

# Differences and Changes in Paranormal Beliefs in University Students from South Korea and the United States

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## Abstract

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South Korean and American college students are compared on paranormal beliefs. The surveys were administered twice, first in 1999 and then in 2009 both in Korea and in the United States. In 1999, Korean students showed higher scores than the United States students in every sub-type of paranormal beliefs except for religious belief. In 2009, Korean students showed higher scores in paranormal beliefs except for religiosity and spiritualism. The level of religious and non-religious paranormal beliefs declined in both countries over the 10 years between the two testing periods and the decline was significantly steeper in Korea. The implications of these findings are discussed.

**Key words:** *paranormal beliefs, religious beliefs, cross-cultural comparison*

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## I. Introduction

The goal of this study was to compare the United States and South Korean college students on paranormal beliefs and to examine the change, if any, of those beliefs over time. In order to compare religious and non-religious paranormal beliefs a set of selected questions from Tobacyk and Milford (1983)'s Paranormal Belief Scale (PBS) and Rohrbaugh and Jessor's Religiosity scale of Personality (1975) was administered in 1999 and again in 2009. The survey questions were modified and original questions from "Paranormal beliefs" refer to beliefs about phenomena that cannot be explained by science and includes beliefs about ghosts, fortunetelling, and some religious concepts.

Tobacyk and Milford cited three criteria used in previous studies (Alcock, 1981; Braude, 1978) to define paranormality: (1) inexplicability in terms of current science, (2) explicability achieved only by major revisions in basic limiting principles of science, and (3) incompatibility with normative perceptions, beliefs, and expectations about reality. This study is basically one which is both exploratory and empirical. However, the results may suggest clues for answering theoretical questions such as why people believe (or do not believe) certain things or what the relation is between religious and paranormal beliefs.

The Paranormal Belief Scale (1983) is a 25-item self-report questionnaire that includes seven subscales: Traditional Religious Belief, Psychic Ability ("a person's thoughts can influence the movement of a physical object"), Witchcraft (voodoo, magic), Superstition (unlucky numbers, unlucky animals), Spiritualism

(“your mind or soul can leave your body”), Extraordinary Life Forms (a snowman, Big Foot) and Precognition (predicting the future). It should be noted that although there is a revised version of the Paranormal Belief Scale (Tobacyk, 2004), it was not available when this study was conducted in 1999 and the same questions were used again in 2009 in order to examine the change.

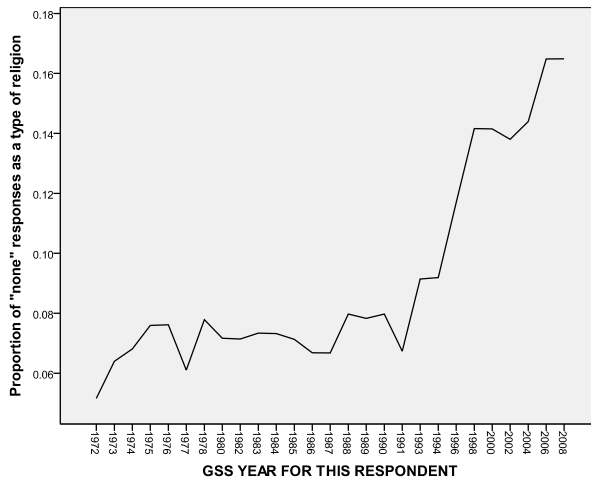
The Paranormal Belief Scale has been used in many studies to compare people of different countries. The results of these studies indicate that the United States' sample in general shows stronger paranormal belief than European samples. For example, Haraldsson and Houtkooper (1996) found that compared to Americans, Icelandic people were “less believing on all subscales (factors) except on the Spiritualism subscale where it was comparable to the U.S. sample.” Tobacyk and Pirttilae-Backman (1992) found that American students “reported greater belief in traditional religious belief, superstition, witchcraft, and extraordinary life forms” than students in Finland. Tobacyk and Tobacyk (1992) compared Polish students with American students and found that the latter scored significantly higher than Poles on Traditional Religious belief, Witchcraft and Superstition subscales. It should be noted, however, that the American samples in these studies were made mostly from the “Bible Belt” area of the U.S. where there is a strong tradition of conservative Protestant religion.

Do paranormal beliefs increase or decrease over time? There are relatively few studies concerning the change of non-religious paranormal beliefs and the results of the existing studies do not provide any clear answers. According to a Gallup survey (Gallup, 2005), belief in various paranormal phenomena increased between the years of 1990 to 2001 and then decreased between those of 2001 to 2005. For example, those who believe in Extrasensory Perception went from 49% (1990) to 50% (2001) and then to 41% (2005). Those who believe in

Witches went from 14% (1990) to 26% (2001) and to 21% (2005). Belief in the Power of the Mind to Know the Past and Predict the Future went from 26% (1990) to 32% (2001) and then to 26% (2005).

Compared to non-religious paranormal beliefs, there are more studies on change in religious beliefs and the results are consistent. Various studies indicate that religious beliefs are in decline. The General Social Survey (Davis & Smith, General Social Survey 1971-2008) indicated that in the U.S. the percentage of people with no religion rose from 5.2% (1972) to 16.5% (2008). Figure 1 shows the change in the proportion of Americans with no religion according to year. According to the Korean government’s statistics bureau (Statistics Korea), the percentage of Korean people who responded by selecting “no religion” increased from 31.7% (1991) to 46.5% (2005).

**Figure 1.** Proportion of “None” Responses to the Question,

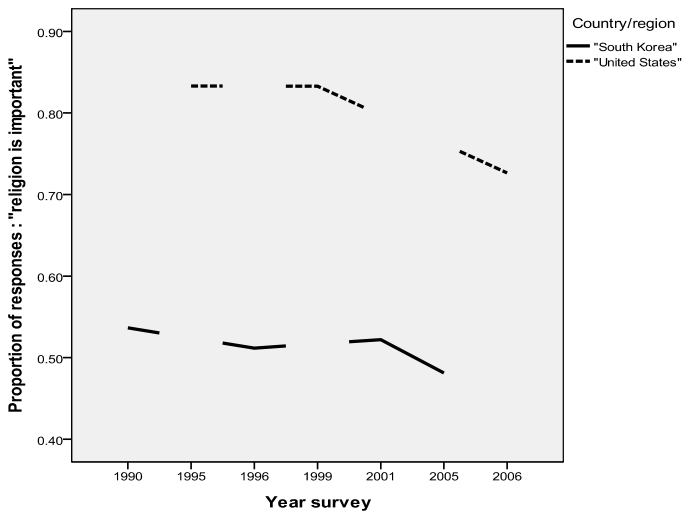


Source: “What is your religious preference?” in the General Social Survey from 1971 to 2008.

The World Value Survey (1981-2008) also found declines in religious beliefs in both the U.S. and South Korea as shown in

Figure 2. In the survey, respondents were asked how important religion is in their lives with four response choices: Very important, Rather important, Not very important, Not important at all. In 1990, 54% of South Koreans responded that religion was very important or rather important in their lives. The percentage dropped to 48% in 2005. In 1995, 83% of Americans responded that religion was very important or important in their lives. The number dropped to 73% in 2006.

*Figure 2.* Proportion of respondents who answered that religion is important or very important in their lives



Source: The Survey in the World Value Survey

The relation between non-religious paranormal beliefs and religious beliefs is somewhat complicated. There have been studies that show conflicting results. Aarnio and Lindeman (2007) concluded that very religious people have a low level of paranormal beliefs but among those who are not very religious, there are

positive correlations between paranormal beliefs and religious beliefs. Orenstein (2002) showed, after analyzing a Canadian sample, that conventional religious belief was positively correlated with paranormal belief while church attendance has a negative correlation with paranormal belief. He concluded that “paranormal beliefs are profoundly religious in nature” and “some amount of religious belief is a necessary condition for paranormal belief” but church authorities tended to suppress non-religious paranormal beliefs in their congregation. Kennedy (2004) argued that paranormal phenomena such as psychic ability may be viewed as either divine intervention or human ability and religious believers would accept the former but reject the latter. The current study would add more data for this and previous mentioned issues.

## II. Method

### 1. Participants

A total of 829 Korean and American college students participated in the survey. In 1999, one hundred and twenty seven Korean students (48 men, 79 women) at Kyung Hee University, Seoul, Korea and 92 American students (31 men, 61 women) at Iona College, New Rochelle, NY, responded to the survey. In 2009, 378 Korean students (133 men, 245 women) at Kyung Hee University and 232 American students (47 men, 185 women) at Iona College participated. The mean age of Korean participants was 23.2 and the mean of American participants was 20.9.

## **2. Material and Procedure**

The study began as a class project in a research methodology course taught by this paper's second author in 1999. In order to compare paranormal beliefs of Korean college students with those of American college students, questions from Tobacyk and Milford's Paranormal Belief Scale (1983) and Rohrbaugh and Jessor's Religiosity scale of Personality (1975) were modified so that they could be used for Koreans as well for Americans. For example, instead of "The number 13 is unlucky", the phrase "Unlucky numbers do exist" was used as some Koreans (and some Chinese & Japanese people) consider that the number 4 instead of (or in addition to) 13 is unlucky because the number 4 is homophonous to the word death. The original Paranormal Belief Scale includes statements such as "Voodoo is a real method to use paranormal" and "Black magic really exists" and these statements may not convey the clear meaning when translated word by word. Therefore an alternative statement was used such as "Individuals can use spells or magic for malevolent or evil purposes to harm others."

The Extraordinary Life Forms subscale in the original Paranormal Belief Scale includes questions about imaginary creatures such as "Big foot" or "Snowman of Tibet" and "Loch Ness Monster." Many Korean students are not familiar with these creatures and the subscale was not used. Instead two questions were added concerning the Extraterrestrial life: "There is life on other planets" and, "Alien life forms have visited the earth".

The Traditional Religious Beliefs subscale in the Tobacyk Scale was omitted because it assumes that Christianity is the traditional religion of Korea. Instead, a slightly modified form of Rohrbaugh &

Jessor's (1975) Religiosity Scale of Personality was used to assess the degree of religiosity because it does not assume that Christian religion is the traditional religion. The original scale consists of eight questions regarding religious beliefs and practices. Seven of them were used omitting one of the questions, "How many times have you attended religious services during the past year?" because Buddhists do not usually attend religious services on a weekly basis. According to the Statistics Korea (South Korea's central government organization for statistics), Buddhism, with 24% of the population as followers, is the most popular religion in Korea (Protestantism is the close second, with 23%).

The English questionnaire derived from the Paranormal Belief Scale and Religiosity Scale of Personality was translated into Korean by one of the authors and back-translated by another bilingual Korean scholar, who judged the translations as satisfactory. The questionnaire also included basic demographic background questions relating to sex, age, and type of religion. The survey was first conducted in late 1999 and early 2000 in both South Korea and in the U.S. The same survey was administered again at the same colleges in both countries in 2009.

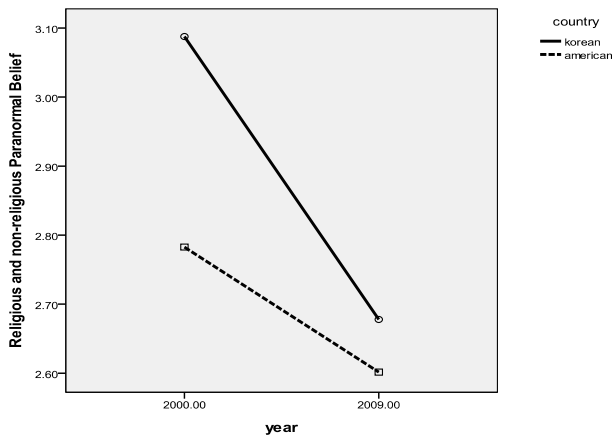
The reliability measures (Cronbach's alpha) for each subscales for the Korean sample are: .797 (Witchcraft), .869 (Psi), .924 (Superstition), .801 (Spiritualism), .719 (Precognition), .741 (Extraterrestrial Life), .876 (Religiosity). The Cronbach's alpha's for the American sample are: .898 (Witchcraft), .893 (Psi), .932 (Superstition), .836 (Spiritualism), .825 (Precognition), .762 (Extraterrestrial Life), .749 (Religiosity).



### III. Results

Figure 3 shows the overall paranormal belief scores by nationality and year. They decline in both countries over the 10 years indicated (2000 ~ 2009~) and the decline is greater in the Korean sample. A 2 (Nationality) X 2 (Year) ANOVA shows that the interaction is significant,  $F(1,825) = 5.48$ ,  $p < .02$ ,  $\eta^2 = .007$ , indicating that the decline in Korean students is significantly larger. The highly significant main effect of the nationality,  $F(1,825) = 15.23$ ,  $p < .001$ ,  $\eta^2 = .02$ , showed that Korean students have, on average, higher paranormal belief scores than American students when the data is combined for both years.

Figure 3. The Mean Paranormal Belief Scores

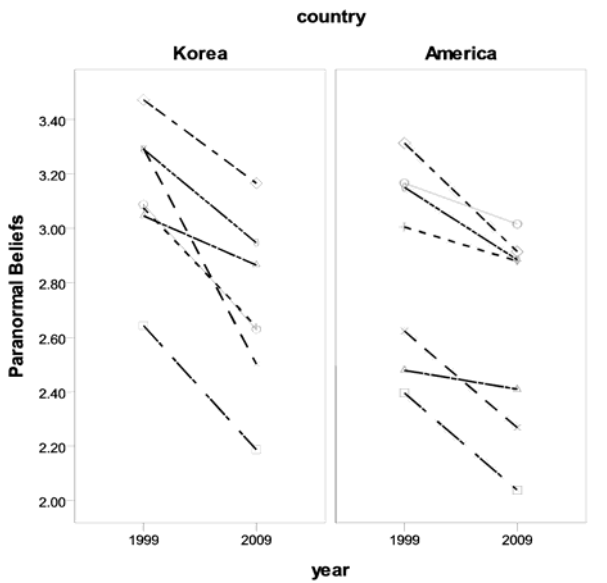


Notes: Response 1 means strong disbelief, 3 is the midpoint and 5 means strong belief.

However, when the 2009 data is analyzed separately, the difference between the U.S. and Korea is not statistically significant. The main effect of the year of the survey is also highly

significant,  $F(1,825) = 36.603$ ,  $p < .001$ ,  $\eta^2 = .04$ , indicating the significant decline in paranormal beliefs in both countries over the 10 years indicated. The decline is statistically significant even when analyzed separately for each country.

**Figure 4.** Seven Types of Paranormal Belief Scores by Country and the Year of the Survey



Notes: ○: Religiosity, □: Witchcraft, X: Psi, △: Superstition, ◇: ExtraLife Form, +: Spiritualism, O: Precognition

A 2 x 2 MANOVA was performed with nationality and the year of the survey as independent variables and the seven subscale scores as dependent variables. The two main effects and the interaction effect are all statistically significant. (Year: Wilks's Lamda = .876,  $F(7, 814) = 16.45$ ,  $p < .001$ ,  $\eta^2 = .124$ ; Country: Wilks's Lamda = .802,  $F(7, 814) = 28.77$ ,  $p < .001$ ,  $\eta^2 = .198$ ; Interaction: Wilks's Lamda = .967,  $F(7, 814) = 4.01$ ,  $p < .001$ ,  $\eta^2 = .033$ ). As expected, these results are consistent with the ANOVA on

the combined data mentioned earlier. The follow-up ANOVA's show significant interaction in Psi ( $F(1,820) = 10.90, p < .002, \eta^2 = .013$ ), Spiritualism ( $F(1,820) = 5.92, p < .02, \eta^2 = .007$ ) and Religiosity ( $F(1,820) = 4.86, p < .05, \eta^2 = .006$ ), indicating that these three measures declined more in the Korean sample. The main effects of nationality are all significant except in Spiritualism and Precognition. The main effects of year are all significant except in Superstition. In other words, all paranormal belief subscale scores declined significantly over the 10 years indicated except Superstition which did decline although not significantly.

Table 1 shows the difference in the 7 subscale scores by nationality and year. These are basically differences between all comparable pairs of points in Figure 4. The first two columns show the differences between 2009 and 1999 analyzed separately for each country. They show that all subscale scores declined significantly in Korea over the 10 year period. They also declined in the U.S. sample but the declines in Religiosity, Spiritualism, and Superstition are not statistically significant. The next two columns show the differences between the two countries in 1999 and 2009 separately.

**Table 1.** Differences in Different Types of Paranormal Belief Scores by Combination of Nationality and Year

	2009 - 1999 Korea	2009 - 1999 US	Korea - US In 1999	Korea - US In 2009	2009 - 1999 Korea & US combined	Korea - US 1999 & 2009 combined
<b>Extraterrestrial Life</b>	-0.3**	-0.42**	0.14	0.26**	-0.34**	0.22**
<b>Precognition</b>	-0.34**	-0.26*	0.15	0.07	-0.31**	0.07
<b>Religiosity</b>	-0.45**	-0.15	-0.08	-0.38**	-0.34**	-0.31**
<b>Spiritualism</b>	-0.43**	-0.12	0.07	-0.24**	-0.31**	-0.16
<b>Superstition</b>	-0.18*	-0.05	0.59**	0.46**	-0.11	0.49**
<b>Psi</b>	-0.79**	-0.36**	0.66**	0.23**	-0.6**	0.33**
<b>Witchcraft</b>	-0.45**	-0.34**	0.26*	0.15*	-0.4**	0.16**

Note: \* $p < .05$ , \*\* $p < .01$

In general, Koreans show higher paranormal belief scores than Americans except for two subscales: Religiosity and Spiritualism. Superstition is the subscale with the most significant difference between the two countries while the Precognition scores are almost identical. The fifth column shows the difference between 2009 and 1999 in seven subscale scores ignoring the nationality variable (related to the main effects of year in the ANOVA's mentioned above) and the last column shows the difference between Koreans and Americans in seven subscale scores ignoring the year (the main effects of nationality in the ANOVA's mentioned above).

*Table 2.* Correlation among 7 subscales

country	Witchcraft	Psi	Superstition	Spiritualism	Precognition	ExtraLifeForms	
Korea	Religiosity	.142**	.220**	.004	.237**	.113*	-.105*
	Witchcraft		.784**	.554**	.660**	.641**	.339**
	Psi			.561**	.737**	.674**	.431**
	Superstition				.563**	.632**	.421**
	Spiritualism					.685**	.434**
	Precognition						.374**
	America	Religiosity	.161**	.172**	.100	.198**	.070
Witchcraft		.747**	.587**	.606**	.595**	.297**	
Psi			.594**	.758**	.657**	.398**	
Superstition				.576**	.625**	.253**	
Spiritualism					.711**	.415**	
Precognition						.287**	

Note: \* $p < .05$ , \*\* $p < .01$

Table 2 shows the correlation among 7 subscales. There is a weak negative correlation between Religious belief and belief in Extraterrestrial Life in both the Korean and American samples. The negative correlation could imply that the belief in Extraterrestrial Life is positively associated with a scientific world

view. There is a strong correlation between Psi and Witchcraft; and between Psi and Spiritualism.

## **IV. Discussion**

The main findings of this study are (1) Korean students, on average, show stronger paranormal beliefs than American students, (2) the religious and non-religious paranormal beliefs declined in both countries during the 10 year period, and (3) the decline was much more significant in Korean college students and in 2009 the difference in paranormal beliefs between the Korean and American samples was no longer significant.

This study was not based on the national representative samples and therefore there could be an objection concerning the generalizability of the data. However, the results of the study are in line with the Gallup survey based on the representative American data. As discussed in the introduction, according to the Gallup survey, beliefs in various paranormal phenomena in the U.S. increased between 1990 and 2001 but from 2001 to 2005 they showed a sign of decreasing trend. Our study examined the change during the period of 1999 and 2009. There are also many studies that indicate that religious paranormal beliefs are declining in the U.S., in Europe and in S. Korea as discussed in the introduction which is also consistent with the results of the study.

Irwin (2009) discussed four hypotheses for explaining belief in the paranormal: 1) The Social Marginality Hypothesis, 2) The Worldview Hypothesis, 3) the Cognitive Deficits Hypothesis, and 4) the Psychodynamic Functions Hypothesis. The results of our study

are probably not related to the third hypothesis (the Cognitive Deficits Hypothesis) as it is unlikely that fundamental cognitive ability of people changes over 10 years but the results can be interpreted with the first and the second hypotheses. The proportion of people who are “socially marginal” may have decreased especially in S. Korea with the rapid economic growth during the period (Yoo, Ilho, 2008). According to the The World Factbook (CIA), the GDP per capita in the U.S. increased from \$33,028 (1999) to \$46,400 (2009 est) while in S. Korea, from \$9,554 (1999) to \$28,000 (2009 est).

The results can also be interpreted as evidence that Koreans and Americans are accepting the scientific world view more than before. The definition of paranormal is usually tied to the concept of science as discussed in the introduction. The dictionary definition of ‘paranormal’ often includes phrases such as “not scientifically explainable.” Therefore people who have a scientific world view (or those who understand and value scientific processes) would more likely have a lower level of paranormal beliefs while those who believe in mysterious forces that cannot be explained by sequences of cause and effect between matter and energy would have a higher level of paranormal beliefs. The reason the belief in Extraterrestrial Life has the highest overall mean belief score is that many scientists believe that it probably exists and therefore it is not considered as paranormal by many. The decline of both religious beliefs and non-religious paranormal beliefs, shown in this study, is consistent with the idea that the acceptance of a scientific world view is increasing (Lim, 1983).

Studying the belief in the paranormal has an implication in the broader question about belief in general. Belief can be viewed and usually measured as an attitude (strongly agree to strongly

disagree ratings) on a proposition. A proposition such as “Some people have the ability to predict the future” brings out various levels of agreement among different people. Propositions about paranormal phenomena usually lack scientific and empirical support by definition. There are many propositions that are not about paranormal phenomena but also lack empirical or scientific support. As a matter of fact, there are very few propositions that have an absolute support of science as science itself changes as it progresses. As scientists believe that a certain proposition is true because it goes along with a theory he or she believes in, people would believe in the veracity of a proposition about various domain including political issues if it fits the worldview he or she holds.

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## References

- Aarnio, K. & Lindeman, M. (2007). Religious people and paranormal believers: Alike or different? *Journal of Individual Differences*, *28*(2), 1-9.
- Alcock, J. E. (1981). *Parapsychology: Science or magic?* Pergamon Press.
- Braude, S. E. (1978). On the meaning of "paranormal"?. In Ludwig, J. (ed.) (1978). *Philosophy and Parapsychology*.
- Davis, J. A. & Smith, T. W. General social surveys, 1972-2008 [machine-readable data file] /Principal Investigator, James A. Davis; Director and Co-Principal Investigator, Tom W. Smith; Co-Principal Investigator, Peter V. Marsden;

- Sponsored by The National Science Foundation. –NORC ed.-  
- Chicago: The National Opinion Research Center  
[producer]; Storrs, CT: The Roper Center for Public Opinion  
Research, University of Connecticut [distributor],2009.
- Gallup (2005). Three in four Americans believe in paranormal by  
David W. Moore, June 16, 2005.  
<<http://www.gallup.com/poll/16915/Three-Four-Americans-Believe-Paranormal.aspx#2>>.
- Haraldsson, E., & Houtkooper, J. M. (1996). Traditional Christian  
beliefs, spiritualism, and the paranormal: An Icelandic-  
American comparison, *International Journal for the  
Psychology of Religion*, 6(1), 51-64.
- Irwin, H. (2009). *The psychology of paranormal belief: A researcher's  
Handbook*. Hertfordshire: University of Hertfordshire Press.
- Kennedy, J. E. (2004). The roles of religion, spirituality, and  
genetics in paranormal beliefs, *The Skeptical Inquirer*,  
28(2), 39-42.
- Lim, H.-S. (1983). A study on the change of value-orientations  
adjustments for value conflict in contemporary Korean  
society, *The Korean Social Science Journal*, 10(1), 94-115.
- Orenstein, A. (2002). Religion and paranormal belief, *Journal for  
the Scientific Study of Religion*, 41(2), 301–311.
- Rohrbaugh, J. & Jessor, R. (1975). Religiosity and self-control,  
*Journal of Personality*, 43, 136-155.
- Tobacyk, J. (2004). A revised paranormal belief scale, *The  
International Journal of Transpersonal Studies*, 23, 94-98.
- Tobacyk, J. & Pirttilae-Backman, A. (1992). Paranormal beliefs and  
their implications in university students from Finland and  
the United States, *Journal of Cross-Cultural Psychology*.  
23(1), 59-71.



- Tobacyk, J. & Milford, G. (1983). Belief in paranormal phenomena: Assessment instrument development and implications for personality functioning, *Journal of Personality & Social Psychology*, *44*(5), 1029-1037.
- Tobacyk, J. J. & Tobacyk, Z. S. (1992). Comparisons of belief-based personality constructs in Polish and American university students: Paranormal beliefs, locus of control, irrational beliefs, and social interests, *Journal of Cross-Cultural Psychology*, *23*(3), 311-325.
- Yoo, I. (2008). Korea's economic development: Lessons and suggestions for developing countries, *The Korean Social Science Journal*, *35*(1), 31-63. World value survey, <http://www.worldvaluessurvey.org/>.
- The World Factbook (n.d.). Country comparison: GDP - per capita (PPP). Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2004rank.html>.