the function and role of the media has been widely debated. With interest in the perception and response of the publics, a key contribution is the psychometric theory of risk by Slovic et al. [4], which shows that individuals assess danger based on subjective factors, such as familiarity with the risk itself and perceived sense of control. Arvai and Rivers [5] further explored this approach, highlighting the direction of people's actions, which is guided more by subjective perception and definition of the situation rather than scientific assessments, resulting in direct effects on decisions made in the face of disasters.

Overwhelmingly - and as reflected in studies by Wählberg and Sjöberg [6] - there is a tendency for the media to exaggerate some risks and ignore others, sacrificing objectivity in favor of sensationalism. Other studies focus on the media's tendency to favor rare and dramatic risks and to consider only events in which there are fatalities and deaths as news. In supporting this thesis, many of these scholars take their cue from Combs and Slovic [7], who argue that there is a media bias in selecting risk-related news. Of the same opinion are Vogler and Meissner [8], who point out the media's focus on extraordinary events, neglecting recurring emergencies; where continuous communication could help to avoid underestimating hazards and encourage timely responses. The media do not merely convey events, but actively contribute to the construction of social reality by selecting news and applying interpretive frames on it.

In recent years, studies using agenda setting theory have attributed to the media an influence on associations between themes and attributes that can activate a network of relationships (third level of agenda setting) [9] and that can prove useful in both media narrative analysis and risk communication management. It seems clear that the media play a key role in risk communication considering the effect produced on citizens, likewise they are tools that public actors also turn to in the communication and management of crises resulting from disaster events. Recent contributions have highlighted their function as prevention and coordination tools, now disseminating useful information for emergency management, now becoming amplifiers of anxiety and misinformation.

METHODS

Two research questions emerge from the literature review, and with particular reference to studies related to the Social Amplification of Risk Framework and agenda setting:

[RQ1] What is the media representation of environmental disasters and weather warnings that emerges from media coverage in Sardinia and Sicily?

[RQ2] Is it possible to identify common traits in the two islands?

The article then analyzes the journalistic representation of environmental disasters and weather warnings that have affected the territories of Sardinia and Sicily to identify common and/or divergent traits in the media coverage and thematization strategies adopted for the two islands. The study recognizes - as a result - the importance and role of the media in communicating the risk and management of environmental disasters.

To do this, a database focused on national, regional and local press as well as online news outlets was constructed. All articles from local and national newspapers were collected through the *Eco della Stampa* platform, the retrieval of which was done through the following keywords contained in the texts and titles of the articles: *disastr** *ambiental** or *weather alert** associated with Sardinia or Sicily, for the period between January 2022 and December 2023. To analyze media coverage, the study made use of the sociocultural profiling method of Emotional Text Mining, (ETM) [10], which is based on a socio-constructivist matrix perspective, which interprets the behavior of social actors as the product of categorization processes of reality, processes that are socially constructed and shared. ETM is based on a natural language processing procedure applicable to small and large corpora, usable on unstructured data, through a semiotic and semantic approach to

text, which allows for the identification of three levels of communication: content, representations and the symbolic-cultural matrix that organizes the construction of meaning and consequently the perception of social actors [10].

In order to be able to operate on the collected texts, it was necessary to proceed with a database cleanup, which allowed for the elimination of irrelevant journalistic texts, reducing them to a number of 166; collected - in turn - into a medium-sized corpus consisting of more than 80,000 words, with a good lexical richness. In the procedural articulation of the ETM, after an initial pre-processing phase, in which the corpus is divided into comparable text fragments (FTs), the selection of the words under study identified on the basis of statistical criteria was carried out. Next, the text fragments were grouped on the grounds of word association, that is, through cluster analysis, texts were grouped on the basis of the similarity of their lexical profile, and then the symbolic cultural categories were extrapolated using correspondence analysis. Finally, specific clusters emerged for the regions under investigation (Sicily, Sardinia) and for the type of event (environmental disaster, weather alert) through the chi-square test.

RESULTS

The 414 words selected allowed for the classification of 99 percent of the *corpus*, which was characterized by the presence of eight representations related to environmental disaster and weather alert that can be grouped into four macro-themes. These macro-areas and related representations are located in a symbolic-cultural sense space organized by three main factors of communication [10]. Correspondence analysis reveals three symbolic-cultural factors that organize communication, three axes around which discourses are organized: cause, human choice and environmental disaster. The most relevant factor, as reflected in the percentage of inertia explained (47%), is that of the causes of the disaster. A disaster that contrasts the work of man, his action, with the uncontrollable *force* of nature that takes shape through weather phenomena (*rain, thunderstorm, wind, snow*, etc.) and that *alerts* man, who - in turn - gives it a specific color (*yellow, orange*) because of the *risk* it poses when it invades different *parts* of the country (*north, Tuscany*). Human action, on the other hand, seems to be aimed at identifying and prosecuting (*inquiry, investigation, trial*) - through the appropriate bodies (*PM, prosecution, court, lawyer, GIP*) - the actors of potential *crimes* that *pollute* and determine those conditions favoring environmental disasters.

The division of disaster causes into human and natural is subsequently declined by the other two factors obtained from data processing: the consequences of human choice distinguished into legitimate and illegitimate, although both can result in environmental pollution; while those of the force of nature are declined in two time frames: that of prevention (pre-disaster) and that of the impact of natural forces (during the disaster event).

Distinct human choice in legitimate distinguishes actions, such as allowing the presence of a firing *range* for the *military* in *Teulada*, a choice made by the governing bodies that nevertheless highlights the possibility of mismanagement by the figures in charge (*Giuseppe Valotto, Claudio Graziano*) who are being investigated (*preliminary hearing*) and remanded *for trial*. This pole is contrasted with that of illegitimate choices, those of environmental crimes (*waste, sewage treatment plant, landfill*) and the need to put *facilities* under *seizure* because of mismanagement by *industrial companies*.

The third symbolic-cultural factor, on the other hand, specifies two aspects of the forces of nature: its impact (*bad weather, storm surge, landslide, precipitation*) on vast areas of the territory (*coast, Liguria, Lazio*) and the prevention (*avoidance*) of disasters (*fires*) with the intervention of the public institutions in charge (*Civil Defense, Fire Department*).

This initial analysis of the database makes it possible to respond to the need to map the way in which the media narrate or choose to construct a narrative system around disaster events [RQ1]. Especially, the poles related to choice oscillate along a legality dimension by marking the presence of legitimate and illegitimate actions and actors, the presence of which-in the latter case-advances the hypothesis of the presence of crimes within environmental disasters. The analysis of the first three factors is tangential to the analysis of journalistic narrative logic, which selects and frames events in a non-neutral manner through the inclusion of a point of view, that proper to the news outlet.

The framework outlined returns the media's ability to shape public perception of risk by producing a mixture of uncertainty, risk and certainty, evident in the content of the macro-areas and especially the eight representations [RQ1]. Finally, the results show a statistically significant association between the illustrative variables considered (region and event) and the representations identified with the ETM. If we consider the regional dimension of the survey *corpora*, we can see that the macroareas of "force of nature" and "legal process" are significantly associated with Sicily (χ^2 , $df=3$, $p<0.05$) while those of "land management" and "environmental pollution" with Sardinia. In contrast, news articles dealing with the weather alert focus more on "force of nature" and "land management" (χ^2 , $df=3$, $p<0.05$) while those dealing with environmental disaster focus instead on "legal process" and "environmental pollution" [RQ2].

DISCUSSION

Analysis of the data revealed the presence of three factors around which media discourses related to environmental disasters and weather warnings in Sicily and Sardinia are articulated. The three axes move along a dimension of analysis that disarticulates cause, human choice and environmental disaster. In the digression of the medial construction of risk and attribution of responsibility, four macro areas intersect – then – grouping representations related to the object of detection, environmental disaster and weather alert. In identifying the four macro areas, we have that "force of nature" and "legal process" are significantly associated with Sicily while those of "land management" and "environmental pollution" with Sardinia. Conversely, if we look at the type of event, we have that the weather alert is drawn by resorting more to the theme

of “force of nature” and “land management”; in contrast to the articles related to environmental disaster, which gather narratives focused on “legal process” and “environmental pollution” [RQ1 and RQ2].

The findings that emerged from the data analysis already make it possible to discriminate the approach to the representation of natural disaster risk and its management for the two islands: in Sicily, media attention is mainly focused on seismic and volcanic hazards with a reactive approach, while in Sardinia, narratives about hydrogeological hazards and the environmental impact of military polygons and mass tourism, often considered an ecological threat, prevail. Both representations are – however – incomplete, neglecting an integrated approach to risk management and sustainability.

Thus, the research questions from which this work has moved seem to be answered; in fact, the need to map the media representation of natural disasters and the related need to identify common and/or divergent traits in the communication strategies adopted for the two islands [RQ1 and RQ2] already appears to be met.

CONCLUSION

The representations identified through ETM offer the possibility of tracing not only themes and attributes but also of recovering, with them, a network of relationships. A process, the latter, related to network agenda-setting which argues that news tells us how and what to think and determines associations between themes and attributes by generating a network of relationships between themes and the attributes themselves in an attempt to shape social reality [11]. The action produced by the media builds a network along which environmental disasters and weather warnings are colored by socially constructed meanings, which turn on the valence of the effects produced by the social construction of risk closely related to the SARF strand of studies. Studies such as the one presented here can also play a strategic function in improving public risk communication, both in terms of critical analysis of the media climate and in defining more calibrated and effective communication interventions for the specificities of the territories and the populations living there.

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