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RISK COMMUNICATION AND THE TRANSFORMATIONS IN THE METANARRATIVE OF THE NUCLEAR FIELD IN THE 20TH AND 21ST CENTURIES

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ABSTRACT

The metanarrative of the nuclear field was influenced in the beginning by the perspectives of economic prosperity and the possibility of diversifying to alternative sources of power. However, it has been transformed throughout the 20th and the early 21st centuries by the collective memory and micronarratives of the nuclear bombs during the II World War and the nuclear or radiologic incidents of Three Mile Island, in 1979, Chernobyl, 1986, Goiânia, 1987, and Fukushima, 2011. The most recent occurrence made countries like France and Germany, which depend a great deal on nuclear power supply, to suspend their nuclear programs, although having to retake them afterwards due to the impossibility of getting new sources of energy in a short period of time. All that attracted negative attention to the field and severely impacted the perception of risk by the society. This paper observes the future of the metanarrative in such area will be based in the influence of other national and supranational risk communication narratives around security, pollution, environment and economy. The discussion is based on theories by researchers such as Andreas Huyssen, Carlo Ginzburg, Lorenzo Negri, Maurice Halbwachs, Max Weber, Pedro Fernando Bendassolli, Peter Sandman, Roland Barthes, Ulrick Beck and Walter Benjamin.

1. INTRODUCTION

Narratives compose History as individual memory sharing establishes and perpetuates the collective memory. For Halbwachs [1], the individual memories are observation points over the collective memory, which are altered according to conditions that individuals keep with other means. So that the memory of individuals get support on the memory of others, it does not suffice they provide their testimonies. It is necessary there to be agreement among the memories and many points in common for it to be possible a reconstruction of the memory on a common foundation.

Halbwachs divides the memory in autobiographic and historical, in the sense that the second supports the first because the lives of individuals are contained in the general History. It is the History lived by people, not the one learned, that the memory finds support. According to the author, memory is a reconstitution of the past with support from data lent by the present time, and, besides that, prepared by other reconstructions made in previous periods and where the image of ancient times was already manifested with many alterations.

Since the collective memory helps in a certain way to compose the narratives of institutions, organizations and nations, the aim of the narrative could be to provide coherent vocabulary for individuals to use in order to build their identities in time-space and deal with their social relationships. As for Barthes [2], in a more generic way, the object of the narrative is social communication and presupposes a narrator and listener.

Ginzburg [3] observes the interference of the growing reconstitutions of the microhistories in the narratives, either organizational or governmental, in the doubts concerning the macro-historical processes. For Ginzburg, there comes a temptation to oppose to the revolutionary or reformist optimisms of the years 1950-60 the doubts of the radical nature of the latest 1970s and 1980s.

With a similar approach, Huyssen [4] points out, for example, that in the 1980's, the memory of Holocaust started to be a part of the public sphere, articulated with projects of the oral story, rise of the literature of based on testimonies in different media. The author states this memorial obsession substituted the concern with the German past in the artistic representations and that, from the 1990's, the memorial culture of the Holocaust became increasingly more international, with rituals and museums all over the world. Berlin gained the Monument to the Murdered Jews of Europe, by the architect Peter Eisenmann, which had international repercussion. Inversely, going from global to local, Nova York City suffered great transformation on its narratives from the episode od September 11, 2001, on. For the author, the main difference between the two approaches is that the dates between the celebration and the events themselves were too divergent. The Berlin monument was erected over 50 years after the Holocaust, while the debate about the memorial in New York started the day after the event.

For Huyssen, in Nova York there cannot be a historical distance, including due to the fact that the Ground Zero is the place itself of the event and memory, standing in an important part of the financial district of the city. There, history and memory relate in distinct manners in both capitals. While Berlin has several monuments of great historical signification and which are presente in the memory of its inhabitants and visitors from all over the world, Nova York also contains monuments with the same kind of relevance, but which do not generate historical reflection.

Benjamin [5] introduces what he considers to be the difference between narrative and information. For him, the individual experience passed on to new generations is the source to which resort all narrators. He believes nearly all that happen is at the service of information, not narrative. Therefore, information is only valuable when it is new because it only lives for a brief moment, being very different from the narrative in the sense that the latter conserves its strengths for a long time and is capable of being developed. On the other hand, metanarratives may be represented as conceptual comprehensive abstract systems aimed at connecting conceptual narratives and the social actors in broaden historical perspective.

2. METANARRATIVE OF THE NUCLEAR FIELD IN TRANSFORMATION

The news on the possibility of the liberation of energy in nuclear reactions through bombing uranium atoms by neutrons, proven by a study held by the researchers Otto Hahn, Fritz Strassmann and Lise Meitner in 1938, shook the world. Meitner and her nephew and assistant

Otto Frisch published in Nature in 1939 the paper "Disintegration of uranium by neutrons: a new type of nuclear reaction" [6], which revealed the empiric results obtained from their researches jointly held with Hahn e Strassmann. The researches added to that the observation of the mass-energy equivalence formula by Albert Einstein, theorized in 1905. The discovery was responsible for Hahn being awarded with the Nobel Prize of Chemistry in 1944 [7].

However, the II World War brought a new look to the possibilities of the nuclear fission, with the launch of atomic bombs over the Japanese cities of Hiroshima and Nagasaki, causing destruction and sorrow to the local population, and consequently, the surrender of the Japanese army. Hahn himself and the scientific community criticized the misapplication of atomic energy.

For Felman [8], events like the launch of the nuclear bomb, which threaten the victims of forgetfulness, transform the stories about the past and the relationship of people with determined events.

Afterwards, the incidents of Three Mile Island, in 1979, Chernobyl, in 1986, and Goiânia, in 1987, called the same kind of negative attention of the public to the use of nuclear energy. The most recent accident, which took place in Fukushima in 2011, made some developed countries and dependent a great deal of nuclear power, such as Germany and France, declared the suspension of their nuclear programs for a period of time, but having to retake them shortly after. Currently, there are 65 reactors in construction in the world: China, India, Brazil, Argentina, Pakistan, the United States, Mexico and Japan, among other countries [9].

The constancy of mistakes in the approach of communicational narratives in the nuclear field subsequently to the incidents mentioned originated the creation of a guide of orientation named "Communication with the Public on a Nuclear or Radiological Emergency", by the International Atomic Energy Agency (IAEA), which observes that, even though an event may not be considered and an emergency by specialists, it may be understood otherwise by the public and the act of communicating with effectiveness mitigates risks and minimizes the negative psychological effects [10].

The metanarrative of the nuclear area, once influenced by the perspectives of economic prosperity and clean energy, has been transformed along the XX and XXI centuries by the collective memory and micronarratives of the victims of nuclear bombs, accidents and radiological incidents. There is disenchantment in the world, in the perspective of Max Weber [11], which triggers a process of rationalization where there once was magic, enchantment. Similarly to the transformation occasioned by an earthquake, in which the destruction raises a more emotional and psychological level on individuals, at the same time that it destroys the collective memory and its community narratives [12], nuclear incidents provoke the same type of sensation in the society.

Also, the difficulty presented by the global powerful nations to come into agreement with Iran and its nuclear program help to currently contextualize the metanarrative of the nuclear area in the History by the narrative of risk perception. According to Sandman [13], risk is composed by two elements: the actual risk and the way the public perceives the risk, or outrage. Even in cases when the actual risk is low, if the perception of it is sensitive by the public, then the total risk is high.

For Bauman [14], fear is how we name uncertainty, lack of knowledge on threats and must be done to face it or end it, whenever possible. The author points out humans have a derived fear, a sensation of insecurity and vulnerability which makes individuals to acquire this vision of the world and have reactions plausible to a meeting with danger, despite the presence of a real threat. Furthermore, it is only possible to worry about it and act to run away from somewhat predictable consequences. Such imaginable consequences are socially classified as risks. Focusing on the measures that may be taken, individuals tend to avoid the reflation what cannot be done, which would diminish the self-confidence of men.

The metanarrative of the nuclear area has been transformed in something with a content perceived as harmful for people and the planet. This way, as pointed by Sandman, even though presenting low real risk in a given circumstance, the high perception of risk of such area by the public makes the total risk potential. The concept of "society of risk" by Beck [15] approaches the present times when the negative aspects of the progress are what moves societies and the disappearance of its basilar questions enables the emergence of new possibilities of configuration. For Beck, there are many dangers such as atomic radiations which are invisible and imperceptible to the common man. This means that the destruction and denounce around the matter are mediatized with the help of symbols. It is only through images and symbols which are culturally significant and publicly played that the daily life may become attentive to such dangers.

3. UNCERTAIN FUTURE

Up to 2100, the world will need to extinguish the CO_2 emissions, according to a recent report issued by the Intergovernmental Panel on Climate Change of the United Nations [16]. This is the narrative of fear, which may once again influence the direction of the metanarrative of the nuclear field, in case the alternative energy matrixes to fossil fuels may eventually be defined. As Beck [15] stated, the drama of the ozone hole may provide a new legitimation to nuclear power.

The future of the nuclear area will depend on the directions of its metanarrative. Even for IAEA there is uncertainty concerning the perspectives of the use of atomic energy, to which the agency attributes the acceptance by society as a strong factor [10].

4. FINAL CONSIDERATIONS

The role of the organizational, institutional and governmental metanarratives in the world is also given to the economic and political scenarios, altering the perceptions about certain controversial matters and the future of mankind. In the nuclear area, the directions of its metarrative will depend on the influence of the remaining national and supranational narratives concerning security, pollution, ecology e economy. Brazil, as signatory of the Treaty of Tlatelolco and of the Non-Proliferation Treaty, participates in the ambit of IAEA of the global safeguards of the nuclear activities. According to Bustani [17], the trust in the expectation that there will not be deviation in activities with peaceful purposes, without harming the right of nations to use nuclear energy, is the way to implement appropriate measures of control through the operation of the competent international organisms. From the

perspective of narrative, the way may be the translation of the issue to society, openness and dialogue.

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