ID# _____ Final Exam PS 306, Fall 2003

As always, the Skidmore Honor Code is in effect and you will indicate that fact in writing at the end of the exam. Read each question carefully and answer it completely. I continue to think of a point as a minute, so use that information as a guideline for the time to allocate to each question. Thanks for your engagement in this course…it made my life much more pleasant. Stop by my office to pick up your exam and lab materials in the spring (or when you return to campus after a term abroad). Have a peace-filled and relaxing break. [And, yes, Alex, the early questions are easy.]

1a. Pierroutsakos and DeLoache (2003) were interested in the development of pictorial competence in children. They use the term pictorial competence to "encompass the many factors that are involved in perceiving, interpreting, understanding, and using pictures (DeLoache, Pierroutsakos, & Uttal, 2003, p. 115)."These researchers observe infants as they explore pictures of familiar objects. Unlike adults, infants are not content to look at the pictures, but will typically attempt to manipulate the pictured object.

In the data depicted below, 9-month-old infants were shown photographs and line drawings of familiar objects. The photographs and line drawings were either in black-and-white or in color. The dependent variable is the number of manual behaviors the infant exhibits toward the picture. Complete the following source table, which depicts results consistent with those of Pierroustsakos and DeLoache, and then analyze the results as completely as you can. Make an effort to interpret the results, as you would in a Discussion section. [10 pts]

ANOVA Table for Manual Behav

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Pict Type				75.75	<.0001	75.757	1.000
Color			36.100	56.50	<.0001	56.504	1.000
Pict Type * Color			.100		.6947	.157	.067
Residual							

Means Table for Manual Behav
Effect: Pict Type * Color

	Count	Mean	Std. Dev.	Std. Err.
Drawing, B&W	10	.900	.568	.180
Drawing, Color	10	2.700	.949	.300
Photo, B&W	10	3.000	.816	.258
Photo, Color	10	5.000	.816	.258

1b. DeLoache and her colleagues find that 9-month-old children will often attempt to grab objects pictured on paper or on television screens. Adults, however, rarely attempt to grab the beer can pictured in a magazine or television advertisement. DeLoache, et al. were not interested in the factors that contribute to adults attempting to manipulate such objects. However, they *were* interested in the time course of development of the "awareness" that the child cannot manipulate the pictured object. To that end, DeLoache, Pierroutsakos, Uttal, Rosengren and Gottlieb (1998) studied 9-month-olds, 15-month-olds, and 19-month-olds. They were interested in the way the children interacted with the pictured objects across the three different ages. They looked at two different types of manual behaviors directed at the pictures (manual investigation vs. pointing). Below are partially completed source tables for analyses of these two dependent variables. Complete the source tables and then tell me what story these two data sets tell. [15 pts]

ANOVA Table for Manual Invest

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Age				100.199	<.0001	200.398	1.000
Residual							

Means Table for Manual Invest
Effect: Age

	Count	Mean	Std. Dev.	Std. Err.
09 month	20	4.850	1.226	.274
15 month	20	2.000	1.076	.241
19 month	20	.500	.513	.115

ANOVA Table for Pointing

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Age				128.400	<.0001	256.800	1.000
Residual			.862				

Means Table for Pointing
Effect: Age

	Count	Mean	Std. Dev.	Std. Err.
09 month	20	.300	.470	.105
15 month	20	2.000	.973	.218
19 month	20	4.950	1.191	.266

2. Hmmm. There's an article with the intriguing title, "Why people fail to recognize their own incompetence" by Dunning, Johnson, Ehrlinger, and Kruger (2003). According to Confucius, "real knowledge is to know the extent of one's ignorance." So, how well do you think that you'll do on this exam? Dunning, et al. (2003) asked students who were leaving an exam to judge how well they'd done on the exam. It turned out that students who performed the worst on the exam actually overestimated their performance and students who did the best on the exam were fairly accurate in their self-assessment (with a slight underestimation among the students with the best performance).

In one study, Kruger and Dunning (1999) gave additional information to some students, and that information had an impact on their judgments. Let's imagine a set of results that are consistent with their report. The dependent variable is the percent overestimation of a person's performance on an exam. So a score of zero is an accurate judgment. A positive score indicates overestimation and a negative score is an underestimation of one's performance. The students were divided into four groups based on their actual performance (Bottom Quartile, Second Quartile, Third Quartile, and Top Quartile). In addition, half of the students in each quartile were given a mini-lecture about the material after completing the exam (Add Info), but before making their judgments. The other half of each quartile was not given any additional information (No Info). Complete the source table below and interpret the results of this study as completely as you can. [20 pts]

ANOVA Table for Estimate

	DF	Sum of Squares	Mean Square	F-Value	P-Value	Lambda	Power
Quartile		6184.6			<.0001	1251.531	1.000
Add Info		1008.2			<.0001	204.020	1.000
Quartile * Add Info		1308.1			<.0001	264.708	1.000
Residual		355.8					

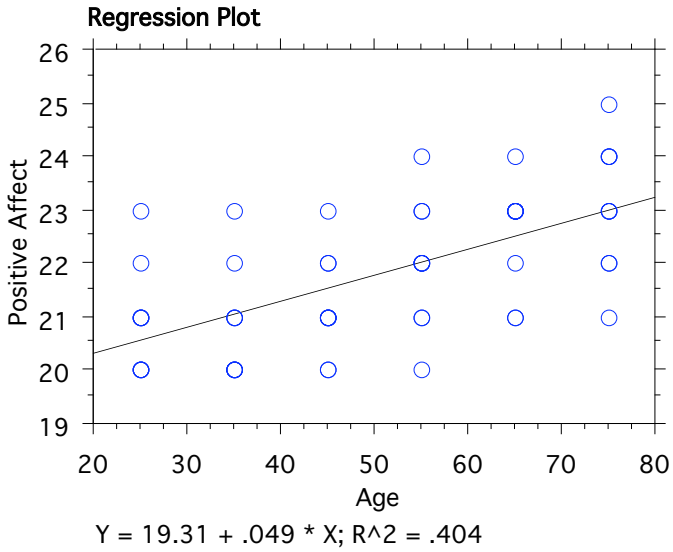
Means Table for Estimate
Effect: Quartile * Add Info

	Count	Mean	Std. Dev.	Std. Err.
Bottom, Add Info	10	12.300	3.164	1.001
Bottom, No Info	10	30.400	4.300	1.360
Second, Add Info	10	9.300	1.418	.448
Second, No Info	10	20.900	2.079	.657
Third, Add Info	10	4.000	1.155	.365
Third, No Info	10	3.700	1.337	.423
Top, Add Info	10	-.300	.823	.260
Top, No Info	10	-1.300	.949	.300

3. Do you think that people get more crotchety as they get older? Mroczek (2001) was interested in assessing the relationship between affect and aging. To that end, he analyzed data from the Midlife in the United States (MIDUS) survey. Mroczek looked at both positive and negative affect, but I'll focus on positive affect here (higher scores indicate more positive affect). I've attempted to replicate the basic trend that he reported in the data analyzed below. Interpret the results of this study as completely as you can. What would be your prediction of a person's affect score if he or she was 65 years old? Ordinarily, you would be able to argue against the proposition that age "caused" the changes in affect by using a couple of arguments. One argument won't work in this case. Tell me why. Nonetheless, you should be able to articulate why you would be uncomfortable arguing that age caused the change in positive affect. [10 pts]

Regression Summary
Positive Affect vs. Age

Count	60
Num. Missing	0
R	.635
R Squared	.404
Adjusted R Squared	.393
RMS Residual	1.038



ANOVA Table
Positive Affect vs. Age

	DF	Sum of Squares	Mean Square	F-Value	P-Value
Regression	1	42.263	42.263	39.238	<.0001
Residual	58	62.470	1.077		
Total	59	104.733			

Regression Coefficients
Positive Affect vs. Age

	Coefficient	Std. Error	Std. Coeff.	t-Value	P-Value
Intercept	19.310	.415	19.310	46.584	<.0001
Age	.049	.008	.635	6.264	<.0001

4. How many participants would you need in an experiment with a minimum n = 25? [10 pts]

A completely between (independent groups) 5x5 design	
A completely repeated measures (within) 5x5 design	
A completely repeated measures (within) 2x5 design	
A mixed 3x5 design, with the second factor repeated measures (within)	
A mixed 4x4 design, with the second factor repeated measures (within)	

5. Imagine that you are a member of an Institutional Review Board (IRB). In reviewing research proposals involving human participants, you would apply the APA guidelines (as we discussed in class and as you read in your textbook). What are those guidelines? When reviewing a research proposal that involves deception (e.g., the West, Gunn, & Chernicky (1975) study on planning a burglary as described in your textbook), what are all the points that you would investigate before approving the study? Given the results of the Ross, et al. studies, what would you conclude about the effectiveness of debriefing? [10 pts]

6. Remember Lab 1? We talked about the False Memory Paradigm, in which people report seeing a word (e.g., anger) if they were exposed to a number of words highly associated with that word (e.g., mad, fear). Drs. Deese and Dose were interested in investigating the role of the number of associates (as we did in our lab) on the extent to which people reported seeing the lure. They present participants with a long list of words, and interspersed within the list are two of the associates for each of 10 lures, four associated words for each of a different 10 lures, eight associates of another 10 lures, and 12 associates of a final 10 lures. During the acquisition phase, the 260 words are not blocked in any way, but are randomized throughout the list. As a result, do you think that there is any need to counterbalance?

At test, then, Drs. Deese and Dose are interested in the number of lures (out of a possible 10) that participants reported seeing during the acquisition phase of the study for each number of associates (2, 4, 8, and 12). Complete the source table below and interpret the results of this study as completely as you can. [10 pts]

ANOVA Table for Num of Associates

	DF	Sum of ...	Mean Sq...	F-Value	P-Value	Lambda	Power
Subject		26.5					
Category for Num of Associates		193.1			<.0001	327.906	1.000
Category for Num of Associates * Subject		15.9					

Means Table for Num of Associates
Effect: Category for Num of Associates

	Count	Mean	Std. Dev.	Std. Err.
Two Assoc	10	.200	.422	.133
Four Assoc	10	1.400	1.174	.371
Eight Assoc	10	3.400	1.075	.340
Twelve Assoc	10	6.000	1.414	.447

7. In talking about the social psychology of the experiment, we discussed experimenter effects and participant effects. Distinguish between experimenter effects and experimenter expectancy effects. What kinds of evidence support the existence of these two potential effects in an experiment? How might you minimize the impact of these effects, if you were concerned about them? What kind of participant effects should you cause you concern? [10 pts]

8. Carefully describe the circumstances under which you think that an undergraduate author should receive authorship credit for his or her efforts? Use the principles from Fine & Kurdek to support your position. [5 pts]