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## EAS Temperament Traits, Gender, Age and Religious Fundamentalism in a Polish Sample

**Abstract:** This is a study of the relationship between EAS temperament traits, age and gender, and religious fundamentalism in an adult Polish sample. Participants were sampled from among people who tended towards secularisation. A total of 902 participants, including 551 women and 351 men, aged 18 to 58 ( $M=27.73$ ;  $SD=7.40$ ) were studied. Participants were students in a variety of university faculties and adults with higher education representing a variety of professions. They all lived in the Warsaw area. Temperament was assessed with Buss and Plomin's EAS Temperament Survey. Religious fundamentalism was assessed using Altemeyer and Hunsberger's Religious Fundamentalism Scale (short, revised version). The level of religious fundamentalism was found to be associated with the temperament traits of sociability and anger. All three variables decrease in intensity with age. Women have higher levels of religious fundamentalism than men.

**Key words:** EAS temperaments; age; gender; religious fundamentalism; adults

### Introduction

The study presented in this article investigated the relationship between age, gender and the temperament traits posited by Buss and Plomin (1984) in their EAS theory of temperament (emotionality, activity and sociability) and religious fundamentalism as understood by Altemeyer and Hunsberger (1992, 2004). This study focuses on the Polish population.

Emotionality (E), regarded by adults as distress, fear and anger, is the tendency to react easily, intensely and anxiously. Emotionality is typically associated with difficulty keeping calm and with high sensitivity to stimuli, which cause discontent. Activity (A) is defined as a trait exclusively associated with physical energy expenditure. It manifests in all behaviours and reflects energy expenditure motivation. Sociability (S) is the general tendency to seek other people's company and avoid being alone. The main component of S is the instrumental seeking of other people's company. This trait is rooted in positive reinforcements that flow from being in touch with other people. The presence of other people, sharing activity with others, manifestations

of other people's interest, reciprocal response and initiating social contact are particularly important.

According to Altemeyer and Hunsberger (1992, 2004), religious fundamentalism is expressed as the belief that one's own religion is the one and only basic truth about life, human nature and deity (so-called religious ethnocentrism), which enables one to combat evil. Belief in this truth must be supported by centuries-long immutable religious practices that enable one to have a special relationship with God.

Compared with other European countries, Polish religiousness is typically accompanied by a stable and relatively strong attachment to religious practices, such as church services, masses or encounters. According to the Public Opinion Research Centre (CBOS, 2009), nearly 97% of all Poles declare that they are believers and nearly one half of this number practice at least once a week. Nearly 90% of young respondents (aged 18–24) declare belief in God, but the proportion of regular practitioners has decreased in this age range within the last 20 years from 72% to about 50%. This decrease is more evident in men, with a 10% greater decrease.

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Relatively little research has been done on relations between religiousness and religious fundamentalism, on the one hand, and personality, age and gender, on the other hand. The trait of anxiety is a significant predictor of religious fundamentalism (Jakubowska & Oniszczenko, 2010). The significant relationship between religious fundamentalism and right-wing authoritarianism and prejudice (McCleary et al., 2011; Stefurak, Taylor, & Mehta, 2010; Vincent, Parrott, & Peterson, 2011) supports the connection between anxiety and religious fundamentalism. Saroglou's (2002) meta-analysis showed a relationship between religious fundamentalism and agreeableness, openness to experience and neuroticism, which constitute three of the factors of the five-factor model of personality. Religiousness, a broader theoretical construct than religious fundamentalism, was also related to those three personality traits (Barrett & Roesch, 2009; Carlucci, Tommasi, & Saggino, 2001; Proctor & McCord, 2009; Saroglou & Muñoz-García, 2008). Longitudinal research (Wink et al., 2007) has found that personality traits in adolescents predict levels of religiosity and spirituality in late adulthood. Conscientiousness and agreeableness predict religiosity, and openness to experience predicts spirituality.

Various aspects of religiousness are associated with Eysenck's personality dimensions, neuroticism, extraversion and psychoticism (Francis & Pocock, 2009; Village, 2011). Religious fundamentalism is also reversely correlated with intelligence and education (Lewis, Ritchie, & Bates, 2011). No differences between men and women have been found for religious fundamentalism (Carlucci et al., 2011; Helm, Berecz, & Nelson, 2001; Lewis et al., 2011; Stefurak et al., 2010) although women scored higher on other dimensions of religiousness (Lewis et al., 2011; Nagoshi et al., 2008; Stefurak et al., 2010; Village, 2011).

The associations between religiousness and age are apparently more complex. McCullough et al. (2005) analysed the religiousness of highly intelligent Californians aged 27 to 80. They identified three trajectories of religiousness: two linear types (low and high religiousness) and the parabolic type typified by an increase in religiousness up to middle age followed by a symmetrical reduction (40%) later. The two linear types were low religiousness in early adulthood, which dropped further with age (41%), and high religiousness in early adulthood, which increased with age (19%). They identified the following determinants of inclusion in each trajectory: age, religious education, number of children, marital status and the personality trait of agreeableness. Women were less likely to be on a downward trajectory. Later studies of adolescents and students usually found a reduction of religiousness, particularly religious practices, or stabilisation with age (Good, Willoughby, & Busseri, 2011; Mayrl & Oeur, 2009; Sallquist et al., 2010; Village, 2011). It has been suggested that emerging adulthood (between ages 18 and 25) is pivotal for the development of religiousness. This is the period of life when people tend to revise the religious attitudes they acquired in childhood and adolescence and discard dependence on authorities (Arnett, 2000). Koenig, McGue and Iacono (2008) found that moderate religiousness decreases at this

time of life, but its rank-order stability is high. Religious practices are the most likely to be affected. The available data (Seifert, 2002; Wink & Dillon, 2003) suggest that religious attitudes remain stable throughout adulthood. As far as religious fundamentalism is concerned, Lewis et al. (2011) and Carlucci, Tommasi and Saggino (2011) found that it correlated positively with age and negatively with years of education. One must be careful when generalising, however, because of the scarcity of longitudinal and cross-cultural research.

The purpose of our study is to identify the relationship between the EAS temperament traits—emotionality (a component of neuroticism), sociability (a component of extraversion), age and gender—and the level of religious fundamentalism in a society characterised by the cultural inheritance of Catholicism, twenty-five years after systemic transformation. We studied groups that we thought to be most vulnerable to secularisation, i.e. the most educated (students and men and women) living in large cities.

## Method

### Participants

There were 902 participants, including 551 women and 351 men, aged 18 to 58 ( $M=27.73$ ;  $SD=7.40$ ). We studied students from various university faculties (43.2%), and men and women with a university degree (56.8%) in various professions. All participants lived in the Warsaw area. All were volunteers and no-one was remunerated for participation. The study was part of a large personality research project. Approval of the local Scientific Research Ethics Committee at the Faculty of Psychology, University of Warsaw, was granted.

### Materials

EAS temperament traits were assessed with the Polish version of the EAS Temperament Survey for Adults by Buss and Plomin (1984, Polish adaptation by Oniszczenko, 1997). The survey contains the following scales (Cronbach alphas for the Polish version in parentheses): distress (.74), fear (.70), anger (.59), activity (.67), and sociability (.57). Test-retest stability coefficients ranged between .53 (sociability) and .79 (activity).

Religious fundamentalism, part of a larger test battery, was assessed with the 12-item version of Altemeyer and Hunsberger's (2004) Religious Fundamentalism Scale (Polish adaptation by Jakubowska and Oniszczenko). This scale is very reliable (Cronbach alpha for the Polish version 0.80).

## Results

The data were analysed with PASW Statistics 18 (SPSS Inc., 2009). Since variances differed significantly between groups, the Mann-Whitney U Test for two independent samples (Z values) was used.

**Table 1. Pearson's R Correlations Between Religious Fundamentalism and Age and EAS Temperament Traits in the Whole Sample ( $n = 902$ )**

	Age	Distress	Fear	Anger	Activity	Sociability
Religious fundamentalism	-.17**	.02	.07*	.13**	.08*	.26**
Age	-	-.07*	-.06	-.19**	-.06	-.13**

Note. \*  $p < .05$ ; \*\*  $p < .01$

### Correlations between religious fundamentalism and age and EAS temperament traits.

The data in Table 1 indicate low to moderate correlations between religious fundamentalism and age and EAS temperament traits. We found a low negative correlation between religious fundamentalism and age, a low positive correlation between religious fundamentalism and anger, and a moderate positive correlation between religious fundamentalism and sociability. Age correlates weakly and negatively with anger and sociability.

### Fundamentalism in men vs. women

We found that religious fundamentalism was higher in the studied sample of women ( $M=53.49$ ;  $SD=17.28$ ) than in men ( $M=50.38$ ;  $SD=18.41$ ). This difference is significant ( $Z=-2.51$ ;  $p=.012$ ).

### Comparison of EAS temperament traits in men vs. women

**Table 2. Gender Differences in EAS Temperament Traits**

	Women <i>M (SD)</i>	Men <i>M (SD)</i>	<i>Z</i>	<i>p</i>
Distress	10.12 (3.19)	9.78 (3.17)	.14	n.s.
Fear	10.70 (3.10)	8.89 (2.80)	-8.96	.000
Anger	12.48 (3.29)	12.42 (3.52)	-.30	n.s.
Activity	13.96 (2.91)	13.75 (2.85)	-1.03	n.s.
Sociability	14.28 (3.03)	13.61 (3.04)	-2.84	.004

Note. *Z* value for the Mann-Whitney *U* test

The data presented in Table 2 show significant differences between groups in fear and sociability. We found that the levels of both traits are higher in women than men.

### EAS temperament traits as predictors of religious fundamentalism level in men and women

Table 3 presents the hierarchical regression analysis outcomes. The temperament variables, which correlate significantly with the religious fundamentalism score, were accepted as predictors of this variable in men and women.

Significant predictors of religious fundamentalism are: sociability (7% of explained variance), anger (1%) and fear (1%). Together, these three variables account for 9% of the variance of the explained variable.

Religious fundamentalism and temperament traits in three age groups

We divided participants into the following age categories: beginner students (Group 1), transition to professional and social activity (Group 2) and achievement of life stability (Group 3). (see Table 4 - page 67)

Our findings indicate that the level of religious fundamentalism decreases with age. We found significant differences between groups 1 and 2 ( $Z=-3.46$ ;  $p=.001$ ), groups 2 and 3 ( $Z=-2.91$ ;  $p=.004$ ) and groups 1 and 3 ( $Z=-5.03$ ,  $p=.000$ ).

We can also see from Table 4 that as people get older there is a reduction in their level of distress. The difference between groups 1 and 3 alone is significant ( $Z=-2.06$ ,  $p=.040$ ). Anger showed significant differences between groups 1 and 2 ( $Z=-2.44$ ,  $p=.015$ ), 2 and 3 ( $Z=-4.39$ ,  $p=.000$ ), 1 and 3 ( $Z=-6.20$ ,  $p=.000$ ). Sociability showed significant differences between groups 1 and 2 ( $Z=-1.99$ ,  $p=.047$ ) and groups 1 and 3 ( $Z=-3.09$ ,  $p=.002$ ).

Significant differences in levels of fear were found between groups 1 and 2 ( $Z=-3.37$ ,  $p=.001$ ) and groups 1 and 3 ( $Z=-2.14$ ,  $p=.033$ ). Significant differences in level of activity were only found between groups 2 and 3 ( $Z=-2.06$ ,  $p=.040$ ).

**Table 3. Hierarchical Regression Analysis with EAS Temperament Traits as Predictors of Religious Fundamentalism in a Whole Group (Men and Women)**

Model	F	F $\Delta R^2$	R	R <sup>2</sup>	Predictor	Semipartial correlation
Sociability	66.85 (a)***	-	0.26	0.07	Sociability	.26***
+ Anger	40.62 (b)***	13.47***	0.29	0.08	Sociability Anger	.26*** .12***
+ Activity	27.05 (c)***	0.01	0.29	0.08	Sociability Anger Activity	.25*** .12*** .00
+ Fear	21.95 (d)***	6.18*	0.30	0.09	Sociability Anger Activity Fear	.26*** .08* .02 .08*

Note. (a)  $df = 1, 900$ , (b)  $df = 1, 899$ , (c)  $df = 1, 898$ ; (d)  $df = 1, 897$ ; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Table 4. Religious Fundamentalism and EAS Temperament Traits in Three Age Groups: Descriptive Statistics

	Group 1 Age 18-22 ( <i>n</i> = 260)	Group 2 Age 23-35 ( <i>n</i> = 479)	Group 3 Age 36-58 ( <i>n</i> = 163)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Age	20.68 (0.83)	27.15 (3.43)	40.67 (4.43)
Religious fundamentalism	56.15 (16.36)	51.81 (17.66)	47.48 (19.03)
Distress	10.39 (3.40)	9.90 (3.07)	9.61 (3.10)
Fear	10.60 (3.31)	9.71 (3.00)	9.85 (3.00)
Anger	13.13 (3.12)	12.52 (3.52)	11.17 (3.01)
Activity	13.80 (2.81)	14.06 (2.88)	13.48 (3.01)
Sociability	14.43 (2.98)	13.98 (3.11)	13.47 (2.88)

### Discussion

Our results suggest the importance of sociability (more generally, extraversion), anger (one of the components of negative emotionality), age and gender for religious fundamentalism, which is understood as a deep conviction to the appropriateness of religious beliefs and is supported by participation in religious practices. In our sample, both sociability and the tendency to react with anger correlated positively with the level of religious fundamentalism (these two temperament traits are orthogonal in the Polish population, see Oniszczenko, 1997). The level both decreases with age and this reduction is accompanied by a reduction in the level of religious fundamentalism. The tendency to seek other people's company and to avoid being alone, which flows from high sociability, may exacerbate the need to belong to a religious community that promises to satisfy these needs (see Ysseldyk, Matheson, & Anisman, 2010). The anxiety caused by the challenging conditions of life and uncertainty of one's future may lead to cognitive changes, which increase the tendency to react with anger. This hostility manifests itself in aversion to other people or even hatred and is accompanied by attacking or negativistic tendencies. Therefore, religious fundamentalism may be a buffer that protects a person from stress and social rejection (Aydin, Fischer, & Frey, 2010). Both tendencies, need of social reinforcement and negativism, are very pronounced in younger people. As they grow older and life becomes more stable, they weaken. Therefore, the regulative function of temperament vis-à-vis religious fundamentalism, a life strategy factor, should also weaken. The tendency for religious fundamentalism to weaken with age, which we identified in our study, may be due to the considerable leap in scholarisation in Poland after the systemic transformation in 1989, as suggested by sociological findings (CBOS, 2009). Lewis, Ritchie and Bates (2011), however, found a reverse association between education and religious fundamentalism. It is worth mentioning that although we observed a linear reduction in the level of religious fundamentalism, from high level in the youngest group (18–22 year olds) to low level in the oldest group (36–58 year olds), we cannot be sure that religious fundamentalism does not increase in still older people. Such an increase could

be triggered, for example, by increasing fear of death, as suggested by the findings of research on people with health problems (Vess et al., 2009). We must also bear in mind that religious fundamentalism, as opposed to other dimensions of religiousness, is closely linked to religious practices, which decrease with age; this has been observed by Mayrl and Oeur (2009), Good et al. (2011) and Sallquist et al. (2010). We have shown the dispersion of religious fundamentalism measures increase with age. This suggests that older people are becoming more diverse in religious attitudes. Probably a significant part of this observed group change involves their perception of religion and their growing tendency to return to the religious life. This is only a hypothesis, because the lack of data from a group older than 65 is a major limitation of our study.

We found that women were more religiously fundamental than men, a result not confirmed by other researchers, who found no such differences (Carlucci et al., 2011; Helm et al., 2001; Lewis et al., 2011; Stefurak et al., 2010). Perhaps women, who are more conscientious (see Schmitt et al., 2008; Zawadzki et al., 1998), engage more often in religious practices, which require one to be more systematic and exacting. It is also probable that women in Poland are generally more open to faith than men. The effects of upbringing in Poland, which is persistently traditional and conservative, may have specific socialising effects on women. Compared with men, Polish women are more relationship-oriented and cooperative, and this may lead to greater religiousness (at least at the declarative level). This hypothesis has been supported by Helm et al. (2001), who found that greater religious fundamentalism in women correlated with more dependency and less alienation. In our study, we have shown that women have higher levels of sociability and fear compared to men. Therefore, these two temperamental traits may explain gender differences in religious fundamentalism. A higher level of sociability in women promotes the pursuit of important social gains through active participation in religious practices. The higher level of fear or anxiety observed in women, promotes involvement in religious life to reduce existential fear, especially the fear of death (Ellis, Wahab, & Ratnasingan, 2013).



Summarising the results of the study, it should also be noted that the observed relationships are weak or moderate, as in the case of sociability. Perhaps this is due to the weakness of the tool used for the diagnosis of temperament. It only measures the components of the broader dimensions of personality (neuroticism and extraversion), and it is probably less effective a tool compared to other measures the same variables.

## Conclusions

The level of religious fundamentalism is associated with the temperament traits of sociability and anger. All three variables decrease linearly with age. Women are more religiously fundamental than men.

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