

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.

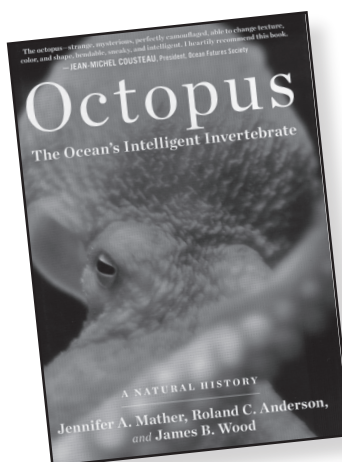
The information in the book is valid and forms a well defined framework of the attitudes about developments in science and technology in Italy, where people are against nuclear power because they think it is smarter to produce energy from sun and wind; women are more cautious than men; all women and 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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OCTOPUS. THE OCEAN'S INTELLIGENT INVERTEBRATE
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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

the octopus, represents a nice and timely overview on the cognitive capabilities of this amazing cephalopod species. It is authored by Jennifer A. Mather, a leading scientist on animal personality, professor at the University of Lethbridge in Alberta, where she teaches a variety of human and social psychology courses. The second author, Roland C. Anderson, is a Seattle-based biologist; while the last one, James B. Wood, is an outreach expert in a major aquarium and an accomplished underwater photographer.

The relevance of this book for public health in general resides primarily in a major change occurring on these days in European legislation on the protection of animals used in experimental procedures. Following in fact a norm implemented in the UK already several years ago (the Animals Act Order 1993), the new Directive states in Article 1 (3b) that live cephalopods are among the animals falling within the scope of the Directive. Such Directive will have to be enforced by Member States before January the first 2013 [1].

This legislative step follows the awareness raised by cognitive experiments performed with octopus, which showed unexpected cognitive abilities (among these studies, we want to remember the studies by Graziano Fiorito at the Stazione Zoologica Anton Dohrn, in Naples). Generally speaking, remarkable cognitive abilities are thought to be linked with the possibility of experiencing significant level of suffering, including psychological suffering. These considerations have moved European politicians to embrace the British norm at European level. Therefore, experimenters willing to carry out studies on octopus, cuttlefish or squids will soon have to provide written justification to motivate their experiments, while veterinarians will have to evaluate psychophysical suffering of these molluscs.

Furthermore, scientists coming from different areas of expertise and provided with a Darwinian perspective, such as zoologists, comparative psychologists as well as evolutionary-minded neurophysiologists and some psychiatrists and neurologists, do remember that for ages Planet Earth was ecologically dominated by terrestrial vertebrates, mainly reptiles, while cephalopods (extinct ammonites), with their (likely) complex behavioural patterns, inhabited for a very long time seas and oceans. Octopuses are the living remains of this ancient, yet noble, lineage. Indeed, it does not come as a surprise that their behavioural patterns were considered at the same level of sophistication from the European Parliament. Mammals-like reptilians originated mammals and hominination process led primates to sprout the genus *Homo*, presently the highest priority in today biomedicine.

In this book, chapter 8 (*Personalities*) and chapter 9 (*Intelligence*) could convince the readers that the octopus could be a possible ambassador for other invertebrates to be protected when used in experimentation (first-in-line crustaceans for their evocative lobster), and could deserve such a level of protection [2].

Chapter 9 underlines that “intelligence is not only about getting but also using information [...] much of the octopus’s daily survival is based on getting information and using it well” (p. 123). It touches critical arguments such as spatial memory (citing nicely Nobel laureates Niko Tinbergen’s work [3], (p. 124) and learning, with a lucid reasoning about constraints and selectivity of learning (p. 127-135). Octopus reaction on the “mirror test” (p. 133-134) although still missing, should be explored in terms of species-specific characteristics and evolutionary preparedness in neurosensory, motor and cognitive patterns, results of specific niche demands having ultimately shaped the phenotypic behavioral traits in any single vertebrate or invertebrate species. This represents a rather unique point of view, and makes it a definitely original contribution to the present-day debate. A critique of ethologist and bioethicist Mark Bekoff, not enlisting the octopus in his book on the Cognitive animal [4], deserves attention.

The *Personalities* chapter enlarges the discussion to the personality or temperament dimension in animals. After describing their excellent work tracing personalities in octopuses, authors state that octopuses should be considered along with “higher” animals, for which variation in personality dimensions (such as shyness, activity, reactivity) are taken for granted. In this book the octopus is considered like a “thinking and anticipating being”, a “spineless smart” animal which, with his “beautiful mind” [5], is an important part of the sea’s complex web of life.

Last but not least, the final seven websites, enlisted just before the well-arranged index, are worth being carefully navigated: for the emotions they stimulate they remain a cogent, expanded, part of the published text.

In sum, despite a few points where the narrative style resembles the one of a coffee-table book, this volume remains a nice contribution to a hot topic issue that has seen invertebrate species among sentient animal deserving special protection.

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