



LA CULTURA DELL'INNOVAZIONE IN ITALIA

Rapporto 2011

Cotec e Wired,
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"Italians are better than the common representation made by the media.... Italy is not afraid of the future thanks to the fact that it is establishing a new covenant with science. The many innovations announced are welcome but they are also viewed quite critically...". These are considerations expressed by Riccardo Luna, at the time director of Wired magazine, in the preface to the third annual report *La Cultura dell'innovazione in Italia 2011*, edited by Wired and Cotec foundation in collaboration with the Institute for Research on Population and Social Policies (IRPPS) of the Italian National Research Council.

This third report, which aimed to assess the perceptions and opinions of Italians regarding new technologies, confirmed the optimism at all levels of the population towards innovation, which is seen as the main engine for growth of their country.

This 2011 survey focuses on the views of the Italians on the major scientific and technological developments in certain key areas such as: waste management, nuclear energy, stem cells, GMOs, the state-of-the-art vehicles, internet, politics and innovation.

The results were collected in a volume consisting of two chapters, preceded by an introduction and followed by a collection of the points of view of experts organized by thematic areas. An afterword by Riccardo Viale, founding partner of Cotec, closes the volume. Each chapter ends with an extensive bibliography of the topics covered and a large number of graphs and tables.

The first chapter is entirely devoted to the *role of emotions* in the perception and evaluation of risk by individuals; the second chapter presents a detailed analysis of the survey results.

The survey was designed and conducted by IRPPS of the Italian National Research Council in March 2011, using Computer-Assisted Telephone Interviewing (CATI) methodology and completely random generation of telephone numbers.

Two thousand interviews, containing 72 questions, were conducted with subjects over age 16 years, of which 52% women and 48% men, 47% had a secondary school diploma and 46% were employed.

Chapter I (Reason and emotion in the assessment of technological risks), edited by Del Messier F, Marcato F. University of Trieste.

According to Silvio Funtowicz and Jerry Ravetz [1] when "*facts are uncertain, values in dispute, stakes high and decisions urgent*", it becomes necessary to support normal science with a new model of science, the so-called post-normal. In contexts where levels of uncertainty and stakes are high, it is necessary an increase the number of subjects authorized to participate in the collection of relevant information. These subjects should not include only the experts but also concerned individuals, and all stakeholders. The purpose of post-normal science is not to determine the truth, by its nature uncertain, but to collect as much information as possible and make wise decisions that take into account all legitimate prospects, produce consensus and are inspired by the precautionary principle.

But in all this, *what is the role of emotions?* This is the question posed by the authors of the first chapter.

The contrast between emotion and reason is often a simplistic concept. Empirical studies show that the emotional component plays an essential role in the assessment of technological risks, even though emotions can, in some circumstances, lead to errors in assessments and choices. The opinion of non-experts can sometimes point out aspects of risk that have eluded experts, who often focus mainly on technical aspects. Therefore, when making decisions on the adoption of potentially dangerous technologies, in-depth studies and comparisons are necessary and above all it is imperative to make decisions shared with the public.

This is the position of the authors, which is not shared by all. Some critics do not agree about giving emotions the same weight as expert opinion; emotions are important but much more important is the opinion of experts.

Chapter 2 (The culture of innovation in Italy: results of the survey) edited by Avveduto S, Cerbara L, Valente A. IRPPS / CNR.

The first two questions of the survey, besides gradually introducing the topics covered, allowed the authors to understand what is associated with the term innovation in the minds of people.

Respondents gave similar answers to the question of what came to mind on hearing the words *future* and *innovation*. The two tag clouds obtained contain the same words: *technology, future, hope, progress, knowledge and energy*. Terms such as *hope* and *better* had a very prominent position, but the positive sense that pervades the word *innovation* was not present to the same extent in associations with the term *future*. The term *future* was related, though not always, to negative concepts, such as *uncertainty, concern* about the future of children and families, and *fear* of possible difficulties in the future.

Another interesting fact that emerged is that Italians do not feel well represented by the current political forces. Sixty-four percent of respondents believe the government acted badly or very badly in the last year; 71% that the opposition acted badly or very badly as well.

Much of the questionnaire focuses on the risk/benefit relation. Answers to the question, What is risk? showed that women are generally more cautious. They are more inclined to support the precautionary principle and show more caution upon the introduction of technologies or innovations into society. In contrast, older persons showed less caution (43.6%), but also greater difficulty in answering this question (6.8%).

Naturally, the greater caution shown by women does not imply less support for science and innovation. What emerges from this survey, in line with previous studies, is that in an increasingly post-normal society, trust must be distinguished from obedience.

But who should decide? This question is contained in all three surveys. And the answer was always in favour of scientists (38%), followed by all citizens (20.9%).

Women for first recognized the fundamental role of scientists in the decision-making process. Students showed a great desire to participate directly with the majority choosing all citizens.

Paragraph 1, Alternatives for waste management, in the Technology and Society section, showed no substantial difference between men and women in considering the various alternatives for waste management. The common opinion inclined to eco-sustainability, i.e. the use of waste to best advantage through recycling rather than resorting to measures such as incinerators, because they do not create any virtuous circle. In paragraph 3, Solar is king and nuclear... , the data showed the total opposition of Italians to the use of nuclear energy, with only 8% of subjects in favour. Conversely, 40.1% of respondents considered the solar sector as the major source for future supply of energy, followed by 25.1% in favour of wind.

The answers of men and women did not differ very much but women showed a greater tendency toward renewable or eco-sustainable energy. Solar energy was favoured by all age groups.

Regarding the risks of nuclear power, men and women in almost equal numbers considered radioactive waste management as the greatest risk. Paragraph 4, dedicated to electric vehicles, showed a very high consensus, especially for their use in public transportation. Paragraph 5 is about stem cells. The public expected great benefits from them, while the perceived risk is very low.

In an interview on the topic of stem cells at the end of the volume, Camillo Ricordi, professor at the University of Miami, laments the lack of investment and strategic planning in our country. He believes that the debate on this issue is very heated and conditioned by the Church. Angelo Vescovi from the University of Milan Bicocca, highlights the lack of infrastructure in Italy and a bureaucracy that prevents any form of development and raising of funds for research. He believes that in Italy communication regarding stem cells is politicized and selective. When people hear about stem cells, they think about embryonic stem cells and the vetoes of the Church. Instead, alternative studies in Japan are based on cellular reprogramming of adult cells, allowing this problem to be bypassed.

Paragraph 6 is devoted to GMOs. The level of perceived benefit is rather low and the risks are considered higher. But when asked whether GMOs can help to solving the problem of hunger in the world, negative answers prevailed slightly, with men showing greater propensity to answer yes.

The survey on risks/benefits of the internet showed that the positive elements are clearly greater than the negative, because of the ease of communication as well as access to knowledge. A high percentage of respondents expressed negative opinions on the issue of privacy. They fear that their personal data entered into the internet can be used by attackers.

The Italians think it is important to participate in political life and to vote, but that it is not appropriate to lower the voting age to 16 years. The youngest subjects were among those not favourable.

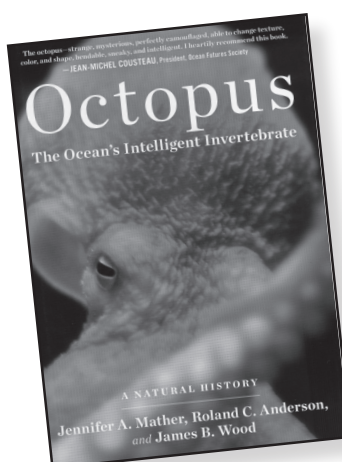
The information in the book is valid and forms a well defined framework of the attitudes about developments in science and technology in Italy, where people are against nuclear power because they think it is smarter to produce energy from sun and wind; women are more cautious than men; all women and men are in favour of stem cell technology, waste management and recycling, and electric public transportation. There is a certain detachment regarding participation in political life, especially among young people.

References

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It could seem an extravagant choice for a public health journal to review a book on octopus. However this book, with its elegant appearance, including the wonderful cover picture showing the “intelligent” glance of