

## H0: & RH: Practice

### The Story (almost the same as before)

A social psychologist wanted to examine how students select their friends. In particular, she wanted to begin to understand things related to how someone decides whether or not to befriend an "odd person". Twenty-four volunteers from an Introductory Psychology class participated in the study. Each was asked to report their **gender** (1=men 2=women), **age**, and to indicate the type of person they were most likely to become friends with (**friend**: 1=someone with shared interests, 2=someone interesting to be around). Also, each person completed the Odd Friends Scale (**OFS**: the author claims persons with higher scores are more likely to have odd friends, 30 items).

The last part of the questionnaire included a vignette. There were two versions of this **vignette**, and 12 participants were randomly assigned to receive each version. Both versions contained a story about a new neighbor who had moved in next door and describes them as having a job as "an independent deep sea gilet recovery expert, with hobbies that all involve imminent death or dismemberment". One version (coded 1) of the questionnaire tells that this new neighbor makes a concerted and polite effort to "become friends", while the other version (coded 2) tells that they are "quite standoffish". After reading the story, each participant was asked to rate the likelihood (**likerate**) of their befriending this new neighbor, using a 10-point scale (on which a "10" means they would certainly want to make friends with this person and a "1" means they would definitely not want to make friends with this person).

Each of the participants came back one week later to complete a follow-up data collection session. First they were asked to take the OFS again (**OFS2**). Next they were asked to remember the vignette they had read and to again rate the likelihood of their befriending this new neighbor, using the same scale (**likerat2**). Then they read two additional vignettes that described new neighbors who had different "senses of humor" and rated the likelihood of turning each neighbor over to the police for their actions (using a 10-point for which a "10" meant they would definitely inform the police and a "1" meant they would definitely not inform the police). The first vignette (the "Joker vignette") told of a neighbor who loved practical jokes -- harmless things like putting your car in a tree or kidnapping your child for a day or two. The second vignette (the "Borrower vignette") described a neighbor who had a tendency to borrow things and take them to his house without asking -- small things such as your refrigerator or your bed. In the dataset, these variables are referred to as **jokepol** and **borowpol**, respectively. They were also asked whether or not they had ever called the police to report a neighbor (**polever**). Finally they were asked to tell the number of close friends they had that were male (**mclsfrnd**) and female (**fclsfrnd**).

#### 1. Identify the type (qualitative or quantitative) of each variable

Variable	Type	Variable	Type
gender		OFS2	
age		likerat2	
friend		jokepol	
OFS		borowpol	
vignette		polever	
likerate		mclsfrnd	
		fclsfrnd	

## 2. Working with correlations

What key phrase should be in the H<sub>0</sub>: for a correlation? **No linear relationship**

What are the three phrases one of which should be in a R<sub>H</sub>: for a correlation?

**Positive linear relationship, no linear relationship or negative linear relationship**

a. R<sub>H</sub>: I expect that people with higher OFS scores will give higher likelihood ratings.

- Expected r is  $\textcircled{+}$  0 - ?? Null is  $\textcircled{0}$  + - ??
- State the associated H<sub>0</sub>:, using proper phrasing for this statistical test.

**There is no linear relationship between OFS scores and likelihood ratings.**

- Restate the R<sub>H</sub>:, using proper phrasing for this statistical test.

**There is a positive linear relationship between OFS scores and likelihood ratings.**

b. R<sub>H</sub>: I think that older participants will tend to have lower OFS scores

- Expected r is + 0  $\textcircled{-}$  ?? Null is +  $\textcircled{0}$  - ??
- State the associated H<sub>0</sub>:, using proper phrasing for this statistical test..

**There is no linear relationship between age and OFS scores.**

- Restate the R<sub>H</sub>:, using proper phrasing for this statistical test.

**There is a negative linear relationship between age and OFS scores.**

c. R<sub>H</sub>: I don't think that OFS scores will be related to the number of close friends participants have.

- Expected r is +  $\textcircled{0}$  - ?? Null is +  $\textcircled{0}$  - ??
- State the associated H<sub>0</sub>:, using proper phrasing for this statistical test.

**There is no linear relationship between OFS scores and the number of close friends.**

- Restate the R<sub>H</sub>:, using proper phrasing for this statistical test.

**There is no linear relationship between OFS scores and the number of close friends.**

### 3. Working with BG ANOVA

What key phrase/idea should be in the H0: for an ANOVA? **No mean difference** or **means are equal**

What are the three phrases/ideas one of which should be in a RH: for an ANOVA? **G1 > G2** **G1 = G2** **G1 < G2**

a. RH: I expect that men (G1) will have higher OFS scores than women (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**Men and women will have the same mean OFS scores.**

**There will be no difference between the mean OFS scores of men and women.**

- Restate the RH:, using proper phrasing for this statistical test.

**Men will have higher mean OFS scores than women.**

b. RH: People who have ever called the police to report a neighbor(G1) will have lower OFS scores than people who have never done so (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**People who have and have not called police to report a neighbor have the same mean OFS scores.**

**People who have ever called the police to report a neighbor will have the same mean OFS scores as people who have never done so.**

- Restate the RH:, using proper phrasing for this statistical test.

**People who have ever called the police to report a neighbor will have lower mean OFS scores than people who have never done so.**

c. RH: People who read the "friendly" vignette (G1) will give the same likelihood to befriend rating as people who read the "standoffish" vignette (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**People who read the "friendly" vignette will give the same mean likelihood to befriend rating as people who read the "standoffish" vignette.**

- Restate the RH:, using proper phrasing for this statistical test.

**People who read the "friendly" vignette will give the same mean likelihood to befriend rating as people who read the "standoffish" vignette.**

#### 4. Working with WG ANOVA

What key phrase/idea should be in the H0: for an ANOVA? **No mean difference** or **means are equal**

What are the three phrases/ideas one of which should be in a RH: for an ANOVA? **G1 > G2** **G1 = G2** **G1 <**

a. RH: I expect that people will have fewer male friends (G1) than female friends (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**People will have no mean difference in the number of male and female friends people have.**

**People will have the same mean number of male and female friends**

- Restate the RH:, using proper phrasing for this statistical test.

**People will have the fewer mean male friends than female friends**

b. RH: I don't expect any difference between the OFS scored from the first session (G1) and the second (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**People will have the same mean OFS scores from the first and second sessions.**

**The mean OFS score from the first session will be the same as the mean OFS score from the second session.**

- Restate the RH:, using proper phrasing for this statistical test.

**The mean OFS score from the first session will be the same as the mean OFS score from the second session.**

c. RH: I expect that people will give higher likelihood ratings during the first session (G1) than during the second (G2).

- Expected  $G1 > G2$   $G1 = G2$   $G1 < G2$  ?? Null is  $G1 > G2$   $G1 = G2$   $G1 < G2$  ??
- State the associated H0:, using proper phrasing for this statistical test.

**People will have the same mean likelihood ratings from the first and second sessions.**

**The mean likelihood ratings from the first session will be the same as the mean likelihood ratings from the second session.**

- Restate the RH:, using proper phrasing for this statistical test.

**The mean likelihood ratings from the first session will be the same as the mean likelihood ratings from the second session.**

## 5. Working with $X^2$

What key phrase should be in the  $H_0$ : for a  $X^2$ ? **No pattern of relationship**

What key phrase should be in a  $RH$ : for a  $X^2$ ? **specify the pattern of the relationship**

a.  $RH$ : I expect that men are more likely to pick friends because they are interesting than because they have similar backgrounds, whereas women are more likely to pick friends that have similar backgrounds than because they are interesting

- Use  $<$ ,  $>$  and  $=$  portray this  $RH$ : in the boxes below

	Gender	
Pick friends who...	Men	Women
Are interesting	<b>V</b>	<b>^</b>
Have a similar background		

- State the associated  $H_0$ :, using proper phrasing for this statistical test.

**There is no pattern of relationship between gender and how people pick their friends.**

- Restate the  $RH$ :, using proper phrasing for this statistical test.

**More men will pick friends who are interesting, whereas more women will pick friends with whom they have similar backgrounds.**

$RH$ : I expect that most men will not have reported a neighbor to the police, and that most women will not have reported a neighbor to the police.

- Use  $<$ ,  $>$  and  $=$  portray this  $RH$ : in the boxes below

	Gender	
Ever report a neighbor to the police?	Men	Women
No	<b>V</b>	<b>V</b>
Yes		

- State the associated  $H_0$ :, using proper phrasing for this statistical test.

**There is no pattern of relationship between gender and whether or not people have called the police about a neighbor.**

- Restate the  $RH$ :, using proper phrasing for this statistical test.

**More men will not have reported a neighbor to the police, also more women will not have reported a neighbor to the police.**