


Medial Image of Nuclear Energy in Poland (Case Study). Analysis of Broadcasts from the Last Six Months of President Campaign

**Obraz medialny energetyki jądrowej w Polsce (studium przypadku).
Analiza przekazów z ostatnich sześciu miesięcy prezydenckiej kampanii wyborczej**

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Abstract: Energetic policy and differentiation of energy sources are connected with the place of nuclear energy in so called energy mix. According to that it is important to answer the question how political players perceive nuclear energy. The article shows the medial image of nuclear energy presented by presidential candidates in the 2020 Polish election. First part of the paper is focused on analysis of crucial European Union legal documents about emission reduction, what is deeply bound with energy production. Then the model of perceiving nuclear energy was worked out. This model put together ecological challenges and growing energy consumption. In the frames of this rational model of nuclear power candidates' statements on this topic were discussed. For the purposes of this paper were used cognitivist, semiotic and rhetoric tools which allow to appear typical conceptualizations of nuclear power, in particular *cliché* and thinking schemes – incompatible with facts and technical data – functioning amongst political players.

Keywords: nuclear energy, medial image, decarbonization, *cliché*, conceptualization

Streszczenie: Polityka energetyczna i różnicowanie źródeł energii wiążą się z kwestią znaczenia energetyki jądrowej w miksie energetycznym. W związku z tym ważna staje się odpowiedź na pytanie, jak aktorzy polityczni postrzegają energetykę jądrową. W tekście omówiono medialny obraz energetyki jądrowej prezentowany w wypowiedziach kandydatów na prezydenta w wyborach z 2020 r. Najpierw przeprowadzono analizę dokumentów prawnych Unii Europejskiej dotyczących redukcji dwutlenku węgla, co ściśle wiąże się z produkcją energii. Następnie opracowano model postrzegania energii jądrowej godzący wyzwania ekologiczne z rosnącymi potrzebami energetycznymi. W ramach tego modelu omówiono wypowiedzi kandydatów poruszające ten temat. W analizie zebranych przypadków wykorzystano narzędzia kognitywistyki, semiotyki oraz retoryki. Pozwoliły one ukazać typowe konceptualizacje energetyki jądrowej, w tym m.in. *cliché* oraz sprzeczne z faktami schematy myślowe obecne w dyskursie aktorów politycznych.

Słowa kluczowe: energia atomowa, obraz medialny, dekarbonizacja, *cliché*, konceptualizacja

The presented discussion focuses on the issue of nuclear energy in Poland seen from the perspective of the 2020 presidential election. The part containing the analysis of collected materials focuses on two issues: did the issue of nuclear energy appear during the presidential campaign, as part of the energy theme in Poland? If this issue was discussed, in what light it was presented? The analysis included statements made by presidential candidates on the *Imponderabilia*¹ Internet channel and a search of publications addressing the issue of nuclear power plant construction in Poland, appearing during the period under review in the following weekly opinion magazines: "Polityka," "Newsweek," "Tygodnik Powszechny," "W Sieci," "Do Rzeczy," "Wprost." The television debate of eleven candidates was omitted because it focused only on worldview issues and was subordinated to the political goal of the ruling party, and climate or energy issues were not mentioned at all.

In order to fairly assess the image of nuclear power presented in the opinion magazines and in the statements of presidential candidates, it will be referred to the following concepts and findings on this subject. The first covers the view of scientists and practitioners at the same time, particularly Andrzej Strupczewski (National Centre for Nuclear Research) and Kazimierz Bodek (Faculty of Physics, Astronomy, and Applied Computer Science, Jagiellonian University). This scientific perspective will be complemented by the approach of ecologists, represented mainly by the authors of *An Eco-modernist Manifesto* 2015, the considerations of Michael Shellenberg, one of the main environmental activists of the 21st century, at one time an opponent of nuclear energy, and finally Steven Pinker, proposing in his book *Nowe Oświecenie* (2018) a balanced treatment of, among others, the issues of energy demand, development and environmental protection.

It is worth explaining why these approaches and these authors were chosen to build a paradigm view of nuclear power. As for the sheer scope

¹ The selection of this channel was dictated by the following considerations: first, during the 2020 presidential campaign, its creator conducted interviews with a similar structure (e.g., range of questions, interview time) during the 2020 presidential campaign. Secondly, its host, while not hiding his political views (he openly said so during the interview with the incumbent president), was able to put them aside during the interviews, giving the floor mostly to his interlocutors. Fourthly, the channel is very popular (e.g., the interview with President Andrzej Duda reached 1.2 million views), while maintaining the standards of reliable journalism (e.g., the host is well prepared for meetings, his questions are balanced, politicians and media people are eager to participate in these programs, which is evidenced by the presence of all candidates – TV debates failed to achieve this).

or breadth of the material, this was dictated by the small size of the article itself. The most important aspect, however, is the content and contribution to the current discussion on climate change and carbon dioxide emission reduction. As a framework for assessing the image of nuclear power in Polish opinion weeklies during the presidential campaign, and in the statements of the presidential candidates themselves, the presented concepts cover two central approaches to nuclear technology. Steven Pinker, M. Shellenberger and the authors of *An Ecomodernist Manifesto* exemplify the view of intellectuals and climate activists who, while calling for a maximum reduction of carbon dioxide emissions and a reduction of the greenhouse effect, do not lose sight of the fact that every human being has the right to live in prosperity. However, K. Bodek and A. Strupczewski present a scientific and consumer-based approach to this form of energy production, trying to objectively assess the key pros and cons of this method of generating electricity.

1. Towards a rational view of nuclear Energy

The paradigm of perception of nuclear energy constructed in this article is closely related to the entry into force and validity also in Poland of the following EU documents:

1. Decision 2015/1814 of the European Parliament and of the Council of 6 October 2015 on the establishment and functioning of a market stability reserve for the EU Emissions Trading Scheme and amending Directive 2003/87/EC;
2. Directive 2018/410 of the European Parliament and of the Council (EU) of 14 March 2018 amending Directive 2003/87/EC to strengthen cost-effective emission reductions and low-carbon investments and Decision (EU) 2015/181.

The referenced documents – in a nutshell – oblige the members of the European Union to reduce greenhouse gas emissions, mainly carbon dioxide. As we read in Decision 2015/1814, it is about “reducing CO₂ emissions in a cost-effective manner and stimulating innovation in low-carbon technologies that foster economic growth and job creation” (Decision 2015/1814: para. 4). A conjunctural approach can thus be seen. Reducing greenhouse gas emissions correlates with continued economic development,

and does not mean stopping or slowing down the economy to achieve low emissions. This kind of view is opposed to the ideology called “greenism” by S. Pinker, which treats the development of civilization and the use of the earth’s resources as an expression of greed and an unequivocal evil that can only be remedied by the gradual withdrawal of humans through depopulation, economic slowdown, etc. (Pinker 2018: 154).²

Linking the reduction of greenhouse gases, especially carbon dioxide, to sustaining civilizational development and necessarily expanding spheres of prosperity requires a constant supply of energy. This fact is pointed out by ecomodernists, or so-called enlightenment or humanist ecologists. They point out that “when people use energy to build a structured enclave in their bodies and homes, they must increase entropy in other areas of the environment in the form of waste, dirt, and other forms of disorder” (Pinker 2018: 155). In the case of energy production, these wastes are combustion products (usually in gaseous and solid forms) and used equipment. In the approach presented in this work, all these residues can be reduced to the so-called carbon footprint (equipment also has to be produced, and energy is needed for that), which of course should be as small as possible.

Since there is a correlation between the level of prosperity and the amount of energy used, i.e. the richer the society, the more energy it consumes (Bodek 2018), it is necessary to bet on energy that is as efficient as possible and at the same time leaves the smallest carbon footprint. Here, electricity produced by wind power and solar radiation is usually immediately indicated. It seems that by simply expanding the wind and photovoltaic infrastructure, the growing energy needs will be met. However, this is a solution that raises huge problems and impacts energy security. This is due to at least three factors, which will be briefly outlined here. These include: the large fluctuation range of these sources, their low power density (*An Ecomodernist Manifesto* 2015: Chapter 4) and – perhaps surprisingly – large carbon footprints along with a large amount of harmful or difficult to recycle waste.

The first weakness of wind and solar renewable energy is obvious. It is characterized by intermittency (Shellenberger 2019) and creates a highly unstable energy system. For example, if wind speed increases twice, three times

² Counterintuitively, even such radical suspensions of mobility and activity as during the COVID-19 outbreak reduce carbon emissions by only 4–7% (UN News 2020). Thus, it is apparent that there is a need for carbon-free energy production in the first place, as energy consumption is not decreasing at all.

as much energy is produced (Bodek 2018). If the amount of energy relative to wind speed increased linearly, this would be simpler to manage, but with the indicated spike increase, transmission lines could be overloaded. In turn, building power lines with such a large reserve is highly uneconomical, as well as environmentally unsound. The other side of this coin is, of course, the windless periods, which even in offshore farms (the windiest ones) often last several weeks (Strupczewski 2014). Thus, wind and solar energy cannot be the only source of energy, so it needs constant support. Usually, these are gas or coal-fired power plants.

The second disadvantage of wind and solar solutions lies in their low energy density. If one counts their average efficiency (thus not the most commonly reported efficiency at the so-called peak, i.e., the peak moment), it rarely exceeds 20% (Strupczewski 2014), and at the same time, actually, most importantly, they need a huge space. "Meeting the world's needs with renewables by 2050 would require covering an area the size of the United States (including Alaska), Mexico, Central America, and the inhabited part of Canada with windmills and solar panels" (Pinker 2018: 181). Compared to a nuclear power plant, a solar farm of comparable capacity needs about 450-500 times more land (Pinker 2018: 181; Shellenberger 2019).

The third weakness of these renewable energy sources (RES) seems to be surprising. After all, panels and windmills do not emit any gases, do not burn anything and thus produce clean electricity. However, due to the already mentioned instability of these energy sources, they need support. This support is usually provided by combining RES with coal power, biomass or gas (fossil or biogas), which of course generates a carbon footprint. This regularity is confirmed by the fact that in Germany, as part of the so-called *Energiewende* and the radical shift towards renewables, especially wind and solar, linked to the abandonment of nuclear (*Atomausstieg*), carbon dioxide emissions are increasing every year (Bodek 2018; Bone 2019; Shellenberger 2017). In addition, the construction of wind and solar farms requires infrastructural investment, which is not insignificant in terms of carbon emissions. At this point, it is worth drawing a comparison between nuclear energy and solar and wind energy in terms of the carbon footprint of the construction of such installations. The former is four times less carbon-intensive than solar-based power (Shellenberger 2017). One of the reasons for such a significant carbon footprint during the construction of solar panel farms is probably related to the high demand for aluminium. Producing a tonne of this metal generates 11.7 tonnes of carbon dioxide (Grant 2017).

Then there are the other heavy metals that are not detrimental to the greenhouse effect but are necessary for the production of panels: lead, cadmium, chromium. The demand for concrete and steel is also of great importance in this respect. It turns out that here, too, nuclear power requires much less (Shellenberger 2017). For example, for a capacity of 1,000 MW, the steel and concrete resources needed to build a suitable nuclear power plant in comparison with a wind power plant are, as calculated by A. Strupczewski, one to six, one million tonnes against six million (Strupczewski 2014). Residues from the use of solar, wind and nuclear power plants should also be included, while not forgetting that the lifespan of the former two is on average calculated to be twenty years, which is three times shorter than that of nuclear power plants (Żmijewski 2018). Moreover, nuclear power plant waste is one of the residues whose storage and recycling are subject to extremely strict regulations so that their harmfulness or impact on the environment is radically negated. The issue of their radioactivity is presented in the next section of the article.

The three weaknesses of solar and wind power solutions discussed above relate solely to emissions and pollution. However, these sources should also be looked at from the perspective of the consumer paying for electricity. It is difficult to expect that economic development, which is included in the EU's climate policy, will be effectively stimulated by high energy prices. And the prices of electricity produced by solar cells and windmills may come as an unpleasant surprise – after all, wind and sun cost nothing, so there are no fuel costs. In order not to elaborate too much, it is worth mentioning a few examples.

In California, which is a leader in the implementation of energy reaching for renewable sources, electricity is five times more expensive than in the rest of the US states (Shellenberger 2019). Slightly closer to Poland, in Germany, as part of the aforementioned *Energiewende*, electricity prices increased by 50% between 2006 and 2016 and are twice as high as in neighbouring France, which mainly uses nuclear power plants (Shellenberger 2017).

To summarise a rational view of nuclear power that takes into account the reduction of greenhouse gas emissions along with sustaining economic development and not overburdening society, it seems reasonable to recall the words of nuclear physicist Sanniva Rose: “How is it possible to worry about global warming and yet not lean towards nuclear power?” (Rose 2013).

2. The media image of nuclear energy

In this part of the article, the above model of perception of nuclear energy, juxtaposed with the requirements and directions of EU climate policy (reduction of pollution consistent with socio-economic development) will be contrasted with its image in the media. It turns out that in relation to nuclear power plants, the emotional dimension prevails over a balanced account of advantages and disadvantages. It is not without reason that S. Rose added the subtitle *facts and feelings* to the title of her lecture on nuclear energy (Rose 2013). Unfortunately, the latter prevail.

The already cited S. Pinker relates this negative image of nuclear energy to the strong influence of pop-cultural catastrophic visions starring a reactor explosion (and yet a reactor is not a nuclear bomb), reinforced by media exaggeration of actual nuclear accidents (Pinker 2018: 181–182). Three Mile Island, Chernobyl and Fukushima have a paralysing effect, although the former and the latter did not cause any casualties, while a Chernobyl-like event (31 dead) has no right to happen with normal plant operation. In addition, still, modern reactors are designed to withstand a force comparable to the impact of a passenger plane or a tsunami (new technical requirements after the 2001 and 2011 events), and in the event of a reactor leak, radiation increased only within the plant itself, i.e. within a radius of about 800 metres (Strupczewski 2019).

To illustrate how disproportionate this fear is to the facts about nuclear power, it is worth citing some data. If we take the number of deaths per terawatt hour (1000 GWh), we find that for coal it is 161, for oil 36, for gas 4, for hydropower 1.5, for wind 0.15 and finally for nuclear 0.04 (Rose 2013). So nuclear is $3\frac{3}{4}$ safer than wind power. These figures were not used to claim that nuclear energy is the safest way to generate electricity, as there are no photovoltaic farms on the list (probably no one has died because of them). The point is to show the drastic discrepancy between the real danger of nuclear power plants and the media's or popular perception of that danger.

If one is tempted to create a model for the conceptualisation of nuclear power, i.e. to reach for the method often used within cognitive science (Kaczmarek, Pawlikowska-Asendrych 2018: 145), the effect may look like the one in Figure 1.

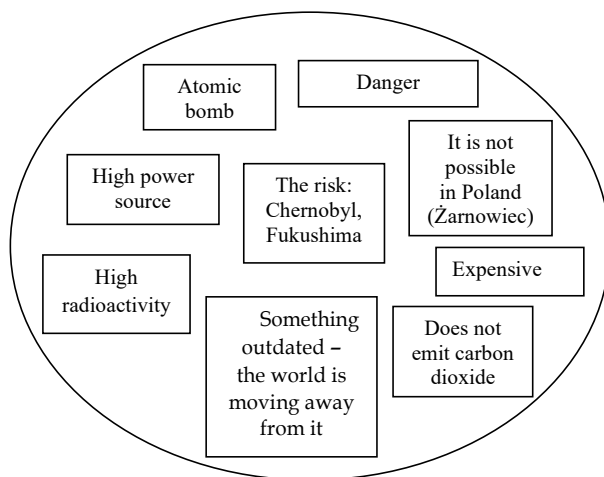


Figure 1. Nuclear power conceptualisation model
(in the collection the most frequent conceptualisations or *clichés* centred around nuclear power; closer to the centre are the strongest ones)

Source: own study.

The model presented here uses the tools of cognitive definition developed by Jerzy Bartmiński. Such approaches focus primarily on the understanding of given expressions from the perspective of average language users (Bartmiński 2014: 85). The model presented here is based on a qualitative linguistic analysis of the cited utterances of politicians and professional statements showing common associations (thought patterns) focused on nuclear energy, and cited and analysed in this article. This conceptualisation is not only an attempt to capture but also to a large extent reflects the way of perceiving and talking about nuclear power, which is most often present in the mass media, in the statements of politicians or the so-called professionals dealing with ecology. For example, it is worth recalling a statement by Andrzej Kassenberg of the Institute for Sustainable Development, which follows the patterns of “something outdated,” – “the world is moving away from it,” and “something risky, dangerous” (Kassenberg 2020). The presidential candidates’ statements and press material analysed further will also confirm this model.

Very important components of the outlined model include elements that create a sense of threat (associations with the atomic bomb, Chernobyl and Fukushima, radioactivity), the popular *cliché* about the huge costs of this energy and the world’s departure from these solutions, and finally, the very Polish feeling that it will fail again (Żarnowiec, government projects that

have been dragging on for many years). In such a company, the advantages of nuclear power plants – their emission-free nature and enormous efficiency (energy density) – appear muted.

It is worthwhile to dwell briefly on the negative associations triggered by the nuclear power slogan since these – as further analysis will reveal – have so far been dominant. The association with an atomic bomb is one of the most common (Rose 2013), and yet completely meaningless since a reactor is not such a bomb. In contrast, catastrophic visions with a nuclear accident at the centre have been a constant presence in mass culture since the 1950s (Phipps 2019). If we add to this the phenomenon called radiophobia, the fear of being irradiated, it becomes clear why nuclear power is portrayed in such an unbiased way. As David Ropeik, among others, writes, driven precisely by panicky fear, the hasty evacuation of people from the Fukushima area caused more than 1,600 casualties, while the radiation itself was not so strong and dangerous as to force the evacuation of nearly 154,000 people (Ropeik 2017; Shellenberger 2017). The reaction of the German authorities to Fukushima to abandon nuclear power altogether also fits into this pattern of perception. After all, one does not have to be a geologist or climatologist to realise the extremely low probability of an earthquake and tsunami in this region of Europe. It should also be mentioned that, as far as industry is concerned, the largest amounts of radiation are produced by the coal power industry, and as part of *Atomaustieg* our western neighbours have just had to increase their mining and burning of lignite and hard coal (Bodek 2018).

The strong pop-cultural and media fear of radiation (one can speak of *cliché* here) reinforces the so-called availability heuristic distorting the rational perception of atomics. As S. Pinker, “people estimate the probability of an event or the frequency of a particular kind of thing by the ease with which examples come to mind” (Pinker 2018: 61). Images of the dangerous operation of nuclear power plants are present on the fly, as it were, constantly sustained by the media, while factual information that speaks of several hundred reactors producing electricity without any fluctuations has very little staying power. At present there are 440 power stations (Statista 2020), not counting submarines or above-water craft so powered and operating perfectly.

The *cliché* of the obsolescence and unprofitability of this power station remains, as the question of whether such a plant can be built in Poland will be resolved by reality itself. Energy prices have already been mentioned, so far the one from the atom turns out to be much cheaper, despite very strong

lobbying and subsidising of renewable sources (Shellenberger 2017, 2019), also in Poland. It is worth recalling one of the opinions containing the aforementioned *cliché*: “The world is also moving decisively away from nuclear power plants, perhaps with the exception of China, India and, of course, Russia,” according to A. Kassenberg (2020). Even if A. Kassenberg were honest in his calculation, these three countries account for 40% of the world’s population, and their economic significance cannot be overestimated. However, this enumeration needs to be supplemented, missing many African countries (Gil 2018), as well as – which may come as a surprise, since it is after all an oil power – the United Arab Emirates (UAE), investing dynamically in nuclear energy. It is no coincidence that this Arab state has appeared, as thanks to its investments in nuclear, the country has a chance to stop being in the infamous world’s top spot as the largest emitter of carbon dioxide *per capita* (in 2016 UAE ranked 5th in emissions per capita and 28th in total; Worldometer [s.a.]).

In statements such as the one quoted above, one can see a value-laden supposition – particularly evident in the word “obviously” occurring before “in Russia” – that nuclear investment does not concern the developed and democratic West. It is worth considering whether this kind of thinking makes sense in serious reflection on climate change.

The way nuclear power is portrayed in social media is both one-sided and fuelled by fears that are not borne out by reality. The central axis of this unreliable vision is, of course, Chernobyl, and not a few hundred efficiently functioning and emission-free installations, because “good news is no news at all” (Flis 2007: 69).

This is not the place to show all the exaggerations visible in the Chernobyl trauma, exaggerations uncritically reproduced by the seemingly responsible media. Examples include calling Chernobyl a “Soviet Hiroshima” or describing the power of the contamination, which makes absolutely no sense even to a layman, as “comparable to the effect of the 50 atomic bombs dropped on Hiroshima” (*Czarnobyl – sowiecka Hiroszima* 2019).

“Meanwhile, studies by international organisations such as the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), the World Health Organisation (WHO) and the International Atomic Energy Agency (IAEA) have systematically shown that radiation in evacuated areas is on average less than natural radiation in many parts of Europe and the world” (Strupczewski 2016).

The decision to permanently evacuate proved to be wrong and caused more harm than good (Ropeik 2017). It was also all the more inadvisable and harmful to evacuate the Fukushima area, driven by an irrational fear of radiation, a fear that has its roots in Chernobyl and the already discussed association of the reactor with the atomic bomb, which in Japan obviously has great psychic power.

Summing up the picture presented, it should be remembered that assessing the operation of nuclear power plants through the prism of Chernobyl is like assessing the safety of passenger planes from the perspective of 9/11. Both cases belong to exceptional events and therefore cannot be used to assess the normal operation of nuclear power plants or passenger flights. Unfortunately, the availability heuristic wins out, additionally, while aeroplanes on longer journeys have no competition, nuclear power after 1986 gave way in many cases to a stronger fossil fuel lobby, especially in Poland (Bodek, private correspondence, 21 August 2021).

3. Press silence on the atom

As can be seen from the above considerations, the problem of atomics turns out to be very complex. Rational perception is often obscured by negative feelings rooted in fears that have little relation to facts. This is probably why this difficult subject matter is not popular in Polish weekly opinion magazines. This is evidenced, among other things, by a search covering issues of such Polish opinion weeklies as: "Polityka," "Newsweek," "Tygodnik Powszechny," "Wprost," "Do Rzeczy," "W Sieci," coming out in the period from 5 February (announcement of the preliminary election date) to 12 July 2020 (second round of elections). It turned out that during this period only Polityka devoted an article to this issue by Adam Grzeszak (2020). The impulse to publish the article was probably the visit of the President (and candidate in the second round of the election) Andrzej Duda to the United States, as his talks with Donald Trump concerned, among other things, American-Polish cooperation in nuclear energy.

In addition to the conceptualisation presented above, linguistic tools relating to the rhetorical organisation of messages as examples of media discourse (see Maćkiewicz 2014: 21–22) were used to analyse the article and the candidates' statements addressing nuclear energy. This analysis can

also be treated as focusing on the media version of the linguistic image of the world present in the referenced messages (see Ptaszek 2015: 14–15), and a prelude to its interpretation remains the already mentioned conceptualisation built on the basis of cognitive science.³

In this journalist's statement, a rational view of nuclear energy is intertwined with the negative elements of its conceptualisation presented earlier. The author emphasises the emission-free nature of nuclear power and points to this solution as a way of replacing coal in Poland (Grzeszak 2020: 43). However, he talks extensively about the unprofitability of nuclear power plants, showing, for example, the debt of the French state-owned company Électricité de France (EDF). However, he fails to mention electricity prices in France that are twice as low as in Germany and the huge subsidies for renewables (cf. Bodek 2018; Shellenberger 2019; Strupczewski 2014). Moreover, the rising costs of power plants currently under construction in France, England or Finland, as described by A. Grzeszak, are due not to real outlays, e.g., materials, equipment, labour, but to administrative, not to write bureaucratic-political ones, dictated by the already described fear of nuclear and the multiplication of safety requirements often beyond the reasonable limit (vide German *Atomaustieg* as an aftermath of Fukushima), which modern reactors are able to meet anyway (Strupczewski 2014).

The analysed article, in its linguistic layer and at the level of more or less intentional references, sets in motion two important themes that were mentioned when conceptualising nuclear power. Its headline reads *Nuclear Offensive* and this war rhetoric certainly does not tame nuclear power, but rather gives it a menacing, precisely warlike, "offensive" (attacking) face, reviving associations with the atomic bomb.

The second theme is delineated by an interpretative frame: "nuclear energy in Poland is a fantasy." The lede of the article opens with the sentence "The fantasy of the Polish atom is back," then the element of meaning, pointing to the unreality of the Polish atomic plans, is revealed either in the repeated term "fantasy" or in the expression "never-ending story," introducing the reader into a fantastic world (association with the film *NeverEnding Story* or, even if read non-allusively, a reference to constant talking, doing nothing – telling something as the opposite of doing it).

³ I do not resort to content analysis, as this works best when examining a large collection of texts. In the case of a single article, and in connection with the presented model of nuclear energy perception, it is much better to use tools related to the concept of linguistic worldview.

The final part of the analysed text also contains a thought pattern that will recur in the statements of the presidential candidates analysed below. This part, preceded by the subtitle *The Silent Assassin*, which is again related to the rhetoric of war and the atmosphere of threat, presents a wind and solar energy as the killer of nuclear energy. This metaphor, used in an anti-nuclear context, sets in motion at least one thought pattern popular in the treatment of this issue. This is disjunctive thinking about nuclear power and solar and wind power. In logic, the disjunction has the schema "it is not true that p and q," and in relation to the subject under discussion it says that if RES are introduced, this, therefore, means that the atom is excluded, and *vice versa* of course.

This kind of exclusionary thinking has no factual justification, as reactors can cooperate with windmills or photovoltaics (K. Bodek in private correspondence also confirms this with the example of the Borssele nuclear power plant in the Netherlands). If this kind of possible cooperation is related to the EU law on emission reduction mentioned at the beginning of this discussion, such an energy mix will turn out to be a very good solution. However, the author of the *Nuclear Offensive* does not point to this optimal combination, remaining with a disconnected view of the two energy sources. A similar pattern is repeated in the statements of politicians, as will be discussed below.

4. Evasive and disjunctive thinking of politicians on nuclear

The analysed statements of the main presidential candidates in the 2020 elections come from the highly watched web channel *Imponderabilia*, hosted by Karol Paciorek. They include interviews with six major politicians vying for the presidential seat: Robert Biedron, Władysław Kosiniak-Kamysz, Krzysztof Bosak, Szymon Hołownia, Rafał Trzaskowski and A. Duda.

One of the thematic blocks discussed during these talks included environmental protection, climate change and energy issues. Surprisingly, each of the invited guests spoke or at least mentioned RES, climate problems or reduction of emissions, but only in two cases the topic of nuclear energy appeared – more importantly, it was brought up due to a direct question regarding this issue asked by the host of the programme.

The appearance of the topic of nuclear energy was clearly something uncomfortable for R. Biedroń and R. Trzaskowski. The answers of these candidates focused on this issue and revealed almost all negative elements shown earlier in the nuclear energy conceptualisation scheme.

For R. Biedroń, RES make nuclear power unnecessary, which shows the disjunctive thinking pattern just indicated. There is also the *cliché* of the unprofitability of nuclear power, and the conviction that it cannot be implemented in Poland, if only due to the lack of its own technology (Robert Biedroń 2020). This is, of course, a misconception, since only four countries have such solutions, which does not prevent the rest of the world from building such installations at home. However, what is particularly noteworthy is the strong conviction of the left-wing candidate that the paths of the atom and renewable sources are definitely divergent, and that the issues of energy demand will be taken care of by “individual farms, not large systems that have failed in the world” (Robert Biedroń 2020). In a nutshell, it can be said that R. Biedroń convincingly repeats all questionable assumptions or *clichés*, whose unreliable or utopian character is shown, for example, by K. Bodek (2018) and M. Shellenberger (2019).

The question about nuclear power confounded not only R. Biedroń, but also R. Trzaskowski, who spoke – by way of an attempt at evasion – about the need for clean air, but did not use this opportunity to at least point out that nuclear power is not Bełchatów or Konin and is not emissive. When asked for the second time – as is evident from the evasive answer – “So what about the atom?” (Rafał Trzaskowski 2020), the presidential candidate is confronted with the need to specify his position. In presenting it, he reproduces the pattern of disjunctive thinking about nuclear energy and RES: “I am afraid that we, investing in nuclear instead of renewable energy sources, may in 10–20 years become unmodern [...]” And a bit further: “Turning our back on global warming will make us an economic backwater” (Rafał Trzaskowski 2020). Another politician, therefore, cannot imagine cooperation between the atom and RES and additionally does not see the emission-free nature of nuclear power in the context of global warming.

Rafał Trzaskowski does not rule out the construction of nuclear power plants in Poland at all, but treats it somewhat – to use the title of a well-known novel by Fredrick Forsyth – as “the devil’s alternative” (here “alternative” as a synonym for a solution, a way out of a situation, and not the scheme: a or b).

Conclusions

Why is the dominant media portrayal of nuclear energy so different from the model developed in the first part based on an analysis of EU directives and technical facts? And why is this subject so uncomfortable, so avoided? The answer to the first question is largely given in the section on the media image of the energy industry. Therefore, if we refer to the second question from the introduction of the presented deliberations, it can be observed that negative coverage of the issue of nuclear power plant construction in Poland (not to mention several such installations) dominates. One can see in this the reproduction and, at the same time, the power of erroneous associations with nuclear weapons, then characterised by exaggerated traumas after Chernobyl (mainly) or Fukushima (marginally), and, finally, radiophobia reinforced by pop culture messages. This set of thought patterns and *clichés* contributes to the negative reactions of a large part of politicians or journalists to the nuclear issue.⁴

In contrast, the avoidance of nuclear energy by politicians running for president is explained by the concept of common and divisive⁵ questions raised during election campaigns (e.g., Pew Research Center 2020: Chapter 4). And while global warming or even more so energy security (reforms in the energy sector, ensuring energy independence for Poland, diversification of energy sources, etc.) are common questions, worthy of discussion and programmes, as they attract potential voters, the presentation of one of the important solutions, i.e. nuclear energy, is so far classified as a divisive issue, likely to scare off many voters. From this perspective, the avoidance of this issue in periodicals with a clear political line is not surprising, nor is the avoidance or bracketing of this issue in the statements of those running for president.

It is likely, however, that this avoidance of energy issues, and nuclear energy in particular, will change in the next elections. The growing demand

⁴ Robert Biedron's statement that the Netflix series *Chernobyl* shows what nuclear power means is symptomatic of this (Onet Wiadomości 2019). This statement does not fall within the analysed time frame, so it was not commented on in the main text. But as a footnote, it is worth showing on this example how strongly the heuristics of accessibility work: well, one can imagine 440 series about all the nuclear power plants that have been operating efficiently for decades. However, as the single case of Chernobyl is more visible in the media and psychologically, so within this heuristic 1 turns out to be bigger than 440, the culpable accident and the exception stronger than the rule.

⁵ I would like to thank professor Jarosław Flis for raising this issue to me.

for energy, which is linked to the EU's emissions reduction and decarbonisation policy, as well as the problems with the Turów and, probably soon, Bełchatów mines, will mean that the current media framework for the operation of nuclear power plants will change, moving the issue towards a general question.

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