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# Laboratory exercises for psychology courses: scientific study of horoscopes\*

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This article describes three studies suitable for use as classroom lab exercises in psychology classes dealing with the following topics: research methods, correlation, expectancy effects, personality measurement, and astrology. An appendix, available from the authors, contains all necessary materials and forms (except for the daily newspaper horoscope forecasts needed for Study 3), optional statistical tests, and reprints of our research findings on this topic.

The lab exercises are designed to illustrate the use of the scientific method in answering questions about everyday events; they provide answers to the following questions:

## STUDY 1

- A. What is the validity (perceived accuracy) of astrologically-based personality descriptions?
- B. Do expectancy effects influence judgments of the accuracy of astrologically-based personality descriptions?

## STUDY 2

- A. Are there sex differences in horoscope reading habits and in belief in astrology?
- B. Is the personality dimension "locus of control" related to horoscope reading and belief in astrology?

## STUDY 3

A. What is the validity (perceived

usefulness) of daily horoscope forecasts?

B. Do expectancy effects influence judgments of the usefulness of daily horoscope forecasts?

#### **METHOD**

One, two, or all three studies may be done with the same students. If Study 1 is included, it should be done first and before any mention of astrology is made.

For each study, there are two options, A and B. Option A deals with question A, option B with question B. Note that option B is always the more complex and rquires that option A be done first.

Before the labs are presented, you may want to ask the class:

- 1) How could one find out if personality descriptions based on "handwriting analysis" are accurate? (Study 1)
- 2) How could one find out whether males and females differ in their horoscope reading habits? (Study 2)
- 3) How could one find out if people with particular types of personality are more likely to read horoscopes than others? (Study 2)
- 4) How could one find out whether horoscopes are useful? (Study 3)

If you want your students to make predictions about mean ratings, correlations, etc. you will probably want to discuss some of the issues raised in the discussion sections of

the studies before proceeding the analysis of data.

Students can score their o answers and ratings. Means of easily be calculated in class b few students with calculate Scattergrams can be plotted on t board. If your students, like ou are beginning students with knowledge of statistics, you m want to stop your data analy there and simply tell your stude about statistical tests. If your s dents are more sophisticated, v may wish to do some statistic analyses. (The formulae for t-te: and Pearson r are included in t appendix available from the autho For any correlational analys where students do not report th own data, you can use date of bi and class section to match up sults.

#### STUDY 1

#### **MATERIALS NEEDED**

1) A copy of the "Personal Descriptions" (in the Appendiavailable from the authors) for eastudent. (This is a set of 12 astudent.)

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logically-based personality descriptions and a "Barnum" paragraph plus rating scales.)

- 2) Staplers or paper clips.
- 3) "Personality Descriptions" scoring key (in Appendix available from the authors).

#### **PROCEDURE**

## Option A

If you want to answer only question A, "What is the validity (perceived accuracy) of astrologically-based personality descriptions?":

- 1) Hand out the "Personality Descriptions" to your students;
- 2) Instruct them to shuffle the pages into a random sequence and then restaple or clip them;
- 3) Ask the students to read the descriptions carefully and to rate on the Personality Descriptions 10 point scales how much like themselves each description is.

#### Option B

If you also want to answer question B, "Do expectancy effects influence judgments of the accuracy of astrologically-based personality descriptions?", proceed as above in one class of students. In a different class:

4) Identify the personality descriptions by zodiac sign. Have the students write the appropriate sign above each astrologically-based description, and write "average college student" above the "Barnum" paragraph before they shuffle the pages and rate the descriptions.

#### DATA ANALYSIS

#### **Option A**

If you are only dealing with question A

- 1) Identify (by zodiac sign) each personality description.
- 2) Have each student record: a) his rating of the perceived accuracy of the description of his own sign, b) his mean rating of the other 11 descriptions, c) his rating of the "Barnum" paragraph.
- 3) Calculate the class means of a), b), and c) above.

#### Option B

If you are dealing with question B as well, do the following in addition to the above.

4) Compare the three means (a), (b), and (c) above of the class which rated the personality descriptions which were identified by zodiac sign (Option B) and the means of the class which rated the descriptions without knowing the zodiac signs (Option A). In other words, Table 1 below should be filled in.

## DISCUSSION TOPICS AND METHODOLOGICAL ISSUES

## Option A

- 1) Ask your students why they were told to shuffle the pages of the "Personality Descriptions".
- 2) Ask why they were not told the origins of the personality descriptions.
- 3) Discuss the (presumably) high mean rating of the "Barnum" paragraph. Ask your students why they think so many people find it a good

useless

description of themselves. Given some background on this.

4) Discuss the meaning of aidifference between the class' "ovingin" and "other 11 signs" meanings (Table 1).

#### Option B

- 5) Give your students som background on expectancy effect Ask whether they think these cou be involved in people's judgmen of the accuracy of astrologicall based personality descriptions.
- 6) Discuss the meaning of ar differences between mean rating in the class where the description were identified beforehand and the class where they were not.

## STUDY 2

## MATERIALS NEEDED

## Option A

1) A copy of the "Horosco Reading Habits" form (Table 2) each student.

very useful

TABLE 1							
	MEAN						
DESCRIPTION	Own Sign	Average other II	"Barnum"				
Not identified before rating							
Identified before rating							

#### TABLE 2

#### Horoscope reading habits

1. Sex:	Male_			_ F	ema	ale_				-		-
2. Date of birth	: Day			Мо					Yea	ır		
3. Birth sign:												
4. In the past m	onth (28	da	ys)	, i re	ead	my	hc	ros	cop	рe		
never or aln never	nost	1	2	3	4	5	6	7	8	9	10	every day or nearly every da
5. When I read	my horo	sco	pe,	l g	ene	rall	y fi	nd 1	he	adv	ice o	r information give

1 2 3 4 5 6 7 8 9 10

#### **Option B**

The above plus

2) A copy of the Rotter Internal/ External Locus of Control (I/E) Scale (in Appendix available from the authors), for each student and

3) Rotter Scale administration instructions, scoring master and norms (in Appendix available from the authors).

#### **PROCEDURE**

#### Option A

If you want to answer only question A, "Are there sex differences in horoscope reading habits and in belief in astrology?":

1) Have the students fill out the "Horoscope Reading Habits" form.

### Option B

If you are also dealing with question B, "Is the personality dimension "locus of control" related to horoscope reading and belief in astrology?", do the above and

2) administer the Rotter Scale to all students. Make sure that students understand that they must always choose the statement closest to their views even when they believe neither or both.

#### DATA ANALYSIS

#### **Option A**

If you are only dealing with question A:

 Calculate the average male and female scores on questions 4 and 5 of the "Horoscope Reading Habits" form.

#### Option B

If you are dealing with question B as well, do the following in addition to the above.

- 2) Explain to your students how to score their Rotter Scale.
- 3) Have your students hand in (anonymously) a sheet with their Rotter Scale score and their answers to questions 4 and 5 on the "Horoscope Reading Habits" form OR have them hand in their completed and scored Rotter

Scale and their "Horoscope Reading Habits" forms. If you do the latter, use their birthdates to match up data for individual subjects. Plot scattergrams on the board (Rotter and Question 4, Rotter and Question 5, Question 4 and Question 5). If you wish, you may calculate the correlation coefficient (formula is in the appendix available from the authors).

## DISCUSSION TOPICS AND METHODOLOGICAL ISSUES

#### Option A

1) Discuss possible interpretations of any sex differences found with regard to horoscope reading habits.

#### Option B

- 2) Give your students some background on the dimension of locus of control. Discuss its possible relationship to horoscope reading habits.
- 3) Discuss the meaning and significance of the scattergrams and/or correlation coefficients.

## STUDY 3

#### **MATERIALS NEEDED**

- 1) Horoscope forecasts from one or two daily newspapers published the day before the day you do the lab. One set must be taken from an out-of-town newspaper which carries a different astrologer from the one(s) in the major paper(s) in your city. (We used the Toronto Star.) The second (optional) set should come from the local paper most widely read by your students. (We used the Montreal Gazette.) The forecasts must be re-ordered in a random sequence and specific references to astrological signs deleted.
- 2) A copy of the "Horoscope Rating Form" (Table 3) for each student. This provides instructions and the form for rating each forecast on a 10-point scale.)

## **PROCEDURE**

#### Option A

If you want to answer only question A, "What is the validity (perceived usefulness) of daily horoscope forecasts?":

1) read the randomized newspaper horoscope forecasts aloud to your students. It is recommended that each be read twice. As soon as you have finished reading one, have the students rate it (on the "Horoscope Rating Form") as to how useful the information or advice would have been to them the preceding day. (The 10-point scale of usefulness is explained on the form.)

#### Option B

If you are also dealing with question B, "Do expectancy effects influence judgments of the usefulness of daily horoscope forecasts?", do the above and

2) read the horoscope forecasts in the same order to a different group of students but identify the zodiac sign for each forecast just before reading it.

## **DATA ANALYSIS**

### Option A

- 1) Identify the signs of the forecasts.
- 2) Have the students (a) circle the rating of the forecast for their own signs and (b) calculate the mean rating for the other 11.
- 3) Calculate class means for (a) and (b) above.

### Option B

4) Compare the two means (a) and (b) above of the class which rated forecasts which were identified by zodiac sign and the means of the class which made the ratings without knowing the zodiac signs. In other words, the Table 4 below should be filled in.

## DISCUSSION TOPICS AND METHODOLOGICAL ISSUES

#### Option A

1) Ask your students why only an

#### TABLE 3

#### Horoscope rating form

Rate each forecast on a scale from 1-10 with 1 = useless, 10 = very useful.

Yesterday	: Newspaper A	Yesterday: Newspaper B					
Forecast No.	How useful would this advice/information have been for you yesterday?	Forecast No.	How useful <b>would this</b> advice/information <b>have been</b> for you yesterday?				
1		1					
2		2					
3	· 	3	<u> </u>				
4							
5		5					
6	<del></del>	6					
7		7					
8		8					
9		9					
10		10					
11		11					
12		12					
		<del>-</del> -	· ·				

**TABLE 4** 

Description	MEANS							
	Newsp	aper A	Newspaper B					
	Own Sign	Average Other II	Own Sign	Average Other II				
Not identified before rating								
Identified before rating	***							

out-of-town paper was used, (or why both out-of-town and local papers were used).

2) Ask why the forecasts were in random order and not identified.

3) Discuss the meaning of the following comparisons:

(a) The difference(s) between class mean ratings of own and other 11 signs (for both newspapers, if two were used).

(b) the differences between ratings of forecasts from the two newspapers.

#### Option B

(c) the differences betweer ratings in the class where the signs were identified and the one where they were not.

#### NOTE

1/ The personality descriptions were taken from Naylor, John, Your 1981 Astrology Guide (Globe Mini-Mags 713-724). New York: Globe Communications Corp., 1980. Specific references to zodiac signs were deleted. The "Barnum" paragraph was the paragraph described by Snyder C.R., Shenkel, R., & Lowery, C. Accep tance of personality interpretations The "Barnum effect" and beyond J. Consult. & Clin. Psychol., 1977, 45. 104-114. This paragraph contains statements with a high base rate of occur rence in the population; data show that people given this description generally believe it to be a good reflection of their own personality.

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