

## THE APPROACH OF NUCLEAR RELATED ISSUES BY THE PRESS

**Cristiane Teixeira Manetti, Kátia Suemi Tanimoto and Goro Hiromoto**

Instituto de Pesquisas Energéticas e Nucleares, IPEN - CNEN/SP  
Av. Professor Lineu Prestes 2242  
05508-000 São Paulo, SP  
[cristianemanetti@hotmail.com](mailto:cristianemanetti@hotmail.com)  
[kátia\\_tanimoto@hotmail.com](mailto:kátia_tanimoto@hotmail.com)  
[hiromoto@ipen.br](mailto:hiromoto@ipen.br)

### ABSTRACT

Nuclear energy has always been a polemic issue, and it is usually more intensely associated, by the general public, to the risks than to the benefits from its use; in this sense, the mass media have clearly had its share of responsibility for public opinion formation. This paper presents a report on the coverage of the nuclear issue in the press, identifying the amount of negative and positive views on the subject, as well as the people involved in the process. The analysis comprises the period from February 2007 to February 2008, right after the edition of the 4<sup>th</sup> IPCC Report. From that sample, 172 texts published in widely known newspapers and magazines, most of them from Sao Paulo State, were identified. The analyzed speeches were classified according to five information sources: specialists, users, authorities, protagonists and entrepreneurs. It was noted the predominance of positive articles, mainly due to the weight of the favorable speeches by authorities, cited as the most frequent in this paper.

### 1. INTRODUCTION

The media information main role is to create subsidies for decision making, and the main characters in this process are, visibly, the individuals. The information importance in a certain context may be evaluated under many perspectives, but inside any system, the basic perspective is from the information user [1].

The news message influence on mass society had been argued throughout the last century by researchers, who produced diverse theoretical hypotheses on this phenomenon, contributing, therefore, for the construction of the theoretical contemporary knowledge on the mass media. It seems clear that the act of informing, educating, and, consequently, forming individual opinions about the subjects that affect the daily routine, has been a means through which the communication vehicles contribute, remarkably, with the reality construction [2].

This opinion formation phenomenon of the population is called public opinion. In James Bryce's understanding, the public opinion only exists when the individuals from a society have free access to the information of the present time and, consequently, they can formulate self-conscious opinions [3].

Marx points out that "as far as it is a product of the public opinion, the free press, also, creates this opinion". What means that, when equalitary information access for citizens exists, these are capable of formulating opinions and of acting democratically, demonstrating the possibility of the journalistic articles to create ways and tools, so that people can practice

their citizenship [3] [4].

Nuclear energy has always been a polemic issue, and it is usually more intensely associated, by the general public, to the risks than to the benefits from its use; in this sense, the mass media have clearly had its share of responsibility in public opinion formation.

This paper presents a report on the coverage of the nuclear issue in the press, identifying the amount of negative and positive views on the subject, as well as the people involved in the process; this work is part of a larger project of risks perception, with the objective of supplying subsidies to formulate a communication program with the public, on nuclear energy use in the country.

## 2. CLASSIFICATION OF THE INFORMATION SOURCES

According to the writing manual of periodicals such as *Folha de São Paulo* and *O Estado de São Paulo*, base for most of Brazilian periodicals, the sources are classified by hierarchic level of trustworthiness [5]. It is each journalist attribution to determine the hierarchy of their own sources of information, supported on common-sense and on the sources description. In this case, a periodical classifies the sources into four categories: source type zero, type one, type two and type three. Each of these sources demands, from the journalist, different procedures for the text preparation and finalization:

Source type zero - written and with exactness tradition, or recorded without allowing any doubt: famous encyclopedias, documents emitted by reliable institutions, videotapes. In general, the type zero sources do not need information crossing.

Source type one - it is the most trustworthy, in the cases where the source is a person. The type one source has trustworthiness description; therefore, the pieces of information passed by this source are always correct. It speaks with knowledge, it is very close to the fact which is reported and it does not have immediate interests in the news spreading. Although the crossing of information is always recommended, it is admitted that information coming from a source type one be published without being verified with another source.

Source type two – it has all the attributes of type one, except the trustworthiness. All information of source two should be crossed with, at least, one more source (of the type one or two), before being published.

Source type three – the least trusty. It is well informed, but it has interests (political, economic, or others), which make its information less trustworthy. There are two possibilities for source information type three: to work with it as a simple starting point for the journalistic work or, in the impossibility of crossing with other sources, to be published in the backstage column (“in off”), with the explicit indication that is still not-confirmed information.

The manuals still call the attention for the fact that, in face of changes in the political scene and the level of relationship between source and journalist, there is variation on the classification of these sources. Another important register mentions another important guidance: the journalist should not understand a classification as a "straight-jacket". This

means that a source zero can spread mistakes or rumors and source three, specific and reliable information.

In this study, information sources have been divided in five categories: specialists, users, authorities, protagonists and entrepreneurs. The category called 'specialist' is that formed by scientists, technicians and some experts on the subject reported in the feature. The category 'users' refers to people, communities and groups which, direct or indirectly, benefit from or are reached by the reported phenomenon in the article. The category 'authorities' is constituted by representatives, in its several levels, of the federal, state and municipal governments. The category 'protagonists' is formed by agents, that is, those that had given origin to the journalistic fact, being included those classified as NGOs – non-governmental organizations and journalists. The category 'entrepreneur' is represented by the entrepreneurs, in general.

### 3. COLLECTION OF JOURNALISTIC MATERIAL

The propagated news in the press, with the main theme related to the nuclear energy, has been selected from a CETESB clipping, covering the period between February 2007 to February 2008, right after the edition of the 4<sup>th</sup> *Report of the IPCC* [6], when the global warming and alternative energy sources were frequent subjects in the press. The current research focused only on printed vehicles.

In the period mentioned above, 172 articles were found, distributed in twenty and two vehicles of communication, comprising seventeen newspapers and four magazines: *A Cidade, Agora, São Paulo, Tribuna, Correio Brasiliense, Correio Popular, DCI, Diário de São Paulo, Diário do Grande ABC, Folha de São Paulo, Gazeta Mercantil, Jornal do Brazil, Jornal da Tarde, Mogi News, O Diário, O Estado de S. Pablo, O Globo, Valor Econômico, Época, Exame, Isto É* and *Veja*.

#### 3.1. Frequency of the Information Sources

Table 1 presents the number of articles and speeches, analyzed per information source, in each communication vehicle.

The analyzed news was verified to be concentrated, to a large extent, in periodicals of wider circulation in the State of São Paulo, with *O Estado de São Paulo* and *Folha de São Paulo* representing 47.1% of the total of the articles considered in this study. It was evident that more extensive journalistic covering on the theme occurred among periodicals of great circulation; on the other hand, there was reduction of the covering as the vehicle distribution decreased.

Of a total of 255 analyzed speeches, distributed in the 172 pieces of news, from the 22 communication vehicles, it is noticed that authority (58.0%) was the predominant source, followed by protagonists (18.5%), specialists (15.3%), entrepreneurs (4.3%) and users (3.9%). The category 'authority' was distinguished for being the major source in the articles, occurring in the majority of the press vehicles; this is related, probably, to the responsibility of the category in projecting solutions and proposing alternatives for the expected scarcity of energy from fossil fuels.

**Table 1. Number of articles and speeches analyzed per communication vehicle**

| Vehicle             | Number of articles | Number of speeches |     |    |    |    |       |
|---------------------|--------------------|--------------------|-----|----|----|----|-------|
|                     |                    | PR                 | AU  | US | SP | EN | Total |
| A Cidade            | 1                  | -                  | 2   | -  | -  | -  | 2     |
| Agora São Paulo     | 1                  | -                  | 1   | -  | -  | -  | 1     |
| A Tribuna           | 4                  | 2                  | 3   | -  | 1  | -  | 6     |
| Correio Brasiliense | 1                  | -                  | -   | -  | 1  | -  | 1     |
| Correio Popular     | 1                  | -                  | 1   | -  | 2  | -  | 3     |
| Diário do ABC       | 3                  | 1                  | 1   | -  | 1  | -  | 3     |
| Diário de São Paulo | 2                  | -                  | 1   | -  | 1  | -  | 2     |
| DCI                 | 14                 | 2                  | 15  | 1  | 5  | 5  | 28    |
| Época               | 1                  | 1                  | 1   | -  | 2  | -  | 4     |
| Exame               | 1                  | 1                  | -   | -  | -  | -  | 1     |
| Folha de S. Paulo   | 34                 | 4                  | 34  | 3  | 7  | 1  | 49    |
| Gazeta Mercantil    | 15                 | 5                  | 12  | 1  | 3  | 2  | 23    |
| Isto É              | 2                  | 2                  | 3   | -  | -  | -  | 5     |
| Jornal do Brasil    | 8                  | 4                  | 4   | -  | -  | -  | 8     |
| Jornal da Tarde     | 1                  | -                  | 1   | -  | -  | -  | 1     |
| Mogi News           | 1                  | 1                  | -   | -  | -  | -  | 1     |
| O Diário            | 1                  | -                  | 2   | -  | -  | -  | 2     |
| O Empreiteiro       | 1                  | 1                  | -   | -  | -  | -  | 1     |
| O Estado de SP      | 47                 | 14                 | 37  | 1  | 12 | 1  | 65    |
| O Globo             | 16                 | 5                  | 13  | 1  | 1  | 1  | 21    |
| Valor Econômico     | 15                 | 4                  | 17  | 3  | 2  | 1  | 27    |
| Veja                | 1                  | -                  | -   | -  | 1  | -  | 1     |
| Total               | 172                | 47                 | 148 | 10 | 39 | 11 | 255   |

PR: Protagonists; AU: Authorities; US: Users; ES: Specialists; EM: Entrepreneurs.

In the scientific journalism, however, the intensive use of the source ‘authority’ is seen cautiously, once if this source is official, that is, the information domain belongs to it or the information is generated by it, the journalist will have difficulty to verify data transmitted by it.

In the case of the source ‘specialist’, some other care should, also, be taken, because journalists were trained, since the beginning their formation, to see scientists and experts as unquestionable sources, what tends to compromise the foreseen debate by journalism.

#### 4. APPROACH ANALYSIS

Information speech sources were classified according to the presented approach, positive or negative, favorable or not to the nuclear energy. They were classified as mixed approach, when it was not possible to identify, clearly, the source positioning or when, in the same article, two or more sources had presented antagonistic positions.

Table 2 presents the occurrence frequency of each approach, per each communication vehicle. It is observed that in 49.4% of the analyzed articles, the nuclear energy is approached in a positive way, against 25.6% of negative approach and 25.0% of mixed approach.

**Table 2. Number of approach types per communication vehicle**

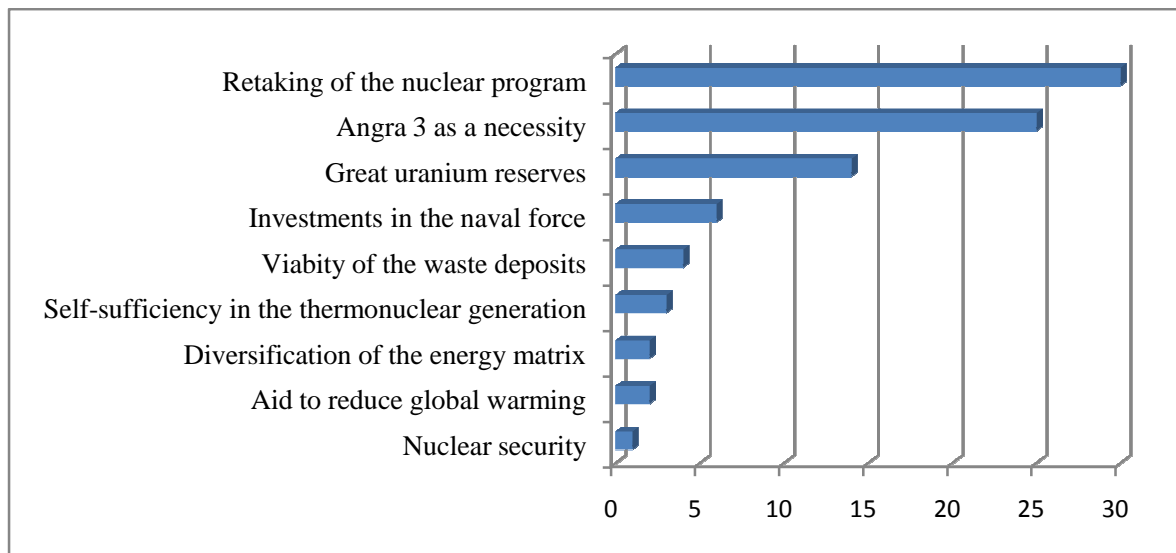
| Vehicle             | Approach type |          |       |       |
|---------------------|---------------|----------|-------|-------|
|                     | Positive      | Negative | Mixed | Total |
| A Cidade            | 1             | -        | -     | 1     |
| Agora S. Paulo      | 1             | -        | -     | 1     |
| A Tribuna           | 1             | 2        | 1     | 4     |
| Correio Brasiliense | -             | 1        | -     | 1     |
| Correio Popular     | -             | -        | 1     | 1     |
| Diário do ABC       | 2             | -        | 1     | 3     |
| Diário de S. Paulo  | 2             | -        | -     | 2     |
| DCI                 | 10            | 2        | 3     | 15    |
| Época               | -             | 1        | -     | 1     |
| Exame               | -             | -        | 1     | 1     |
| Folha de S. Paulo   | 16            | 7        | 11    | 34    |
| Gazeta Mercantil    | 8             | 7        | -     | 15    |
| Isto É              | -             | -        | 2     | 2     |
| Jornal do Brasil    | 6             | 2        | -     | 8     |
| Jornal da Tarde     | -             | -        | 1     | 1     |
| Mogi News           | -             | 1        | -     | 1     |
| O Diário            | -             | 1        | -     | 1     |
| O Empreiteiro       | -             | -        | 1     | 1     |
| O Estado de SP      | 24            | 12       | 11    | 47    |
| O Globo             | 7             | 5        | 4     | 16    |
| Valor Econômico     | 6             | 3        | 6     | 15    |
| Veja                | 1             | -        | -     | 1     |
| Total               | 85            | 44       | 43    | 172   |

Out of a total of 75% of the articles with positive or negative approaches, Table 3 presents the frequency of these occurrences in function of the type of source that performed the speech. There is a clear trend on the part of authorities and entrepreneurs in transmitting a positive image of the nuclear energy; on the other hand, a negative image presented by protagonists is observed.

**Table 3. Number of approach types per information source**

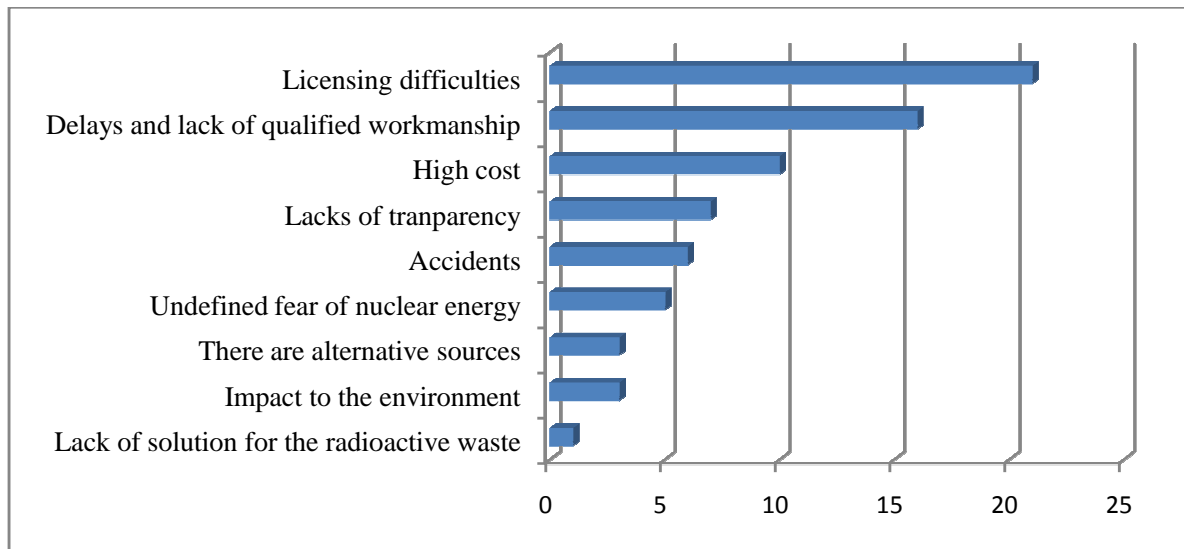
| Source       | Approach type |          |
|--------------|---------------|----------|
|              | Positive      | Negative |
| Authority    | 84            | 19       |
| Specialist   | 11            | 16       |
| Protagonist  | 7             | 19       |
| User         | 2             | 5        |
| Entrepreneur | 9             | 1        |
| Total        | 113           | 60       |

We have raised and exemplified with snippets, from the collected articles, how the positive and negative approaches in the 172 reports analyzed in this work had occurred. Fig.1 presents the main points cited by the information sources that have characterized the speeches as being positive.



**Figure 1. Frequency of the main points cited in characterization of positive approaches**

Fig.2 presents the main points cited by the information sources that have characterized the speeches as being negative.



**Figure 2. Frequency of the main points cited in characterization of negative approaches**

The positive approach was present in 85 articles, focusing on nine items as the main positive points of the nuclear energy. The three items of greater importance mentioned the benefits of nuclear programs retaking in Brazil and other countries, the construction of Angra 3 and other power reactors, and the great national reserves of uranium, cited, respectively, in 35%, 29% and 16% of the articles.

The negative approach was present in 44 articles, focusing on nine items as the main negative points of the nuclear energy. The three items of greater importance referred to the difficulties of licensing Angra 3 and actions against its construction, evidences involving delays and interruptions of the Brazilian nuclear program, and the high costs of nuclear technology, cited, respectively, in 48%, 36% and 23% of the articles. It is interesting to point out that the radioactive waste problem, normally pointed as one of the determinant factors for the nuclear energy non-acceptance, appeared cited only in 2% of the negative articles (and in 5% of the positive features).

## 5. CONCLUSIONS

- There is a predominance of positive news about the nuclear energy in the press; this happens due to the largest number of consulted authorities as information source.
- The clearly tendencious information sources are represented by the NGOs, in the negative aspect, and by authorities and entrepreneurs, in the positive aspect.
- The majority of the traced communication vehicles mixed positive and negative news on the subject.
- There is evidence of a hegemonic speech by part of the official sources.

- The positive approach is, predominantly, related to the retaking of the Brazilian nuclear program, the necessity of the construction of Angra 3 and the self-sufficiency in the uranium reserves.
- The negative approach is predominantly related to the difficulty of licensing, delays and interruptions of the nuclear program, lack of qualified workmanship and the high costs of nuclear technology.

## REFERENCES

1. MEDINA, C. A. “*Profissão jornalista: responsabilidade social*”. Rio de Janeiro: Ed. Forense-Universitária (1982).
2. De FLEUR, M.L; BALL ROKEACH, S. “*A sociedade de massa e a teoria da bala mágica*”. In: Teorias de comunicação de massa. Rio de Janeiro, Zahar (1968).
3. MELO, J. M. Paradigmas da Escola Latino-Americana de Comunicação. Universidade Federal de Goiás, *Comunicação & Sociedade*, v. 2, n. 2 (2000).
4. BUENO, W. C. “*Jornalismo científico no Brasil: os compromissos de uma prática independente*”. São Paulo: ECA-USP, tese de doutorado (1984).
5. FOLHA de SÃO PAULO. “*Manual de Redação*”. São Paulo: PubliFolha, 2001
6. “4<sup>th</sup> IPCC REPORT. Climate change 2007: Synthesis report”, [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf) (2007).