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AN ALTERNATIVE GOD: THE NON-CHRISTIAN DIVINE IMAGINARY AMONG THE SCIENTISTS FROM LITHUANIA AND UKRAINE

The relationship between science and religion, particularly their assumed conflict, has traditionally been discussed in terms of their factual or logical contradictions. The article proposes to change this perspective and to consider them both as sources of images in order to show their powerful interaction in the sphere of the imaginary. It also emphasizes that the historical and cultural context of their interaction is highly important. Based on the 66 in-depth interviews with the (post)Soviet generations of Ukrainian and Lithuanian scientists, the article reconstructs their imaginary of the Divine. Most of them have not retained their Christian belief. Instead, they created an alternative, science-related imaginary that integrated science and religion rather than put the two in conflict. The research provides evidence that the Soviet culture aimed at eradicating religion has in fact planted a seed of a religious sensibility and imaginary that was hidden under the guise of science and that has been persisting through generations.

Key words: sociology; science; religion; Ukraine; Lithuania; (de)secularization; imaginary

Introduction

When Robert Boyle compared the endless circulation of the heavens to the clock installed in Strasbourg cathedral, his imagery was born of newly introduced mechanistic physics. The image of God as a Watchmaker has since undergone a radical metamorphosis. Having been used in the past by the authors of various religious and philosophical perspectives, from creationists to deists, it appeals today to the imagination of the atheists, as Richard Dawkins speaks of the, now Blind, Watchmaker (Dawkins 1986).

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The Watchmaker story is just one example of how religious images can change and how they can participate in what is known as secularisation at the intersection of religion with science. It seems to prove conflict between science and religion and to demonstrate that scientific progress leads to a decline of former great theological metaphors. In this article I am going to show that this is not necessarily the case and propose that some phenomena usually associated with secularisation can be viewed as an expression of not a decline, but of a change in the religious imagination. For the purpose of my argument I will frame here one of the most important dimensions of modern religious change – which underlies processes described, depending on the context, as secularization or privatization – as dissatisfaction with images of the Divine that no longer correspond to the modern sensibility. This, in turn, is a response to the new ways of understanding, experiencing, and describing the world, which undoubtedly reflect the new scientific ideas and their cultural assimilation. In certain historical, political and cultural contexts the seemingly secularized sensibility can still retain religious features, generating the corresponding imagination. Science can participate in this not as a source of knowledge, but as a source of images, and not threaten the religious perception, but enrich it.

There is no much empirical sociological study on science, religion and imagination. Secularisation of the religious images under the influence of science seem to be one of the central issues in the science and secularisation debate. Paradoxically however, it has been almost totally overlooked by empirical sociologists interested in the topic. It is especially manifest when we look at the research of religious beliefs in the scientific community, a social group where the influence of science on religion is considered to be most visible. This group has been extensively studied (Leuba 1916, 1934; Larson, Witham 1998; Lehman, Shriver 1968; Ecklund 2010; Ecklund et al. 2019; Gross, Simmons 2009; Gołąb 2017; Libiszowska-Żółtkowska 2000), but images and imagination have hardly become a research question.

The study of scientists' religiosity was historically derived from the premise of conflict between science and religion. As a pioneer of that research, James Leuba, was convinced, unbelief in a personal God correlated with the individual qualities determining success in science (Leuba 1916: 279). It was their deeper knowledge that was supposed to make successful scientists resistant to religion (Larson, Witham 1999). The conflict thesis became later one of the assumptions of the theory of secularization (Martin 1969; Bryan 1998; Wilson 1969; Wilson 1985; Bruce 2008, 2002) emphasizing that science is one of the main social factors in the weakening of modern religiosity. As we have been increasingly realizing, however, this proves to be a highly simplistic vision. Firstly, the secularisation thesis itself turns out to be oversimplified, and today the privatization of religiosity rather than its disappearance is recognized (Davie 1990;

Hervieu-Léger 1999; Voas 2008; Mariański 2013). Some authors talk also about desecularisation tendencies (Berger 1999; Karpov 2010). Secondly, secularisation theorists have been abandoning the idea of unitary secularisation along the Western lines and exploring other paths of the religious change in individual countries rooted in their historical, religious, and cultural specificity (Martin 2008; Casanova 2008).

This makes the study of different historical and cultural contexts of (de) secularisation essential. A focus on imagery could provide insight on many crucial points here, as it reflects unique local cultural settings of science and religion. Images and imagination are rooted in culture – or, more accurately, cultures, with all their local variety. Thus, culture, in its highbrow and popular manifestation is a principal mediator of imaginative interaction of religion (Ostwalt 2012) and science[1]. Indeed, while scientists around the world are less religious compared to the general population, there are some national dissimilarities in their religiosity, still insufficiently understood but related perhaps to their cultural (and, thus, imaginative) environment (Ecklund et al. 2019). Many scholars would agree now that the idea of „a linear relationship between science and secularisation regardless of differences in national culture (…) has major blind spots" (ibidem: 2). Yet, despite the growing research on the cultural context of science and religion, as well as the academic request for the new approaches to them, there is little attention paid to imagination.

This article attempts to fill this gap focusing on the religious imagery and cultural context of scientists. It is intended to offer an insight on the role of images in religious change at the intersection with science, and show a rich, even if not purely rational, interaction between science and religion in the area of the imagination, which can be far from being in conflict. The two countries chosen for the study – Ukraine and Lithuania – make an especially valuable case on this subject. Along with their Central and Eastern European (and thus under-investigated in terms of science and religion) cultural and religious affiliation, they share a dramatic past under Soviet regime. This period was associated with aggressive anti-religious campaign justified by science, as well as the powerful – and powerfully imposed – Soviet cultural influence.

Further, based on 66 in-depth interviews with natural scientists from Ukraine and Lithuania, I aim to reconstruct the main patterns of their imagery of the

[1] In this article, I share the sociological understanding of culture: it includes all forms of expressive-aesthetic activities (literature, cinematography, art, music), the ideological sphere (e.g. philosophy and social thought), as well as science and religion themselves. Cultural production, accordingly, generates and disseminates elements of culture, and has a huge impact on the public imagination (Bourdieu 1993; Hesmondhalgh 2006). For convenience, however, I will further single out science and religion to show how they participate in formation of the imaginary.

Divine. I will show how it was changing within the biographical trajectories of the scientists, and how Soviet and post-Soviet culture served as the mediator of the formation of these changes. Both Soviet and post-Soviet generations of my informants largely rejected their original Christian imagery, and developed alternative patterns that referred to science. The commonality of this imagery in all the studied cohorts of both countries can be interpreted as an evidence that Soviet culture, aimed at eradicating religion through the ideology of „scientific atheism", had in fact planted the roots of a new religious sensibility hidden under the guise of science, which persists through generations.

The Imaginary, Sensibility and Culture

Throughout the history of natural philosophy, psychology or cognitive sciences the debate on imagery has taken into account that it is not limited to pictures or visualizations, but also related to ideas (Nigel 2023). In my research I use the term „imaginary" to convey this complexity and discuss both images and ideas expressed by images (including metaphors and visual analogies), which concern the object of religious faith of my informants. In this article, though, I emphasize an aspect in the science and religion interaction, which is not straightforwardly rational, and am mainly interested in the social and cultural dimension of the scientific and religious imaginary.

These aspects of the imaginary have been described by sociologists in different non-primary contexts. According to social psychologists, „the dose" of the imaginative, figurative component is „contained to a certain extent in all [social] representations", and is, indeed, „more directly social than the intellectual" (Moscovici 1988: 222). This component of representations, as already Emile Durkheim observed, plays an important role „in the manner in which ideas are connected or separated" (Durkheim, Mauss [1903] 1997: 85), with religion being, in his view, the most obvious field of representations expressing a broader „sensibility" of a society (Maffesoli 1993). Although Durkheim, in the spirit of his time, believed that religion had emerged from a more emotional than intellectual premise, he also recognized the growing role of science in forming modern sensibilities and the need for religion to adjust to it (Durkheim 1909; Romero 2007). Imagination was also discussed in terms of social aesthetics. For example, Thorstein Veblen explored „aesthetic sensation" and „imaginative acts" that establish „social interdependence" in society (Throntveit 2008). Michael Maffesoli talked about „aesthetic sensibility" as a platform of social unity (Maffesoli 1993).

There was also some theoretical debate on the role of imagination in particular aspects of science, religion or culture. In particular, Andrew Greeley

studied „religious sensibilities", and Catholic imagination (Greeley 2000). Paul Froese and Christopher Bader discovered that images of God correlated with attitudes to science in different ideological groups (Froese, Bader 2010). Researchers of science from different disciplines have shown that also science operates influential images. Images, metaphors, visual analogies seem to have epistemological potential (Black 1962; Boyd 1993; Brown 2003; Haack 1994), they are involved in institutional practices, exert a disciplinary pressure through institutional classifications and affect the intrinsic logic of scientific procedures (Douglas 1986; Knorr Cetina 2009; Bloor 1991; Garfield 1986). Important metaphors are decisive for the development of theories (Nelkin, Lindee 2010; Pigliucci, Boudry 2011; Niebert, Gropengiesser 2015; Thibodeau, Boroditsky 2011). Important theories, like the evolutionary one, have a huge imaginative potential and no doubt influences mass imaginary (Beer 2000). The growing role of culture as a dimension of imagination have been, in turn, discussed by researchers of modernity, who famously present modern collective identities as the „imagined" ones (Anderson 2010), and modern social representations as simulacrum (Baudrillard 1994). We need to agree that, with the development of traditional and new media, modern societies progressively perceive reality through the mediation of its cultural products (Debord 2021).

Both religious and scientific imagery are subject of a cultural mediation and, together with the culture, participate in the process of social change. The situation becomes even more complex when it comes to deliberate influence of political power on culture and imagination. That was the case of the Soviet state, which undertook a struggle for the mass imaginary from the very beginning of its existence and used imaginative resource to substitute religion with science (see, for example: Smolkin-Rothrock 2010; Andrews, Siddiqi 2011). To varying degrees, culture was included in this campaign: literature, films, philosophy, without any doubts, influenced the formation of a special sensibility and imaginary in the Soviet space. The newer cultural influences of independent Lithuania and Ukraine had to interact with this legacy.

Lithuania and Ukraine

Lithuania and Ukraine were chosen as two countries which were subjected to the forced state secularisation based on the Soviet official ideology of scientific atheism, and, after the collapse of the Soviet Union both experienced a rapid religious revival. This provides a unique opportunity to trace the effects of the radical religious change that occurred within the lives of several still living generations. From the very beginning, the Soviet Union pursued a militant anti-religious policy, which weakened during World War II and immediately after

it, as Stalin counted on the support of the Churches. However, in mid 1950s Nikita Khrushchev launched a large-scale campaign of „scientific atheization" with atheistic propaganda in universities, cultural institutions and the media. Soviet culture was supposed to glorify science, but, in reality, often mystified it (Zorya 2023). One of the manifestations of this was the fact that the ideas of Soviet esotericism or New Age, which referred to science, spread already in the USSR in some circles and flooded the post-Soviet religious markets in the 1990s (Menzel 2007).

The following study of the imaginary of Lithuanian and Ukrainian natural scientists is designed as a comparative one, in hope to find cultural differences between the countries at the intersection of religion and science. However, the results of the analysis show similarity of the major imaginary patterns, which confirms their attribution in the common Soviet cultural experience. This is a striking starting point, as although Soviet past brought Ukraine and Lithuania close to each other and produced a common post-Soviet cultural legacy, it also resulted in several differences. The most obvious one is related to the different duration and repressiveness of the atheistic regime. The major part of Ukraine, originally a deeply religious Orthodox region, became a Soviet Republic in 1922. Religion was persecuted there, and the religiosity of the population was under pressure from the anti-religious campaign for a long time. Lithuania, in turn, became Soviet territory only in 1940, and the repressions against religion lasted for a shorter time. Catholicism was still present in the lives of many Lithuanian Soviet families.

The contemporary religious markets also distinguish the two countries. The Lithuanian Catholic Church takes a position of religious „hegemony" in Lithuania (Ališauskienė 2016). Around 77% of population declare themselves as Catholics, with only a negligible amount belonging to other religions (Račius 2019). There is however a „wide variety in the attitudes toward Catholicism and modes of belonging to the Catholic Church throughout the population" (Schröder 2012). The Ukrainian religious field is, in turn, highly pluralistic (Казанова 2019; Паращевін 2017). Even if Orthodox is a dominant religious tradition here with 70% declaring to be Orthodox, the population is divided between two competing Orthodox Churches; there is also an influential Greek-Catholic Church and smaller but visible Catholic, Muslim and Protestant communities (Центр Разумкова 2020).

Different Christian traditions and religious markets, dissimilar situation of religion in the Soviet past, rapid change of the atheistic to the religiously liberal political system within the biographies of several still living generations, all create important comparative local contexts, which can influence the changing imaginary at the intersection of science with religion.

Methodology and the sample

The study is based on 66 in-depth interviews with natural scientists employed in research institutions and universities in Lithuania and Ukraine, with a disciplinary predominance of physics and biology. For comparison purposes, the findings of earlier research in Poland (see Rogińska 2021) are also used. I will refer to this data only occasionally here.

The sampling procedure followed a standard snowball sampling technique and resulted in a sample of 32 informants from Lithuania and 34 from Ukraine: 10 habilitated professors from Lithuania and 18 from Ukraine, 17 PhD holders from Lithuania and 12 from Ukraine, 5 PhD students from Lithuania and 4 from Ukraine. Men dominated in both groups (21 in each one). The in-depth interviews took place in October 2020-November 2021, online, and lasted an average of 1.30h. They were partially structured, i.e. a guide was prepared, but the topics were discussed in a free sequence, so that informants could discuss them in what was for them a natural order. The guide included questions at the intersection of science and religion: the origin of the universe and life, the place of human beings in the universe, beliefs about the supernatural being and soul. Each of these issues was discussed in relation to images. I asked informants to specifically remember images that were used by them in their past, seemed more convincing or adequate than the others, or could be helpful in bringing me closer to understanding their reflection on the topic. The interviews contained also a biographical element meant to establish how the imaginary was changing throughout the informants' biographies from their childhood to the present moment, and what role science and religion/faith played in this process. All interviews were encoded and analysed with a qualitative data analysis software (QDA Miner 6).

This study adopts the general principles of grounded theory which assume, inter alia, initial non-assumptive coding of the material and selection of the basic categories and their connections subsequently (Charmaz 2006). The article discusses the category of *the imaginary object of faith*. During the focus coding, its properties, such as *initial* and *alternative* (with this latter one including *transitional* and *rejected)* images, were identified.

The *initial* images were related to the ones adopted by the informants during their institutional faith period, usually in childhood. In both countries, these were Christian images, derived from Catholic or Orthodox iconography, mainly referring to God the Father, often presented with a formula „old man with a beard", sometimes including also a figure of Jesus or Holy Spirit. Informants usually indicated that these images looked "like icons in the church," "as in church books", these were "the face of Christ" , "Jesus as a personal friend" etc. *Initial* images typically corresponded to the Christian idea of a personal God,

the Creator of the world who cared about His creation, even if transcendent in relation to it.

The *alternative* images appeared as opposed to the *initial* Christian images. They were usually constructed as „less naive", closer to the subjectively convincing idea of the supernatural, and often, according to the personal conviction of the informants, more compatible with science. The *alternative* images were encoded as *transitional* ones, if in the further course of the biography the informant lost his/her faith. The *transitional* images usually appeared as a temporary attempt to preserve one's belief in the face of religious doubts, but ultimately turned out to be just a transition to a definite unbelief. Within the *alternative* (including *transitional*) images several *patterns* were distinguished, among them the three most typical discussed here: the *Mind*, the *Planet*, and the *Energy*. *Pattern* was understood as a set of variants of similar images centred around the basic idea of the Divine.

The *initial* and *alternative* images were analysed further within the three age cohorts: the *older* (informants born in 1940–60), the *middle-aged* (1970–1980) and the *younger* one (1990–2000 accordingly). Out of 66 people, only 13 identified themselves as Orthodox or Catholics, and mostly it was just a cultural identification. Only 6 among them still used Christian images, usually *initial* ones, although this was not necessarily related to their consistent adherence to the doctrine. These images were often used in a conditional way – as visualizations helpful in prayer. Rarely a similar imaginary was drawn from non-Christian sources, being then a by-product of popular culture's adaptation of Christian iconography (e.g. in cartoons or science fiction). The remaining 35 believing scientists used *alternative* imagery and professed ideas non-traditional for Christianity. They had mostly a radically privatized faith, a conscious and definite lack of identification with any institutional doctrine, even if they had gone through a period of childhood religiosity.

25 scientists (15 from Lithuania and 10 from Ukraine) were unbelievers. Such people quite often confessed to a lack of images in their thinking or used them only as scientific models. However, several people did use images and were able, at my request, to construct images of the supernatural which „they would be willing to accept if they believed". These *alternative* images were encoded as the *rejected* ones, that is images more attractive than Christian, but still declined.

Both *transitional* and *rejected* images adopted forms that were typical for all the *alternative* images.

Imaginary shifts in the three age cohorts

As it has become clear, in my sample we observe the almost complete loss of a Christian imaginary in both countries. I will now examine how this occurred within the biographies of the scientists from the three age cohorts, which bear witness to different historical circumstances.

The sample included 29 scientists from the *older* cohort (10 from Lithuania and 19 from Ukraine), who spent the major part of their lives under the atheistic Soviet regime. A stronger presence of religion in Soviet Lithuania was apparent in the interviews with the informants from this cohort. Many of them talked about families practising Catholic faith, which was associated with presence at Mass and participation in common prayers. Their memory preserved *initial* images, mainly referring to the religious pictures encountered in childhood (books and icons depicting God the Father, sometimes Jesus, Hell and Satan). Such images were not present in accounts of the *older* Ukrainians, whose childhood was mostly irreligious. *Older* scientists from both countries did not experience any significant changes in their religious imaginary during school and university. Only after the collapse of the Soviet Union in 1991, when they were in their 40s and 50s, some of them developed forms of non-institutional faith based on the *alternative* images of the Divine.

The most formative period for the *middle-aged* cohort (25 informants, 14 from Lithuania and 11 from Ukraine) turned out to be *perestroika* and the following decade of political transformation with its rapid revival of the religious life. The *middle-aged* informants from both countries mostly had some religious upbringing in the families and/or schools[2], and talked about their Christian *initial* imaginary, even if in the Ukrainian case the families and children growing up in them were not deeply religious. Still, both Ukrainians and Lithuanians lost their *initial* Catholic and Orthodox images and beliefs in favour of the *alternative* ones. In the long run, they replicated the religious shift of the *older* cohort. The outcome of these different biographical processes was similar in the two countries and within the two cohorts: this was a definite choice of the *alternative* faith instead of the traditional Orthodox or Catholic Christianity.

The sample included 12 people from the *younger* cohort (8 from Lithuania and 4 from Ukraine). *Younger* Ukrainians had mixed childhood experiences.

[2] While Lithuania had successfully introduced religious education in schools, which started on a national scale after the fall of the USSR in 1991 (Ališauskienė, 2021, op.cit.), the introduction of the religious classes in Ukraine at the national level is still being debated (*В школах Украины могут появится уроки христианской этики и библейской истории,* https://focus.ua/ukraine/473084-v-shkolah-ukrainy-mogut-poyavitsya-uroki-hristianskoy-etiki-i-bibleyskoy-istorii (online: 19.11.2021). In this cohort the religious classes at school were only mostly present in the Lithuanian memories.

Some of them grew up in deeply religious Orthodox or Greek-Catholic families and were strongly believing children, while the others were raised in non-believing families. In this cohort Lithuanians happened to be less religious, as almost all of them didn't experience any strong personal faith in childhood. However, the religious shift of both groups again followed the general pattern: in the last years of the schools or in the university period most of the *younger* informants lost their Christian faith (non-believers typically through the *transitional* imaginary).

From what has been said, it is clear that regardless of the dominant religious tradition, its historical position in the societies, or its presence in the families and schools, nearly all the informants rejected Christian faith and imaginary which they considered „unconvincing". Why did that happen? Part of the explanation can be provided by the analysis of the *alternative* images which turned out to be more appropriate to the scientists. Further, three most typical imaginary patterns: the *Mind*, the *Planet*, and the *Energy*, will be discussed in more details.

Alternative patterns: the *Mind*

The *Mind* pattern was a collection of related images, all appealing to the idea of the intelligent Divine agency which exercised rational control over the development of the universe and human beings. „Ideas", „consciousness", „organization", „power", „control" were the accompanying characteristics of the *Mind* conceptualized as the principle ensuring integrity of the world and the source of physical laws: „*When you ask me what is my image of God, it is a great Mind of the universe.* (…) *When I get results from my theoretical formulas, I understand that it should be a great Mind that created the laws*" [L12ph, male]. „*It is our consciousness that makes the world not fall apart. We see and experience everything through our consciousness, and I imagine God as such an infinite Consciousness, through which the whole world stays integrated*" [L26b, male].

The Divine aspect of the *Mind* was expressed in spatial metaphors of externality and height, as „*some Intellect that is above us*" [L20ph, male], „*a higher Mind, a higher power, a higher organization, a higher position above us*" [U20b, male]. However, it was not fully transcendent to the material universe and could have material properties expressed through scientific concepts as „matter", „force", „field", „energy". „*It is Matter that becomes intelligent at a certain level*" [U20b, male]. This material component remained similar even in rare cases of a Biblical interpretation of the pattern: „*The Holy Spirit is that very powerful Force in the Universe, with the help of which the Creator created everything* (...). *Energy is what it is*" [OU3b, male]. However, in majority of

cases the idea that the *Mind* is a Biblical Creator was rejected, and instead a scientific reading was proposed: *„I always try to get to the truth from natural positions. And I don't know whether to attribute* [the Mind imaginary]*: to the Holy Spirit or the Trinity*" [U20b, male].

Although the *Mind* could easily fit into the concept of Intelligent Design, the act of creation itself was often blurred: the moment of Genesis was covered with mist, the universe was considered eternal, pulsating or cyclically replicating. In several cases the *Mind* turned out to be a Creator that was created itself, or a Programmer that was itself programmed, it could be both the author and a self-developing program controlling the universe: „*One Intellect creates another Intellect that creates another Intellect"* [L20ph, male]; *„Don't we live in a computer world? Some initial conditions are set, yes, and then the system begins to develop* (...) *That is either something „winds up", or it is „wound up*" *together with [the universe]*" [L1b, male]. This pattern also included the imaginary of the *Mind* as an „information field" containing all scientific laws, or a computer-like network: „*The image* [of the Divine] *is that there is some Network of Intellect* (…) *not a brain, but a Network of ideas*" [L5ch, male].

Alternative patterns: the *Planet*

The *Planet* pattern emphasized the imaginary of various discrete entities joined in a one interconnected community, a network, a planetary (less often cosmic) meta-entity. It expressed a sense of belonging to one whole of all creatures, including humans and animals, plants and inanimate matter, their mutual dependence and interconnectedness. This meta-entity had a mysterious life, sometimes a will or a consciousness, and evoked a numinous feeling of my informants: „*It is a certain* (…) *living organism of our Planet, which we feel as if we were in kinship with and part of it, part of the whole. And this is something that somehow exceeds us* (…)*, and this is what causes what you call a religious perception*" [L1b, male]. To convey this kind of the Divine *imaginary*, a Lithuanian physicist Arūnas used several related metaphors: an orchestra, a scientific team, which members are united by a mysterious Divine inspiration, and the conscious planet-ocean *Solaris* from the Stanislaw Lem's science fiction novel and a famous film by Andrei Tarkovsky's based on it: „*This famous movie by Tarkovsky* (…)*, this ocean* (…)*. It may be a metaphor* [of God]*, as well*" [L17 ph, male]. In the imaginary of another Lithuanian scientist, Rasa, a believing Catholic, God was the aggregate of all the planet souls, and not only human, since „*animals and plants also have souls: it is some kind of manifestation, of a sense, of life and love, and warmth that come with a personality. It happens that you meet a person, and warmth flows from her. Also,*

the family has its own soul, and the whole human race too." This image helped Rasa to explain the Christian theology of the Holy Trinity [L28b, female].

The Planet imaginary was, indeed, mostly focused on the planetary level: „[When I think about God, I imagine]*, basically, the planet, I don't think much about the big cosmos, because it's huge, something infinite, it's hard to imagine*" [L28b, female]. Only in some cases the pattern reflected embeddedness of all creatures in the more general cosmic unity, of which the planet was an element. Thus, a Ukrainian neurobiologist explained that there was „*a universal interconnectedness. Everything forms a single web. And now quantum physics gives amazing* (…) *mystical confirmation of this*". The planetary humanity was built into this cosmic interdependence and itself was gradually mastering „*the meta-language, that is, the language that neurons talk with each other*." He predicted that „*when we develop the ability to use meta-language sufficiently, we will gradually begin to form a new type of society* (...) *which will gradually become a collective self*". The Divine image corresponded to the idea of the network: „*I remember, I had* (…) *the image of* [God as] *a spider, which, so to speak, hangs on the web of the Universe and feels all its tremors that occur in different places*" [U11b, male].

As in the case of the *Mind* pattern, the Divine in the *Planet* pattern was both transcendent and immanent in relation to the world. It was a principle of matter, which, even if sacralised, had attributes that could be described by science.

Alternative patterns: the *Energy*

The *Energy* pattern continued the idea of cosmic interconnectedness. However, instead of the unification of multiple discrete entities, the dissolution in divine Energy was central here. The boundary between the living and the inanimate was erased, as each element dissolved into the whole. As Monika, a young Lithuanian biologist, said: „*The most appealing image* [of God] *for me is the one that indicates that we and the universe are connected. If God or the Energy of the universe is like a full ocean, then I myself, I am a drop of water. We are all made of the same material, but are of different size. However, we can connect to each other because we're the same.* (…) *Everything [is connected]. People and planets, and materials,* (…) *and atoms, and everything in the universe*". This kind of the Divine was given a physical interpretation, such as vibration of the atoms or electromagnetic field: „*Atoms are vibrating all the time,* (…) *these vibrations also connect our world somehow"; „I guess that the Energy is electromagnetic field that we cannot see but we can measure. Or maybe* (…) *some Energy we can measure and some not, but will be able to one day*" [L23b, female].

The typical amalgamation of the sacred and scientific languages could be seen here, as the Energy did not only acquire the physical features of a field, force, quantum phenomenon or vibrations, but was also identified as love: „*I see the Energy as simply Love. Because everywhere where I don't see love* (…)*, I see also lack of energy*" [L22b, female]. As in the case of the other two patterns, the *Energy* was measurable with scientific instruments: „*On a quantum level everything is Energy.* (…) *It is the same energy of which we hear in science.* [Author: Could you call this energy 'God' or it is just a natural energy?] *I don't like that opposition between science and God. I do think that they are intertwined and that God is the same Energy that is in science*" [L24b, female].

The imaginary, sensibility and cultural production

The following section builds on the analysis of the fragments where the scientists reflected on the sources of their visual images of the Divine, or where such sources appeared in the interviews. Science, religion and culture, all contributed to the reconstructed imaginary in both Soviet and post-Soviet periods.

Science was a surprisingly often-mentioned source of the Divine imaginary of the Lithuanian and Ukrainian scientists in all cohorts. This can be explained by the close, daily contact of scientists with scientific symbolic and imaginative material. In addition, scientists reported near-scientific sources: popular science films and programs, as well as science fiction books. These were familiar to many of them already in their childhood and youth, and provided imaginative material during their professional activities: „*I read a book* (…) *about astrophysics. And* [the author] *explained step by step, second by second what happened after the Big Bang. And I also saw some TED talks on the topic*" [L24b, female]; *„the image of some Network of intellect* (…) *maybe* [I found] *somewhere in science fiction* (…) *this picture or idea of that.*" [L5ch, male]. Another element, probably related to the specificity of the scientific work, was the frequent reference to computer programs, which appeared, for example, when informants were explaining metaphors of God as a Programmer or a Network of information. In case of the *older* and *middle-aged* scientists this imaginary was also related to the computerization in the 1990s, when „life" was breathed into the information-managing devices – the computers, arousing an almost numinous fascination, as it has been described on the Ukrainian material (Rogińska 2021).

Obviously, not only scientific elements were involved in shaping the *alternative* religious imaginary. Also religious influences participated in it, which often included a new recognition of science. The moment when children's

initial images were replaced by the *alternative* ones was especially crucial in this regard. This happened mainly in the last grades of the school and the university period of the informants. Young people were then experiencing a crisis of their *initial* Christian faith, which seemed to them unconvincing, anthropomorphic, childish. As we already know, only in few cases this Christian faith was maintained.

Rarely young people, whose Catholic or Orthodox Christianity was already collapsing, fell back into the traditional Christian images. This happened under the influence of Catholic or Orthodox religious groups or significant Others and only stopped the process for a while. And so, Matas, a physicist brought up in a religious Catholic family (his *initial* imagery was described as "*the images in the church, the sculptures and the paintings* (…) *and also from the books, the drawings from the books*"), met a Catholic community while experiencing a personal crisis. This restored his faith in Jesus, who became his „personal friend" and the focus of his imaginary: „*my view of God was determined by some people I met there, who were singing with guitars, who were always joyful and always happy. And I wanted to be like them. So my image was very much determined by that experience* (…). *And God or Jesus in particular was somebody who was my* "*bedtime companion*" *each evening, who was my hope. It was a person, Jesus. God was my friend*". But gradually it shifted towards the *alternative* Spinozian God-nature ("*mystics and even Spinoza, Baruch Spinoza had similar image of God*"), before moving to complete unbelief [L5b, male]. Similarly, the Ukrainian biologists Anastasia temporarily restored her Orthodox imaginary in conversations with the Orthodox university friend: „*God is something like a father with a belt, sometimes with a sweet. This is an absurd image, but it is embedded precisely in what is very clearly spelled out in all, yes, all our Orthodox books; and the same with the image of Christ and his whole life: he is, as it were, a man*". However, later she finally lost her faith. The religious search at this period was mostly directed to areas other than Catholicism or Orthodoxy [U2b, female].

Interestingly, the protest against Christianity was played out to a large extent in the plane of imaginary. We could observe in the interviews, how replacing the traditional Christian imaginary with the *alternative* one sometimes allowed to preserve faith of the informants. Various sources of the Soviet and post-Soviet era served as imaginative wellsprings here.

For the *older* cohort, courses of scientific atheism were imaginatively significant (even if ideologically dismissed). Some ideological clichés (e.g. unity of opposites, law of conservation of energy, transition of quantity into quality) remained influential in construction of their new religious convictions: „*It was Marxism-Leninism and dialectical materialism* (…), *and yes, I accepted that, and it fits into my dialectical approach* (...) *that truth is a process, that quantity*

turns into quality, this was taught not primitively and influenced me a lot" [U18ph, male]. Philosophical books and concepts known in the USSR, as well as some literature that became available in the post-Soviet era were mentioned. Plato, Seneca, Aristotle, Pseudo-Dionysius, St. Augustine, St. Thomas Aquinas, Descartes, Kant, Hegel, Schelling, Schopenhauer, Teilhard de Chardin, Heidegger, Mamardashvili, as well as Freud and Jung appeared in interviews. But these elements of philosophy could be easily intertwined with cinematic and literary motifs. For example, in some cases modern concepts based on science, e.g. Fritjof Capra's „Tao of Physics" or Gaia theory by James Lovelock (1972), were found important. They not only fitted into a *Planet* pattern, but were associated with a domestic noosphere concept introduced by Vladimir Vernadsky, a Soviet geologist and cultural philosopher, the first President of the Ukrainian Academy of Sciences. This corresponded with another, already discussed, Soviet cultural reference important for the *older* and *middle-aged* cohort: Andrei Tarkovsky's film *Solaris*, based on the science-fiction book by Stanisław Lem, also interpreted as visualization of the collective consciousness of the *Planet*, as well as Teilhard de Chardin's scientific and religious ideas of evolution: „*Lem, Solaris.* (…) *For Ukrainians, it is Vernadsky. And the French have Teilhard de Chardin*." [U11b, male].

Instead of traditional Christian religiosity, the *older* and *middle-aged* cohort referred to the *alternative* near-religious experiences of their youth: the Soviet New Age and esoteric beliefs of the 1990s. A variety of semi-religious teachings and practices – mystical and esoteric literature, as well as some fiction (e.g. Mikhail Bulgakov's *Master and Margarita*), alternative medicine, psychedelic experiences and even sports – appeared in their biographies in 1960–70s. As a Ukrainian physicist remembered: „*When I was at the university a lot of martial arts began to appear in our country* (…)*, they had meditation there, qigong here, yoga* (...)*, then a real esotericism came and a lot of people were involved in it.* (…) *In the late 1970s, this all was in full swing in the Soviet Union.* (…) *And people really liked it, because it seemed* [to them] *that they were acquiring some kind of superpowers* (…)*. And I got carried away, I liked autogenic training, meditation* (…) *we all did karate. In our country it was also consecrated by some mystical rituals. We concentrated cosmic energy in our inner selves in order to put it into a punch* (…)*. This came on the wave of popularity of the Hollywood films*" [U13ph, male].

Strictly speaking, the ideas and phenomena that formed the Soviet New Age were not perceived religious by my interlocutors (this term was reserved for Church religiosity). Conversely, they were closely connected with science, but in its special, typical for the Soviet sensibility, „enchanted" form. Framed as mysterious, but potentially natural, even if yet undiscovered phenomena, they were present even in the official Soviet discourse of science (Zorya 2023). In

a case of my informants the encounter with them was perceived as an interesting adventure and welcomed, in attempts to brighten up the grey Soviet reality and the already worn out, unconvincing scientific atheism. Having fallen on the soil of a religious tradition interrupted by the atheistic regime these encounters persisted in their imaginary and were smoothly transferred in the 1990s. Then the borders opened and a powerful wave of the Western and Eastern esoteric teachings flooded into the religious market: „*We knew nothing about normal religion* (...)*, but already in my lifetime, esotericism came to Ukraine very powerfully*" [U13ph, male]. This rooted popular esoteric elements that combined scientific and occult in their imaginary even further.

Parents of some *younger* scientists, formed in the Soviet 1970s, raised them already in this spirit: „*My mother is really extremely open-minded about all of these things. She used to go to a lot of seminars which are about astrology, afterlife, about Venus, and yoga and everything.* (…) *That's maybe why I believe in that Energy*" [L24b, female]. These experiences became source of the *alternative* images, especially of the *Planet* and *Energy* patterning, sometimes just for a moment, in typical *transitional* attempt to save at least some faith: „*I read something about biofields, some extrasensory stuff. I read about it and thought maybe it was true. But it was the same* (…) „*transition*" *story*" [L10ph, male]. This transitional faith could be retained or lost later*:* „*At university I started to learn physics* (…)*, and lots of different things disappeared which I imagined* (…) *– aliens, extrasensory things, bioenergy, cosmic energy*" [L10ph, male].

Such syncretic beliefs sometimes were superimposed on Christian ideas taken from the religious context of, now independent, Ukraine and Lithuania. However, after the collapse of the USSR, other, *alternative* religious and spiritual sources were available and searched. In Lithuanian interviews neo-pagan groups were mentioned in this regard: „*I can feel a greater connection with* [my neo-pagan friends] *than with my friends Christians* (…) *They drink from the well of historical sources of our culture and religion* (…) *and some of the things I try to take from the same well*" [L9ph, male]. In Ukraine, instead, some Protestant or new religious movements had a similar impact: „*I was in search, wandering from one group to another, and finally, I found Jehovah's Witnesses*" [OU3ph, male]. For the *youngest* cohort, encounters with Eastern religions and practices, such as yoga, meditation, played the same role: „*I went to a festival in Lithuania* (…), *where people listen to various lectures about spirituality. In the mornings they did yoga, meditate* (…)*. So I went home and started reading about that.* (…) *Hinduists* (…) *call themselves 'the religion of love', and I preferred these religions to Christianity, which is so popular in Lithuania*" [L12ph, male]. These practices changed the way scientists perceived and imagined reality: „[Meditation] *changed* (…) *how I see the world.* (…) *What is me, is slowly becoming less and less* (…) *centre of the universe. And more and*

more I feel that I am part of everything (…). *So, not only you understand that you are, from a physicist's perspective, just a tiny fraction of this universe* (…). *When you meditate, you feel* (…) *that slowly you are becoming* (…) *more and more* [part] *of everything*" [L25ph, male].

All these influences, again, were easily combined with the new ideological currents and cultural products. The *younger* cohort took ecological consciousness especially seriously: „*I hope there is some kind of conscience in the surrounding nature* (…) *All the animal* [form] *a conscience* (…), *forces in nature* (…) *I can easily* (…) *see the river as a* [conscious] *being* (…) *and* [I like the idea that] *you shouldn't hurt them*" [L9ph, male]. Several young scientists have, besides, referred to the pop culture, cartoons, and adventure films as sources for their images of God and the soul: „*This perception, especially for a young human being who is very into pop culture, this image comes straight from those content.* (…) *The first thing that comes to my mind is God from the Simpsons. Hi is very tall. Typical appearance with the beard and so on, but the main thing is that this image lives on the clouds and is very, very high*" [L6ph, male]. „[My images are] *probably formed through seeing something in television, maybe some cartoons or something like that.* (…) *I was not raised as a Catholic, so I have not read the Bible and stuff. I don't get a lot of associations with religion*" [L15ph, male].

Thus, we have seen how in several cohorts of scientists the imaginative material of scientific, religious and cultural origin was combined in a free bricolage, which had an inclusive character and was receptive to new elements that no longer belonged to the Soviet era.

Discussion and conclusions

The imaginary of the scientists from Lithuania and Ukraine, reconstructed in this analysis, is an important case that illustrates some underexplored mechanisms of religious formation at the intersection with science. The imaginary lies in the most private, intimate dimension of religiosity, which manifests processes usually hidden behind its conventional indicators. It deals with something else than a purely rational discourse, opinion and views which are easier to capture in surveys. Here, the collisions of science and religion occur at the figurative level that expresses a changing sensibility of the society – sensibility conceived, among other factors, by its cultural context and itself finding expression in its cultural products. This unique quality of the *imaginary*, its close association with cultural production and scientific, religious and political factors, as well as with a cultural memory that is not restricted by national borders, makes it a valuable tool for the study of the religious change,

including (de)secularisation processes influenced by science. It also shows that the interaction of science and religion can occur at different levels, and in the field of imaginary they can, instead of opposing each other, be easily integrated.

As a phenomenon of a dynamic nature, such an imaginary must be investigated in its historical context. In this article, I traced it against the backdrop of the Soviet past and later independent period of Lithuania and Ukraine. Constructed without pressure of a religious tradition, as a free subjective choice, the *alternative* imaginary patterns of my informants reflected serious shifts in their religious expression. However, it is safe to say that, despite the aggressive state atheistic campaign appealing to science, in the group of Lithuanian and Ukrainian scientists, it was privatization of their religiosity that happened rather than its elimination. Even more, science was widely used as a source of the religious imaginary. The images of the Divine were willingly assembled from the scientific sources: books, articles, talks and films, and were described in scientific language: „field", „energy", „force", „network", „planet", „computer program" etc[3]. Moreover, it is its embedding in science that provides a partial explanation of why this *alternative* imaginary was more satisfying to scientists. In some contexts, this was a specific, „re-enchanted" science, which corresponded to the special sensitivity to science – present already in the Soviet Union and with the advent of the post-Soviet religious revival interpreted not in the spirit of atheism, as in many Western secular countries, but in connection to a privatized bricolage religiosity.

At the same time, the scientific references only partly concerned the scientific knowledge itself. Science was used as a symbolic resource and stood in line with other symbolic resources scooping from the social and cultural environment of the two countries. The compatibility of Soviet culture and this kind of science-based religious sensitivity is an intriguing question, which deserves a separate study. My preliminary research on Soviet sources from 1917 to 1991 suggests that Marxism itself and, in particular, the doctrine of dialectical materialism may have contributed to that phenomenon. The Soviet version of dialectical materialism, an obscure, susceptible to mystification, but officially

[3] My comparative study of Polish and Ukrainian scientists (Rogińska 2021) sheds additional light on shifts in the meanings of physical concepts towards religious interpretation. The roots of this phenomenon may lie in the normative structure of the Ukrainian scientific and religious fields, as well as the boundaries between them. While the Polish group exhibited strong and "well-defended" boundaries between science (concerned with matter) and religion (focused on transcendence), the Ukrainian group, in general, had a weaker sense of "orthodoxy" in this respect. The question of whether physical categories could be interpreted mystically or religiously was easily treated by many of them as a scientific inquiry. Consequently, it was considered within the realm of science and expressed in a typical scientific language in their narratives about the Divine.

imposed doctrine, had been widely disseminated among further Soviet generations and perpetuated some features typical for the turn of the 20th century mystical sensitivity under the guise of science. After the collapse of the Soviet Union, this imaginary, especially receptive to science, underwent accelerated and open sacralization.

This study proceeded from the comparability but dissimilarity of these environments, which included: dominant religions, duration of the countries' exposure to the Soviet regime, family religiosity and generational differentiation of the three cohorts. As we have seen, despite all these differences, my informants showed a surprising similarity in their religious imaginary. Most of them rejected the traditional Catholic, Orthodox or Greek-Catholic imaginary and, instead, created the *alternative* ones, which were based on the near-scientific elements and fitted into several patterns, perceived as „less naive" and more subjectively satisfying. Not only science helped in creating this more satisfying interpretation of religion, but also religious or esoteric elements which were involved in interpretation – re-enchanting – of science.

Moreover, Ukrainian and Lithuanian patterns differed from those observed by me (Rogińska 2021) in the Polish group, where they most likely originated from the Catholic imaginary[4]. This made Catholic Lithuania much closer to Orthodox Ukraine than to Catholic Poland, and supported attributing this imaginary rather to some (post)Soviet cultural legacy than to religion. In other publications I have considered how the anti-religious totalitarian policy and the normative situation imposed by the Soviet regime contributed to my informants' choice of science for the bases of their religious imaginary (Rogińska 2023a), and how their imaginary became an object of a discursive struggle between various social actors in the (post)Soviet societies (Rogińska 2023b). In this article I explored some of the Soviet and post-Soviet cultural influences as a base for these shared imaginary patterns. Such cultural elements seemed to have created a special imaginative amalgamation common to the two countries.

[4] The main feature of the imaginary in the Polish group was ontological dualism. Unlike Ukrainians and Lithuanians, who leaned towards monistic images, Poles contrasted matter and spirit, the material world, and the transcendental God, sometimes openly referring to Catholic catechism, hymns, and iconography. Although Polish society does contain syncretic, esoteric, and generally heterodox ideas about the Divine, it turned out to be less typical for the scientists. In addition to the normative structure of the Polish scientific field (see footnote 3), this can be explained by the generational characteristics of the group. My Polish informants were mostly older and middle-aged professors, socialized in traditional Catholicism. These factors, along with their largely intelligentsia background, may have contributed to their general reluctance towards heterodoxy, both in science and religion. These trends may differ in younger Poles, who are now facing rapid religious changes in the country. The Polish case adds another dimension to the debate about social factors that may influence the formation of sensibility and imagination in different contexts.

They were easily woven into the science-based imaginary at the intersection with religion.

The factor that created the most general preconditions for the *alternative* imaginary was the tangible interruption in religious transmission, committed by Soviet anti-religious regime, that could be observed in the interviews with the *older* and *middle-aged* scientists. The residual family Christian religiosity, even in Lithuania, was not sufficient to maintain my informants' link to their Churches. It was on this ground that the powerful Soviet cultural influence fell. The sources of this influence, mentioned by the informants, included: philosophical concepts, both Soviet and Western, courses of scientific atheism and dialectical materialism, popular films and literature, as well as some technological innovations. These non-religious, and often directly anti-religious sources, provided socially shared imaginative templates that proved to be easily adjustable for the religious use. We also encountered directly near-religious – esoteric – sources, that satisfied essentially religious needs of the Soviet population under the guise of science, and whose legitimization was, according to Kateryna Zorya, directly related to „the Soviet policy of suppression" (Zorya 2023: 50). These sources have become a particularly important factor after the collapse of the USSR, when the „occult revival" happened, which „transcended the newly-established borders, as it was deeply rooted in the Soviet policy of creating an all-encompassing history narrative for the Soviet Union as an heir to all that was remotely scientific and proven in the past" (ibidem: 27).

While the Soviet cultural contribution to the imaginary of the *older* and *middle-aged* cohorts could have been predicted, it is intriguing that the *younger* scientists showed the very same patterns in their imaginary. This phenomenon deserves special attention, as it may point to the ongoing transmission of the element of the Soviet-born imaginary into the younger generations, and thus persisting imaginative legacy of the Soviet period.

Although the *younger* scientists grew up in independent countries – they had the opportunity of the Catholic, Orthodox or other religious socialization, including religious classes in school, and often went through a period of childhood Christian religiosity – they still did not absorb the traditional Christian imaginary. Very few of them have preserved at least some Christian identity. This weak connection with the Christian Churches and their traditions corresponds to the tendencies in the general populations of Lithuania and Ukraine. Even in Lithuania, with its strong, dominant Catholic Church supported by the state, sociologists observe the „low importance of religion, engagement in its practices, and low level of knowledge about religion within Lithuanian society, despite the fact that the majority of the population consider themselves to be Roman Catholics" (Ališauskienė 2021: 24). This is true already for the last born in the USSR generation of Lithuanians, formed in a period of general enthusiasm

for the religious liberalization after the collapse of the USSR, but also sharing this anti-clerical, anti-institutional attitude (ibidem). The high percentage of Ukrainians (64–65% over the course of two decades: 2000–2020) who believe that "a person can simply be a believer and not practice any particular religion" expressed a similar anti-institutional, significantly privatized religiosity in Ukraine at the time of the interviews (Центр Разумкова 2020).

This all elucidates the situation in which the *younger* scientists grew up. Often brought up by parents who did not insist on their Church religiosity and themselves practiced a privatized version of faith, they participated in the „generational religious decline" (Crockett, Voas 2006), all the more significant because it came in a post-atheistic society after a rapid, but short religious explosion of the 1990s. Such a fuzzy association with the traditional Churches must have increased the sensitivity of the *younger* scientist to the *alternative* religiosity and in particular, to the imaginative patterns, *alternative* to the traditional Christianity, already present in the cultural space of post-Soviet Lithuania and Ukraine.

At the same time, other, non-Soviet cultural elements were also found in *younger* scientists' imaginary. These included ideological currents and popular culture spread in the two countries in recent years (e.g. Lithuanian neo-paganism or elements of modern pop culture), as well as currents which drew from the global cultural space rather than only the national one (e.g. ecological consciousness, mindfulness, oriental teachings and practices). Interestingly, these non-Soviet cultural influences also easily fit into the already existing patterns of religious *imaginary* constituted in Soviet times, which could indicate their formative influence preserved for at least several (post)Soviet generations. These strong, typical for both countries, imaginative amalgams were inclusive and kept taking in the new imaginative material of already independent Ukraine and Lithuania. It should be especially noted that all these amalgams easily combined science and religion, instead of excluding either of them.

In the most general terms, my findings support those approaches in sociology of religion that abandon the simplistic narrative of its conflict with science but, instead, advocate the „complexity" of science and religion relationship, as well as the diversity of the science-influenced (de)secularisation paths. Indeed, as the case of Lithuanian and Ukrainian scientist showed, the processes of religious change at the intersection with science involved a lot of locally attributed factors, including culture and imaginary, mediated by it.

In this study, the religious changes observed in my informants were associated with different *initial alternative states*. Some respondents were raised in unbelief but developed a kind of religious imagination, while others lost their Christian imagination and instead acquired an alternative one. Depending on the terminology adopted, these changes could be interpreted as a loss of religiosity

or its acquisition. What we know for sure is what these changes were not. They were not a loss of religiosity under the influence of science, and therefore this widespread stereotype is not applicable to majority of Lithuanian and Ukrainian scientists.

My analysis, however, reveals even more. Regardless of the external forms and directions of religious change, something else was happening beneath the surface – a culturally conditioned metamorphosis in sensibility and imagination. What appeared and could be interpreted by sociologists as "secularization", "religious privatization", or even a return of some forms of the sacred had, in fact, a hidden dimension with its own dynamics. Religious change occurring at this deep, hidden level still awaits its theoretical reflection and empirical investigation before we can integrate it with secularization theory.

As Rodney Stark noted in 1999, the crisis of this theory and attempts to overcome it resulted in shifting the debate from the micro to the mezo and macro levels – a shift he considered historically "insincere", as it ignored the real interest of theorists in the "decline in the religiousness of the individual"(1999: 252–253). Stark's observation well defines the development of empirical research on secularization since then: we still know little, and even less conceptualize the micro-mechanisms of individual religious change, especially those at the intersection of science and religion. This research reveals a significant but under-investigated expression of religiosity at the micro-level, with its unique qualities, less visible through the lenses of traditional analysis. It proves that introducing the concept of the imaginary to the secularization debate may help capture modern religious change, as well as the integration of science and religion integration, in a more accurate, nuanced, and culturally sensitive way.

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