

**Final Exam**

**PS 306, Fall 2002**

1. Suppose that you completed a senior thesis in which you worked out the basic idea of the study in conjunction with your faculty advisor, you collected all the data, then worked with your advisor on analyses, and then went through several cycles of revision of your thesis based on feedback from your advisor. Ultimately, two years after you graduate, your advisor is interested in including your thesis along with three other studies in a paper to be submitted to a journal for publication. Using the three principles espoused by Fine & Kurdek, what kind of acknowledgement do you think would be appropriate for your contribution. [10 pts]

**Your answer should make explicit use of the principles espoused in the article.**

2. Dr. Ray N. Deere was interested in the impact of three types of Drug (A, B, and C) on minimizing the negative impact of the common cold. A group of 15 people suffering from colds were given one of the three drugs for 3 days after first reporting cold symptoms and then asked to rate how comfortable they felt on a 7-point scale (1 = awful, 7 = excellent). Complete the analysis seen below, then tell Dr. Deere what he should do next. [10 pts]

**ANOVA Table for Comfort Score**

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Drug	2	.933	.467	.560	.5854	1.120	.120
Residual	12	10.000	.833				

**Means Table for Comfort Score**

**Effect: Drug**

	Count	Mean	Std. Dev.	Std. Err.
Drug A	5	5.000	.707	.316
Drug B	5	5.200	.837	.374
Drug C	5	4.600	1.140	.510

**First of all, you should note the absence of an appropriate control group (no drug/placebo). Then, you should determine how you might increase the power of the study. Including the control group would help enhance the treatment effect, but you might also consider giving a greater dosage of the drugs. You could also work to decrease the error term. One approach might be to use only males or only females. You might also use only people with very severe colds (through some operational definition, using maximum temperature, etc.). Finally, you can always boost the power by increasing the sample size from 5 to a much larger n.**

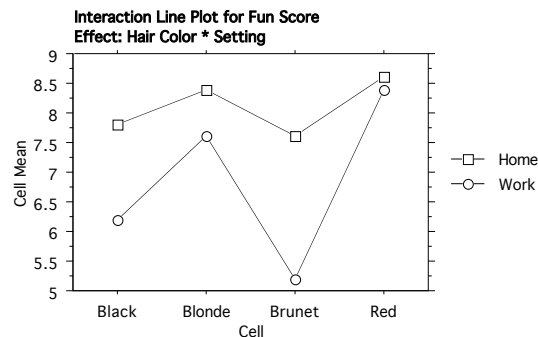
3a. Intrigued by the notion that “blondes have more fun,” Dr. Harry Feller (himself a blonde) decided to collect data from people with various hair colors. Because he thought that blondes would have more fun under a wider range of settings, he decided to collect data in two different settings (Work and Home) for 40 people with four different hair colors: blonde, brunet, red, and black. The dependent variable was a 9-point rating scale of the amount of fun the person was having “at that time.” Complete the analysis below and interpret the results as completely as you can. Do the data indicate that you should stock up on blonde hair coloring? [15 pts]

**ANOVA Table for Fun Score**

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Hair Color	3	27.075	9.025	12.893	<.0001	38.679	1.000
Setting	1	15.625	15.625	22.321	<.0001	22.321	.999
Hair Color * Setting	3	6.875	2.292	3.274	.0336	9.821	.694
Residual	32	22.400	.700				

**Means Table for Fun Score**  
Effect: Hair Color \* Setting

	Count	Mean	Std. Dev.	Std. Err.
Black, Home	5	7.800	.837	.374
Black, Work	5	6.200	.837	.374
Blonde, Home	5	8.400	.894	.400
Blonde, Work	5	7.600	.548	.245
Brunet, Home	5	7.600	1.140	.510
Brunet, Work	5	5.200	.837	.374
Red, Home	5	8.600	.548	.245
Red, Work	5	8.400	.894	.400



**At the outset, you might mention that nothing is manipulated, so you can't make any causal claims about the impact of hair color on fun scores.**

$$HSD = 4.59 \sqrt{\frac{.7}{5}} = 1.72$$

**Conclusion: At home, people of all 4 hair colors had equal levels of fun. However, at work people with red hair had more fun than people with black or brunet hair. At work, people with blonde hair had more fun than people with brunet hair. But, absent a true manipulation, dying one's hair red (or blonde) would not necessarily lead to more fun at work (and certainly not at home).**

3b. Suppose that Dr. Feller decided to ignore the two different settings and analyze his data (from 3a) as a single-factor ANOVA with hair color as the only factor. Complete the source table below to illustrate the outcome of that analysis. [5 pts]

Source	df	SS	MS	F
Hair Color	3	27.09	9.03	7.22
Error	36	44.89	1.25	
Total	39	71.98		

4. Suppose that you were interested in conducting an experiment as a 5x5 design, with a minimum of 30 scores per cell. [5 pts]

How many participants would you need for a completely between (independent groups) design?	<b>750</b>
How many participants would you need for a completely within (repeated measures) design?	<b>50</b>
How many participants would you need for a mixed design (one factor independent groups and one factor repeated measures)?	<b>Complete: 600 Incomplete: 150</b>

5. Briefly describe at least 3 studies that illustrate the operation of experimenter expectancy effects. [10 pts]

**Clear articulation of the studies illustrating experimenter expectancy effects is essential here.**

6. Using *either* the West, Gunn, & Chernicky (1975) study from your text (participating in a burglary) *or* one of the two studies used in the class in which we broke into mini-IRB groups, use the APA ethical guidelines to determine whether or not you would have voted to approve the study. Briefly describe the study before making your argument. [10 pts]

**As always, your use of the guidelines is more important than the decision you reach. The more explicit the use of the guidelines, the better the answer.**

7. Do you ever reach the end of an exam and think, "Damn! He didn't ask *anything* about X and I was ready to nail that question!" Well, here's your chance. Ask yourself any question that was *not* asked (or related to) any of the other questions on this exam. Then answer that question. Your grade will be based on both the quality of the question and the answer. [5 pts]

**You need to ask a good question and provide a good response.**