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An inquiry of the opinions of the French and Belgian populations as regards risk

Benny Carlé [a], Sylvie Charron [b], Alexandre Milochevitch [b], Frank Hardeman [a,*]

[a] *SCK•CEN, The Belgian Nuclear Research Centre, Boeretang 200, B-2400 Mol, Belgium*
[b] *Institut de Radioprotection et de Sûreté Nucléaire (IRSN), BP 17, 92262 Fontenay-aux-Roses Cedex, France*

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Abstract

IRSN (France) and SCK-CEN (Belgium), two institutes of research and expertise in radiation protection and nuclear safety, simultaneously organised a very similar public opinion survey in their respective countries in November 2002. The study explores subjects such as: major people's concerns, perception of environmental risks, perception of risks in general, the role of experts in decision making, opinions on nuclear matters and aspects of nuclear emergency preparedness. In each country, more than 1000 citizens representing the general public have been consulted in face-to-face interviews. The field work has been performed by professional companies (BVA in France and Research International in Belgium).

The paper shows that industrial and technological risks are not perceived as one of the major public concerns, although many other risks, of different nature are considered to be high. The actions of the authorities to provide protection against the consequences of many risks or disasters are not considered to be sufficient, and many respondents claim not to believe the information they receive. There exists a large difference between the opinion of French and Belgian public, and within the different language groups in Belgium, with regard to who should be in charge of the control of the hazardous industries.

Many of the "actors" within the nuclear industry are not known by the respondents. The perception of the technical competence or the truth being told shows large variations between the main actors (such as members of the nuclear industry, the government or the media). Majorities within the population believe that a disaster as serious as the Chernobyl one can happen in their country and that in case of a nuclear accident, the authorities would not be capable to protect the population adequately.

Keywords: Radiation protection; Nuclear safety; Environmental risks

1. Introduction

IRSN and SCK-CEN are two institutes of research and expertise in radiation protection and nuclear safety. Both institutes have implemented a programme for the integration of social sciences into their research programmes, starting as early as the end of the seventies in IRSN. Since 1988, IRSN [1] has annually carried out a survey in the general population of France about the people's opinions related to risk and safety ("IRSN Barometer of Risk and Security Perception"). This continued effort offers terms of reference for similar public opinion studies elsewhere. In 2002, a collaboration between IRSN and SCK-CEN led to simultaneous and similar studies being performed in Belgium and France. The study deals with topics such as the main matters of concern for people, the perception of risks (technological and natural ones), the role of experts in decision making, the willingness to participate in decision making processes, the opinions on nuclear activities and nuclear emergency preparedness, and the acceptability of countermeasures. Following the IRSN practice, a number of questions already asked in previous years were included, as well as a few new ones allowing to address more in depth some themes considered to be research priorities in one or both institutes.

The authors tempted to keep the questionnaire as similar as possible, but some modifications had to be made to correctly assess situations that are specific for each country. Modifications were due for instance when referring to authorities (different organisation of the state), actors (different names and responsibilities of various organisations in each country), etc. Some minor modifications were imple-

* Corresponding author. Tel.: +32-14-33-28-51.
E-mail address: fhardema@sckcen.be (F. Hardeman).

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mented in a few cases, for example, when some risks were not considered relevant in one of the countries. As an example, the risk of large fires in forests is hardly a threat to Belgium, both because of the climate and because of the lack of forests in major parts of the country.

The methodology was kept identical. In each country, more than 1000 individuals representative of the general public (sex, age distribution, social classes, distribution over the country, urban or rural living area, etc.) were consulted in face-to-face interviews via a CAPI (computer-assisted personal interview) of about 30 min on the selected topics. CAPI has the advantage of allowing a daily follow-up of the survey, of randomising easily the items within one question, and of a good quality check. Furthermore, data treatment is more efficient, as all data are available in digital formats immediately. The field work was performed by BVA in France (as in the previous IRSN surveys) and Research International in Belgium (selected after a public enquiry using a multi-criteria decision analysis approach). Both companies are specialised in opinion polls, and use professionals for the interviews. The survey was performed simultaneously in both countries during the second half of November 2002. No particular events that might have had a large influence upon the answers of the people occurred during this period, nor in the few months before.

All results presented further in this paper reflect the opinions of the general public. Its perception may differ from the expert's view on risk [2], which has already been a subject of discussion in literature [3]. Not all data can be presented here, but they will be made available via the websites of both institutes and elsewhere [4–6]. The paper also does not cover the particularities related to the risk perception by the workforce [7]. The data presented are based upon averages for the entire population. The purpose when starting the experiment was to develop and launch a "Barometer", an instrument to assess public "pressure". The aim indeed was to have a snapshot of the public opinion, in order to adjust possibly research priorities or some policy issues, e.g. on nuclear emergency preparedness. Further detailed analyses will be carried out by other colleague researchers. It was not our purpose to find explanations why risks are perceived high, or to identify the main factors which do influence the public perception. Therefore, within this paper, statistical analyses are not presented, nor the main factors (psychometric approach [8], social amplification of risk [9] or the basic risk perception model [10]) contributing to explanations are identified. Those are described and discussed largely elsewhere in literature [11–14]. Some authors seek also better explanations of the responses to questionnaires by complementing them with results from other methods such as Focus Groups as used recently in Germany [15].

2. Technological risks: not the major concern

A first finding, maybe contrary to what safety engineers and technicians in industrial facilities may expect, is that technological risks are not the major matter of concern for the general population. Indeed, when asking people about their concerns, from a list with 12 options, the fear for terrorism [16] or violence and social risks such as unemployment or social exclusion, are chosen much more often than the technological risks (see Fig. 1).

3. Many risks are considered to be high

The fact that the people attribute more concern to non-technological risks does not mean they consider industrial facilities to be safe. For a number of risks, individuals were asked to specify whether they considered them to

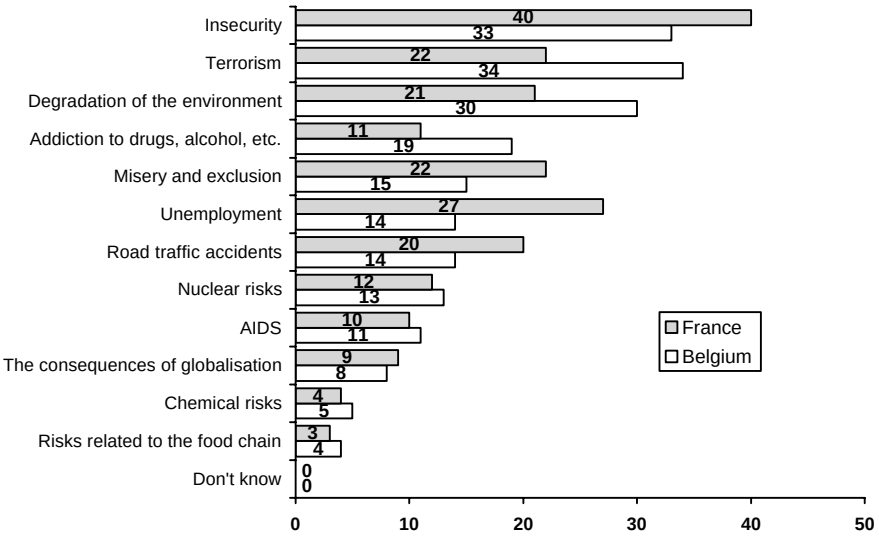

Fig. 1. Responses to the question: "In France (resp. Belgium), among the present problems mentioned in the list, which one is the main source of concern to you? And the second one?" (percentages cumulated, explaining why the sum is over 100%).

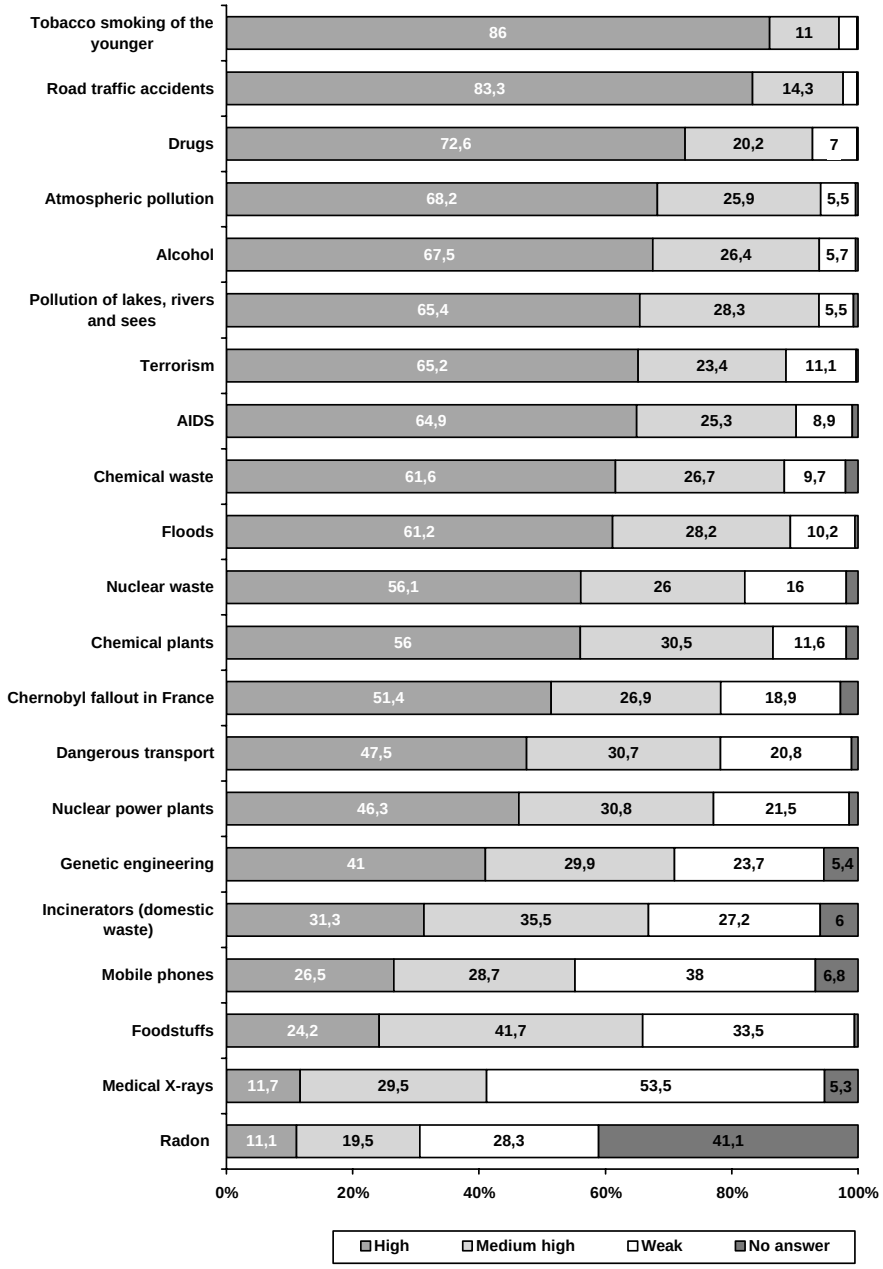

Fig. 2. Results for the question: “In each of the following domains, do you consider the risks for the French to be high, medium high, weak, no answer”, France, November 2002.

be high, medium high, low or “do not know”. In Fig. 2, 2002 data are presented for France. The data for Belgium are similar, although terrorism is ranked much higher, and the personal risks such as road traffic accidents or tobacco smoking are ranked lower. Similar for both countries are the lack of knowledge about radon, and the good perception of medical X-rays. As far as industrial activities are concerned, a few conclusions may be relevant:

(i) Industrial risks are not ranked within the first items mentioned, but still are considered high to fairly high by a large majority of the population.

(ii) Perception of nuclear risks is rather similar as compared to perception of chemical risks.

(iii) Perception of waste is higher as compared to the perception of risks of industrial facilities, whether nuclear or chemical. French people seem to consider the chemical risk to be more important than the risk of nuclear power stations (it could be due to the chemical plant disaster that occurred in Toulouse in 2001); in Belgium, this difference is much smaller. Similar results on the waste issue have been reported by Drottz-Sjöberg [17]. This may be linked to “tampering with nature” [18].

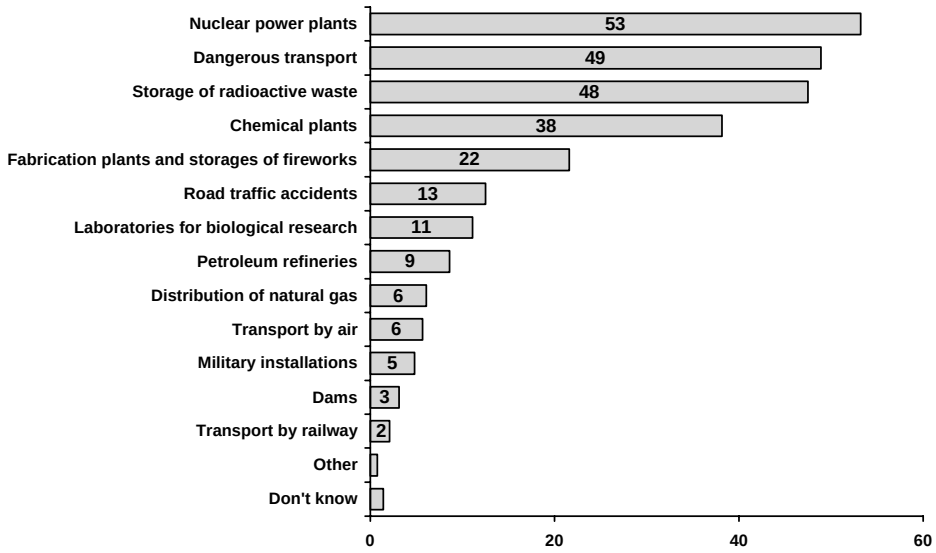

Fig. 3. "Which industrial activities or technologies are the ones that according to you show the highest probability to cause a serious accident or disaster (three answers possible, so the overall sum is over 100)?" (results for Belgium, November 2002).

(iv) The food industry is part of the "better perceived" category of industries, despite of the several problems experienced in recent years.

3.1. Technological risks

The authors of the paper also asked which industrial facilities or technologies are considered as the ones most likely to cause disasters or large accidents. Results for Belgium are given in Fig. 3. In the context of a disaster, nuclear facilities are considered to be the most dangerous ones, closely followed by transportation of dangerous goods and nuclear waste (not specified: high or low level waste, interim storage or final repository facilities).

4. Telling the truth?

The outcome of the question on whether people are told the truth is not very positive, as can be seen from Table 1. Most of the people think they have not been told the truth about risks. Remarkable is the high number of people in France assuming they were not informed correctly about the fallout of Chernobyl. It is worth mentioning that the data below are average values; further analysis will show whether these perceptions are systematic at the individual level. The question did not specify which actor was envisaged (authorities, plant managers, media, etc.); this was left open to the general impression of the respondents.

Table 1
Percentage of the population in France or Belgium answering 'no' to the question whether they think the truth has been told to them about ..., November 2002

Facility	France	Belgium
Nuclear power plants	56	60
Chemical plants	61	57
Nuclear waste	63	63
Chemical waste	63	61
Chernobyl fallout	75	65

5. Trust in and role of the authorities

5.1. Capabilities of the authorities to protect against industrial risks

We also asked about the confidence people have that the authorities will protect them well against the possible harm of the hazards mentioned above. The general feeling varies a lot depending upon the risk considered. For traffic accidents, medical X-rays, AIDS or foodstuffs, fairly large majorities claim they feel well or fairly well protected. However, for industrial activities or wastes, the feeling is more negative in both countries. In France, about 37% of the people and in Belgium even 42%, claim they do not have confidence in the appropriateness of the actions taken to protect them against the danger of nuclear installations. For chemical plants, the percentages are 42% for France, and 41% for Belgium.

5.2. Control of facilities

We asked the interviewees about who should be in charge of controlling facilities posing risks to the environment and the nearby populations. The results differ strongly between Belgium and France. Furthermore within Belgium, there are large variations between the Dutch and French speaking parts of the population (Fig. 4).

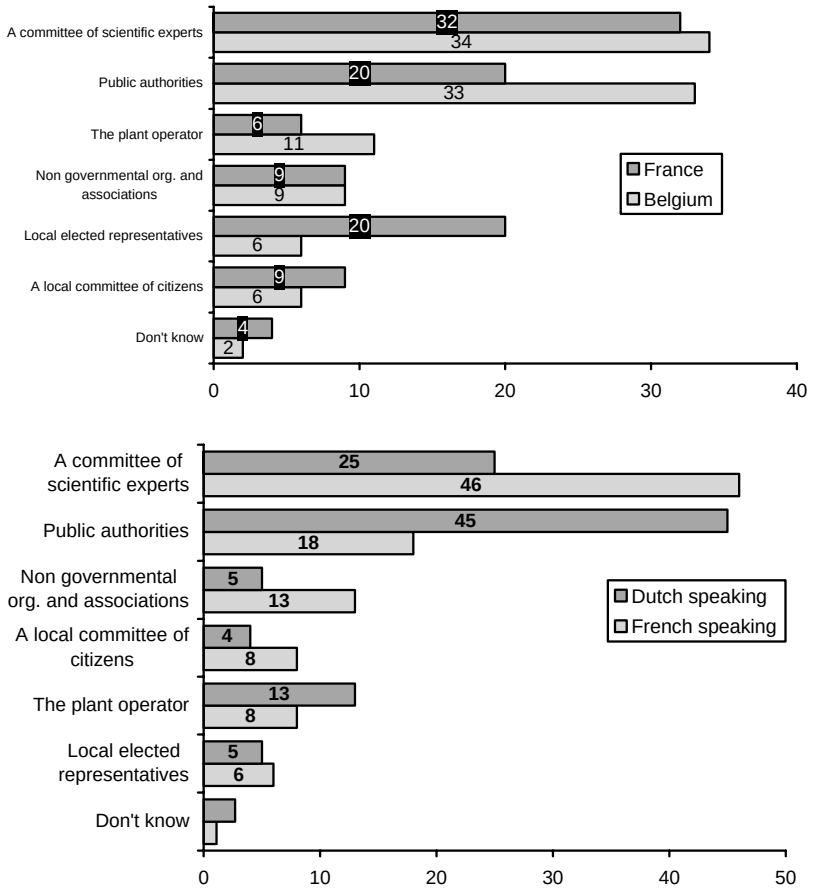

Fig. 4. Who should be in charge of facilities showing a risk to the environment or the nearby population? Subdivision between France and Belgium (upper figure) and between French and Dutch speaking parts of the Belgian population (lower figure), November 2002.

6. Public participation

We asked about the willingness to spend some time in getting information about hazardous installations, and in taking part in decision making processes related to such facilities. Although there are many people not wanting to spend any time for such tasks, we were surprised by the large number of people claiming wanting to spend more than 1 day or even 1 week per year for such tasks. This is good news for many stakeholders initiatives and public debates being organised nowadays, e.g. in the context of siting of new installations.

7. The nuclear industry

Large fractions of the population are not very familiar with organisations or institutions intervening somehow in the nuclear activities in their country. For instance, in Belgium, only about 10% of the people claim they know the public authority responsible for nuclear licensing and control or the waste handling authorities; even the International Atomic Energy Agency is known by only about 12%.

When asked about technical competence, many people are not capable of answering; but among the ones who answer, the main actors—the operators of the power stations, authorities, and research institutes—are considered to be technically competent by a large majority of the people. However, many people think they do not necessarily tell the truth. For other actors, the figures are completely different: although medical doctors are not believed to be technically competent in nuclear issues, they are believed to be very trustworthy. The government, locally elected representatives, trade unions and journalists are generally believed not to be technically competent (in nuclear matters), and not to tell the truth by a large majority of respondents. Ecological associations take a position close to the medical doctors: although not considered technically competent by large fractions of the population, they are perceived by many people to be telling the truth, and their image is better than the one of the nuclear actors.

We also asked to the interviewees whether they believed or not that an accident as severe as Chernobyl could occur in their respective countries. The results in both countries are very similar: a small majority believes this is the case (Fig. 5). This clearly shows that the fear for a potential disaster remains present, even though the accident happened already 16 years before the survey, and despite of the differences in technology and the lessons learnt from it.

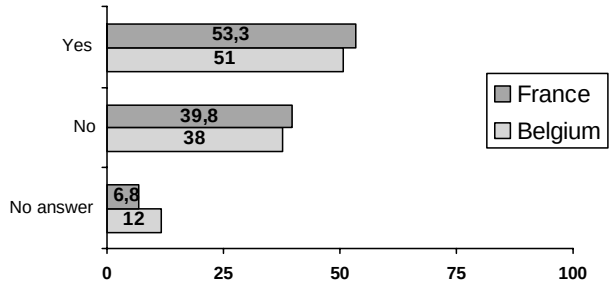

Fig. 5. Percentages of people answering 'yes', 'no' or not answering to the question: "Do you believe that a Chernobyl-type accident could happen again in Belgium (France)?", November 2002.

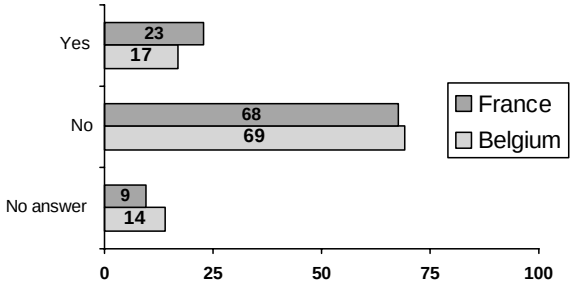

Fig. 6. Percentages of people responding to the question: "Would Belgian (French) authorities take necessary protective actions in the event of an accident in a nuclear plant in Belgium (France)?", November 2002.

The respondents were also asked whether the authorities would be capable to protect the population adequately if a severe nuclear accident would occur; two-thirds of the people believe this is not the case (Fig. 6). The belief that a serious disaster may happen and that the authorities would not be capable to adequately protect the population clearly is not an element in favour of nuclear energy production.

8. Conclusions

The major concern for the population is related to societal factors such as the fear for terrorism or unemployment. Technological risks are only seldom mentioned as main concerns. However, a lot of people think that many risks, of all nature, are fairly high to high. The policy to protect people by the authorities is not always considered to be adequate. Many people believe they are not told the entire truth about risks.

There is a lot of variation in the opinion who should be in charge of the control of hazardous facilities: committees of experts, authorities, etc. In Belgium, there are large differences in the opinion on this subject between the two main population groups. Many respondents claim not to want to spend too much time in public participation processes, but on the other hands, large fractions do seem to be interested and wanting to invest considerable time in doing so.

For the nuclear industry, it was found that many actors are not very well known to the interviewees. The appreciation of technical competence and of fairness shows a lot of variation between the different actors, and both are not necessarily linked. The main actors directly related to the nuclear industry are considered to be technologically competent, but not necessarily telling the truth; medical doctors and environmental groupings are considered less technologically competent, but are considered more trustworthy; politicians, journalists and trade unions are believed to be neither technically competent, nor telling the truth.

The belief that a Chernobyl-like disaster could happen in their country is present with a small majority of the respondents in both countries; two-thirds of the population believes that the authorities would not be capable of coping with an adequate protection of the population in case of a severe nuclear accident.

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