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**Who Believes
that Astrology is Scientific?**

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For over 60 years, most political psychologists have assumed that conservatives are more likely than other members of the US population to believe in astrology.¹ Indeed, a belief in astrology has been frequently used as a measure of how conservative you are, as if a belief in rule by the stars was a major tenet of conservatism.² The support for this supposition in representative national samples of the general public has been non-existent. Indeed, when there are significant differences in adherence to astrology between political groups, usually conservatives and Republicans are less likely than the general public to believe in this form of pseudo-science.

A recent report by the National Science Foundation reviewed scientific knowledge and attitudes.³ Perhaps its most striking finding was a decrease in the opinion that astrology is “not at all scientific.” If one includes the few non-respondents and those who don’t know, in 2012 54.8% correctly stated that astrology was “not at all scientific,” compared to 9.7% believing that astrology is “very scientific,” 31.8% believing that it is “sort of scientific,” 3.3% saying they “don’t know,” and 0.4% refusing to answer.⁴ The data used in that portion of the NSF study were from the

¹ T. W. Adorno, E. Frenkel-Brunswik, D. J. Levinson & R. N. Sanford, *The Authoritarian Personality* (1950, New York: Harper); John T. Jost, Jack Glaser, Arie W. Kruglanski, & Frank J. Sulloway, *Political Conservatism as Motivated Social Cognition*, 129 *Psychological Bulletin* 339-375 (May 2003); R. A. Altemeyer, *The Authoritarian Specter* (1996, Cambridge, MA: Harvard University Press); R. A. Altemeyer, *The Other “Authoritarian Personality,”* in M. P. Zanna (Ed.), 30 *Advances in Experimental Social Psychology* 47-91 (1998); G. D. Wilson & J. R. Patterson, *A New Measure of Conservatism*, 7 *British Journal of Social & Clinical Psychology*, 264-269 (1968). Studies using short versions of the F-scale (typically 5-10 questions) were included the 1952 American National Election Study (ANES), the 1954 ANES, the 1954 Stouffer study, and the 1964 NORC-Berkeley study of Anti-Semitism. See generally James Lindgren, *The Centrist Authoritarian* (2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2029435.

² See authorities in note 1 supra.

³ National Science Foundation, *Science and Technology: Public Attitudes and Understanding* (2014), <http://www.nsf.gov/statistics/seind14/content/chapter-7/c07.pdf>.

⁴ The first draft of this paper used the 2012 sample from the 1972-2012 cumulative GSS data file. This includes about 1,000 respondents who were selected for 2012’s new sample. In reconciling my percentages with those in the NSF report, I determined that the NSF also included two carry-over samples from 2008 and 2010

National Opinion Research Center's General Social Survey, the best of the academic omnibus surveys.

This brief article reports some of the correlates of a belief in astrology as scientific using the same GSS database used in the NSF report.⁵ Results are weighted by adults in the household and nonresponse. Correlations with party and political orientation are reported for the GSS question:

ASTROSCI: Would you say that astrology is very scientific, sort of scientific, or not at all scientific?

For the belief that astrology is either very scientific or sort of scientific, results are also broken down by age, gender, education, and region.

who were resurveyed in 2012. Since there is some attrition on resampling, that group may be slightly less representative, which is why a majority of researchers using the GSS for cross-sectional analyses usually exclude those samples. Because the NSF used the resamples, I decided to include them as well in the second and third drafts, a move that more than doubles the sample to 2256 respondents and a weighted N of 2252. Results are weighted by the variable WTCOMBNR, which appears to be the same weight used by the NSF.

⁵ See note 4 supra.

Table 1**Belief that Astrology is Not Scientific by Party and Political Orientation**

NORC GSS 2012, including panel data; weighted N=2186

Political Group	Very scientific	Sort of scientific	Not at all scientific	Don't know	No answer	wtd N
Democrat	12.9%	35.7%	48.6%	2.6%	0.2%	778
Independent	9.9%	33.0%	52.6%	4.1%	0.6%	853
Republican	5.5%	25.6%	66.2%	2.6%	0.1%	556
Liberal	10.1%	33.4%	55.3%	1.0%	0.2%	595
Moderate	11.0%	34.0%	51.1%	3.6%	0.3%	778
Conservative	7.9%	28.6%	60.3%	3.0%	0.2%	790
Liberal Democrat	11.6%	30.1%	56.9%	1.4%	0.0%	356
Moderate Democrat	12.9%	39.1%	44.4%	3.3%	0.3%	258
Conserv. Democrat	16.3%	43.1%	36.6%	3.2%	0.8%	149
Liberal Indep.	8.3%	38.5%	52.5%	0.5%	0.2%	182
Moderate Indep.	11.2%	31.9%	53.5%	3.2%	0.3%	390
Conservative Indep.	7.8%	33.1%	56.1%	3.0%	0.0%	219
Liberal Republican	9.4%	35.7%	54.9%	0.0%	0.0%	36
Moderate Repub.	6.1%	31.6%	60.2%	1.7%	0.3%	110
Conserv. Republican	4.9%	22.1%	70.0%	3.0%	0.0%	403

Margin of error for party & political orientation on "not at all scientific": 3.3-4.0%

Median margin of error for party & political orientation combinations on "not at all scientific": 6.6%

Table 2

Belief that Astrology is Not Scientific by Gender

NORC GSS 2012, including
resampling; weighted N=2252

	% Not Scientific	wtd N
MALE	60.2%	1062
FEMALE	50.0%	1190

Margin of error: 2.8-2.9%

Table 3

Belief that Astrology is Not Scientific by
Region

NORC GSS 2012, incl. panels; weighted N=2252

	% Not Scientific
NEW ENGLAND	52.3%
MIDDLE ATLANTIC	55.6%
E. NOR. CENTRAL	56.5%
W. NOR. CENTRAL	57.7%
SOUTH ATLANTIC	51.1%
E. SOU. CENTRAL	50.9%
W. SOU. CENTRAL	50.6%
MOUNTAIN	64.3%
PACIFIC	56.9%

Margin of error: 4.6-5.9%

Table 4
 Belief that Astrology is Not Scientific by
 Age

NORC GSS 2012, incl. panels; weighted N=2231

	% Not Scientific	wtd N
18-29	45.6%	405
30-39	52.3%	391
40-49	53.3%	389
50-59	57.2%	451
60-69	62.6%	327
70 or older	60.8%	268

Margin of error: 4.6-5.9%

Table 5
 Belief that Astrology is Not Scientific by
 Highest Educational Degree

NORC GSS 2012, incl. panels; weighted N=2252

	% Not Scientific	wtd N
LT HIGH SCHOOL	34.4%	310
HIGH SCHOOL	51.5%	1134
JUNIOR COLLEGE	54.9%	159
BACHELOR	69.4%	430
GRADUATE	72.1%	219

Margin of error: 2.9-7.8%

Discussion and Conclusion

A possible reason for some respondents believing that astrology is at least sort of scientific is that they might not understand even the basics of cosmology. In the NSF module, the GSS asked:

EARTHSUN: Now, does the Earth go around the Sun, or does the Sun go around the Earth?

For those who answered correctly, a follow-up question was asked:

SOLAREV: How long does it take for the Earth to go around the Sun: one day, one month, or one year?

In the 2012 NSF/GSS survey, only 54.6% of adults were able to answer both questions correctly, even though the questions were multiple choice, and there was a 50-50 chance of guessing the right answer to the first one and a 33% probability of guessing the right answer to the second. Thus, only about 55% of adult Americans know both that the Earth revolves around the Sun and that it takes a year for that to occur. Perhaps not surprisingly, in 2012 only 39% of those who thought that the sun revolved around the Earth correctly believed that astrology is not at all scientific.

As one can see from Table 6 (below), in 2012 a majority of Democrats (51.4%) could not correctly answer both that the earth revolves around the Sun and that this takes a year. Republicans fare a bit better, with only 37.9% failing to get both correct. The number of respondents who identified as liberal Republicans was so small (a weighted N of 36) that they are probably better combined with moderate Republicans (leading to a combined 49.9% getting it right). As with astrology, conservative Republicans fare the best, with non-liberal Democrats (moderate and conservative Democrats) at or near the bottom.

Table 6
% Correctly Answering That the Earth Goes Around
the Sun & That It Takes a Year
by Party and Political Orientation

NORC GSS 2012, including panel data; weighted N=2186

Political Group	% Correct	wtd N
Democrat	48.6%	778
Independent	55.0%	853
Republican	62.1%	556
Liberal	59.7%	595
Moderate	51.9%	778
Conservative	56.0%	790
Liberal Democrat	62.0%	356
Moderate Democrat	43.7%	258
Conservative Democrat	26.9%	149
Liberal Indep.	59.5%	182
Moderate Indep.	57.4%	390
Conservative Indep.	53.2%	219
Liberal Republican	39.9%	36
Moderate Republican	53.2%	110
Conservative Republican	67.2%	403

Margin of error for party & political orientation: 3.3-4.0%

Median margin of error for party & political orientation combinations: 6.6%

Believers in astrology are not the only ones who hold beliefs for which there is no good evidence. Many political psychology researchers share the view that a belief in astrology is one of the things that defines how conservative you are. Support for astrology or horoscopes was contained in the most commonly used conservatism scales: the Adorno F-Scale, the Wilson-Patterson C-scale, and the Right Wing Authoritarianism (RWA) scale.⁶ By this logic, the most conservative group in the population—conservative Republicans—should be the most likely to believe in astrology. But instead they are the least likely to think that astrology is scientific. That should cause a reconsideration of whether the common scales measure the beliefs and attitudes of typical political conservatives, rather than the typical views of non-liberal Democrats, who score highest on a belief in astrology as well as on some other typical “conservatism” items.⁷

Using Fisher’s Exact Test, conservative Republicans are significantly more likely than other groups combined to reject astrology as not scientific ($p < .0005$). The same is true of conservatives compared to non-conservatives ($p < .0005$) and Republicans compared to non-Republicans ($p < .0005$). Likewise, Democrats are less likely to reject astrology as unscientific than others ($p < .0005$). Liberals do not significantly differ from non-liberals ($p = .810$).

The General Social Survey also asks whether the respondent reads horoscopes (the variable ASTROLOGY). In 2012, the political groups in which a majority read horoscopes are conservative Democrats (59.5%), moderate Democrats (56.8%), Democrats (56.2%), liberal Democrats (54.8%), liberals (51.4%), and moderates (51.0%). The groups least likely to read horoscopes are conservative Republicans (38.2%), Republicans (40.2%), conservative Independents (40.4%), and conservatives (42.4%) Generally, liberals and Democrats are more likely to read horoscopes and conservatives and Republicans are less likely to read horoscopes.

The results presented in this paper for astrology are similar to those for knowing that the Earth revolves around the Sun, but not the same as for some other scientific beliefs, such as a belief in the evolution of humans from other animals (e.g., only 32.4% of Republicans in 2012 believe in evolution). The relationship between science and politics is much more complex⁸ than the one-sided approach reported by most social scientists and journalists.⁹

⁶ See e.g., Adorno, *supra*; Jost, *supra*; Wilson, *supra*; Altemeyer, 1996, *supra*. But see John J. Ray, “A New Measure of Conservatism”: Its Limitations, 10 *British Journal of Social & Clinical Psychology*, 79-80 (1971).

⁷ James Lindgren, *The Centrist Authoritarian* (2012), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2029435.

⁸ See James Lindgren, *Who Fears Science?* (2005 draft, examining 1972-2002 data), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2018806

⁹ See, e.g., Chris Mooney, *The Republican War on Science* (2005).