

Article

Food for thought – Communicating food-related risks

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In the last few years, a continuous series of food alerts have caught the attention of the media and the public in Europe. First, eggs and pork contaminated with dioxins; then, “mad cow” disease, while, all along in the background, a battle against genetically modified plants has been in progress. These food alerts have had complex repercussions on the perception of risks associated with food production.

Experts have often been divided over these issues, and the uncertainty of scientific data has been indicated on more than one occasion as one of the factors that influence risk perception. However, the most important factor seems to be undoubtedly the way in which the risk has been communicated (or not communicated) to the public.

Therefore, risk communication analysis offers an excellent opportunity to understand the profound changes that are taking place in relations among the scientific community, mass media and other members of civil society now that they are fully aware that scientific and technological innovation, the real driving force of modern industrial society, is a source of development but also a source of risks which are not always acceptable. Within this different context, a debate open to all interested parties appears to have become a dire necessity for the “risk society”, especially as far as food is concerned because food has extremely important psychological, ethical and cultural values.

Keywords: Risk communication, Social participation to science, Public awareness

Introduction

Ever since the dawn of biotechnology, its rapid development has gone hand in hand with suspicion and fear. But it is mainly since 1996, when the first transgenic products to be consumed by humans came onto the market, that biotech research applications have become one of the most controversial global issues.⁽¹¹⁾⁽¹²⁾ Some food-related scandals that in the last few years have overwhelmed Europe, contributed to stirring up conflict about so-called “Frankenstein food”. The first was “mad cow” disease. In 1996, as the first cargoes of genetically modified soya beans from America were arriving at European ports, the British authorities, which had persistently denied any kind of risk for almost a decade, were forced to admit that the terrible disease which drives cows mad can be transmitted to humans.⁽²³⁾ The public felt betrayed and the serious confidence crisis caused by the “mad cow” disease scandal inevitably involved transgenic foods as well.⁽¹¹⁾⁽¹⁶⁾

Soon food-related risks became one of the hottest issues in the mass media. Since it was an issue of public debate and political conflict, all social parties were involved and had to take sides over it. Scientists too were forced to come out of their “ivory tower”, sometimes even to demonstrate, as was the case in Switzerland in 1998 and in Italy in February 2001.⁽¹³⁾

Methodology

Within the analysis of the events that aroused the interest of the European mass media and public in food safety issues, particular attention has been devoted to the “mad cow” disease issue. “Mad cow” disease is a media event which, although in different times and ways, crossed single countries’ borders and became the perfect paradigm of the food scares that have affected Europe in the last few years. This research

paper has made use of an analysis of the sociological and anthropological factors that contribute to forming risk perception; an analysis based both on the wide range of literature available on the subject and the direct experience of some Italian experts who have contributed to the latest developments in these fields.

At the same time, the communicative aspects of food-related risks have been examined. The role of the mass media and the communicative impact of “mad cow” disease and genetically modified foods-related issues have been assessed. The assessment was carried out on the basis of a qualitative and quantitative analysis of articles that appeared in the two national newspapers with the largest circulation in Italy:

- *Corriere della Sera*
- *la Repubblica*

And three European newspapers considered opinion leaders:

- *The Guardian* (Great Britain)
- *Le Monde* (France)
- *El País* (Spain)

In order to obtain a more thorough analysis, coverage of the “mad cow” disease issue was monitored in four other Italian national newspapers. These newspapers were chosen according to circulation, political leaning and geographical distribution:

- *La Stampa*
- *Il Giornale*
- *Il Manifesto*
- *La Padania*

Quantitative analysis means examining the trend over time of some critical parameters, such as number of articles, news stories, comments and interviews, number of times they made the front page, number of illustrations and explanatory diagrams. Qualitative analysis, on the other hand, means identifying some elements within the texts that show how the mass media communicated food-related risks and indicate the role they assumed in risk perception. Qualitative analysis uses methods such as the division in frames, the study of the language used, the sources and the communicative approach adopted by the different categories of social actors (politicians, scientists, entrepreneurs) as far as informing the public was concerned.

The analysis was carried out on events between January and February 2001. On January 14, the “mad cow” disease issue broke out in Italy as well, when the first case of an Italian cow infected with Bovine Spongiform Encephalopathy (BSE) was reported. For weeks, topics related to food safety hit the headlines of all the national papers.⁽²⁾⁽¹⁴⁾ Because of the special circumstances in Italy (in mid February scientists rallied to claim more funds, autonomy and freedom of research), the hot issues of risk management and of relations among scientists, political institutions and citizens emerged in a particularly striking manner.

Media analysis

The quantitative analysis carried out on articles featured in Italian newspapers shows that in the field of food-related risk communication, the “mad cow” disease issue, unlike that of transgenic foods, acquires all the characteristics of a real media event. After a rapid increase in the number of articles, triggered by reports of the first Italian cow infected with BSE around mid January, the decrease is much slower, which shows that the media level of attention remains high for several weeks and that the developments of the crisis are followed constantly.

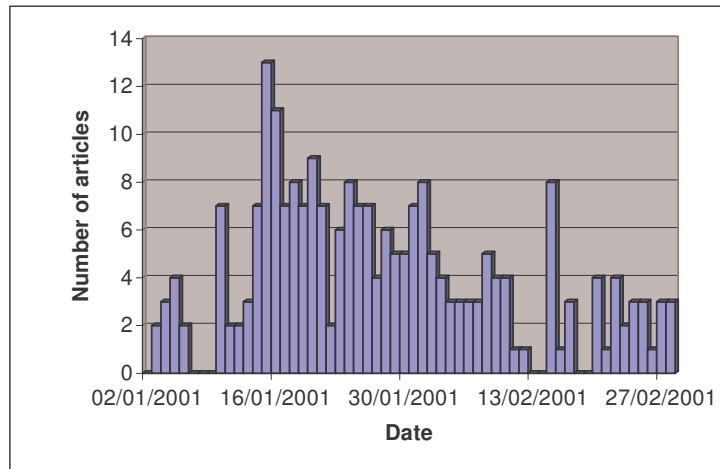


Figure 1: Quantitative analysis results on “mad cow” disease in *Corriere della Sera* (other Italian national newspapers present the same trend).

The qualitative analysis of the division in frames shows that in the Italian mass media the “mad cow” disease issue is treated predominantly as a health issue and thereafter mainly as an internal clash between political institutions. The economic aspect of the issue is marginal.

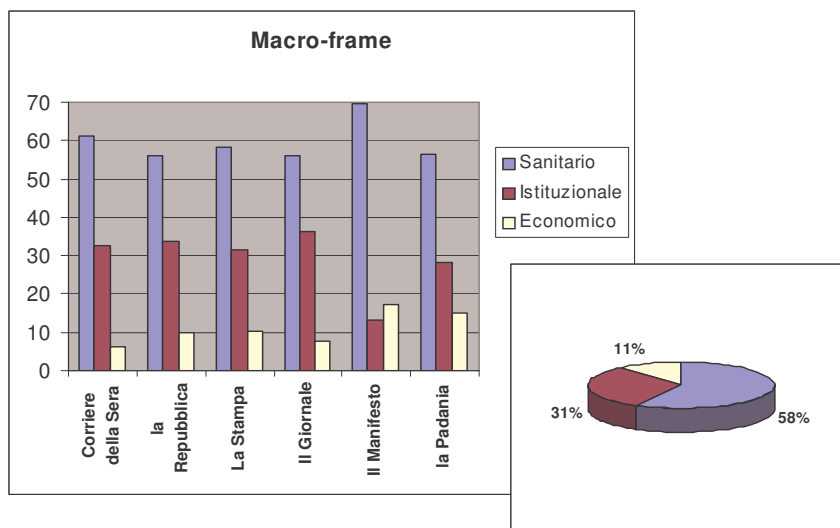


Figure 2: Qualitative analysis: division into frames of “mad cow” disease (percentages) as it appeared in the Italian national newspapers considered. The overall situation can be seen in the pie chart.

Finally, division of texts by type highlights a marked preponderance of articles and news “snippets” compared to comments and interviews. This is typical of an approach based on mere news reporting that follows a pattern of: new alerts – denials – subsequent reassurances. Very little space is devoted to investigative journalism.

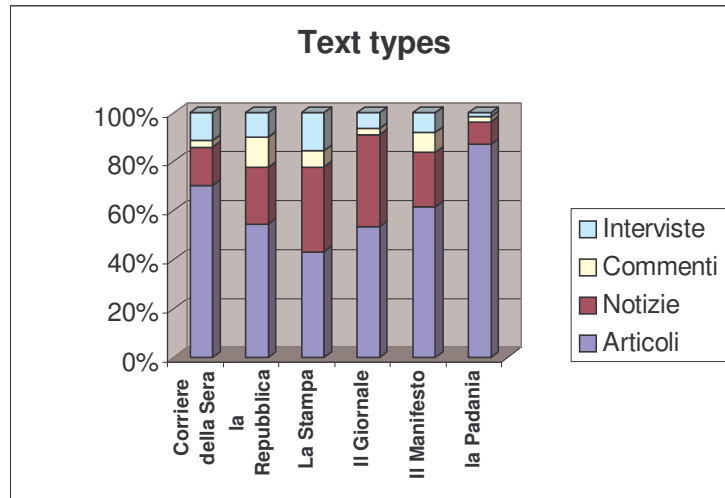


Figure 3: Division of texts into different text types carried out on articles in Italian national newspapers

As far as the European press is concerned, coverage by the Spanish newspaper *El País* is more or less the same as that of Italian newspapers: after all, Spain was still in the middle of a full-blown health emergency just like Italy. On the contrary, France was already a step ahead in dealing with the crisis and in the coverage by *Le Monde* economic aspects prevail. In Britain on the other hand, the crisis seems to belong to the past, despite the indelible marks it has made; therefore, it is political aspects concerned with attributing responsibility that most interest the British newspaper *The Guardian*.

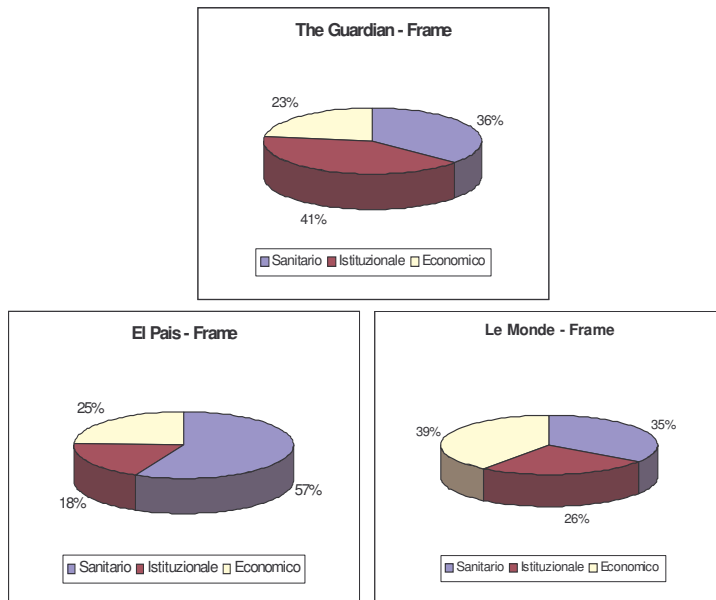


Figure 4: Qualitative analysis: division into frames of “mad cow” disease carried out on articles in the European newspapers considered

Contrary to the “mad cow” disease issue, transgenic foods do not seem to be able to earn themselves a prominent position in the Italian press: in the two months taken into account, Genetically Modified

Organisms (GMOs) appear only around mid February in conjunction with the above-mentioned rally by Italian scientists.

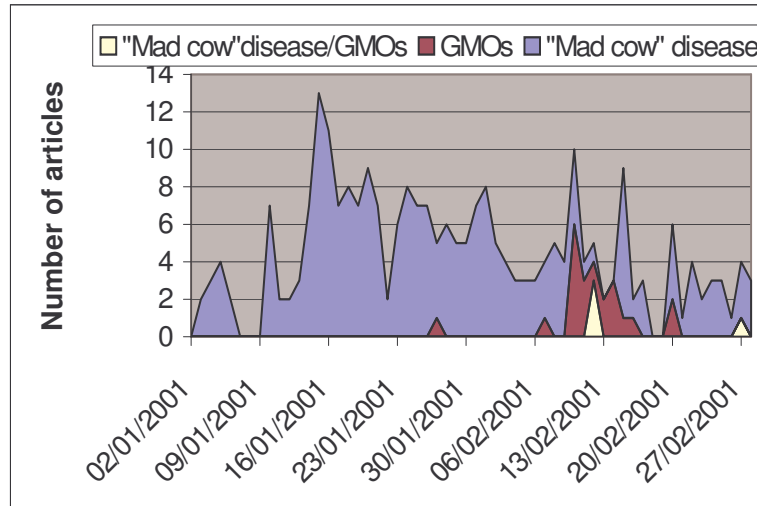


Figure 5: Quantitative analysis results in *la Repubblica* (*Corriere della Sera* presents the same trend)

In the Italian national press, the debate on so-called “Frankenstein food” appears highly politicised and is polarised between two groups opposed to each other: scientists and biotech entrepreneurs on the one hand, environmentalists and consumer associations on the other hand. However, qualitative analysis shows that genetically modified foods, as covered by the two major Italian newspapers, do not seem to carry a negative connotation, contrary to what has been asserted elsewhere.(4)

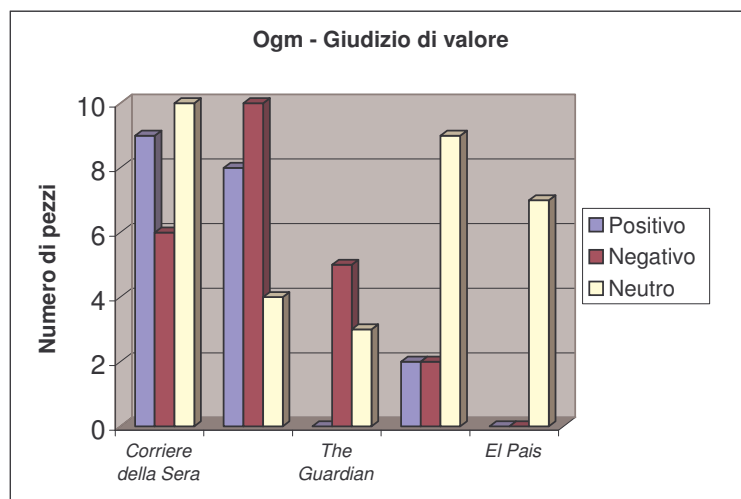


Figure 6: Qualitative analysis based on a “value judgement” that divides articles on GMOs into categories according to their “positive”, “negative” or “neutral” connotation; a comparison between the two major Italian newspapers and the three European newspapers considered.

Just like the Italian press, European newspapers devote little attention to transgenic foods, and deal with them only on an occasional basis. What is more, as can be observed in the British newspaper *The Guardian* the presumed negative connotation of GMOs is not an exclusively Italian characteristic. The difference is that whereas in the European press most articles appear neutral because each one of them reports both arguments “in favour of” and arguments “against” GMOs, in the Italian press, where more space is given to comments and interviews, only one of the two points of view finds its way into the articles and this results in polarising the debate.

The perfect metaphor

The main reason why “mad cow” disease became a media event probably lies in the fact that it is a case with strong narrative elements. These elements have been found in all the articles examined, and they can be briefly summarised as follows:

1. Victims with a name and a face were shown.
2. There is blame to attribute and, presumably, people responsible to be identified.
3. A shared principle of the community, that of not upsetting the natural order of things, was violated.
4. It is a sensational story that was able to express concerns, fears and resentments that are deeply rooted in our society.

In other words, media representation of “mad cow” disease takes place according to a script which starts with an alleged “scandal” followed by an immediate attempt to understand its origins and goes on with a search for “culprits” or ways to “make amends”. Even when the article is clearly a scientific one –a rare event because scientific information is often mixed with news reporting- the narrative elements are there: there is always a scandal (an infectious agent, prion, which seems to violate a dogma of biology), an original sin (having transformed herbivores into cannibals, thus favouring prion jumping between species) and a way of making amends (a vaccine or similar remedy that only scientific research can provide).

The fact that, unlike BSE, transgenic foods entail no victims, and therefore no culprit, is noteworthy. Since two important narrative elements are missing, GMOs cannot earn themselves the media prominence that “mad cow” disease enjoyed instead. Moreover, an analysis of the origins of BSE and of its human variant shows that this tragic outcome cannot be considered a natural calamity.(22) On the contrary, it is the result of human actions. In pursuing profit at all costs and systematically underestimating risks, what according to popular imagination is a symbol of nature’s purity was transformed into a sophisticated technological artefact. Thus, rightly or wrongly so, madness itself, the concept the whole media representation of the disease revolved around (statements about mad science and questions as to whether cows or the people who drove them mad were madder and so on, cropped up), became a powerful and perfect metaphor of drifting away from nature’s normality.(10)(24)

Risk acceptability

Although scientists and risk analysis experts tried to show that the risk associated to “mad cow” disease was extremely low, especially if compared to other risks we are exposed to every day, panic wasn’t prevented from spreading in wealthy and educated Europe. In a nutshell, the reason is that risk acceptability does not only depend on how high the probability of such risk coming true is.(15)(16)(17)(20) Whether we like it or not, “mad cow” disease is perceived as an unacceptable risk for a series of reasons that can be summarised as follows:

1. It is not a natural calamity but a risk generated by human actions. It is the direct consequence of a profit-gearred logic that overrode citizens’ safety and health.
2. It is the cause of a new, terrible disease that strikes mainly young people, and there is neither a cure nor a treatment for it.

3. It concerns food, which has very important social, ethical and cultural values.
4. It can strike anyone; each and every one of us is a potential victim.
5. It represents a violation of the natural order of things (herbivores were forced to become carnivores and even cannibals).
6. In the field of science as well, many uncertainties remain with regards to the disease. Even its transmission mechanism seems to violate a dogma of biology.
7. It brings to mind the ancient plagues or a biblical punishment for the sins committed.

There is a strong temptation to define these motivations as “irrational”, but this is probably naïve. First of all, even if it is true that in terms of public health a hundred victims is a scanty figure, from a subjective point of view it is nevertheless a terrible disease and medicine seems powerless to overcome it. Moreover, since we have all unknowingly been exposed to the risk for at least a decade and since the incubation period could be very long, the real impact of the epidemic among humans cannot be reasonably estimated yet.(14)

However, instead of discussing whether such fears are grounded, it is important to realize that considering them “irrational” would only make us miss a priceless opportunity to understand that what counts in the field of risk communication are the ethical and cultural aspects a community identifies with, rather than figures. According to Mary Douglas, the British anthropologist, a risk is not the mere probability that an event will take place, but also the probable extent of its consequences and everything depends on the value attached to the consequences, a value based on political, aesthetic and moral questions.(17) She also stated that the effect of culture is to focus attention on certain dangers thereby transforming them into moral indicators. Therefore, trying to study risk acceptability without trying to assess its cultural background is a mistake.(17) Thus, it becomes obvious why “mad cow” disease would have never been accepted by our society, even if there had been only one victim.(24)

Conclusions

According to what is probably still a widespread idea, there is a clear distinction between “real risk”, which is the domain of experts, and the “perceived risk” of the public at large based on a poor understanding and distorted view of scientific facts. The idea dates back to the early 1970s when, in order to explain their lack of popularity, nuclear power industries and scientists put forward the hypothesis that this was due to a serious “cultural deficiency” on the part of the public.(17) Thus, on more than one occasion, it was deemed sufficient to “educate” the public by providing it with better information in order to make it overcome its fear and suspicion of new technologies.(1)(10) This kind of idea can be illustrated schematically through what we call the “topdown model of risk communication”, which is obtained by adopting *ad hoc* the classic model of popular scientific communication.

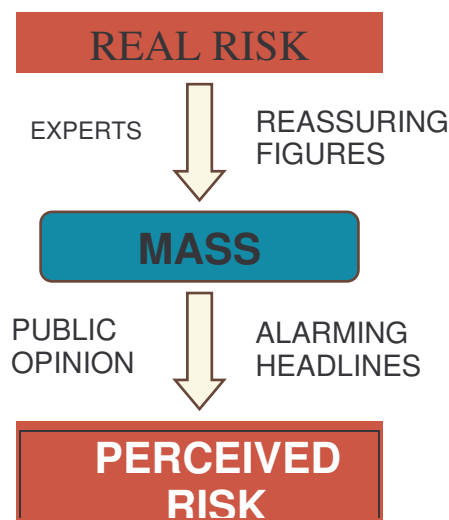


Figure 7: The top-down model of risk communication.

In this model, information flows monodirectionally from top to bottom, from experts to the lay public through the mass media. “Real risk”, which is the object of specialists and experts, is quantified using procedures of statistical mathematics. Translation into a more accessible language and dissemination of the results is entrusted to the mass media. However, the latter “amplify” and “distort” it just as a lens does. Thus, at the end of this translating process, the information deteriorates and the public cannot but perceive risks in a distorted way.

In fact, this model is far removed from reality.⁽⁹⁾ Firstly, although trying to quantify risks through methodologies of statistical mathematics cannot be dispensed with, it is necessary to be aware of the fact that, especially as far as the environmental field is concerned, there are phenomena that, due to their intrinsic complexity (for example, climate changes or long-term effects of biotechnologies), have an unavoidable degree of uncertainty instead of being calculable in terms of risk.⁽¹¹⁾⁽¹⁵⁾

Moreover, as has already been mentioned, this is not only a matter of figures, but also a question of acceptability. Therefore, it is essential also to consider the ethical and cultural elements that are socially established within a community and that contribute towards deciding whether a certain risk can be accepted or not.⁽¹⁵⁾⁽¹⁷⁾ The criterion of usefulness to society, for instance, can be a factor of distinction among technological innovations. A clear example of this is the widespread acceptance of biotechnologies in the medical field as opposed to the total rejection of transgenic foods, because Europeans do not see them as having any clear social advantages.⁽¹⁾⁽³⁾⁽¹¹⁾⁽¹⁶⁾⁽¹⁸⁾

Numerous field studies have shown extensively that the various attempts to “educate” the public failed because, although inadequate knowledge of basic concepts of science is an undeniable fact, it cannot be taken for granted that better information will reconcile opinion differences on risks, all the more so if these differences are of a political nature.⁽¹⁾⁽⁹⁾ The public is not a homogeneous object and it is even less a passive subject; it is a community of individuals who have different interests and abilities, but who are all able to reinterpret the information they receive, to use it or reject it according to their purposes, to negotiate its meaning.⁽¹³⁾

The media play an active role because instead of simply amplifying and distorting information in a passive way, they extend the field of the debate, which no longer belongs exclusively to experts and political institutions. The media thus favor a risk negotiation process which must be considered a social problem and not one for specialists.⁽¹⁰⁾ It has now become a common wish, without denying the scientific approach its specific and central role, that political decisions concerning new technologies should take into consideration all kinds of knowledge, be it scientific or not.⁽⁸⁾⁽¹⁵⁾⁽¹⁶⁾⁽¹⁹⁾⁽²¹⁾ In other words, risk-related issues should be reformulated in order to include moral and political implications as well.⁽¹⁷⁾

And this is where the last important aspect of the problem lies. While all too often scientists and risk experts do not want to talk about politics for fear of “getting their hands dirty” and they prefer to address the issue of choices in terms of theoretical probability, the public keeps politicising the issue. The debate on new technologies follows the model of political debate in the media as well. The aim is not to compare and contrast all possible theories in order to choose “the best” one, but to give equal space to all different opinions.⁽¹⁰⁾ Arguing the slight probability that an event will actually take place does not work not (or not only) because people do not understand figures, but because many other elements that the public considers important have been excluded from calculating the risk.⁽¹⁵⁾⁽¹⁶⁾⁽¹⁷⁾⁽²⁰⁾ As the German sociologist Ulrich Beck stressed, the political meaning of risks cannot be hidden any more behind claims of “innocence” and “neutrality” that no longer exist.⁽⁵⁾⁽⁶⁾⁽⁷⁾ On the contrary, scientists need to admit they are part of society and to accept discussion with its other members. This is what European citizens, who no longer believe in “zero risk”, are asking of them.

Notes and references

- (1) *Bioteecnologie fra innovazione e responsabilità*, Giannino Bassetti Foundation (ed.), 2002.
- (2) *Due mesi di quotidiana pazzia*, Università di Bologna, 2001.
- (3) “Europeans, science and technology”, in *Eurobarometer 55.2*, European Commission, 2001.
- (4) “Le agrobioteecnologie nei media italiani”, in *Report 2001*, Osservatorio di Pavia (ed.), 2001.
- (5) Beato, F., *Le teorie sociologiche del rischio*, in De Nardis, P. (ed.), *Le nuove frontiere della sociologia*, Carocci, 1998, pp. 343-384.
- (6) Beck, U., *La società del rischio*, Carocci, 2000.
- (7) Beck, U., “‘Mucca pazza’ e la società del rischio globale”, in *Iride*, issue 33, 2001.
- (8) Bennett, P. and Calman K., *Risk communication and public health*, Oxford University Press, 2001.
- (9) Bucchi, M., *Scienza e società*, Il Mulino, 2002.
- (10) Bucchi, M., *Vino, alghe e mucche pazze*, Rai Eri, 1999.
- (11) Carra, L. and Terragni, F., *Il conflitto alimentare*, Garzanti, 2001.
- (12) Castelfranchi, Y., *Xlife*, Avverbi, 1999.
- (13) Castelfranchi, Y., “Scienziati in piazza”, in *Jekyll.comm 2*, 2002.
- (14) De Bac, M., *Mucca Pazza*, Avverbi, 2001.
- (15) De Marchi, B., Pellizzoni, L. and Ungaro, D., *Il rischio ambientale*, Il Mulino, 2001.
- (16) De Marchi, B. (ed.), “Le tecnologie genetiche applicate all’agricoltura in Europa: fra tecnocrazia e partecipazione”, in *Notizie di Politeia*, issue 60, 2000.
- (17) Douglas, M., *Come percepiamo il pericolo. Antropologia del rischio*, Feltrinelli, 1991.
- (18) Gaskell, G. et al., “Biotechnology and the European public”, in *Nature Biotechnology*, vol. 18, September 2000.
- (19) Gray, P.C.R., Stern, R.M. and Biocca, M. (eds.), *La comunicazione dei rischi ambientali e per la salute in Europa*, Franco Angeli, 1999.
- (20) Kahneman, D. and Tversky, A., *Choices, values and frames*, Cambridge University Press, 2000.
- (21) Lledo, P.-M., *Malati di cibo*, Raffaello Cortina Editore, 2001.
- (22) Luhmann, N., *Sociologia del rischio*, Bruno Mondadori, 1996.
- (23) Meldolesi, A., *Organismi geneticamente modificati. Storia di un dibattito truccato*, Einaudi, 2001.
- (24) Perucca, F. and Pouradier, G., *Generazione mucca pazza*, Fanucci Editore, 2001.