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BELIEF AND UNBELIEF IN GOD  
AMONG POLISH SCHOLARS  
AND THEIR VIEWS ON THE RELATIONSHIP  
BETWEEN SCIENCE AND RELIGION

The paper presents selected results of a study on the religious views of 279 Polish scholars with a doctoral or higher degree. The percentage of scholars who declared belief in God was 56.3%. The four groups with the highest indices were chemists (80%), geographers and Earth scientists (76.2%), mathematicians and information technology specialists (73.1%), and medical scientists (64.5%). A small proportion of respondents (6.5%) chose the following option: "I don't believe in a personal God but I believe in a higher power of some kind." The percentages of atheists and agnostics were 18.3% and 7.2%, respectively. The subjects' views on the relationship between science and religion were categorized according to the Barbour's typology (Barbour, 1990). The largest proportion of the subjects (41.9%) denied the inevitability of conflict between science and religion; 13% held the opposite view. Some scholars (19.6%) expressed the view that science and religion should be treated as independent areas of inquiry. The relationship of dialog seemed to be the best form of their coexistence to 2% respondents, while 3.6% were in favor of the cooperation of science and religion in building a comprehensive worldview.

**Keywords:** Polish scholars; worldview; belief in God; science–religion relationship.

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## INTRODUCTION

The most comprehensive scientific study of Polish scholars' worldview has been the one carried out by Libiszowska-Żótkowska (2000). She sent a postal survey to 960 professors and received 447 responses (approximately 47%). Almost two-thirds of the respondents (64%) said they believed in God, while 25.3% described their faith as deep. The percentage of nonbelievers was 19.7%. The researcher distinguished two groups of nonbelievers: identifying themselves as people attached to the Church (13.7%) and those who denied such self-identification (6%). The less numerous groups turned out to be the "undecided" (3.1%), the "indifferent" (5.6%), and "deists" (7.6%). The largest numbers of believers were found among professors working in the fields of agricultural (85.7%) and medical sciences (70.7%). Other areas in which more than two-thirds of the respondents identified themselves as believers were technical sciences (67.8%) and mathematics (66.7%). Believers constituted a majority also in further three groups of professors: arts (60%), humanities (58.5%), and natural sciences (56.8%). The smallest percentage of believers (50%) was found among economists.

The author of the study states that "scholars are commonly held to be irreligious" (Libiszowska-Żótkowska, 2000, p. 139). She also quotes similar words of French historian of religion Jean Delumeau (p. 321). Perhaps this is why she included the following two questions in her survey: "Does religion restrict human cognitive activity?" and "Is it true that a good scientist can only be an atheist?". The former question was answered negatively by 68.9% of respondents, and the latter by 86.1%<sup>1</sup> (p. 138).

One of the issues that are often seen as examples of contradiction between the religious and scientific worldviews is the origin of life on Earth. The respondents could choose between six statements: (a) "Man was created by God"; (b) "God is the creator of organic life, out of which man emerged through evolution"; (c) "Organic life and man developed in accordance with the laws of nature, without the intervention of the supernatural"; (d) "Man came to Earth from space"; (e) "I cannot answer"; (f) "I have a different opinion." The largest proportion of respondents (31.8%)<sup>2</sup> were in favor of the view combining the theory of evolution with faith in God's creative action (b). Almost as many respondents

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<sup>1</sup> There is no precise information about the distribution of answers except that believers and unbelievers answered these questions in a similar manner.

<sup>2</sup> The figures represent the results of my own calculations based on information from Table 45 (Libiszowska-Żótkowska, 2000, p. 135).

(30.4%) chose the atheistic point of view (c). The percentage of those who attributed the origin of life to the sole intervention of God (a) was 22.4%. Roughly one in ten respondents (11%) felt that she or he was not able to answer.

In the Polish psychological and sociological literature there are no other studies exploring how scientists see the relationship between science and religious faith.<sup>3</sup> Such studies have been conducted by American researchers. Sociologists Ecklund and Park (2009) decided to determine how many of the more than 1,600 academic scientists from 21 prestigious American universities thought that there was an irreconcilable conflict between religious knowledge and scientific knowledge. The respondents could express their views using a five-point scale. One in twenty respondents (5.4%) did not choose any of the five proposed answers. Of the rest, only slightly more than one-third (36.4%) agreed that the conflict between religion and science was irreconcilable (including 17% who agreed strongly). More than half of the respondents (57%) were of the opposite opinion (a majority of the participants in this group – 33.4% of the sample – strongly rejected the notion of irreconcilability between religion and science). A few percent (6.6%) had no opinion.

It turned out that the conviction about the irreconcilability of conflict between religion and science was not related to the type of academic discipline (social sciences vs. natural sciences). It was significantly more frequent among scholars who declared atheism, did not attend religious services, treated the Bible as a collection of fairy tales, and had been brought up in families in which little attention was paid to matters of religion.

Elaine Ecklund, who has already been mentioned, conducted 275 interviews with randomly selected scholars in order to learn more details about their attitudes toward religion, academic work, and teaching (Ecklund, Park, & Sorrell, 2011). About 15% of the interviewees believed that religion and science were always in conflict, 15% claimed that there was never a conflict between them, while 70% gave examples of situations where there was a conflict between them and situations in which there was no conflict.

In his treatise *Religion in an age of science* (Barbour, 1990), American physicist, theologian, and historian of science Ian Graeme Barbour (1923-2013)

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<sup>3</sup> Polish psychologist Władysław Witwicki (1879-1948) can be regarded as a precursor of the idea of such studies. In his book *Faith of the enlightened* (Witwicki, 1939, 1959) he addressed the issue of whether educated people are aware of the intellectual and ethical problems related to the contents of their religious beliefs. During an interview, the author presented to them the text containing allusions to situations described in the Bible (the original sin, redemption by Christ). Among the ten interviewees described by Witwicki, there was one to whom the author gave the code name “scholar.”

distinguished four types of relationship between religion and science: **conflict**, **independence**, **dialog**, and **integration**. I decided to use this typology in the analysis of data that I collected in the study discussed further in this text. One of the important aims of this study was also to establish what Polish scholars thought about God's existence. Because scholars have always had high prestige, adherents of every kind of worldview would like to proudly point to representatives of the world of science whose fundamental image of the world is similar to their own.<sup>4</sup>

The scholar who initiated scientific research on the worldview of scientists was James Henry Leuba (1867-1946). In a short questionnaire sent in 1914 to about 1,000 American scientists, he asked questions about their faith in a personal God and in the immortality of the soul. He found that the percentage of believers in God was the highest among historians (approximately 47%) and lowest among psychologists (approximately 24%).<sup>5</sup> It turned out that fewer people believed in God among scientists who were considered eminent. The repetition of the same survey in 1933 showed that the number of believers among scientists had decreased, particularly among eminent scholars (Larson & Witham 1997).

Leuba's prediction that the following years would bring a further decline in the number of believers among all scientists was not supported. After several decades, historian Edward J. Larson and journalist Larry Witham used Leuba's questionnaire again. They published their results in the journal *Nature* under the title of "Scientists are still keeping the faith" (Larson & Witham, 1997). The overall proportion of believers among American scientists in their study was 39.3% and hardly differed from the global result of the first Leuba's study (41.8%). The highest percentage of believers – approximately 45% – was found among mathematicians. In the article "Leading scientists still reject God," these authors wrote that the percentage of eminent scientists who believed in God had decreased. In 1996 it amounted to 7%, while in 1914 and 1933 it was 27.7% and 15%, respectively (Larson & Witham, 1998).

The high proportion of believers among American scientists was demonstrated in an extensive research on 60,000 professors carried out in 1969 as part of a review of issues related to higher education in the USA (Carnegie Commission National Survey of Higher Education: Faculty Study Subsample, 1969 – as cited in: Stark, Iannaccone, & Finke, 1996; Table 1). Let us compare several branches

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<sup>4</sup> This is probably the source of interest in publications in which scientists articulate their worldviews (e.g., Skinner, 1987; Dennett & Plantinga, 2010/2014).

<sup>5</sup> The data were read from histograms made by Leuba (1916, p. 278), and therefore they cannot be regarded as precise.

of science with respect to two indicators: the percentage of people describing themselves as religious and (in parentheses) the percentage of people regularly engaging in religious practices: mathematicians – 60% (47%), physicists – 55% (43%), researchers in life sciences – 55% (42%), sociologists – 49% (38%), psychologists – 33% (20%), anthropologists – 29% (15%).

In 1999, the Pew Research Center in collaboration with the American Association for the Advancement of Science (AAAS) conducted a survey of 2,533 members of the AAAS (which was 25% of those who were asked to participate). It turned out that the largest group of scientists who believed in God were chemists (Masci, 1999). Of the 348 chemists participating in the survey, 41% declared their faith in God. A significantly lower percentage of believers was found among researchers working in the fields of biology and medical sciences (32% – they were the largest group of respondents:  $N = 1,225$ ). Two other groups of scholars for which data about the percentage of believers in God are available were earth scientists (30%,  $N = 154$ ) and physicists or astronomers (29%,  $N = 229$ ).

The topic of belief and unbelief in God among American scientists had also attracted the attention of sociologists at the beginning of this century.

The already mentioned Elaine Ecklund, together with Christopher Scheitle (Ecklund & Scheitle, 2007), collected 1,646 answers of scientists responding to the questions of their survey. The researchers obtained a very high rate of participation: the percentage of respondents was 75% of those invited. Perhaps this was due to the fact that investigators attached the amount of \$ 15 to the invitation. Belief in God was declared by 25.2% of the respondents representing social sciences (30% of political scientists, 25.2% of economists, 23.7% of psychologists, and 20.8% of sociologists). The proportion of believers was slightly lower among the scholars in the natural sciences: 29.1% among chemists, 19% among physicists, and 17.4% among biologists. The overall percentage of believers among natural scientists was 20.7%.

Neil Gross and Solon Simmons (Gross & Simmons, 2009) collected responses from 1,471 professors of American universities. The percentage of those who positively responded to the invitation to participate in the study was 51%. More than half of the participants (51.5%) reported that they believed in God, a majority of them (34.9%) without doubting. Atheists accounted for about 10 percent (9.8%) and agnostics for 13.1%. Almost every fifth respondent (19.2%) chose the answer “I believe in a higher power.” The percentage of believers (71.4%) was the highest among professors in the fields of accounting and ele-

mentary education (86.4%) and the lowest among mechanical engineers (32.4%) and psychologists (28.2%).

There have been few Polish studies on the attitudes of scientists to religious faith. In fact, aside from the study by Libiszowska-Żótkowska (2000), discussed above, only one study can be listed namely that conducted by Erenc (2010). He studied a quota sample of scholars from the University of Gdańsk (14% of the population – 281 people). Questions in his survey contained categories similar to those used by Libiszowska-Żótkowska. The percentage of believers was 72.3%, including the 16.4% who stated that their faith was deep; 10.7% said that, for them, religion meant only attachment to tradition. Unbelievers constituted 7.5%, indifferent individuals accounted for 7.8%, and 1.8% did not respond.

### DESCRIPTION OF THE PRESENT STUDY

In this article I will present some results of an exploratory survey of scholars holding academic degree of Ph.D. (*doktor*) or “Ph.D. with habilitation” (*doktor habilitowany*) working in selected departments of Polish universities and research institutes.

One of the research questions behind the study was the issue of whether there is a relationship between the scientific discipline and the percentage of scientists declaring faith in God.

Another issue of interest were the respondents’ views on the compatibility between science and religious faith.

The study was not funded. In its realization, I was assisted by students of psychology at the University of Finance and Management in Warsaw, participants in my master’s degree seminar. The topic of the seminar was “Believing and unbelieving scholars’ image of God.” The students gathered email addresses of scholars holding at least a doctoral degree and sent an invitation to participate in the study to those addresses. They attached the questionnaire edited by myself as the head of the seminar. The recipient could either complete the questionnaire attached and return it or to visit the website and answer the questions of the survey online.

The main phase of the study lasted from February to June 2013.<sup>6</sup>

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<sup>6</sup> One of the participants in the seminar continued collecting of data in April 2014 using a simplified version of the survey. The present paper is based on data including the 29 responses he received.

Responses were obtained from 279 persons. This group accounted for about 10% of the invitees, which means, the sample should be considered incidental. Three-quarters of the respondents (212 subjects – 76%) completed the survey online, while 67 (24%) sent the completed questionnaires as email attachments. Nearly two-thirds of the participants (173 subjects – 62%) had a doctoral degree, while 106 (38%) had the degree of doctor with habilitation. The sample consisted of 106 women (38%), and 173 men (62%). Most respondents (34.9%) were aged 31-40. Other age groups had the following representation: up to 30 years – 7 subjects (3.8%), 41-50 years – 51 subjects (27.4%), 51-60 years – 31 subjects (16.7%), 61-70 years – 26 subjects (14%), more than 70 years – 4 subjects (2.2%).<sup>7</sup>

## RESULTS

Selected results of the study are presented below<sup>8</sup> – namely, those concerning the participants' worldview declarations and their views on the relationship between science and religious faith.

### Respondents' worldview declarations

The question concerning the belief in God was as follows: “Do you believe in God now?”. There was a list of eight possible answers to choose from.

The responses obtained in the entire sample are presented in Table 1.

Table 1  
*Distribution of Responses of All Respondents Declaring Their Worldview*

Type of response	Frequency	Percentage
(a) I believe in God and I have no doubts about God's existence	111	39.8
(b) I believe in God though sometimes I have various doubts	46	16.5
(c) Sometimes it seems to me that I believe in God and sometimes not	11	3.9
(d) I do not believe in a personal God, but I do believe in a higher power of some kind	18	6.5
(e) I do not know whether there is a God and I do not believe there is a way to check it out	20	7.2
(f) I do not believe in God	51	18.3
(g) I do not want to answer this question	2	0.7
(h) I will answer in my own words	20	7.2
Total	279	100.0

<sup>7</sup> Two respondents (1%) did not indicate their age.

<sup>8</sup> Other details of the results have been presented in another paper of mine (Gołąb, 2014).

The worldview declarations presented in Table 1 were grouped into three categories (types):

(I) belief in God (with or without doubts) – in this group there were 56.3% of the respondents;

(II) atheism or agnosticism (declaration “f” or “e”) – 25.5% of the respondents;

(III) other responses (declaration “c,” “d,” “g,” or “h”) – 18.2% of the respondents.

Precisely these three types of worldview declarations were used in order to determine the relationship between subjects’ responses and their gender, age, academic degree, academic discipline, and the way of responding (either online or through sending the completed questionnaire). The analysis revealed a clear link between the answers and gender ( $\chi^2 = 12.71$ ,  $df = 2$ ,  $p = .002$ ). Among those who believed in God there were more women than men (67.9% vs. 49.1%), in the group of atheists and agnostics the proportions were reversed (14.2% vs. 32.4%), and among other subjects there were almost no differences in terms of gender (17.9% vs. 18.5%). There was no relationship between the respondents’ answers and their age ( $\chi^2 = 8.841$ ,  $df = 12$ ,  $p = .716$ ), academic degree ( $\chi^2 = 2.425$ ,  $df = 2$ ,  $p = .297$ ), and the way of responding: online or by email ( $\chi^2 = .093$ ,  $df = 2$ ,  $p = .954$ ). There were some differences, however, in the responses of scientists from different disciplines. The relevant data are shown in Table 2.

Though the overall index of relationship between the kind of scientific discipline and the type of worldview declaration is not significant statistically, it indicates a statistical trend ( $p < .10$ ). However, when one considers how the kind of academic discipline relates to Type I worldview declaration (“I believe in God” versus the other two types of worldview declarations), one finds a **statistically significant relationship** ( $\chi^2 = 25.99$ ,  $df = 9$ ,  $p = .002$ )<sup>9</sup>. Thus, the **percentage of scholars who believe in God is related to the their field of science.**

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<sup>9</sup> In contrast, when one considers how the kind of academic discipline relates to Type II worldview declarations (“atheists and agnostics” versus the other two types of worldview declarations), no relationship is found ( $\chi^2 = 11.27$ ,  $df = 9$ ,  $p = .257$ ). No relationship is found, either ( $\chi^2 = 9.69$ ,  $df = 9$ ,  $p = .375$ ), between the kind of academic discipline and Type III worldview declarations (“Other responses” versus the other two types of worldview declarations).

Table 2  
*Three Types of Worldview Declarations and Academic Discipline*

Academic discipline	(I) Belief in God	(II) Atheism or agnosticism	(III) Other responses	Total	
	<i>N</i>	16 <sub>a</sub>	2 <sub>a</sub>	2 <sub>a</sub>	20
(a) Chemistry	<i>Percentage of row</i>	80.0	10.0	10.0	100.0
	<i>Percentage of column</i>	10.2	2.8	3.9	7.2
	<i>N</i>	16 <sub>a</sub>	3 <sub>a</sub>	2 <sub>a</sub>	21
(b) Geography /geology/ Earth sciences	<i>Percentage of row</i>	76.2	14.3	9.5	100.0
	<i>Percentage of column</i>	10.2	4.2	3.9	7.5
	<i>N</i>	19 <sub>a</sub>	5 <sub>a</sub>	2 <sub>a</sub>	26
(c) Mathematics and informatics	<i>Percentage of row</i>	73.1	19.2	7.7	100.0
	<i>Percentage of column</i>	12.1	7.0	3.9	9.3
	<i>N</i>	20 <sub>a</sub>	5 <sub>a</sub>	6 <sub>a</sub>	31
(d) Medicine	<i>Percentage of row</i>	64.5	16.1	19.4	100.0
	<i>Percentage of column</i>	12.7	7.0	11.8	11.1
	<i>N</i>	20 <sub>a</sub>	10 <sub>a</sub>	6 <sub>a</sub>	36
(e) Psychology	<i>Percentage of row</i>	55.6	27.8	16.7	100.0
	<i>Percentage of column</i>	12.7	14.1	11.8	12.9
	<i>N</i>	18 <sub>a</sub>	10 <sub>a</sub>	7 <sub>a</sub>	35
(f) Biology	<i>Percentage of row</i>	51.4	28.6	20.0	100.0
	<i>Percentage of column</i>	11.5	14.1	13.7	12.5
	<i>N</i>	25 <sub>a</sub>	15 <sub>a</sub>	12 <sub>a</sub>	52
(g) Physics and astronomy	<i>Percentage of row</i>	48.1	28.8	23.1	100.0
	<i>Percentage of column</i>	15.9	21.1	23.5	18.6
	<i>N</i>	9 <sub>a</sub>	7 <sub>a</sub>	4 <sub>a</sub>	20
(h) Sociology	<i>Percentage of row</i>	45.0	35.0	20.0	100.0
	<i>Percentage of column</i>	5.7	9.9	7.8	7.2
	<i>N</i>	2 <sub>a</sub>	7 <sub>b</sub>	6 <sub>b</sub>	15
(i) Philosophy	<i>Percentage of row</i>	13.3	46.7	40.0	100.0
	<i>Percentage of column</i>	1.3	9.9	11.8	5.4
	<i>N</i>	7 <sub>a</sub>	3 <sub>a</sub>	3 <sub>a</sub>	13
(j) Other disciplines	<i>Percentage of row</i>	53.8	23.1	23.1	100.0
	<i>Percentage of column</i>	4.5	4.2	5.9	4.7
	<i>N</i>	5 <sub>a</sub>	4 <sub>a</sub>	1 <sub>a</sub>	10
(k) No data about discipline	<i>Percentage of row</i>	50.0	40.0	10.0	100.0
	<i>Percentage of column</i>	3.2	5.6	2.0	3.6
	<i>N</i>	157	71	51	279
All respondents	<i>Percentage of row</i>	56.3	25.4	18.3	100.0
	<i>Percentage of column</i>	100.0	100.0	100.0	100.0

Note.  $\chi^2 = 28.86$ ,  $df = 20$ ,  $p = .09$ . When figures in one column are marked with the same subscript they do not differ at  $p < .05$ .

It turned out that scholars believing in God constituted more than 60% in four groups: chemists, geographers (together with other specialists in the field of Earth sciences), mathematicians (together with informaticians) and scientists representing medical specialties. A particularly low rate of believers was found among philosophers. Representatives of four disciplines had a percentage of believers in God close to 50%: psychologists, biologists, physicists with astronomers, and sociologists.

We compared the number of subjects who believed in God across three disciplines: chemistry, psychology, and philosophy. The percentage of believers among scholars in these three disciplines amounted to 80%, 55.6%, and 13.3%, respectively. The percentage of believers among philosophers differed significantly from the respective percentages among chemists ( $\chi^2 = 15.25$ ,  $df = 1$ ,  $p < .001$ ) and psychologists ( $\chi^2 = 7.69$ ,  $df = 1$ ,  $p < .01$ ). The result of psychologists differed from the result of chemists ( $\chi^2 = 3.35$ ,  $df = 1$ ,  $p = .067$ ) at the level of a statistical tendency ( $p < .10$ ).

### **Subjects' views on the relationship between science and religious faith**

The questionnaire included a question worded as follows: "Some people think that there is a conflict between the notion that God exists and the claims of science. What is your opinion on this issue?". This question was answered by almost all of the 248 respondents who took part in the survey in 2013<sup>10</sup> (231 persons, 93.1%). The answers were coded using categories taken from Barbour's typology mentioned in Introduction. Most respondents (104 people, 41.9%) simply **denied the conflict** between science and religion. Here are some examples: "I know of no scientific statement that precludes the existence of God" (W, Ph.D. in chemistry<sup>11</sup>); "I see no problem in reconciling the existence of God with the current state of knowledge about the universe" (M, Ph.D. in physics). Almost 16% of the subjects said that **there was a conflict** between science and religion. Let me cite two opinions of this kind: "Science removes God from every place where it reaches deeper. . . . Where you can still see God today, there will be no

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<sup>10</sup> In the 2014 survey this question was omitted, along with a number of other questions. The number of questions was reduced in order to increase the chance of participation in the study, whose main topic was "the image of God."

<sup>11</sup> The information in parentheses concerns the respondent's gender (W = woman; M = man), academic degree (Ph.D. = doctorate; Ph.D. hab. = doctorate + habilitation), and academic discipline.

longer room for God after some years”<sup>12</sup> (M, Ph.D. in physics). “. . . Nature is governed by the laws of physics, not by God. Science is not compatible with the idea of God” (W, Ph.D. in physics). This type of attitude was most often expressed in the form of short answers such as “agree” [with the claim that “the idea of God cannot be reconciled with the claims of science”]. This group of opinions included ironic responses. Almost 17% of the respondents were of the opinion that science and religion should be treated as **independent** areas of human thought. Let me cite two statements classified into this group of opinions: “Science is one thing and religion is another. Many scientists believe that using the tools of science we can explain the origin of the universe and life on earth and then the idea of God will turn out to be ultimately disproved. I myself absolutely do not agree with this . . .” (W, Ph.D. in biology); “Faith . . . [and] religion are two separate and noncontradictory areas.<sup>13</sup> The problem begins when somebody wants to use the scientific method to prove (refute) religious claims or use religion to influence scientific assertions” (M, Ph.D. hab. in chemistry).

Several respondents said that **dialog** between religion and science should be recommended. For example, one of them stated: “This is not so [i.e., there is no conflict between science and religion]. Science allows us to get to know better how God created/creates the world. I can see no problem in the fact that sometimes science and God seem to us to speak in different voices. This is a difference in language rather than in the nature of things” (W, Ph.D. in psychology).

Nine subjects (3.6%) voted for a solution that would be more radical than bare dialog between science and religion, namely for their **integration**. Here is an example: “[The contradiction between science and religion] is only an apparent contradiction. God is the builder of the world, so theories that will correctly describe reality will not exclude God” (M, Ph.D. hab. in informatics).

Table 3 gives information about how the relationship between science and religion was portrayed by respondents from three groups distinguished according to their worldview declarations.

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<sup>12</sup> Such a formulation brings to mind the practice of recourse to the idea of God in situations where researchers are unable to explain certain phenomena (“God of the gaps”).

<sup>13</sup> This brings to mind the idea voiced by American paleontologist Stephen Jay Gould (1941-2002) that in case of science and religion we are dealing with “nonoverlapping magisteria” (Gould, 1997).

Table 3  
*Type of Worldview Declaration and the Views on the Relation Between Science and Religion*

View on the science–religion conflict		(I) Belief in God with or without doubts	(II) Atheism or agnosticism	(III) Other responses	Total
	<i>N</i>	2 <sub>a</sub>	29 <sub>b</sub>	6 <sub>c</sub>	37
(a) There is a conflict	<i>Percentage of row</i>	5.4	78.4	16.2	100.0
	<i>Percentage of column</i>	1.5	43.9	13.0	14.9
	<i>N</i>	68 <sub>a</sub>	15 <sub>b</sub>	21 <sub>a</sub>	104
(b) There is no conflict	<i>Percentage of row</i>	65.4	14.4	20.2	100.0
	<i>Percentage of column</i>	50.0	22.7	45.7	41.9
	<i>N</i>	24 <sub>a</sub>	9 <sub>a</sub>	9 <sub>a</sub>	42
(c) Both domains should be treated as independent	<i>Percentage of row</i>	57.1	21.4	21.4	100.0
	<i>Percentage of column</i>	17.6	13.6	19.6	16.9
	<i>N</i>	13 <sub>a</sub>	0 <sub>b</sub>	1 <sub>a, b</sub>	14
(d) Dialog or cooperation is desirable*	<i>Percentage of row</i>	92.9	0.0	7.1	100.0
	<i>Percentage of column</i>	9.6	0.0	2.2	5.6
	<i>N</i>	18 <sub>a</sub>	12 <sub>a</sub>	4 <sub>a</sub>	34
(e) Other responses	<i>Percentage of row</i>	52.9	35.3	11.8	100.0
	<i>Percentage of column</i>	13.2	18.2	8.7	13.7
	<i>N</i>	11 <sub>a</sub>	1 <sub>a</sub>	5 <sub>a</sub>	17
(f) No answer	<i>Percentage of row</i>	64.7	5.9	29.4	100.0
	<i>Percentage of column</i>	8.1	1.5	10.9	6.9
	<i>N</i>	136	66	46	248
All respondents	<i>Percentage of row</i>	54.8	26.6	18.5	100.0
	<i>Percentage of column</i>	100.0	100.0	100.0	100.0

*Note.*  $\chi^2$  with Yates' correction = 68.848,  $df = 10$ ,  $p < .001$ . When figures in one row are marked with the same subscript, they do not differ at  $p < .05$ . \* Answers recommending dialog between science and religion and answers recommending cooperation between them were grouped together.

The value of the chi-square test given under Table 3 shows that the association between the analyzed variables is statistically very significant.

Among those who believe in God, there is a prevalence of responses denying the conflict between science and religion. In contrast, a majority of atheists and agnostics believed that the conflict did come into play. The wish that dialog and cooperation should take place between science and religion was expressed almost exclusively by persons who declared faith in God. As regards the opinion that science and religion should be treated as independent of each other, most supporters of this view were believers in God. However, the same opinion was shared by every eighth respondent in the group of atheists and agnostics as well as by every fifth in the group of those whose worldview declarations were classified as "other responses."

## DISCUSSION

The analyses of the results of the study presented in this article were closer to the aims of sociological research than to a search for answers to questions aimed at understanding the psychological mechanisms of the analyzed phenomena. The implementation of the latter objective would require having resources for the funding of such research and its better organization. The author's purpose was more modest: a preliminary exploration of the chosen area of research. The fact that only approximately ten percent of invitees participated in the survey lowers the value of its results, but does not deprive them of value totally. They cannot be used to prove anything, but may be a source of ideas for further investigations.

It is worth noting that not all respondents who do not believe in God (atheists and agnostics) perceive a conflict of science and faith; almost a quarter deny such a conflict. Perhaps such a conciliatory attitude is a result of the fact that they live in a society where a vast majority of people profess faith in God. Surveys on representative samples of Polish society, conducted by the Public Opinion Research Center in 1995-2012, established that over 85% of Poles believed in God either without hesitation or despite fluctuations, and that changes in this respect during 15 years were minimal (Boguszewski, 2012, Fig. 12, p. 14).

Perhaps for the same reasons among the 42 adherents of the view that it is possible and useful to accept the coexistence of science and religion based on their specific autonomy there are not only believers (57%), but also atheists and agnostics (21%), and respondents (21%) who avoid explicit self-identification while expressing their worldview.

Determining whether this hypothesis is correct would probably require using the interview technique, as Ecklund et al. (2011) did in their study. The results of their study can also be seen as a source of other hypotheses seeking to explain the denial of a conflict between faith and science, namely: (a) some unbelieving scientists are distancing themselves from issues that may generate conflict, deciding that these issues do not interest them personally; (b) a certain group of believing scientists highlight the limitations of scientific knowledge and assume that religion makes it possible to go beyond these limits; (c) there are scientists who treat the concept of religion more broadly – as similar to the concept of “spirituality”; for them, conceptions connected with the idea of spirituality may be an inspiration for a new understanding of the reality they study; (d) some scholars, even those who are not believers, know that there are outstanding scien-

tists who emphasize their faith in God<sup>14</sup>; (e) some scientists think that in their teaching activities they should not avoid the issue of the relationship between science and religion, all the more so because students come into contact with discussions on this subject.

From today's perspective, I can see the desirability of replacing the general question of the relation between science and religion with more specific questions. One could use Józef Życiński's idea that there are three aspects of the issue of the relationship between science and religion, namely: the questions of whether the image of the world suggested by modern science can be reconciled with religious beliefs, what role religion played in the past and continues to play in the development of science, and how science influences theology (Gutowski, 2014).

The results concerning scholars' personal attitude to faith in God may, for example, invite comparisons of data from earlier and later years. The decrease in the number of people who believe in God argues that the quite commonly accepted theory of progressing secularization should be considered. However, it seems to me that one should be cautious about such an interpretation. Considering the results obtained by Libiszowska-Żółtkowska (64% of believers), one should bear in mind that these data refer to professors (full and associate) and so to scholars with the academic degree of doctor with habilitation. In the study presented in this paper, the percentage of believers in God among all 106 associate professors was 61.3% and was thus only slightly lower than the percentage obtained by Libiszowska-Żółtkowska. Secondly, the data reported by Erenc (72.3% of believers) contradict the hypothesis of progressing secularization in the scientific community, especially as a majority of his sample were probably doctors (without habilitation), who are usually younger and more susceptible to secularizing influences.

What is interesting is the differences between respondents representing various disciplines. I will consider the indicators of religiosity in three groups of scientists: chemists, mathematicians, and psychologists.

The percentage of believers in God among chemists is strikingly high. In our study it was 80%, and in the cited American studies chemists often outpaced scholars from other disciplines in terms of indicators showing the percentage of believers. Let me add that among the Nobel Laureates in 1901-2000 the percent-

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<sup>14</sup> The subjects in the study by Ecklund et al. (2011) often named Francis Collins, head of the Human Genome Project, as an example of such a scientist. In the present study, some respondents pointed to the Templeton Prize winner Michał Heller.

age of Christians was the highest among the laureates in chemistry (72.5%; Shalev, 2003, p. 59).<sup>15</sup>

Perhaps chemistry is a scientific discipline immune to disputes such as the controversy about the origins of the universe or the origin of man. It is possible that scientists in the field of chemistry less frequently find themselves in situations in which they are expected to reveal their own position in these disputes.

For the same reasons, declaration of faith in God may be easier for mathematicians. Another factor that may play a role is the fact that their scientific activity is carried out alone; as a result, they have fewer opportunities to confront their worldview with that of colleagues. The research of Ecklund and Park (2009) shows that “positive view toward religion” on the part of scientists who are scholar’s colleagues is a factor related to the respondent’s own position on the conflict between science and religion.<sup>16</sup>

As for the results of psychologists, according to the three sources cited earlier (Leuba, 1916; Stark et al., 1996; Gross & Simmons, 2009), psychologists have the lowest indicators of the percentage of believers in God. In study by Ecklund and Scheitle (2007), psychologists had one of the two lowest results in the group of social sciences.

An important reason why psychologists who work as scientists distance themselves from religion is probably the fact that, from the very beginning of its “presence” in universities, psychology ignored the soul as understood in religion, despite the etymological meaning of its name (“the science of the soul”). This has led to a paradoxical lack of interest even in what people think about the soul. It was not until recent years that psychologists have begun to explore that topic (Riecki, Lindeman, & Lipsanen, 2013; Anglin, 2015).<sup>17</sup>

Against the background of the low percentage of believers among American psychologists (24-33%), what is interesting is the moderately high rate of belief in God among psychologists in the present study (55.6%). Perhaps this is a result of growing up in a fairly monolithic society in which religion has a very high

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<sup>15</sup> The corresponding figure is 65.3% for Nobel laureates in physics. The data for the other two disciplines are as follows: medicine – 62%, economy – 54%. The overall percentage was 65.4% (Shalev, 2003).

<sup>16</sup> Strictly speaking, in some analyses this factor turned out to be important, while in others it did not.

<sup>17</sup> Ecklund and Park (2009, p. 277) mention the hypothesis, formulated in 1968 by Edward Lehman and Donald Shriver, that scientists from disciplines dealing with religion are less religious. A study conducted on about 500 psychologists with a Ph.D. showed, however, that “psychologists who personally considered religious phenomena in the course of their work were much more likely to be religious than were those who did not” (Ragan et al., 1980, p. 74).

position. The indicators of declared religiosity in Poland are higher than in the USA (IMAS International, 2006).

Is it worthwhile to continue research on the worldview of scholars? It seems that the answer should be positive, because of the impact the scholars have or may have on students, and also because of the high esteem they still enjoy in the wider society. In the ranking of prestige of various professions in Poland in 1975-1998, university professor held the leading position. In survey conducted by CBOS in 2013, professor's index of prestige moved to the second position (Cybulska, 2013).

In conclusion, I want to write about my own attitude toward the issue of the science–religion relationship. The view that comes closest to mine is that there should be dialog between those who identify themselves with the world of science and those who engage in reflection in the field of religion. What seems to me to be an excellent poetic metaphor for this approach is the idea contained in the opening sentence of the Encyclical Letter *Fides et ratio* (John Paul II, 1998): “Faith and reason are like two wings on which the human spirit rises to the contemplation of truth.”

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