UNPERCEIVED CIVIL RELIGION IN SCIENCE

Enn Kasak
University of Tartu
Institute of Public Law
Kaarli pst 3, 10119 Tallinn, Estonia
E-mail: enn.kasak@ut.ee

The concept of civil religion, as used in social philosophy, can also be applied in the study of science in a slightly different way, as we can find unperceived religious attitudes in trusting beliefs and feelings of sanctity among scientists. Such reactions evoke the use of questionable argumentation in the struggle against pseudo-sciences, spawning contextual demagogy in scientific propaganda. Recognising civil religion in science enables us to distinguish disciplines in which religiosity is a misleading phenomenon (e.g. physics) from others that are based on religious convictions (e.g. astrology). Religiosity in science can be analysed via multidimensional scales of religiosity. Using pragmatist ideology, scientists could retain their devotion to cognizing reality without deviating into civil religion.

Keywords: *beliefs, dimensions of religiosity, civil religion, philosophy of science, religiosity in science.*

Sometimes it can be observed amongst scientists that unscientific elements in the minds of scientists are not restricted to certain emotional stances. They can refer to strong convictions that can basically be unperceived, yet contextually quite influential. It is possible that there are beliefs in science resembling religious tenets. We will try to find and analyze these.

In the first section of the current paper, the issue of possible religiosity in science will be presented. The problems of defining science and the dialogue between science and religion will be touched upon. In the second section, various definitions of religion will be dwelt upon, bringing to attention the fact that religion is usually associated with the belief in God or gods and that the concept of religion is not used much outside religious institutions or movements. Still, there can be religion outside institutions that consider themselves as religious. In this context, the concept of *civil religion* – as used mostly in social philosophy – and the concept of *religiosity* deserve our special interest.

In the third section, we will try to analyze religiosity in science. Sometimes it might be sensible to use the phrase *religiosity in science* to denote the phenomena that interest us. To analyse that, we will use the ideas of Glock and Stark (1965) on religiosity in a five-dimensional scale. We will attempt to use the general term *civil religion in science* to name religious phenomena that occur in science, often present in an unperceived form.

In the fourth section, we will aim to demonstrate the necessity of perceiving the presence of civil religion in science. It can

be important not only to refine the concept of science itself in order to understand pseudo-sciences or their lasting popularity. Finally, we will attempt to show how the recognition of civil religion in science might help us impede the proliferation of pseudo-sciences.

1. On the personal background of the question under consideration

While I was working as a scientist in the field of astrophysics, I believed that physics was the most precise way of describing the objectively existing reality – in fact, the best way currently available. I believed that a physicist's work brings forth the truth, and I held the correspondence theory lying beneath this treatment of truth to be as evident as reality itself. By its nature, such a science is basically atheological, so it seemed to me that a normal scientist must be an atheist although due to human imperfection, some weirdoes might also be religious. It is not hard to see that many scientists and researchers of the history of science are thinking the same way I used to think.

Having met pseudoscientific argumentation primarily in astrology and ufology, it originally seemed to me that pseudoscience differs from science by the much bigger importance of the belief factor. Quite often, pseudo-sciences reveal something that could be considered as faith. Yet during the polemics I noticed the great importance of faith in scientific knowledge too, as I sensed possible alternative interpretations of some basic concepts physicists tend to use, e.g. truth, reality, objectivity, actuality, etc. In that light, belief in the physical worldview as the most objective description of reality seems to be not only naive but also fanatical, and using the word „faith" like in the previous sentence starts to look more suitable.

Like a great number of physicists, I used to think that physicists are better philosophers than philosophers themselves – at least as long as we are talking about the actual world, not some vague philosophical problems. Science seemed able to get by without philosophy, yet the opposite seemed untrue. Such a naturalistic philosophy of science is based on the conviction that by the end of the day, everything can be explained by natural science as natural phenomena (Wolpert et al. 2006). A direct contact with philosophers strengthened my puzzlement because they were ready to doubt the existence of the world and myself. It seemed to me as a physicist that it should be possible to refute such „exaggerations" by *reductio ad absurdum*.

There are philosophers who have chosen the same way, and according to Chalmers it seems that hence Feyerabend has also developed his theory of anarchistic science (Chalmers 1999: 150ff.). As a premise, I took the weirdest point of view: I presumed that there is no space, no time, no matter, no souls, nor myself. What surprised me was that no unavoidable logical contradictions emerged in the discussion. Suddenly the old Buddhist texts I had read years ago contained a lot more wisdom. Shantideva defends in *Bodhicaryavatara* the same type of philosophical position (VIII–IX). Certainly we could proceed from some less extreme philosopher – after all, even Descartes reached the conclusion that he had no doubt about the existence of his

thinking substance (1996: 18). But the conviction in the existence of thinking is also subject to doubt, as Shantideva wrote: „Just as a sword cannot cut itself, so it is with the mind." (IX 18).

However, if I talk about people's great knowledge or how man landed on the Moon, it feels as if each listener had been on the Moon personally.[1] Yet, human stupidity is a far less popular topic. Well, a large number of scientists are ready to admit that they do not know much. But it is certain that one admits to being stupid rather in a context which demonstrates the speaker's highly valued knowledge.

For a former physicist it is very difficult to maintain a dispassionate attitude, at least in the beginning. When doubting realism, it seems extremely reasonable to stick to constructive empiricism, which states that a theory must be empirically adequate, but we do not have to believe that it is true (van Fraassen 1980: 12). Fortunately, then it is unnecessary to believe in constructive empiricism and we may wish to make other choices, e.g. choose a pragmatist position.

The above introduction illustrates the case of a scientist, who, having started to doubt in her faith, may start reconsidering several points of view she held to be self-evident. Here we are focusing on one: are science and religion contradictory concepts?

The concept of science is widely used nowadays and understanding it seems to pose far less problems than defining the same notion[2]. Yet here it would be nice to provide at least some kind of a definition. Presuming that the notion of 'science' is actually familiar to the reader, I would provide an institutional definition: science comprises the number of activities, the financing of which is called financing science in developed countries (cf., e.g., Frascati Manual 2002). This definition does not exclude from science similar or same types of activities, which take place in other places and which may also be subsidized from different sources. However, an attempt to formulate this might make our definition too extended. The notion of 'religion' is also considered well-known, although we can not avoid discussing this problem in length in the following section.

The problems of science and religion are quite a hot topic these days. Good examples are provided by the conferences of the European Society for the Study of Science and Theology, held since 1986 (see www.esssat.org). The society publishes conference proceedings and collections of articles on a regular basis.

In the dialogue between science and religion, a strong asymmetry reveals itself: Religion has to be „modernised" and synchronised with science, yet science may accept the existence of religion and recognise some of its value, but religion has nothing useful to add to science. Still, this may not be quite so true.

While we talk about the religiosity in science, I would like to mention that

[1] As we can see, the medieval understanding of Man as universal still exists nowadays. This question has been expanded by Gregersen (2000: 8–10). If man as such knows something, then in some sense I also know it.

[2] From the long list of possible names I would point out e.g. Chalmers (1999), Niiniluoto (1999), Maxwell (2010), van Fraassen (1980), etc.

scientists accept the use of such notions while criticising pseudo-sciences, yet do not take it kindly in the context of „true" science. By a widespread opinion, notions "science" and "religion" have no common references. Yet although science and religion are defined on different bases it does not mean their extensions could not have an intersection.

2. On the concepts of religion and civil religion

Many proponents of science are hostile to religion, e.g. Dawkins (2006), and it would be arbitrary to use the concept of religiosity in science. However, the habitual idea of religion is based on widespread notions like this: *a religion is a system of beliefs, norms, customs and institutions that centre on divine, holy or supernatural forces and basic values that arrange the relations between a human being and the Universe*. Such a definition can be easily combined from everyday sources, e.g. online encyclopaedias. It seems that such definitions of religion cannot usually bypass gods or other supernatural forces that by scientists' account have no place in science, or at least should not have one.

However, religiosity can be considered to be wider than a mere belief in one or several gods. According to Atran, religion is "(1) a community's costly and hard-to-fake commitment (2) to a counterfactual and counterintuitive world of supernatural agents (3) who master people's existential anxieties, such as death and deception" (Atran 2002: 4). Other authors, including Barbour (1990), have stressed the need for a wider concept of religion.

Yet we can get by without anything supernatural at all. According to Geertz (1993: 90), "… a religion is: (1) a system of symbols which acts to (2) establish powerful, pervasive, and long-lasting moods and motivations in men by (3) formulating conceptions of a general order of existence and (4) clothing these conceptions with such an aura of factuality that (5) the moods and motivations seem uniquely realistic." Geertz's definition is general enough to include phenomena that are similar to the religious yet are not connected to religious institutions nor the supernatural.

One of the first authors writing about religion outside religious institutions was Rousseau using the concept of civil religion in his treatise "Du contrat social" of 1762 (2008: 92–108), while describing the spiritual and mental values of society. In Rousseau's opinion, there are universal religious beliefs that a government could support, e.g. belief in a deity. In 1967 that concept was reanimated by the American sociologist Bellah, who used it to analyse and criticise American society (cf. e.g. Bellah 1975).

Discussions about civil religion usually focus on the question whether certain procedures can be considered to be religious, e.g. the oaths of allegiance or the inauguration ceremonies as a whole. (Hughes 2004) Also, the usual problems include monuments of national importance connected to the mythology-like stories about important statesmen or the special state of a nation, so-called romantic nationalism (Jewett and Lawrence 2004: 328).

In the case of civil religion we can raise the question if we are dealing with „real"

religion or just something religion-like that would be properly called a para- or quasi-religion. Certain pseudo-scientific or esoteric belief systems have been labelled in the same way (cf. e.g. Greil and Robbins 1994). As such, parareligious phenomena involve expressions of ultimate concern but no supernatural beliefs. That is the reason why practices like psychotherapy and ritualistic consumerism make no claims to be religions. On the opposite, quasi-religions like occultism, New Age, and Scientology do make supernatural claims, yet these are anomalous in the context of folk category of "religion". The first author to use the term *the invisible religion* was Luckmann (1963). This particular concept involves the notion that although religion remains an important feature of modern society, it is not restricted to mere church-going. Its main function is the creation of meaning that is adopted as objective by culture, thus transcending people's immediate experience.

Such disputes can be discarded, because the necessity to differentiate between religion and quasi-religion is more important for theologians or social scientists. For a scientist who aims at atheism, there should be no difference whether a person believes in Christ or spiritual beings. It seems to me that the necessity for such a differentiation is somehow religious by its nature and when analyzing science there is no need for it because of the relative similarity of the attitudes. Different religions love to describe others as wrong (or as we say: quasi-) religions. We might say that religions may be very different but religiosity is far less diverse. Therefore, for the sake of brevity, we would better speak about religiosity outside religious institutions.

But now we meet another question: what is religiosity? Examining the definitions in several dictionaries it is easy to notice that religiosity means being religious (Oxford Dictionary of Current English) and in ordinary English it is mainly connected with terms describing the strength of faith, e.g. faith, belief, piety, devotion, and holiness. Experts use the term 'religiosity' depending on their specialty. A theologian would define 'religiosity' by faith (Ratzinger 2000), a psychologist might use such vocabulary as devotion and piety, while a sociologist would mention church membership, church attendance, and doctrinal knowledge. Glock and Stark (1965: 20–21) described five dimensions of religiosity, discussed below. Different dimensions can have little interdependence. For instance, one might believe in the core doctrines of a certain religion, yet not attend church.

Glock and Stark give a new definition of religion: "religion, or what societies hold to be sacred, comprises an institutionalized system of symbols, beliefs, values, and practices focused on questions of ultimate meaning" (1965: 4). The number of dimensions of religiosity has been increased later and this question has been studied in depth (cf. e.g. De Jong et al. 1976: 867).

Experience shows that when talking about religiosity outside religious institutions, especially in the context of science, the audience is often unable to perceive that the discourse is not connected to a specific religion or even a theory of religion. It seems to me that the usage of the term 'civil religion' is justified here, because it diverts the audience's attention from the typical science-religion, atheism-theism dispute templates.

We can also find civil religion in science, in the same sense as in social philosophy – assessments based upon absolute values that are necessary for the survival of scientists as a social group – e.g. falsification of data is not just a regrettable fact but an unconditional and absolute sin. But there are other interesting religious phenomena in science. I am interested in beliefs that are present in the entirely atheistic and materialist science, but in their core resemble religious tenets. When speaking about science, it seems to me more fit to proceed from pragmatism and not from speculative generalisations as e.g. spirit or matter.

The possibility of intersection of science and religion can be substantiated on pragmatist grounds, as expressed by William James: "Grant an idea or belief to be true, what concrete difference will its being true make in anyone's actual life? How will the truth be realized? What experiences will be different from those which would obtain if the belief were false?" (James 1907: 142)

It is not without a risk to take some principles at their face value. Indeed, it seems to me that perceiving some circumstances would offer "true" sciences experience and possibilities to notice contextual fallacies, and they reveal the inner anti-scientific nature of popular pseudo-sciences. Given different basic tenets, it is difficult to understand one another. The oft-exploited semantic triangle by Ogden and Richards (1923: 11) is too simple and does not highlight that thinking is individual but terms are intersubjective. Actually, we have to consider that both you and I each have our own personal triangle. A better description of the situation is Johansen's pyramid of semiosis, as modified by Deely (2009: 106–107).

Although there exists an individual term in each subject's mind as the object of thinking, the social practice, being named language-game by Wittgenstein, is possible if intersubjective signs (words) and conventional intersubjective interpretants exist. E.g., one who loves cats and one who is allergic to cats agree that by saying *cat* they mean a small furry feline predator. Now both can compose mutually comprehensible propositions.

An analogy can be drawn in the connection *reality – statement – proposition*, where proposition appears in a similar role as the intersubjective statement compared to the interpretant. In order to make right decisions and live in a right way it is not indispensable to connect the truthfulness of proposition with reality.

A proposition can be considered to be true if it is in accordance with intersubjective experience and the text that expresses it (stipulable signs) keeps to the rules of actual language-game. The proposition "John is an ape" might be contextually true even if John is actually human. Recognizing such circumstances helps perceive that it is possible to use similar linguistic phrases and yet not understand each other. This happens quite often in discussions on the religiosity of science. On the pragmatist basis and based on the definitions of science and religion in sections 1–2 we can attempt to define the types of beliefs we are interested in.

A belief can be considered to be knowledge, if it is in accordance with intersubjective experience and keeps to the rules and context of the actual language-game.

A belief can be considered scientific if it is in accordance with intersubjective experience and keeps to the rules and context of the language-game of the actual discipline.

A belief can be considered religious if it corresponds to Geertz's definition (see above).

As the concepts of scientific belief and religious belief are described by different characteristics, there is no rational justification to believe these concepts should be mutually exclusive.

However, if these are overlapping concepts, it would be reasonable to ask questions about their common extension.

3. *Religiosity* in science and *civil religion* in science

While discussing *religiosity in science*, people usually tend to think that this notion usually refers to:

- scientists who are followers of some religion (so-called believers);
- novel forms of religions, e.g. Scientology or creationism;
- anarchistic view of science (as often attributed to Feyerabend) that may consider science to be a form of religion.

I do not use this term in any of these meanings. As it was mentioned in section 2, I am interested in beliefs that could be considered to represent religiosity in science: traits that are immanent in modern, basically atheistic and materialist science, yet still resemble religious tenets. Studying religiosity in science, we attempt to apply the dimensions of religiosity (as described by Glock and Stark) to science, looking for appropriate examples for each and every dimension.

(1) The experiential dimension. This includes personal religious experience: feeling of sanctity, feeling of belonging and sense of truth. Revelation of solutions via knowing "how things really are" – revelation-like events similar to *religious experience* are well-known in science. Scientific creativity today is not much more scientific than at the time of Plato. Again and again people say: "I saw the connection here absolutely unexpectedly…" or "I dreamt about a sudden solution…" as it was described by Kekulé, the discoverer of the benzene formula. In the practice of science there appears to be an odd and contradictory combination of the materialistic worldview and an almost mystical creative force, the source of the latter being unclear for a scientist and suspiciously similar to divine revelation of truth. History shows that the supports of science as well as those of real religion are proven to be quite contentious or even refutable, if there appears to be an intersubjective context in which such refutations are considered to be proven.

In science, *sanctity* can be noticed in at least two different ways. First of all, when somebody expresses doubt in a steadfast conviction, it elicits emotional stress and reaction far beyond the ordinary reactions on an everyday blunder or even a personal attack. This is a phenomenon through which the scientist's *sense of truth* is revealed: the scientist has a feeling that she knows some things are real. This feeling combines further with the *feeling of belonging*: no scientist is an island; she is part of the

everlasting scientific progress that brings us the truth. Secondly, the existence of sanctity in science can be seen in the creation of martyrs of science like Galilei, as the study of his trial is sometimes outright inhibited (Koestler 1986) or saints of science like Einstein, proclaimed inhumanly wise, although other geniuses like Gödel are condemned to be human after all.

(2) The ritualistic dimension. This includes the worship experience that is involved in community, rituals of procedures. This aspect is perhaps the least represented in science. An example might be provided by referring to the rituals of defending a scientific degree or awarding one, but these are usually not taken too seriously. Perhaps something might be found when analysing the activities in connection with conferring or handing over respectable science awards. Maybe rituals followed in the laboratories serve for a better example: no one grounds them rationally, but elders teach the young to observe these rituals.

(3) The ideological dimension. This includes adherence to the principal beliefs of the doctrines, steadfast believing. In science steadfast conviction appears in the validity of certain principles and trusting belief in the existence or lack of certain entities. There are many examples in the history of science, as scientists have irrevocably believed things that might look quite freakish to us, yet were necessary in the context of science in those days. Some scientific stupidities may remain influential for millennia, such as the epicycles theory, supposedly authored by Apollonius (Pannekoek 1961: 133–144). But why should a planet move around an empty point in space? Now we know that it is not true and one can only wonder why such a stupidity was believed for so long as it was scientific knowledge. Steadfast conviction in principles is revealed during scientific revolutions. Old paradigms usually die only with their proponents. Popper's idea of a functional falsification is disproved by the actual history of science.

Sometimes, clinging to the principles has justified itself, e.g. when Neptune was found through the disruptions in the movement of Uranus. Sometimes it has not, e.g. when the drift of Mercury's perihelion was explained via a complementary planet. Scientific revolutions are somewhat similar to religious reforms as certain propositions and interpretations are allowed only after the reform (Kuhn 1962).

(4) The intellectual dimension. This includes religious knowledge about the basic tenets of a person's faith and sacred texts, i.e. history, sacraments, morality. Belief in perfect laws of nature also seems to have its origin in theology. Historically, that connection was not easily noticed since the success of science seemed to depend on its departure from theology. The Copernican principle of simplicity, considered by its author to be a proof of the existence of God, seemed to lead science towards atheism (Jaki 2005: 46). In the wake of Laplace, God was dismissed as an unnecessary and complicated hypothesis. It was not easy to see, however, that godless natural science had lost its foundation. In godless science, many things which are intelligible for a theologian, for example the origin of mathematics and logic, or of the intellectual faculty, become incomprehensible. One possibility is to

become a materialist[3] and to proclaim that the Universe is fundamentally simple. Such a vision provides human beings with a belief in their cognitive omnipotence and makes materialism emotionally attractive (Uus 1994: 483). The materialist worldview has become so self-evident that everybody has to adapt to it. Yet how could Newton claim that absolute space is infinite and eternal? How much of that infinite Universe did he traverse and for how long of that eternity did he live? Newton's claim is not scientific, it is the claim of a deeply religious man who believes firmly in the existence of absolute truth and the possibility of perceiving it.

(5) The consequential dimension. This describes the effect of religion on the life of the individual. According to Glock and Stark, the two final dimensions are closely connected (1965: 20–21). Engaging in science demands commitment and leading the life of a scientist. To justify the ethics of science, religious argumentation is sometimes used, because in a purely materialistic way people just can not see the harm due to e.g. faking data, which enables one to earn a lot of money and fame and then, using these resources, make a great discovery. Discarding the truth causes problems in science, especially in the field of ethics in science. If science is not a search for truth, then nowadays it is perhaps a kind of business. In this case the best science is the one which ensures the biggest profit. E.g. I can produce a drug that has no effect at all, earn a lot of money with it and then use the money for working out an efficient drug that I could not have produced without the money. At the same time, science is often attributed the role of saviour and redeemer. Midgley (1992) has written more thoroughly about it. Another example: it is alleged that the solution to the problem of nuclear fusion may lead to an unprecedented prosperity of the mankind. And it is often forgotten that electrification or antibiotics were once expected to solve all problems.

Some doubt has been cast on the existence of dimensions of religiosity (e.g. Clayton and Gladden 1974). It seems to me such a dispute is a good example of religiosity in science: dimensions are contested as existing objects, while they are actually rather tools of analysis. Usually, analysis comprises mental division of complex objects, scrutinizing their aspects separately and drawing general conclusions. I do not asseverate the dimensions of religiosity to exist as objects on their own accord; they are tools that help us to comprehend this complex phenomenon. Discussion about the true form of their existence could be considered prudent rather in a religious, not scientific context.

It seems that almost all forms of religiosity are to a greater or lesser extent evident in science, being denoted by the phrase "religiosity in science". Emphasising that we are not considering the forms of institutional religiosity, it is less misleading to *speak about civil religion in science* and more misleading interpretations may appear if using the expression *religion in science*.

Yet currently, civil religion dwells unperceived in science. In my opinion, scientists need to perceive such beliefs and religiosity in science.

[3] In this paper, the concept of *materialism* is taken in a broad sense: by materialism I mean any view according to which material entities exist. This usage of the term can be found e.g. in Berkeley (1998 §19).

4. Civil religion in science and pseudo-sciences

Most of the questions posed to scientists by the public force the respondent to leave the framework of the specialty-related facts. It looks like scientists are under social pressure to accept the image of philosopher. Therefore it happens that a scientist presents in the name of a scientist (as it appears to the audience) the viewpoints of metaphysics based on the scientist's personal picture of the world, but are not philosophically deeper compared to that of the audience. In case a true scientist feels embarrassed, the public's expectations might be better satisfied by a professional propagandist for science who is not embarrassed to lie a little bit, i.e. not to tell the whole truth for the sake of truth. This occurs, often inadvertently, when scientists pretend to be philosophers and propagandists take the role of the scientists. For various reasons the same methods are used in school education, where it is, for pedagogical reasons, very important to convey convictions. Such activities are often based on religious feelings of the truth. Unperceived civil religion supports demagogy in scientific propaganda that a malicious opponent could call lying in the name of truth. For example, it has often been said that science has proven the non-existence of God, because creating the world *ex nihilo* is contradictory to the scientifically proven law of the conservation of energy. It seems true, until a physicist stops believing in the possibility to prove the non-existence of God by using the law of conservation of energy and then she is able to detect the demagogy of the evidence, because according Noether's theorem it is possible to create the world *ex nihilo* if it is created together with time – as it seems to have been considered already by Augustine in *Confessiones* (ch. XI).

However, the same methods can be quite effectively used in pseudo-sciences and religious counterpropaganda. For instance, both Ross (2001) and Strobel (2007) use the style of popular science, saying that with a little effort, it is possible to use God in the context of modern cosmological models as the best hypothesis to explain the birth of Universe.

The same situation can be noticed in the struggle against pseudo-science: it cannot be victorious lest the proponents of science understand that pseudo-science frequently gains power from lies told in the name of truth – as it is unfortunately often done in both education and the media. In my opinion, while considering civil religion it is useful to keep in mind both social and scientific aspects. The fight against pseudo-science would be much more successful if we perceived the hidden religiosity in science, and if the apologists of science kept science apart from the ideology that paradoxically claims there is no ideology in science, but only "maximally objective reflection of reality".

As a round-up, I want to point out that we can notice tendencies in the history of science that prove us that religion is a natural phenomenon for human beings. As well, it is revealed in the attempts to distance oneself from religion.

We mentioned that science has learnt a lot from theology. But it is pure exaggeration to assume that the relationship could nowadays only be asymmetrical. Indeed, scientists may still learn important things from

theologians. For instance, they may learn how to use the concepts of sin or humility. Perhaps they should regret their stupidity and confess. Maybe we may still find some way of cognition that will enable us to know reality itself (Kasak 2010: 235). It might be useful to *believe* as little as possible before we try to *understand*.

The recognition of civil religion enables us to distinguish disciplines in which religiosity is a rather misleading phenomenon that has to be transcended (as in physics) from the others (as in astrology) that are built on religious convictions and claims to truth; this opens some possibilities to defend science from pseudo-sciences. When scientists are boasting about their knowledge, common people usually do not tell them apart from pseudo-scientists who may appear even more savant. However, recognizing its imperfection and disclosing the role of belief, science still plays an effective and successful role. Pseudo-sciences, however, have a highly dubious empirical basis, or rather they apply logically faulty theoretical constructions and propose hypotheses unlikely to be proven true. Thus these "sciences" have practically no concrete achievements.

I think one should not be afraid of recognizing that a scientist must want to acquire true knowledge about the reality and herself. This wish seems to be as desperate as Wittgenstein's desire to go to the other side of language (Wittgenstein 1965: 11–12), as it is highly probable that it is simply wrong to wish so, but it conforms with the scientist's human dignity and in a longer perspective it may prove to be practically successful.

It seems that amongst the scientific community the notion of *religiosity in science* is met with a rather negative attitude and the reasons for this might be religious. The limits of this article will not allow us to demonstrate more evidence or give further explanations. However, appropriate examples are available in treatises already published. For instance, a book by R. A. Clouser (2005) concentrates on the hidden role of religious belief in theories. Unlike many other authors, the author of this article has remained an unbeliever but seeks religiosity in science in the interests of the future of science itself. In addition to metaphysics, scientific research is necessary. This will be possible by means of sociology using the existing methods and multidimensional models of religiosity (see Hill and Hoods 1999), textological studies or biometrically using methods of functional tomography, e.g., PET and fMRI[4] (see Newberg, Lee 2005).

Conclusion

The purpose of the present paper was to demonstrate the following claims. (1) There are beliefs in science that resemble religious tenets. (2) We may refer to those by the notions *religiosity in science* or *civil religion in science*. We analysed the former using five-dimensional scale of religiosity suggested by Glock and Stark (1965). (3) Scientists should perceive their beliefs; a choice to recognise or deny one's beliefs is important for the scientific research and for the scientist as an ethical being with her own sense of truth.

[4] PET – *Positron Emission Tomography*; fMRI – *functional Magnetic Resonance Imaging*.

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NEPASTEBĖTA PASAULIETINĖ RELIGIJA MOKSLE

Enn Kasak

S a n t r a u k a

Pasaulietinės religijos sąvoka, vartojama socialinėje filosofijoje, taip pat gali būti šiek tiek kitaip pritaikyta ir mokslo analizei, nes tarp mokslininkų galime aptikti nepastebėtų religinių nuostatų, kaip antai pasitikėjimo nuomone ar šventumo pajauta. Tokios nuostatos žadina abejotinos argumentacijos vartojimą kovojant prieš pseudomokslus, skatina kontekstinę demagogiją mokslinėje propagandoje. Pasaulietinės religijos moksle pripažinimas leistų atskirti disciplinas, kuriose religiškumas yra klaidinantis reiškinys (pvz., fizika), nuo tų, kurios yra pagrįstos religiniais įsitikinimais (pvz., astrologija). Religiškumą moksle galima tyrinėti pasitelkiant daugiamates religiškumo skales. Remdamiesi pragmatizmo ideologija, mokslininkai galėtų išsaugoti savo ištikimybę tikrovės pažinimui, išvengdami nukrypimo į pasaulietinę religiją.

Pagrindiniai žodžiai: įsitikinimai, religiškumo matmenys, civilinė religija, mokslo filosofija, religiškumas moksle.

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