Article

Framing Nuclearity: Online Media Discourses a Decade after the Closure of a Nuclear Power Plant in Lithuania

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Abstract

The article refers to the concept of nuclearity as a broader technopolitical phenomenon that implies political and cultural configuration of technical and scientific things. The nuclear media discourses become a site of tensions, struggles, and power relations among various institutions, social groups, and agents who seek to frame nuclear issues. The Bourdieusian concept of a field as a domain of social interaction is employed by the authors of the paper seeking to reveal interactions and power configuration within and between several fields – journalism and media, economy, politics, cultural production fields (cinematography, literature, and art). Commercial and political pressures on the field raise a question about the autonomy of this domain, especially under the conditions of marketization of media. Media coverage of nuclear issues in Lithuania in the period of 2018-2020 includes media framing produced by different 'sponsors' of the nuclear media discourses and agents from the above-mentioned fields of journalism, nuclear industry, politics, cinematography or arts. The media coverage contains the news and press releases produced within PR and public communication of atomic energy industry by representing decommissioning of Ignalina Nuclear Power Plant, articles written by journalists about the atom city Visaginas and challenges faced by the local community due to the closure of the INPP. The nuclear discourse includes politicians' debates on the topic of unsafety of construction of Astraviets Power Plant in Belarus, media coverage of the HBO series 'Chernobyl' representing a strong antinuclear narrative by portraying the Chernobyl disaster crisis and expressing strong criticism of communism. The authors of the article carried out a critical discourse analysis of media coverage on nuclear issues and illuminated the features of the discourse- prevailing topics and themes of nuclear narratives, dominating actors and institutions standing behind the discourse, missing topics, invisible and silent actors.

1. Introduction

The article analyses the nuclear media discourses that have been expanding on four news portals in Lithuania in 2018-2020. During this period, the debate on nuclear energy has intensified on several topics. The topic of nuclear discourse, which has been developed for the last several years, is the decommissioning of the Ignalina Nuclear Power Plant (INPP), the only Lithuanian nuclear facility. This nuclear power plant with an RMBK-style reactor started operating in 1983. The INPP units were shut down in 2004 and 2009, while the dismantling process will last until 2038. The decision to close INPP was a pre-condition for Lithuania to enter the European Union. The nuclear facility with RBMK-1500 reactors (the same as in Chernobyl) in Lithuania was considered by international experts as unsafe with

potential nuclear accident risks. In 2012, during a referendum on the construction of a new power plant, citizens did not support the idea of building a new NPP. The closure of the Ignalina NPP has affected the situation of the 'atomic' town Visaginas which was set up to accommodate atomic industry specialists and their families. The city has an exceptional multi-ethnic background in Lithuania – in the 1970s, nuclear industry experts engineers, and construction workers from all the Soviet Union were sent to Lithuania to work on establishing the atomic industry. After the INPP was closed and the dismantling process started, Visaginas and its inhabitants have undergone a painful change of place identity from mono industrial atomic town to the post-industrial and post-nuclear stage.

During the analysed period 2018-2020, new topics have appeared in the media discourse: media coverage on the Chernobyl accident and the HBO miniseries *Chernobyl*, which was filmed in Lithuania and the territory of INPP, and the growing political discourse on the unsafety of the Astraviec nuclear power plant in Belarus on the border with Lithuania. The emergence of these four major topics evokes a discussion of how media framing takes place by involving different 'sponsors' of the nuclear media discourses and agents from different social and professional fields - media and journalism, nuclear industry, politics, cinematography, and art discourse. Nuclear discourses are interpreted and conceptualized in this study by using theories describing the phenomenon of nuclearity (Hecht, 2009, 2012a, 2012b). Additionally, inspiring insights are gained from Bourdieu's field theory (Bourdieu, 1993, Bourdieu, 1996, Bourdieu, 1998), which explains the distribution of power in various social spheres and fields, their peculiarities and interactions.

This peculiarity of media coverage raises the question of **how the properties of the fields (nuclear industry as a specific economy, politics, media, cinematography, television) determine specific traits of the nuclear discourses they produce and how these features are 'reframed' through media logic.** A study of nuclear media discourses falls within the realm of critical theory when discussing how social actors and institutions with larger power construct dominant discourses and how some participants with less power remain invisible and voiceless. At the same time, the very concept of nuclearity is scrutinized from a critical perspective, revealing how processes in the nuclear energy industry deal with the configuration of power.

2. Nuclearity, nuclear media discourses and Bourdieu theory of a field

In our investigation on media coverage about nuclear issues, we refer to the notion of nuclear media discourses (Gamson & Modigliani, 1989; Entman & Rojecki, 1993) when the concept of media discourse as a form of framing and social construction is applied to representations of nuclear issues. Media discourse is described as *'a site on which various social groups, institutions, and ideologies struggle over the definition and construction of social reality'* (Gurevitch & Levy, 1985, p. 19; cit. by Gamson & Modigliani, 1989). Media discourses on nuclear power contribute to constructing the meaning of nuclear issues for citizens and provide 'media packages' as interpretative central ideas and frames which make sense of relevant events, construct meaning on the nuclear power and mobilize audiences for collective actions (Gamson & Modigliani, 1989). The frame is defined by the choice of actors and participants of a discourse, specific language, and vocabulary appeals to certain symbols. In the nuclear media discourse, nuclear issue-specific frames are related to politics, atomic industry, and environmental organizations.

New emerging events are incorporated into these interpretive frames. *'This frame typically implies a range of positions, rather than any single one, allowing for a degree of controversy among those who share a common frame'* (Ibid., p. 3). While constructing a nuclear discourse, journalists apply certain types of stories as framing schemes and structures for understanding (i.e. frames for simplification of complex nuclear energy questions for mass audiences). Framing is carried out by presenting certain topics and themes on nuclear energy - themes of technological and social progress, economic growth, political aspects, environmental concern, a conflict, etc.

Framing in media is influenced by social norms and values, organizational pressures and constraints, the pressure of interest groups, journalist routines, and political orientations (Scheufele, 2000, p. 307; cit. by Mercado-Saez et al., 2018). Studies of media coverage on nuclear issues in different countries (Mercado-Saez et al., 2018; Balkan-Sahin, 2018) reveal how powerful stakeholders and interest groups (politicians, government and other officials, nuclear industry companies) become the '*sponsors*' of pronuclear discourses and express their political and economic interests in the media. Stakeholders from environmental movements (citizens, organizations) express environmental concerns and take environmental perspectives on nuclear issues in the media discourse. As research on nuclear media discourse shows, politicians and government officials tend to dominate the coverage of the issue; meanwhile, environmental activist sources are less referenced. In many countries, the anti-nuclear discourse remains marginal.

One more important element distinguished by scholars is media norms and practices where journalists and media companies play a prominent role; they become an important medium between sponsors of discourses and audiences.

Zukas (2018) notes that journalists choose rather the role of a messenger than an active producer of the nuclear discourse by applying certain strategies: obtaining information from political and government officials, the energy industry and citing sources from experts holding official titles and degrees, and fall under the influence of strategic communication and public relations of nuclear companies.

Peculiarities of framing are related to the nature of journalism as a field. The Bourdieusian concept of a field provides a conceptualization of journalism as a field of power, a domain of social interaction and social practice that is co-constituted with social structures (Bourdieu, 1998). The theoretical framework provided by Bourdieu enables us to reveal interactions and power configuration within and between several fields – journalism and media, economy, politics, civic society - and could help better understand how nuclear discourses are constructed. On the one hand, the journalistic field is defined as relatively independent from politics and economy and has its logic, on the other hand, commercial and political pressures on the media raise a question about the autonomy of this domain, especially under the conditions of growing marketization of media (Brown, 2013). Analysis of various fields (politics, journalism, nuclear industry) reveals the main participants in the fields (journalists, experts, academics, intellectuals) and the nature of knowledge and practices they exercise in the field. In the shift to online journalism, journalism is undergoing the change when dependency on the market and subsidies from stakeholders are growing. Journalists acquire new professional roles, norms, practices, and new routines have been emerging (Zukas, 2018).

The authors describing nuclear energy point to the concept of nuclearity which embraces a broader area of nuclear things: human-made isotopes, nuclear industry, a nuclear state, and nuclear citizenship, nuclear discourse (Hecht, 2009, 2012a, 2012b). The field of nuclear industry is not just an ordinary and 'banal' industry; it is a broader technopolitical phenomenon that implies political and cultural configuration of technical and scientific things. Thus, the concept of nuclearity reflects the interconnection of different fields: science and technologies, industry, politics, and cultural production (including media), medical and health care, etc. Nuclearity is described as a techno-political regime with power relations in national politics and transnational networks.

According to Hecht (2012a), nuclearity is related to nuclear exceptionalism – the implication that nuclear things are unique, different from ordinary (*non-nuclear*) things (Ibid.). It is related to a specific concentration of power and prestige in the field of nuclear research and industry. Nuclear exceptionalism is promoted in a broader cultural discourse. In the 1950s and later, utopian dreams, atomic fantasies, and promises, related to limitless and cheap electricity and visionary images of a better life were conveyed (Hecht, 2012b). This broader discourse highlighted the progressiveness of nuclear energy, revolutionary quality of the new technology, presenting it optimistically as the energy of the future. The nuclear cultural discourse included four dominating 'master tropes' – mystery, secrecy, potency, and entelechy (Kinsella, 2005). Mystification of nuclear science, theology, and hierarchy turned nuclear energy experts and specialists into 'nuclear priests'. According to Anshelm (2010), nuclear scientists are depicted as magicians and wizards whose work is a kind of 'witchcraft', 'atomic enchantment' at the nuclear reactor as a 'witch oven'. These dominating themes supported nuclear exceptionalism when nuclear was associated with something ontologically unique. At the same time, dominating themes of nuclear cultural discourse reveal how complex the interconnection of nuclear industry, science, and technologies, politics, and culture works and how cultural production fields support the functioning of nuclearity as a techno-political regime.

The nuclear energy industry is not a 'banal' economy branch also because of its secrecy. Historical roots of secrecy go back to nuclear research on the creation of the atomic bomb and military use of nuclear energy. The mysterious and secret nature of the nuclear work created nuclear superiority and exceptionalism by substantiating 'hierarchical structures that emerge under the nuclear sign privilege closed communities of technical, military, and government insiders' (Kinsella, 2005). According to Kinsella (2005), nuclear science and technologies are widely portrayed as intellectually difficult, which cannot be easily grasped by ordinary people. Mystery and secrecy created a boundary between nuclear experts as representatives of the 'hard sciences' and the public, limited public knowledge, and served as a basis for disempowering the public and excluding from decision making in the nuclear domain (Ibid.).

Nuclear disasters in Three Miles Island (1969), Chernobyl (1986), and Fukushima (2011) revealed the potential unsafety of nuclear energy industry. Awareness of the risks posed by unsafe nuclear reactors has ushered in a new period of nuclear industry development. In the 1980s and 1990s, anti-nuclear attitudes intensified in many countries. New nuclear safety culture was introduced by raising and implementing new requirements and standards of safety and ensuring transparency and openness to the public. A broader cultural discourse turned from promoting an optimistic and utopian narrative on the future of nuclear energy to pessimist and even a dystopian vision of the nuclear future. Many countries decided to diminish the role of nuclear energy industry in national energy landscapes due to the negative public opinion and increased costs of the nuclear industry.

On the one hand, the openness of nuclear industry to the public has been strengthened through public communication, promoting educational programs, and providing tours at the sites of nuclear reactors. On the other hand, it has been revealed that nuclear industry applies communication strategies to convince the public of safety,

reliability, and high professional standards. Authors analysing the discourse of public communication, tourism, memory work and heritagization produced by nuclear energy industry point out a peculiarity of this discourse: strong pro-nuclear narrative on the necessity of nuclear industry and safety, intention to shape a positive image of the industry, avoidance, and reluctance to reveal potential risks posed by the industry and to mention nuclear incidents and catastrophes that happened at the nuclear energy industry objects (Storm et al., 2019). Stories of disastrous pasts are not told at the nuclear energy communication and memory sites – these narratives occupy other heritage arenas (Ibid.). Anti-nuclear attitudes and a discursively proclaimed safety myth are presented in museums, memorials, cinematography, literature, and arts. These cultural production sub-fields follow their logic and are relatively independent of nuclear industry and the political field which usually support nuclear energy and pro-nuclear stance. At the same time, due to growing pressures from the economic and political field and increasing dependence on the market and subsidies from stakeholders, journalism and the media domain have become a scene of public relations of nuclear industry companies and strategic communication of state institutions (Zukas, 2018).

Discourses on nuclear things in the cultural production field have specific features. Bourdieu provides a view on the broad field of cultural production and in several works' sheds light on its sub-fields – television, journalism, literature, cinematography, arts (Bourdieu, 1993, 1996, 1998; Hesmondhalgh, 2006). According to Bourdieu, these areas are considered to be of the same nature, but there are some differences between them. Cochrane (2013) points out that cinematography differs from literature because emotion and sensation in cinematography are stronger in film viewing than in literature.

The miniseries *Chernobyl* exemplifies an overlapping of several cultural production sub-fields - television as mass production and cinematography as art, and literature. Additionally, film marketing in the media enhances the cultural consumption of the series. This field of cultural production is under heavy pressure from the economic field. These commercial television channels are watched by millions of viewers in the US, the United Kingdom, and around the world. At the same time, HBO represents a hybrid field where several sub-fields - television, cinematography, digital space interconnect. This series has appeared in mass production on commercial television as the entertainment industry.

Applying the Bourdieusian framework of the field to the analysis of cinematography, this art form is regarded as a habitus and social practice of embodied spectatorship with several elements - the film on the screen, the viewing body, and the space of viewing (Cochrane, 2013). The nature of spatiality in cinema and the development of specific practices of spectatorship and viewing, the nature of cinematic pleasure defines the peculiarity of the sub-field. Practices of spectatorship is an expression and constitution of the collective public identity of the audience (Ibid.). At the same time, cinematography is a form of art and produces artistic expressive forms that evoke feelings through image, sound, and symbols. Although the series *Chernobyl* appeals to historical events and refers to documentary materials, the film itself as a work of art is an artistic interpretation. The production group of the series provided an interpretation of Alexievich's book 'Voices from Chernobyl'. The story of Chernobyl deals with the presentation of reality (historical facts) and at the same time, it is a drama aimed to evoke strong emotions (fear, beauty, sorrow) and aesthetic sensations. The TV series Chernobyl is created in the highly market-dependent HBO television field, which operates separately from the economic field of the nuclear industry. This independence made it possible to make a shocking film about the worst nuclear accident in history that shattered the safety myth of the entire nuclear industry and revealed potential risks and the devastating effects of nuclear energy on human health and the natural environment.

The main criticism in the series is aimed at the Soviet nuclear energy industry as a peculiar technopolitical regime that existed in the Soviet Union. Under this regime, technologies and nuclear facilities, and specific organizational nuclear culture with systemic defects in nuclear energy were combined with specific political governance of the industry (including secrecy and bureaucracy). Even though the series does not express criticism of other national technopolitical nuclear regimes and direct disapproval of the American nuclear industry (in this context it is worthy to mention that the United States is the largest producer of nuclear power in the world), there is no denying that the series *Chernobyl* contributes to a broader anti-nuclear cultural discourse which makes an indirect impact on fields dealing with the nuclear industry by forming general citizens' attitudes on nuclear energy. By introducing the character of Ulana Khomyuk, a woman nuclear physicist, the authors of the series *Chernobyl* seek to counter a traditional distribution of power in nuclear science and industry where women are underrepresented in the male-dominated field. The series becomes an attempt to contribute to the new politics of representation by challenging gender-related stereotypes and gender inequality in the cultural production area. Due to the relative independence of the cultural production field and a different level of exposure to the pressures of the market and politics, some peculiarities could be are found out in different national and historical contexts. Therefore, an empirical study of nuclear media discourses in Lithuania delving into the interaction of fields of nuclear industry, politics, and cultural production (including media) could contribute to a better understanding of how power configurations are produced.

3. Methodology

The four Lithuanian online news portals having the biggest audience of readers were empirically analysed. Three of them are commercial daily news websites l (delfi.lt; lrytas.lt and 15min.lt) and the fourth one is a news portal by the national broadcaster (lrt.lt).

By applying data scraping methods (Karthikeyan et al., 2019), articles were collected from the news portals by using keywords 'Visaginas city', 'Ignalina NPP', 'Astraviec NPP', 'Chernobyl'. The articles were collected for the years 2018-2020. A total number of 3,451 articles was explored. The keyword 'Astraviec INPP' was found in 1529 cases, Chernobyl - 831 cases, Ignalina NPP - 658 cases. The lowest number of articles was identified in relation to the keyword 'Visaginas city' - 433 cases (Fig. 1).
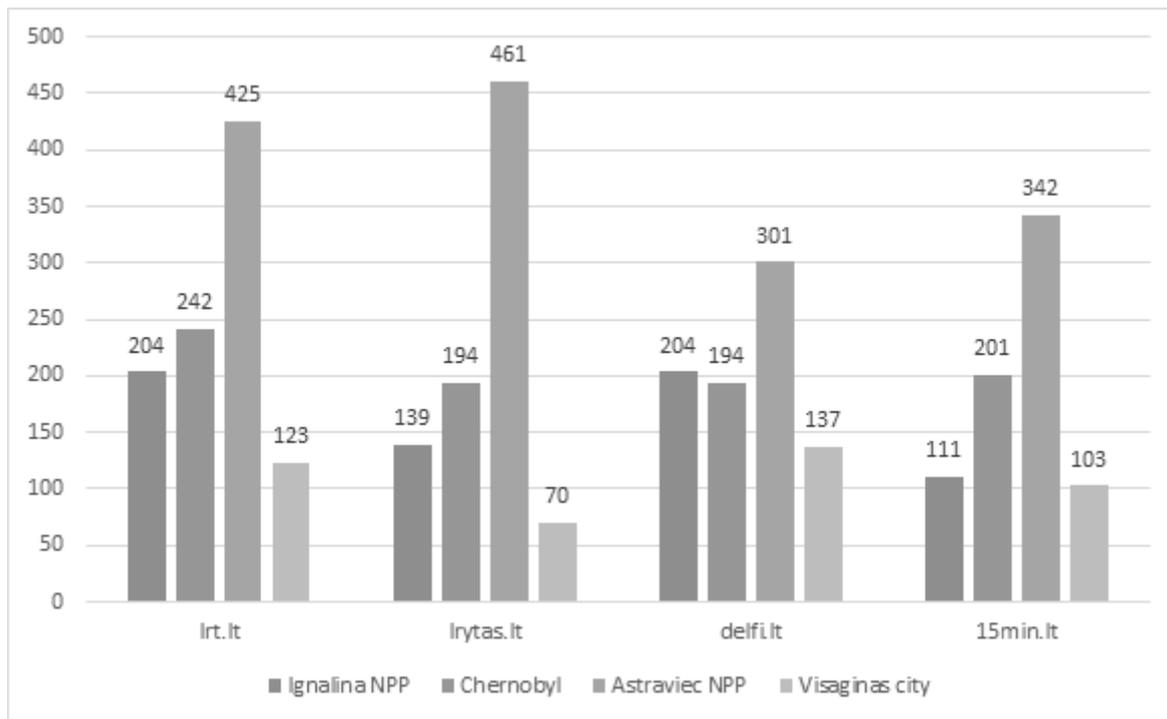

Figure 1. Number of articles examined during the period 2018-2020, all keywords

The frame analysis was employed for the analysis of the stories. The constructionist approach was used involving dimensions that defined story framing: the date when the article was uploaded online; leads (first two paragraphs of the article); the author(s) of the article; selection of quotes; concluding statements or paragraphs of the articles (Tankard, 2001).

Later, the media texts from the selected articles were analysed, seeking to reveal nuclear media frames and the main discourses.

4. Findings: nuclear online mass media discourses

During the analysis of the nuclear media discourses, the following topics were determined as dominating: (Fig. 2).
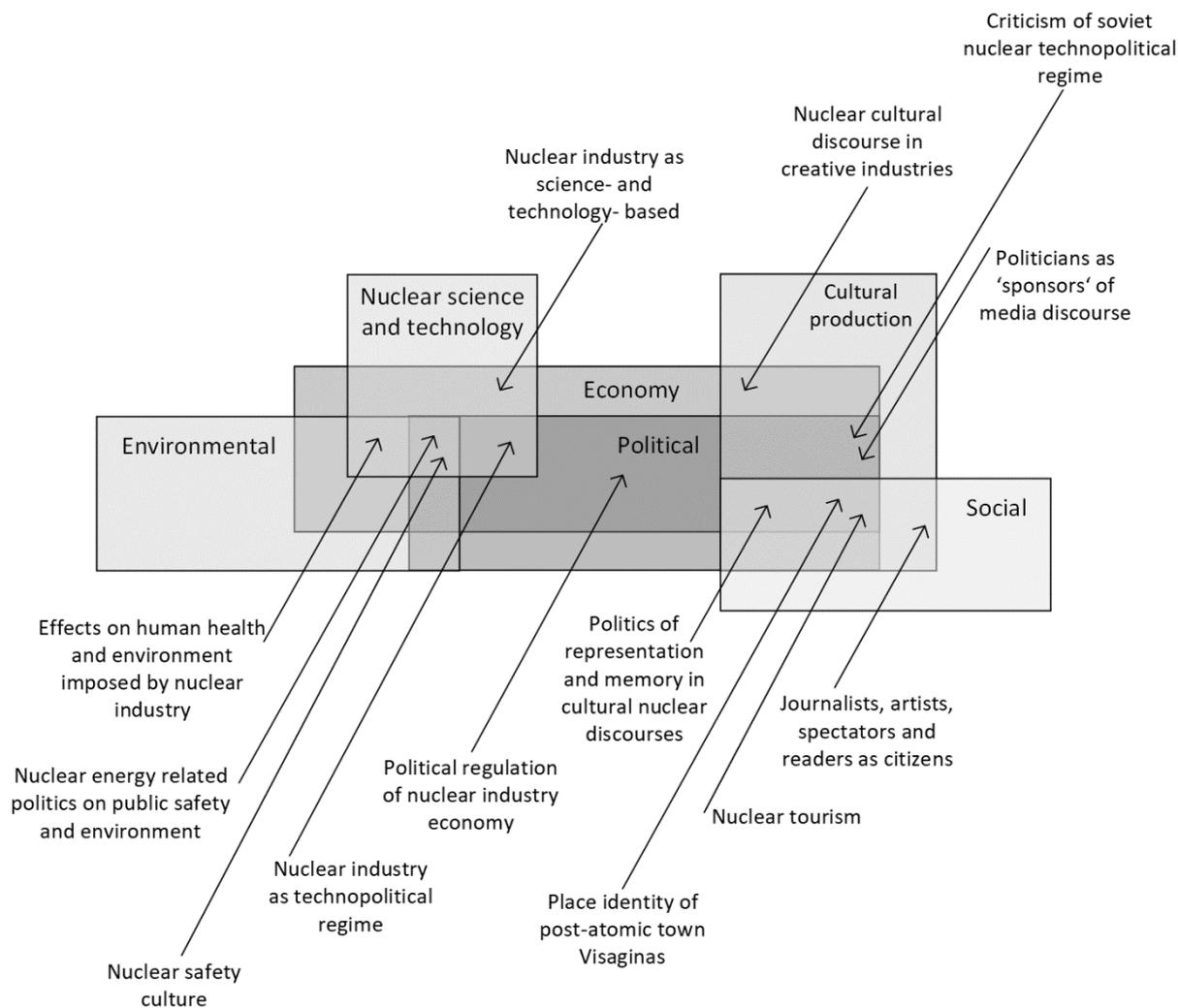
Figure 2. Main interacting fields involved into construction of nuclear media discourses: findings of analysis of Lithuanian online media portals in 2018 - 2020.

4.1 Financial and economic discourse in online news in Lithuania

Since 2009, after the second unit of INPP was closed, power has not been generated by nuclear energy in Lithuania, and this energy industry branch is no longer part of energy landscape. The financial - **economic topic** is unfolded when it comes to the amount of funding to ensure successful INPP decommissioning and nuclear waste management. Financial discourse intertwines with **political discourse**, thus demonstrating that this industrial sector is governed by political means. The necessary funding for decommissioning and nuclear waste management comes from the EU and is ensured during the highest level of political negotiations, where Lithuanian politicians negotiate with the EU on the amount of support for INPP closure work.

When presenting this topic in media coverage and informing about the allocation of funding, there is a tendency to introduce the negotiation process with the EU as an intrigue where Lithuania tries to persuade that more funding is needed. 'Tensions are raging' in the President's negotiations with members of the EU parliament on the part of the allowance allocated to Lithuania.

However, **technological details and solutions** are not analysed in more detail when presenting the content of decommissioning and nuclear waste management work. There is also no discussion about how nuclear waste can potentially affect people and the environment now and in the future. Although the society is informed about the general

progress of the dismantling and work on the radioactive repository, articles about it are scarce, and references are quite episodic. A general attitude is being formed that all problems related to nuclear waste are safely solved technologically and carried out professionally. It should be noted that most of the articles written by journalists on this topic are based on press releases from the authorities and political parties or press conferences. Information on the progress, reliability and professionalism of the performed work is provided by the official reports of the INPP Communication Department and the Ministry of Energy supervising the work of this state enterprise. Only occasionally other participants, who do not directly formally represent the nuclear energy and political field, express their views - scientists interviewed by journalists. In such cases, interviews with nuclear experts reveal more technical details of dismantling and repository preparation, as scientists assess and analyse risks. Rather episodic references to laboratory tests for radioactive contamination appear. Public interest in the Chernobyl theme has increased after the release of the HBO series filmed in Lithuania and INPP in 2019. As a result, tourist flows at INPP have increased several times. Articles prepared by the INPP Communication Department about the great interest in the nuclear power plant and the influx of visitors appeared in the media, but this communication did not touch upon the INPP relation with the Chernobyl NPP and the similarities of the dismantled INPP RMBK type reactor. It is evident that the communication carried out by INPP avoids the links with the Chernobyl nuclear accident, exposure of radiation, hazardous and devastating consequences for man and nature. At the same time, journalists, when presenting the ongoing dismantling of INPP and the stages of construction of storage facilities for nuclear fuel waste, remind that the constructions of INPP reactors are similar to those of the Chernobyl reactor.

Thus, the general tendency in presenting the topics of INPP decommissioning and nuclear waste management - environmental and human health risks discourse - is marginal. This is explained by the fact that the closure of INPP already presupposes the elimination of risks caused by nuclear energy. At the same time, the marginality of this discourse can be related to the fact that INPP decommissioning and nuclear waste management are performed by using the most advanced, safety-enhancing modern technologies, following international recommendations and standards for nuclear safety, employing professional INPP staff and nuclear experts. It is important to note that all the aspects related to the potential damage of nuclear waste to humans, the environment, the potential imperfections of modern science and technology, potential deficiencies in nuclear knowledge, and science, in the expertise of nuclear industry experts, are unquestionable and undoubted.

4.2 Political framing of insecurity, environmental and health risks in media coverage on Astravyets Nuclear Power Plant

The political topic in nuclear media discourses is particularly pronounced when discussing the issue of Astravyets Nuclear Power Plant under construction in Belarus. The analysis of this discourse field discloses the nature of nuclearity as a technopolitical regime, thus proving that both in Lithuania and in Belarus this industry is closely related to and controlled by the political powers. Political framing of the nuclear project at Astravyets NPP is found in Lithuanian media in terms of insecurity. The political actions of the Lithuanian government are presented and the official position is expressed both to the government of Belarus and to the international organizations that oversee the safety of nuclear industry. The media constantly notifies about the preparations for launching the NPP - informs about the launching stages and regularly discusses potential threats. The media continuously mentions the Lithuanian President's worry about the launch of ANPP. It is evidenced by his active participation in various forms of dialogue with the media, discussions with Nobel Laureate S. Alexievich, quite frequent conversations with the Presidents of the Baltic States, discussions on agreements with the EU countries, meetings with the National Defense Council. At the moment, the President claims that the newest threat for the Lithuanian State is the atomic monster, Astravyets Nuclear Power Plant in Belarus, and the fight against it will never stop (lrytas.lt , 2020-08-01).

Media presents the position of the political entity 'Anti-Astravyets Movement', initiated by members of different parties, whose initiative was to present a petition to the European Parliament on the suspension of the Astravyets NPP and the ban on the import of electricity generated by this power plant into the EU associated countries, as well as an acceleration of the synchronization of the Baltic electricity grids with the EU network (lrytas.lt, 2020-02-20). Since 2016, Lithuania has been trying to reach a consensus with neighbouring countries (Latvia, Poland) on a common political strategy concerning ANPP due to the unsafety of this project. Top-level politicians and representatives of ministries are very actively involved in shaping the nuclear discourse.

Another position expressed in public is the proposal to seek a compromise, where Lithuania's role in the newly implemented Astravyets nuclear project in neighbouring Belarus is defined *'through the introduction of a safety measure, through expertise and consulting, and involvement in the final project work observation and monitoring at*

ANPP'. This position is conveyed by representatives of political parties and the presidency. Political field agents highlight insecurity issues in various genres of media content - press releases, expression of opinion, discussion with politicians or ministries. When using the highest political discourse and forming international pressure and resistance to the construction and operation of this facility, Lithuanian politicians in the political field, and at the same time in the media, name, and comment on the technical unsafe parameters of the NPP, including the unsafe location - impermissible proximity to large residential areas (less than 50 km to Lithuania's capital Vilnius). It is important to note that in this discussion about the insecurity of the Astravyets NPP, an economic topic also arises - Lithuania takes the position that the NPP is an unsafe project, therefore it refuses to buy energy from ANPP and urges other EU countries not to buy electricity from ANPP. Thus, technological safety and security arguments reveal that it is not a banal economy based on economic benefits.

When speaking about Astravyets NPP, media coverage on **nuclear power (in)security** is related to **environmental and health risks framing**, which is created and formed by the discourse members. Lithuanian politicians, when criticizing the Astravyets NPP, emphasize the insecurity of this nuclear facility and the non-compliance of technical parameters with international safety standards. The NPP is called a mistake, a monster, an object of insecurity, and a serious threat to Lithuania. It is noted that the constant technical incidents at the Astravyets NPP under construction just 50 kilometres from Vilnius raise serious doubts about the work quality in the project under development. The object is described as potentially posing a hazardous threat to human health. Reports appear in the media where Lithuanian people living near the Belarusian border are interviewed, highlighting their fears and anxiety about the lack of information. Journalists provide advice on where to buy potassium iodide tablets, how these tablets will be delivered to border residents (the medicines should be taken in the event of a radiation leak or other serious incident at the Astravyets NPP). The Chernobyl experience and the irreversible health effects of radiation are recalled in terms of the potential danger posed by the Astravyets NPP. Vivid statements by prominent politicians and public figures about a possible accident at the Astravyets NPP are quoted: 'Astravyets will shake, and neither my children nor my home will remain' (lrytas.lt, 2020-01-15). It should be noted that this discourse was developed during the screening of the series *Chernobyl* (May and June 2019) and after it (in 2020) - the series 'stirred' the general discourse about nuclear disasters and their consequences in Lithuania.

In the context of Astravyets NPP reports, the importance of measuring radiation levels, conducting research, and analysing the effects of radiation on the human body is highlighted in the media. The press has been consistently accentuating that the potential economic benefits of electricity from a nuclear power plant for thousands of people cannot outweigh the risks and harms to human health and the environment. The spent radioactive nuclear fuel will have to be safely stored for thousands of years – potentially, nuclear power plants pose a threat to human health not only due to possible accidents and incidents but also risks imposed by radioactive nuclear waste.

4.3. The role of cultural productions in nuclear media framing

Nuclear discourses in the media are constructed by members of the **cultural production** field (discourse 'sponsors'), journalists, artists, and citizens when portals introduce artistic projects about nuclearity. One of the most outstanding contemporary art projects is the HBO series *Chernobyl*. Another group of projects is exhibitions, performances, music festivals and books published in Lithuania, which introduce the changing identity of the atomic city Visaginas.

It should be noted that both in the series and its media coverage in Lithuanian portals, the main framing topic is **unsafety of nuclear energy industry and radioactive contamination and its hazardous effects on human health and the environment.** The Chernobyl accident becomes an expression of a specific Soviet techno-political regime. The predominant subject of interviews, stories, opinions, and testimonies is the Soviet regime and the Soviet government criticized for lying, concealing information about the accident. Lithuanian citizens themselves have authentic experiences of the Chernobyl accident, how they survived during and after the accident, while being in the territory exposed to radioactive contamination.

The general nuclear discourse on Chernobyl includes the presentation of historical documentary and literature books. For example, S. Plokhy's book *Chernobyl. History of the Nuclear Catastrophe* reveals the flaws of the Soviet nuclear industry, linking the disaster to the authoritarian nature of the regime, control of scientists, the pursuit of economic goals at the expense of security and human lives, the concealment of information (15min.lt, delfi.lt, lrt.lt). At the same time as the HBO series *Chernobyl* was under discussion, the book 'Chernobyl Prayer' by S. Alexievich published in Lithuania was introduced (15min.lt, lrt.lt, delfi.lt, lrytas.lt). Another book widely discussed in the media in connection

with the series is 'Chernobyl. 01:23:40' by A.Leatherbarrow, which emphasizes the consequences of the catastrophe, and the fates of the people who liquidated the catastrophe (15min.lt, lrytas.lt, lrt.lt, delfi.lt).

Thus, the series' strong criticism of the Soviet regime for the management of nuclear energy, which led to the catastrophe, and how the consequences of the catastrophe were handled, is gaining a unique dynamic in Lithuania. This media coverage of the Chernobyl series and of the nuclear accident in Chernobyl itself has become a kind of memory work exercise, when Lithuanians, invited and encouraged by journalists, share memories and recall the Soviet past, sharply criticizing the Soviet regime and Soviet nuclear energy industry. In addition to authentic Lithuanian residents who participated in the emergency response and suffered critical damage to their health, media coverage presents a lot of material with stories and testimonies from Ukrainian, Russian, Belarus liquidators, their families, and other citizens. These authentic testimonies of the participants of the Chernobyl accident are taken by Lithuanian journalists from other countries' portals (e.g., foreign journalists working in Ukraine, articles from Russia, Ukrainian online portals) and reprinted in Lithuania. In addition, journalists refer to various scientific, popular sources about Chernobyl (facts about the number of victims, details of liquidation, etc). Unlike the interpretations of the Chernobyl events presented in the HBO series, the Lithuanian press does not develop a heroic narrative, memories of the events do not depict the heroism of the liquidators. In the Lithuanian media, the reconstructions of the past are dominated by the motives of either the existential survival of the nuclear catastrophe or sufferings from the regime, as well as the condemnation and accusation of the Soviet government.

An additional circumstance in the construction of Lithuania's Soviet and nuclear identity in the HBO series *Chernobyl* is that the series was filmed in a Soviet-built district with specific architecture in Vilnius, depicting the Chernobyl NPP atomic town Pripyat, while scenes depicting the Chernobyl NPP were filmed on the site of the Ignalina NPP. The press discusses how these filming locations in Vilnius and Kaunas have become objects visited by tourists and how cinematic tourism is developed when tourism routes are created at the filming locations of the series. At the same time, INPP is quite widely presented in the media as an **object of nuclear tourism** - an influx of tourists from Lithuania and abroad has been reported after the screening of the HBO mini-series *Chernobyl.* The press states that 'two worlds met at the Ignalina Nuclear Power Plant - cinema and an object of strategic importance with the danger of radiation' (lrytas.lt, 2019-09-19). Another nuclear and cinematographic tourism destination discussed in the media is the premises of the Ignalina Nuclear Power Plant training console, where scenes of the accident operation in the infamous control room of Chernobyl NPP were filmed in the HBO series *Chernobyl*. At the same time, one of the articles describes a new nuclear tourism entertainment in the Chernobyl zone. The media coverage has become a peculiar promotion of nuclear tourism in the territories related to the nuclear accident - Chernobyl Exclusion Zone and places in Lithuania that are associated with Chernobyl.

Another topic of the artistic discourse on nuclearity is artists' projects about the nuclear city Visaginas. Most artistic projects concern not only nuclear energy but also emphasize INPP as a part of the Soviet nuclear industry; sometimes appealing to life in Soviet times with perceptible elements of nostalgia, which is significantly different from the dominant memory politics, i.e., exceptionally negative or tending to sink in oblivion. An example can be the art project *Atomic Identity* (author Neringa Rekašiūtė), where the artistic project (photo exhibition and performance in a Soviet-type flat) conveys Soviet everyday life. The tourist route around Visaginas city with Soviet architecture presents the exceptional architectural and urban features characteristic of the Soviet nuclear mono-industrial city. In the media, the city is represented as a place of criminal violations, with particular details of crimes described at length. Extensive media coverage of this topic emphasizes the difficult social situation after the closure of INPP when the city loses its main economic source and is experiencing an economic and social downturn. This discourse can be interpreted, on the one hand, as a concern, a conscious and unconscious attempt to draw the attention of the society to the difficult situation of the city; on the other hand, such negative representations further marginalize the city community as a result of the stereotyping process, when the city is portrayed as a place of economic, social and moral decline.

4. Discussion and conclusions

Media discourse in Lithuania has become a site on which various social groups and institutions present their position on nuclear issues. In news portals it could be recognized, how power is configured both in media and in particular fields - nuclear industry, politics, economy, cultural production and creative industries, civic society. The central themes and frames recognized in the media reveal the phenomenon of nuclearity - when Lithuanian nuclear energy facility, which was part of the Soviet nuclear energy program, now belongs to another technopolitical regime, which has fundamentally changed in the last 3 decades after Lithuania regained its independence in 1990 and joined the EU in 2004. Ignalina Power Plant with an unsafe RMBK reactor is being dismantled following the international EU

regulations and directives on nuclear safety, and nuclear safety culture has changed. Lithuanian political actors and institutions ensure funding from the state budget and the EU for the successful completion of decommissioning and nuclear waste management work.

Another topic of framing the political field of nuclear issues is the political agenda of the Astravyets NPP under construction in Belarus. The issue of non-compliance of the Astravyets NPP project with international safety standards is formulated through intensive media coverage and information on the activities of top political actors.

One more essential part of nuclearity is the cultural discourse on nuclear issues, which is constructed in various fields of cultural production. As critics of pro-nuclear discourse point out, the development of the nuclear industry in the world in the 1950s and 1980s was supported by a broader cultural discourse that reflected and underpinned nuclear exceptionalism, expressed the idea of nuclear energy potential and entelechy (in this case, determinism of nuclear energy development), linked nuclear things with mystery and secrecy. It must be acknowledged that this broader cultural discourse has changed in the world with nuclear industry practices themselves. After the Chernobyl catastrophe, the nuclear energy industry around the world has been forced by the pressure of anti-nuclear movements to change its closed and secrecy practices towards opening up nuclear energy to the public (through raising public awareness, public communication, nuclear energy tourism). Accordingly, the official institutions in charge of nuclear energy in Lithuania, and INPP itself, inform the public in media and organize tourist excursions to the site of the nuclear facility. The study highlighted the general features of INPP's communication on decommissioning and nuclear waste management: the general public is informed about the safety of the work performed, the professionalism of the nuclear power plant employees, and technological reliability. Actually, such information reflects the real features of nuclear safety culture, following the international safety standards and ensuring transparency. However, it should be noted that the media does not comment in detail on the technical solutions for dismantling and nuclear waste management. Therefore, the nuclear media discourse still reflects nuclear exceptionalism: this technology-based industry is seen as an area of exclusive competence for nuclear experts. Citizens are perceived as actors who are not interested in the subject or it is intellectually not accessible to them. However, these master themes of broad cultural nuclear discourse - mystery, secrecy, entelechy - still apply to the final stage of the nuclear fuel cycle - dismantling and nuclear waste management, where construction of perception of the agency takes place in a subtle discourse way by constraining public participation.

In addition, the description of the national nuclear facilities at INPP in media coverage demonstrates the common intention of the nuclear industry to represent the sector as safe and professionally managed. Environmental concerns and possible human health risks posed by nuclear waste are not mentioned: the media coverage focus more on the general description of dismantling, repository construction, and financing issues, without going into too much technical detail and without discussing the potential risks of nuclear waste for the current and future generations; there is no discussion or reminder that radioactive waste will be present in the country for millions of years. At the same time, INPP communication seeks to minimize the correlation with the Chernobyl nuclear accident. It reflects the general tendency of the entire nuclear industry public communication to avoid associations with insecurity. There are no other participants (environmental organizations, NGOs) in the nuclear media discourse who would express environmental concerns. Thus, the media field, which is under the influence of the political field, as well as strategic communication and public relations departments of nuclear companies (Zukas, 2018), help to construct the nuclear discourse corresponding to the general intentions of the nuclear industry and the political field that protects it. The social field related to the nuclear industry - the community of the nuclear town Visaginas and the painful search for a new identity - occupies a much smaller part of the media discourse and the lesser power of this social field and its members. It is worth noting that in the general context of nuclear discourse, social issues carry less weight than political and economic industrial issues, which are dictated by the fields of power - politics and nuclear industry.

Media discourse acquired distinctive features due to the strong role and high weight of cinematography, arts, and literature fields in constructing media nuclear discourses. The presentation and discussion of the series and literary works not only reconstructed the course of Chernobyl as the biggest nuclear accident and unveiled the consequences, but also strengthened the understanding of the Soviet legacy of Lithuanian nuclear energy, stressing that filming the series in INPP territory is related to the similarities of Chernobyl and Ignalina Soviet design RMBK reactors. The media discussion on the series *Chernobyl* was combined with the topic of insecurity of the Astravyets NPP, initiated and developed by participants in the political field, revealing the connection between the nuclear facility under construction in Belarus and the same legacy of Soviet nuclear industry.

The appearance of the HBO series, the extensive presentation, and discussion of literary and artistic works on the subject of Chernobyl, the involvement of citizens in memory work on the Chernobyl accident contributed to the development of negative nuclear citizenship and nuclear belonging in the media. These memories of Chernobyl practices highlighted the cultural and political identity of Lithuanian citizens - a negative attitude to the Soviet regime and its controlled nuclear industry, where the Chernobyl accident was considered a significant dramatic event in this industry branch, in which citizens participated involuntarily/forcibly and whose negative consequences are still being experienced. These ideas, attitudes and experiences of negative nuclear citizenship resonate with the political field-constructed discourse on Astravyets NPP, where politicians create representations of another country's nuclear unsafety and construct negative attitudes and perceptions of citizens about possible risks of nuclear contamination in Lithuania due to a possible nuclear accident at Astravyets NPP. Artistic projects (theatre and art performances, photograph exhibitions, etc.) presented in the media for the nuclear city of Visaginas play an important role in involving the local community, giving it a voice and helping it negotiate a new post-nuclear and post-industrial identity.

Nuclear discourse participants (politicians, nuclear industry, media, and art representatives, citizens) construct nuclear media discourse in online media with different weights of media participation - some participants are more visible (politicians, nuclear industry) and certain topics are developed louder and wider, while other participants are less represented (i.e. the nuclear city community) and topics are less elaborate. A special role of the cultural production field (cinematography, literature, and arts) appeared, where a broader cultural nuclear discourse, which includes anti-nuclear stance, is being developed in relatively independent fields from politics and nuclear industry, involves citizens, and creates a space for the expression of their agency, civic participation, and existential experiences.

Conflict of Interests

The authors declare no conflict of interests.

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References

1. Anshelm, J. (2010) Among Demons and Wizards: The Nuclear Energy Discourse in Sweden and the Re-Enchantment of the World. Bulletin of Science, Technology & Society, 30(1) 43–53.
2. Balkan-Sahin, S. (2018). Nuclear Energy as a Hegemonic Discourse in Turkey. Journal of Balkan and Near Eastern Studies, 1-19.
3. Benson, R., Blach-Ørsten, M., Powers, M., Willig, I., & Zambrano, S. V. (2012). Media systems online and off: Comparing the form of news in the United States, Denmark, and France. *Journal of Communication*, *62*(1), 21-38.
4. Bourdieu, P. (1993). The Field of Cultural Production. Essays on Art and Literature. Columbia University Press.
5. Bourdieu, P. (1996). The rules of art: Genesis and structure of the literary field. Stanford University Press.
6. Bourdieu, P. (1998). On Television and Journalism, trans. Priscilla Parkhurst Ferguson. London: Pluto.
7. Cochrane, B. (2013). Taking Bourdieu to the Movies: Understanding Cinema as a Spatial and Embodied Practice. PhD thesis. The Open University.
8. Entman, R. M., & Rojecki A. (1993). Freezing Out the Public: Elite and Media Framing of the U.S. Anti-Nuclear Movement, Political Communication, Volume 10, pp. 155-173.
9. Gamson, W. A. & Modigliani, A. (1989). Media Discourse and Public Opinion on Nuclear Power: A Constructionist Approach. American Journal of Sociology, Vol. 95, No. 1, pp. 1-37.
10. Hallin, D. C., & Mancini, P. (2004). *Comparing media systems: Three models of media and politics*. Cambridge university press.
11. Hallin, D. C., & Papathanassopoulos, S. (2002). Political clientelism and the media: Southern Europe and Latin America in comparative perspective. *Media, culture & society*, *24*(2), 175-195.
12. Hecht, G. (2009). The Radiance of France. Nuclear Power and National Identity after World War II. The MIT Press. Cambridge, London.
13. Hecht, G. (2012a). An elemental force: Uranium production in Africa, and what it means to be nuclear. Bulletin of the Atomic Scientists, Volume 68 Issue 2, 22-33.
14. Hecht, G. (2012b). Being nuclear: Africans and the global uranium trade. The MIT Press. Cambridge, London.

15. Hesmondhalgh D. (2006). Bourdieu, the media and cultural production. Media Culture Society 2006; 28; 211 DOI: 10.1177/0163443706061682

16. Jastramskis, D. (2011). Lietuvos žiniasklaidos sistemos modelio bruožai. *Informacijos mokslaı*, (55), 52-70.

17. Mercado-Saez M.-T., Marco-Crespo, E., & Alvarez-Villa, A. (2018). Exploring News Frames, Sources and Editorial Lines on Newspaper Coverage of Nuclear Energy in Spain, Environmental Communication, DOI: 10.1080/17524032.2018.1435558

18. Karthikeyan, T., Sekaran, K., Ranjith, D., & Balajee, J. M. (2019). Personalized content extraction and text classification using effective web scraping techniques. *International Journal of Web Portals (IJWP)*, *11*(2), 41-52.

19. Kinsella, W. J. (2005). One hundred years of nuclear discourse: Four master themes and their implications for environmental communication. In: Senecah SL (ed.) The Environmental Communication Yearbook, Volume 2. Mahwah: Lawrence Erlbaum Associates, pp. 49–72.

20. Storm, A., Krohn Andersson, F., & Rindzevičiūteˌ, E. (2019). Urban nuclear reactors and the security theatre The making of atomic heritage in Chicago, Moscow, and Stockholm. In: Heike Oevermann, and Eszter Gantner (Eds.). Securing Urban Heritage: Agents, Access, and Securitization, Routledge.

21. Tankard, J. W. (2001). The empirical approach to the study of media framing. *Framing public life: Perspectives on media and our understanding of the social world*, 95-106.

22. Zukas, K. J. (2018). No conflict, no coverage: Media misses repeal of nuclear energy moratorium. Cogent Social Sciences, 4(1), 14