

PSYC 51.09: Problem Set 2

Overview

This problem set is intended to solidify the concepts you learned about in this week's lectures and readings. Your responses will be worth 5% of your final grade (1 point = 1%). *After attempting each question on your own*, you are encouraged to work together with your classmates in small groups, and/or to post and answer questions on the course's Canvas site. **You must clearly indicate who your collaborated with and submit your own (uniquely worded) responses.**

Please upload your problem set to Canvas (as a Word or PDF file) before **Wednesday, October 2, 2019 at 3:30 pm**. No late submissions will be accepted.

Note on submitting question 1: please either scan in your ROC curve and calculations and upload them along with your responses for question 2, or hand in a hard copy **before** the beginning of class on the due date. **If you choose to hand in a hard copy, no submissions will be accepted after 3:30 pm on October 2, so please arrive several minutes before class to hand in your hard copy in order to receive credit for question 1.**

Readings and ungraded questions

1. Read Chapter 2 of *Foundations of Human Memory*. What were your thoughts on the reading? **(Ungraded)**

Graded questions

1. Suppose the table below contains data you've collected from one participant in a recognition memory experiment. They were tested with 20 items (TRIAL) which included a mix of targets and lures (STATUS). For each item, they made a 7-point CONFIDENCE judgement: 1 = sure it was not on the list; 7 = sure it was on the list.
 - (a) Plot (by hand) the ROC curve for this participant. Be sure to label axes and put numbers on the axes. Show your work! **(1.5 pt)**
 - (b) Draw (and label) a dotted line on the ROC curve to indicate what it would look like for a participant who mixed up the instructions and reversed the ratings scale in their responses (i.e., they responded 1 if they were sure the item was *old* and 7 if they were sure the item was *new*; **1 pt**).
 - (c) Draw another (labeled) dotted line on the ROC curve to indicate what it would look like for a participant who responded normally, except that they rounded all of their responses to 7 if they internally judged their confidence at 5 or higher (in other words, draw the ROC curve when responses of 5, 6, or 7 below are all replaced with 7; **1 pt**)

TRIAL	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STATUS	T	L	T	T	T	L	L	L	T	L	L	T	L	L	T	T	L	L	T	T
CONFIDENCE	4	5	2	6	6	4	6	3	6	2	4	5	2	1	3	4	6	1	7	2

2. Consider some aspect of recognition memory that neither strength-based models (e.g., strength theory, the Yonelinas familiarity-recollection model, and the variable-recollection model) nor scanning models (e.g., serial self-terminating scan, serial exhaustive scan, parallel search models) can explain. Outline some ideas for extending (or combining) one or more of these models in a way that could help to account for that phenomenon. **(3 paragraphs– description of model: 0.75 pt; description of how it can explain the given phenomenon: 0.75 pt.)**