

The safeguards discourse as a pathway for transformations in public opinion

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Abstract

The starting point of this paper is based on the principle that the pro-nuclear discourse is not as strong as the anti-nuclear discourse in sustaining its arguments. Even decades after the Second World War, the accidents with a great repercussion and the numberless attempts made since then to regain society in favor of nuclear activities, this discourse does not appear to be in a condition to face its opponents successfully because what is sustained in its wording does not work as well as it should as an instrument for persuasion and/or clarification of public opinion. No matter how paradoxical it may appear, the discourse in favor of nuclear technology has also been of use for prompting negative attitudes in this regard. In turn, such attitudes interfere with the perception of the nuclear risk and, consequently, with the decision-making process concerning issues such as, for instance, the installation and/or permanence of nuclear power plants in certain countries —regardless the different realities in each one of them. To the extent in which, within this sector, the contact with the population becomes more active among the institutions developing nuclear technology in all its possible peaceful applications, would nuclear safeguards have any discursive influence upon the behavior of society should the latter become involved in the issue of the stigma? Would they be liable to aid towards a more favorable public opinion in connection with this topic? In short, this article attempts to evidence the reasons for this discursive weakness —using the Brazilian case as an example— and to discuss whether nuclear safeguards can play a worth-practicing role in this process.

Keywords: pro-nuclear discourse, stigma, public opinion transformation, the role of safeguards in society, management of knowledge concerning the nuclear sector.

1. Why aren't its goals fulfilled?

It can be proved that, even with a significant re-orientation occurred during the last five years, the discourse in favor of nuclear technology in Brazil involves an anti-nuclear content in its statements because it is captured by a field of significances that, somehow, reproduces the stigma and weakens its arguments. Considering that all those involved —that is, the nuclear institutions, the anti-nuclear activists and society as a whole— are living within the same historical context, a negative reference to such technology is practically unconscious, even when it is being praised.

The perception indicating that the discourse by the institutions in this sector is conditioned by the same reasons used by those opposing it leads us to believe that this is the fact contributing to maintain the stigma, making the statements made by these organizations inefficient in attaining their objectives. The polemics continues to be a constant when referred to nuclear issues, whether inside or outside Brazil. This situation does not change because the idea of danger is present in both the attack and the defense discourses, even if implicitly. It appears as if there were a certain self-defense tradition among nuclear institutions. And an attacking tradition among those opposing it — once history demonstrated that danger does exist.

An analysis of some anti-nuclear texts will probably lead to find several statements to which pro-nuclear texts respond in an atemporal manner and vice versa. This situation can be illustrated using, as an example, texts by popular movements for environmental preservation, those by certain non-governmental organizations, some private initiative sites, as well as some journalistic texts, all of them contrary to the use of nuclear technology and, especially, for power generation. At the same time, an

analysis of “pro” texts, we would find ideas —and even expressions— very similar to those “against”, thus corroborating what has been said about the fact of a positioning grounded on a given context.

Among all industrial activities, power generation in nuclear plants is among the ones involving lesser risk. The dominating criterion is that, in a zero-tolerance environment, safety can always be improved. In over twenty years of nuclear power generation in Angra, there was not a single accident or event involving risks for the plant workers, the population or the local environment. (Electronuclear’s website, 2007)

*[...] Leaks or explosions in the reactors due to failures in their safety systems cause severe nuclear accidents. The first one of them, at the Russian plant of Tcheliabinski, in September 1957, contaminated almost 270 thousand people. The most serious one, in Chernobyl, Ukraine, in 1986, caused more than thirty casualties, hundreds of injured and produced a radioactive cloud that spread all over Europe. The number of contaminated people is inestimable. **In Brazil, a leak at the Angra I Plant, in Rio de Janeiro, contaminated two technicians.** However, the worst accident with radioactive substances occurred in the country was in Goiânia in 1987: the Instituto Goiano de Radioterapia abandoned a capsule containing the cesium-137 isotope used in a radiological equipment unit. It was found and open by scrap merchants and, in a short time, killed four people and contaminated two hundred [...]. (BBC Brasil.com – August 5, 2005)*

Should everything go wrong... we still have our emergency plans. The seriousness applied by the nuclear power plants in dealing with the safety issue can still be perceived by the so-called emergency plans. Since the time in which the Three-Mile-Island accident occurred, when the plant was not prepared to face an accident of that magnitude, the nuclear sector has been conscious of the need to be perfecting these plans all the time. And, since then, a great evolution can be noticed. (Brasil Nuclear Magazine, April/June 2000)

Failures caused an unprecedented incident and raise doubts concerning the safety of the nuclear power plant. [...] Nevertheless, the technicians did not celebrate. Locating and correcting the defect was a must. Nervous, they pushed controls, reviewed the operations, scanned the conductors – and nothing. While this happened, the second automatic safety system went into operation in order to avoid the overflow of the tank, which was receiving too much liquid [...]. A leak of this magnitude did never occur in the 16 years of history in the Brazilian nuclear power plants. (Epoca Magazine, September 24, 2001)

When we refer to polemics on this issue, first of all, we want to use, as a starting point, the term leading to debate, as a way to reach the set of significances related to the word. We take up the term as a reference, as a criterion in order to identify the problem. Here, the lexical term [1] is a demonstrative unit, an item that, located within a given context, leads to a certain positioning by means of values that, historically, have been attributed to it.

The reproduction of the nuclear stigma occurs both at the interpretation level by the target audience as at that of the textual production made by the institutions of the nuclear sector. This is due to the fact that the preparation and the consumption of the texts are conditioned, among other factors, by a mechanism of imaginary forms and assumptions that is predominantly negative. Consequently, the audience receives the pro-nuclear discourse with distrust because it reminds people of images connected with the tragedies that surround this sector. In turn, the nuclear institutions release what is antinuclear in their statements because they are affected by the negative images attached by society to this issue and do only take care of denying what is stated in the opposition’s discourse, while leaving untouched the assumptions grounded on the nuclear-equal-danger relationship.

Even when the success of its discourse is guaranteed, the nuclear sector needs to assume what must be said in order to attempt obtaining the desired effect in its target audience. However, all the discursive efforts aimed at guaranteeing safety and the peaceful use of its activities are frustrated when it is found that the public has a negative reaction toward such attempt. This suggests that the

assumptions developed for outlining this discourse seem to be wrong, because the discourse is not strong enough to convince the target audience of what it sustains.

In this paper, it is sustained that the main reason for the lack of success of the Brazilian pro-nuclear discourse is a set of negative pre-assumptions concerning what the target audience expects from it. There is a lack of coherence between its intentions and the type of discourse released with regard to its target audience. The discourse elaboration process is filled up with images "soaked" by the anti-nuclear discourse, thus weakening the arguments in favor of this technology. In turn, the target audience discredits such statements due to a lack of confidence and, usually, the media nurtures the reasons for such distrust.

In the following diagrams, keywords repeated in both the pro-nuclear and the anti-nuclear discourses used in the media have been transcribed. The objective is demonstrating that the ideas present in the texts used by the media are also present in the pro-nuclear discourse and can be observed in the references to these ideas made in their statements and in the repetition of several lexical items found in both discourses. There, one can perceive that the grounds for such arguments seem to be in the images proposed at the end of each diagram.

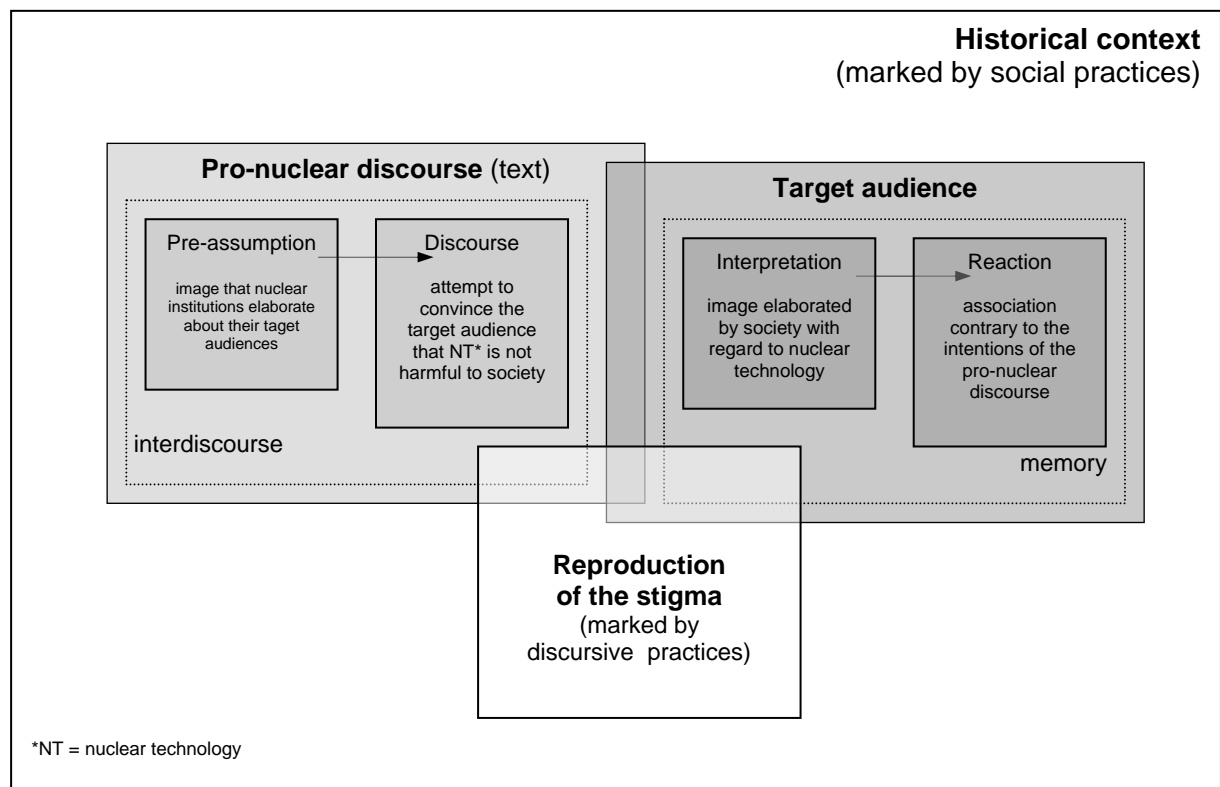
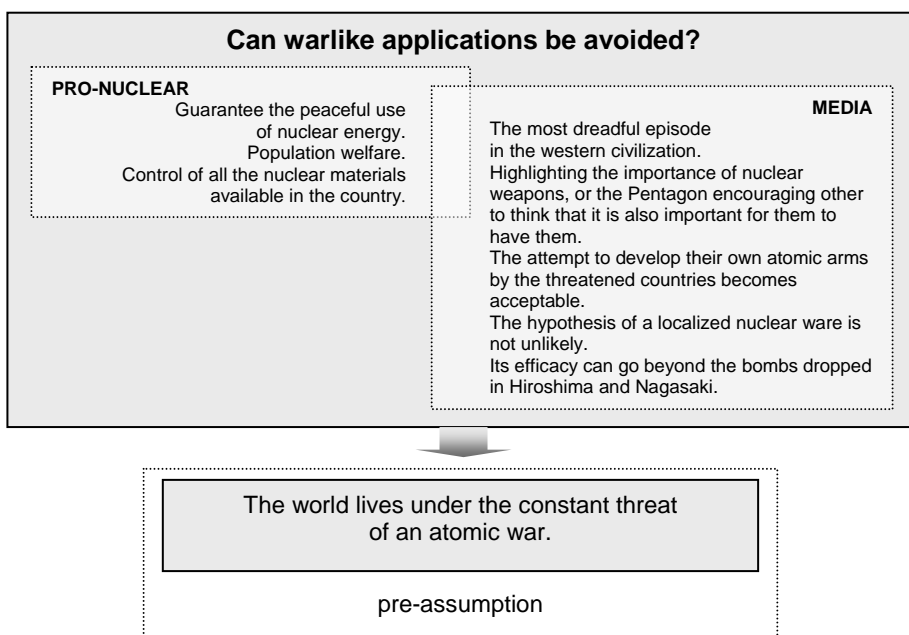
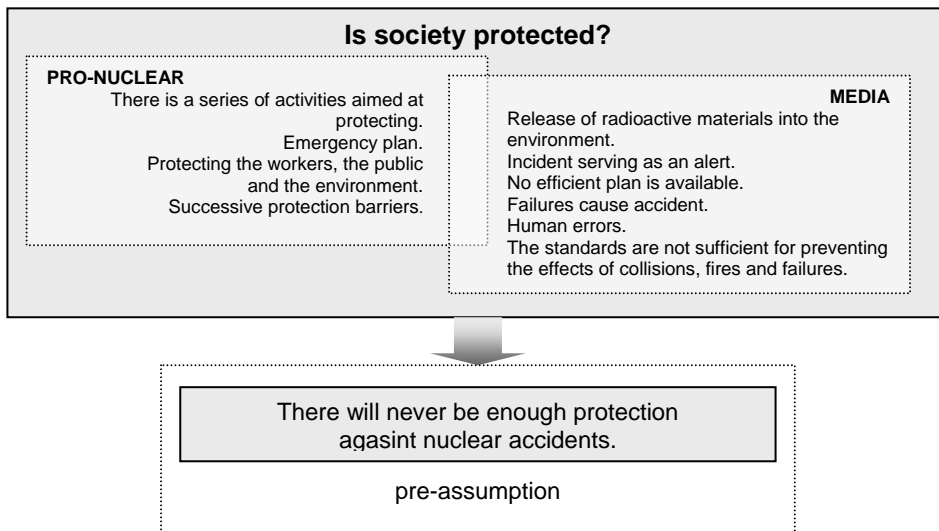
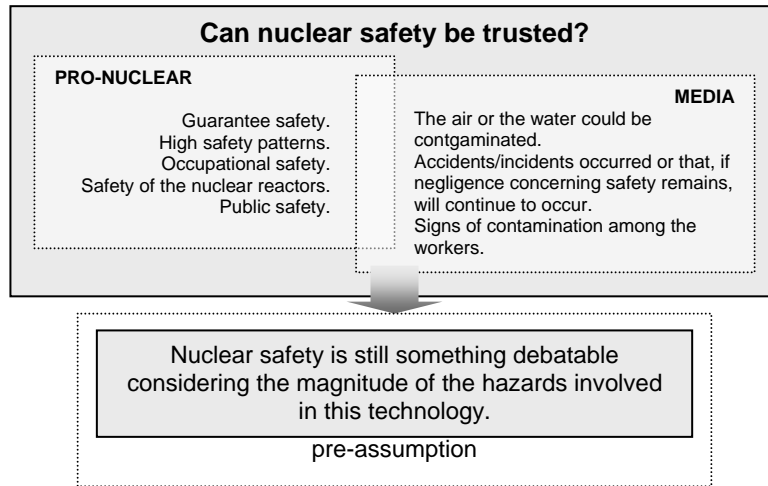
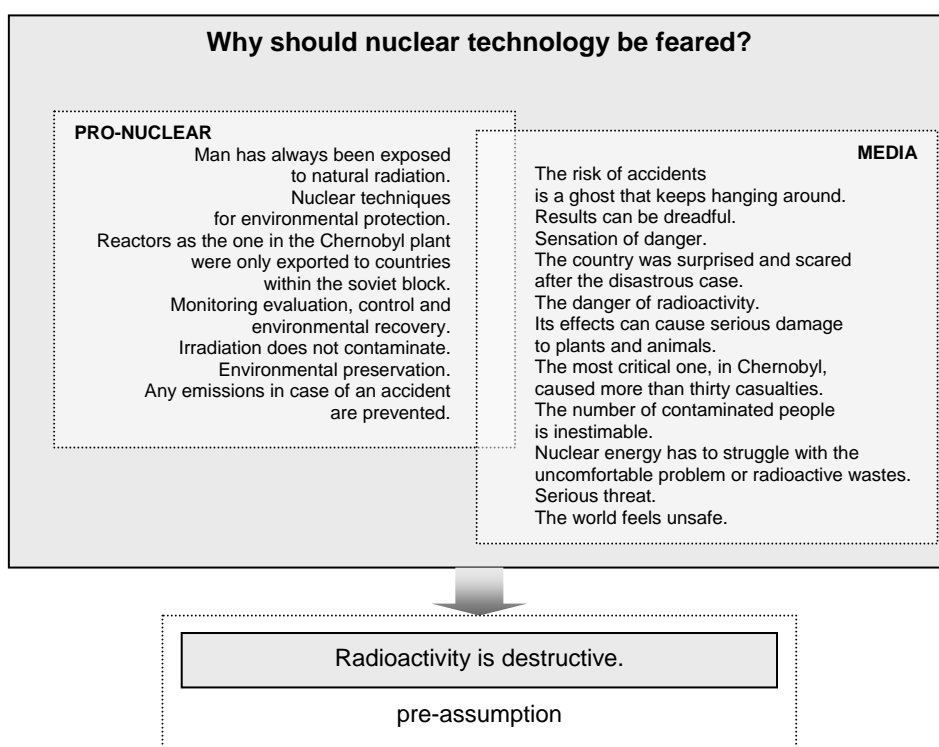
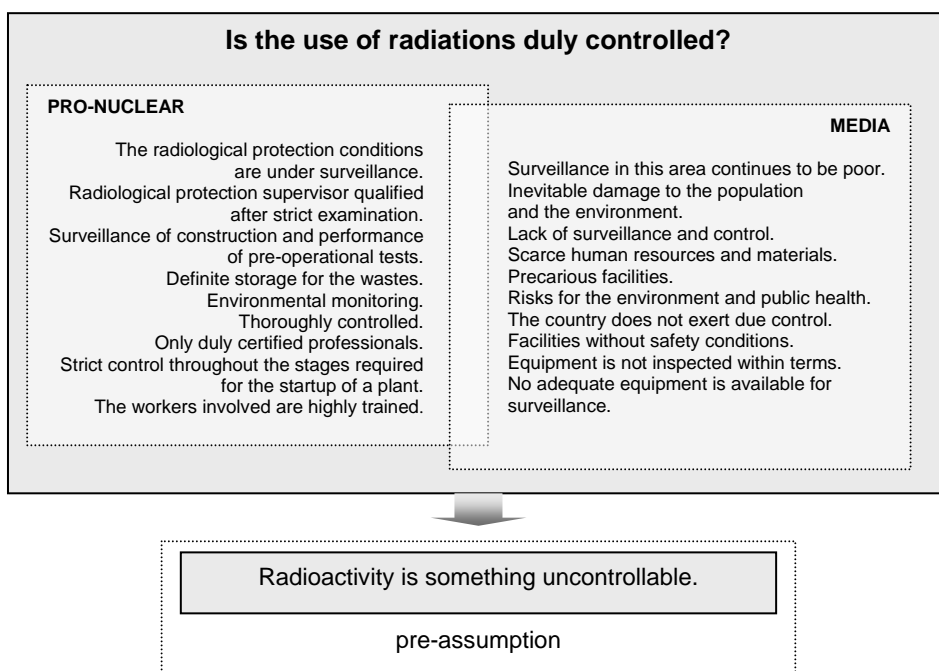


Fig. 1: discursive process of the nuclear sector





Ducrot [2] asserts that “in order to understand the pre-assumption phenomenon, we need to relate it to the idea that the discourse [...] has a structure and that the preservation of the pre-assumptions is one of the laws defining such structure”. In the analyzed discourses, it has been found that certain pre-assumptions that are practically maxims with regard to the nuclear issue are maintained. Also, its negative action can be observed in the statements favoring the sector, weakening its structure and questioning the safety and the seriousness of its activities.

On the other hand, there is an anti-nuclear positioning in which use is made of the same pre-assumptions in order to build up a message that, usually, based on the catastrophes of the past, produces a stronger impact upon the public. This practice ends up strengthening the statement to which it opposes. Thus, if a discourse is not sufficiently strong to enforce its arguments, it is not in a condition to face the opposition successfully. If it is unsuccessful, it is because what it supports in its speech is useless as an instrument for attaining the desired objectives. Ducrot asserts that

[...] the refusal leads to a rejection of the dialog offered by the interlocutor while he/she speaks. Therefore, it also leads to not only accusing the adversary on false statements, but also of having behaved in an absurd manner. In fact, his/her speech, as any speech, implies the structure of a further dialog, and, for this reason, requires a sequence, opens up an exchange. However, at the same time, it imposes unacceptable conditions upon such exchange, rendering impossible the requested sequence, which was needed for its self-realization as a significant speech.

This suggests that the pre-assumptions of the pro-nuclear discourse carry along the application of an unacceptable or doubtful speech for its target audience and, instead of obtaining a favorable reaction to what has been said, leading to a greater adherence of the public toward nuclear technology or to a better clarification on the issue, the sequence of the discourse is interrupted exactly by the fact that it contains elements that are considered as false and/or contradictory.

2. Perceptions and concessions

The course of the current history, between 1945 and nowadays, cannot be understood if the atomic issue is not taken into account along with its necessary supplement: missiles. Contrarily, the evolution of international events during the last 40 years can be traced by considering only the atomic factor, because the latter serves to explain the most important deeds within such period: the cold war, the thaw, the ease of tension, the attempts for cooperation between the East and the West, decolonization, the bipolarization of the current international society. (GAJA apud MAIOCCHI [3])

The power of this scientific discovery gave way to an era based on the development of the nuclear power potential and on fear of both disasters and a world-scale holocaust—this having brought along political and economic consequences that were reflected in every continent. One of them was facing the reactions and the interests of the powerful oil industry, which was by no means willing to lose its market positioning, and the other, which is becoming more and more important, refers to the environment. In the latter, we come up with accidents in the plants and with the destination of wastes. No matter how scientists state that the risks are remote, the society has a different opinion. Actually, the population does not have many reasons for supporting the development of nuclear technology for peaceful purposes because its perception concerning the risks related to this sector is highly influenced by the negative historical context to which it inevitably leads.

Some relevant changes took place during the last few years and, today, the population is experiencing an *impasse* that ends up leading it to new considerations on this issue, even if does not have great affinity for it. Between a gradual waning of nuclear power plants, as it occurred in Germany and Sweden, and the expansion in the production of nuclear power in Finland. Between these two extremes, there are several societies—such as the Brazilian and the Argentine ones—experiencing a reactivation of their nuclear programs for power generation, and the Spanish one, whose efforts in finding solutions for the waste issue is quite well-known.

In addition, issues such as global warming, the increase in energy demand, the threat of an exhaustion of the traditional power generation potential and the movements against the construction of new hydroelectric plants because of their environmental impact are having an influence on public opinion and conditioning its position concerning nuclear energy, far more because of a need than because of its perception regarding risk. This means that, even if a given society does not view the production of nuclear energy favorably, it is willing to assume the risks as soon as the chaotic perspective of the greenhouse effect and the lack of electric power becomes evident.

In a research work performed by the Spanish *Empresa Nacional de Residuos Radiactivos* in 2001, the conclusion was reached that public opinion seems to be tinged by a position of the “no-to-nuclear,-but...” type referred to conditions such as need, safety and technical-scientific development. This is where the following concepts derive from: “nuclear energy is dangerous, but we cannot do without it”; “it is not clean, but it produces less atmospheric contamination than the other sources of energy”; “it is expensive, but it makes us less oil-dependent”; “there is never enough control over nuclear energy; however, its risks are controllable”.

Also, in southeast Brazil, where the country’s nuclear power plants are located, the same type of derived positioning occurred when, in 2001, rainfall dropped considerably and the prospects of a general blackout became possible. Society started to re-dimension its opinion with regard to the use of nuclear energy and began considering it as acceptable considering the serious problem to be faced by the country without the electricity provided by the hydroelectric plants.

This seems to lead to the conclusion that concessions, and even a conceptual change with regard to the nuclear issue, can arise when social perception faces different realities. At a time in which the whole world is facing a climatic change and important institutions as the United Nations alert about an actual hazard resulting from pollution, societies are starting to visualize the nuclear option as one of the most viable nowadays, even in the presence of the hot debate that this has generated.

Thus, the stigma experienced by this sector starts to evidence its “cracks”. Through them, new opportunities may arise to face it with more appropriate arguments – aimed at the future, and not at the past.

3. What about the field of safeguards?

Would the institutions performing nuclear safeguards play a role in the discourse? Which is the dimension of such role, considering that these are the institutions offering some of the most important guarantees on what is said about the nuclear sector?

Up to now, we have mentioned the discursive activities of the institutions regulating and developing this technology, but would it be sensible to include the activities of the agencies in charge of safeguards? Would they be in a position that would also allow to approach society in this respect? Is there any work being carried out by these agencies that does not only look forward a transformation in the perception of risk by the lay public but also offers important instruments leading to a better understanding of the nuclear option?

The universe of this type of safeguards is quite critical and, consequently, there is hesitation concerning its actual possibilities of participation in the conflictive environment of the nuclear discourse. If, on one hand, these agencies represent exactly the live proof of the fact that nuclear power plants are under control and surveillance, providing a highly important guarantee to the population, on the other, such institutions possess technological information lending them a positioning of diplomatic and reserved character.

An interesting issue is considering that the safeguards work perspective and its systematic diffusion might help in clarifying public opinion or, at least, in eliminating the merely negative concepts regarding the nuclear issue. If the society is willing to accept risks when faced with a great need, perhaps, the way to face such risks could be based on other concepts providing new ways of visualizing this technology.

Considering that public opinion is, in fact, the one orienting important decision-making processes in society, it should not only be taken into account toward considering the nuclear option as a valid one, but, primarily, in order to select conscious and well-grounded options, no matter which. In this context, the role of safeguards appears as quite positive, leading to a mature and realistic path.

Since one of the sensitive points in the nuclear issue is precisely safety, it should be considered that those in charge of developing nuclear safeguards have the power to adopt a position before the public on the basis of the authority they were granted by representatives of society itself. In this direction, distrust concerning the possibilities for developing warlike material by the countries possessing this technology could be eased by the institutions in charge of safeguards in a closer relationship with the population. Of course, the risk of accidents or of deviation of nuclear material for non-peaceful purposes will always exist; however, it could be fit better, without groundless exaggerations or displays.

The discursive action by nuclear safeguards deserves reflection and should be taken into account considering that this is a critical moment for the whole world. In view of the seriousness of the problems being experienced and of the intensive debate that they are causing, this may be an excellent opportunity for demystifying public opinion and providing it with a landscape of new concepts on this issue.

4. Some starting points

It is important to bear in mind that we are not only working in a negative historical context. We are dealing with emotions and values. This is an abstract issue and it needs to be analyzed also at this level. Stating that the historical context plays a leading role in the permanence of the nuclear technology stigma is correct. However, when individuals are considered as agents who build reality in the world where they live, questions arise on the limits of historical actions and on the features of such individuals because, if, in fact, they are active, why is it that, often, they are unable to weigh nuclear technology in a more objective manner? What is this mechanism that exerts a certain “control” over significance, even knowing that there are multiple possibilities for signifying? Let’s go back to emotions, values and whatever leads human minds to produce sense.

An analysis of the cognitive bases (evidencing how ‘cognitive spaces’ [5] intersect or reject each other) and the discursive bases (observing interdiscursivity [6] and its effects from sense [7]) regarding the issue under discussion will reveal the mechanism building the network of negative significances related to nuclear technology and allow to search for alternatives for such mechanism to be used in a different manner.

“Typically, we think about concepts as if sets of senses. We label them: *marriage, birth, death, strength, electricity, time, tomorrow*. Senses seem to be localized and stable. [...] However, [...] sense is not stored in a warehouse of concepts. By the contrary, it is alive and active, dynamic and distributed, built for local purposes of knowledge and action. Significances are not mental objects restricted to conceptual regions but, rather, complex operations of projection, linkage, connection, mixture and integration of multiple conceptual spaces.” Turner *apud* SALOMÃO [8].

Thus, it seems sensible stating that the polemics involving nuclear technology is not something so solid as it may appear. As whatever comes from human beings, it belongs to this movement that takes part of significance and that, by itself, exists in a thorough fluency. On the other hand, when the nuclear discourse is categorized within the notions of domain and projections of the cognitive theories, one can verify the extent in which social memory influences the processing of information about this technology, bringing memories of the tragedies occurred in this sector. When thinking is given in the field of significance related to any topic, previous knowledge is searched so as to apply the reasoning corresponding to the subject under analysis. It is this very type of reasoning the one structuring the unfavorable concepts about nuclear technology, because it implies actions by the social-historical context, the memory and sense processing, thus shaping —among other things— the images that lead to the stigma.

Fauconnier [9] states that human beings access and process the same information differently when they are in different contexts, adding that, if human cognition is so contextually configured, exploring

the types of connections that our minds tend to make and the types of effects produced by the various contexts is a crucial task. If we compare public opinion about nuclear technology ten years ago with what people think today, we will see that some variations have occurred deriving from problems that are leading the world population to a review of diverse concepts apparently crystallized and confirmed by the discourse of the media in general.

The importance of all the issues of the discourse discussed above becomes concrete in the extent in which we deal with a problem that occurs within a dynamic relationship between people and their institutions, as well as in individuals themselves in their interpretation. Living in a society means participating in a constant movement that leads society to exist, grow, evolve, signify and find its own significance, among other things. We must bear in mind that distrust regarding the nuclear issue occurs amid social practices, is submitted to them and exerts an influence upon them.

An approximation between this technology and society, based on a structured approach aware of the social and cognitive processes involved, is potentially liable to enlighten this issue with better grounded ideas. The past continues to be in fashion among the discursive practices concerning the nuclear issue and, perhaps, this will never change. Meanwhile, new actors have come on the stage and the way of dealing with this issue must be brought into the present.

If we acknowledge the power of public opinion in the decisions made concerning the nuclear issue, it appears as obvious that the discussions being held during the last few years with regard to energy exhaustion, global warming and environmental disasters, among other topics, will be conclusive in the acceptance—or rejection—of nuclear energy as one of the options in facing these problems. Undoubtedly, this is a delicate period and, at the same time, a gateway opened for the nuclear sector to produce a conceptual overturn about itself. For this reason, it is the time to go beyond what it seems to be and beyond what has been repeated by the institutions dealing with nuclear technology. It is also the time to think about the discursive potential of nuclear safeguards and on their capacity to play a decisive role in the construction, along with society, of new significances concerning this issue.

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