

Midterm Exam

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Winter, 2019

due: March 14, 2019

Snakes on a Plane

A psychologist is interested in testing three types of therapy for modifying Ophidiophobia (fear of snakes). She suspects that one type of therapy may not be best for everyone—rather the best type of therapy may depend on the severity of the phobia.

Undergraduate students in an introductory psychology course are given the Fear Schedule Survey (FSS) to screen out subjects showing no fear of snakes. Those displaying some degree of phobia are classified as mildly, moderately, or severely phobic. One third of subjects within each level of severity are then randomly assigned to a treatment condition: systematic desensitization, implosive therapy, or insight therapy.

The following data are obtained following therapy, using the Behavioral Avoidance Test (higher scores are better, meaning less snake phobia):

<https://www.gribblelab.org/stats2019/data/snakedata.csv>.

Your task is to analyze these data and to answer any questions you believe would be of theoretical interest. Don't feel compelled to perform an analysis just because it is possible statistically. Rather justify the use of each test. Don't forget to test assumptions of ANOVA, and to justify your choices about how (or if) to control for Type-I error in any follow-up tests you choose to perform. Use graphical plots where appropriate to help tell the story. Finally, make sure to include one or more concluding statements.

Desensitization			Implosion			Insight		
Mild	Moderate	Severe	Mild	Moderate	Severe	Mild	Moderate	Severe
14	15	12	10	12	10	8	9	6
17	11	10	16	14	3	10	6	10
10	12	10	19	10	6	12	7	8
13	10	9	20	11	8	14	12	9
12	9	11	19	13	2	11	11	7

Table 1: BAT scores following therapy for snake phobia (higher scores are better, indicating less phobia)

(15 marks)