Adv Topics II (Data to Sci Comm in R): 01:185:412:02
Prof Michelle Hurst

Weekly Assignments Dataset

For most of your weekly assignments, we'll be working with data from a single study. Each week, you'll be working from the same file to add new analyses or try things in different ways.

Participants in this study completed five separate tasks (always in the order presented below) and each task has a separate datafile with participants response. Each task is described briefly below.

Rational-Experiential Inventory

Participants completed a questionnaire presenting 40 items from the Rational-Experiential Inventory, such as:
I think it is foolish to make important decisions based on feelings
Knowing the answer without having to understand the reasoning behind it is good enough for me

Responses were selected on a scale from Strongly Disagree to Strongly Agree (e.g., below)

The scale includes four subscales in 2 x 2 design: experiential vs. rational and favorability vs. ability.

The data is stored in: MFIndD_REI.csv
There is one row per trial per participant, with the columns as follows:

file	name	description
MFIndD_REI.csv	qualtrics_id	unique identifier for each participant
MFIndD_REI.csv	sub_type	the scale includes four subtypes
MFIndD_REI.csv	item_number	item number within a subscale
MFIndD_REI.csv	rev_scoring	whether the item needs to be reverse scored ("neg") or not ("NA")
MFIndD_REI.csv	response	the participants response on a 5 point likert scale ranging from Strongly Disagree (1) to Strongly Agree (5)
MFIndD_REI.csv	scored_response	the scored response on this trial taking into account the reverse scoring

To learn more about this scale, start here:
https://onlinelibrary.wiley.com/doi/full/10.1111/j.1467-9450.2008.00652.x

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Proportion Dominance

In this task, participants are presented with a narrative about two policy programs that have different outcomes and asked which they endorse. One program always improved things proportionally more, but absolutely less (e.g., helping 50% of the people, but in this case it was only 20/40) and the other program improved things absolute more, but proportionally less (e.g., helping 50/1000 people, which is more people – but only 5%). As above, after the task participants were asked if they'd seen these questions before. An example item is below:

> An oil spill around Puget Sound is threatening the sea otter populations in two areas of the bay. Two cleanup plans are proposed, but there is only enough money to support one plan. So, there are only enough resources to save otters in one of these areas of the bay. Program A will save 180 of the 800 otters near the north end of the bay. Program B will save 45 of the 205 otters near the south end of the bay. These programs are mutually exclusive and the only two options available. Which program would you endorse?

- ○ Definitely Program A
- ○ Slight preference for Program A
- ○ Slight preference for Program B
- ○ Definitely Program B

The data is stored in: MFIndD_PD.csv
There is one row per trial per participant, with the columns as follows:

file	name	description
MFIndD_PD.csv	qualtrics_id	unique identifier for each participant
MFIndD_PD.csv	PD_familiarity	response to the question about whether they were familiar with these kinds of problems
MFIndD_PD.csv	task	the task this data comes from (should always be PD (i.e., proportion dominance) for this file)
MFIndD_PD.csv	item	whether this is the item about: amusement (parks), recession, plants, oil, or paper
MFIndD_PD.csv	response	their response selection
MFIndD_PD.csv	strength	the strength indicated by their response
MFIndD_PD.csv	choice	their choice of either A or B
MFIndD_PD.csv	preference_type	categorizing their choice as being the proportionally higher or absolutely higher option

If you're interested in learning more about this task, start here:
https://www.sciencedirect.com/science/article/pii/S0749597805001329

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DeNeys Base Rate Neglect Task

In these kinds of tasks, participants are presented with a narrative and given quantitative information about the distribution of a feature and then specific descriptive information about a single entity that conflicts with the likely distribution. They are then asked questions about the single entity (an example item is provided below). After responding, participants were asked if they have answered questions like these before (yes, no, I'm not sure).

Example Item:
In a big research project a number of studies were carried out where short personality descriptions of the participants were made. In every study there were participants from two population groups (e.g., carpenters and policemen). In each study one participant was drawn at random from the sample. You'll get to see the personality description of this randomly chosen participant. You'll also get information about the composition of the population groups tested in the study in question. You'll be asked to indicate to which population group the participant most likely belongs.

In a study 1000 people were tested. Among the participants there were 5 sixteen-year-olds and 995 forty-year-olds. Allison is a randomly chosen participant of the study. Allison likes to listen to techno and electro music. She often wears tight sweaters and jeans. She loves to dance and has a small nose piercing.

Which is more likely?
- *Allison is definitely sixteen*
- *Allison is maybe sixteen*
- *Allison is maybe forty*
- *Allison is definitely forty*

The data is stored in: MFIndD_deneys.csv
There is one row per trial per participant, with the columns as follows:

file	name	description	
MFIndD_deneys.csv	qualtrics_id	unique identifier for each participant	
MFIndD_deneys.csv	DeNeys_familiarity	response to the question about whether they were familiar with these kinds of problems	
MFIndD_deneys.csv	task	the task this data comes from (should always be DeNeys for this file)	
MFIndD_deneys.csv	item	whether this is the gender item or age item	
MFIndD_deneys.csv	strength	whether they selected "maybe" or "definitely"	
MFIndD_deneys.csv	choice	the option the chose (man or woman for the gender item and sixteen or forty for the age item)	
MFIndD_deneys.csv	preference_type	whether their choice is categorized as a description choice or a distribution choice	

If you're interested in learning more about this task, you can start here:
https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0015954

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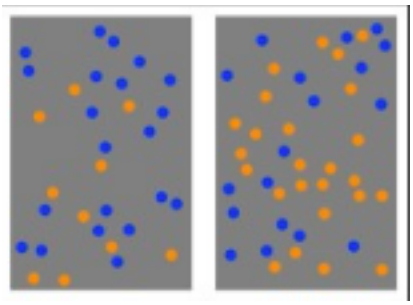
Probability Task

In this task, participants were asked to compare two images of blue and orange based on which had the higher proportion of blue (or orange, randomly assigned between subject). They were given a narrative story about a Magic Ball that landed on blue and orange probabilistically, and to select the one with a higher probability or a blue (or orange) outcome.

The stimuli might look like this, but also had other versions:



The data is stored in: MFIndD_probtask.csv
There is one row per trial per participant, with the columns as follows:

file	name	description
MFIndD_probtask.csv	SubID	unique identifier for each participant
MFIndD_probtask.csv	condition	visual format they were assigned to
MFIndD_probtask.csv	discreteness	categorizing the visual format in terms of : discrete vs. continuous
MFIndD_probtask.csv	regularity	categorizing the visual format in terms of : regular or irregular
MFIndD_probtask.csv	integration	categorizing the visual format in terms of : separated vs. integrated
MFIndD_probtask.csv	major_color	whether they were making judgements about blue or orange (randomly assigned)
MFIndD_probtask.csv	rt_toolong	whether this trial should be excluded for being more than 10seconds (1) or not (0)
MFIndD_probtask.csv	rt_tooshort	whether this trial should be excluded for being too short (1) or not (0)
MFIndD_probtask.csv	rt_exclu	whether this trial should be excluded based on reaction time for any reason
MFIndD_probtask.csv	shape	the format category
MFIndD_probtask.csv	details	the details of the format type
MFIndD_probtask.csv	trial_index	the frame number from the experiment progress
MFIndD_probtask.csv	block	the trial block, 0 = practice, 1 = block 1, 2 = block 2

MFIndD_probtask.csv	left_stim	the size of the two components in the left stimulus, separated by an _
MFIndD_probtask.csv	right_stim	the size of the two components in the right stimulus, separated by an _
MFIndD_probtask.csv	left_path	the path to the image presented on the left
MFIndD_probtask.csv	right_path	the path to the image presented on the right
MFIndD_probtask.csv	rt	reaction time in ms
MFIndD_probtask.csv	response	keybutton response
MFIndD_probtask.csv	correct	accuracy of response (TRUE = correct, FALSE = incorrect)

For more about this kind of task, start here:
https://doi.org/10.1016/j.cognition.2024.105918

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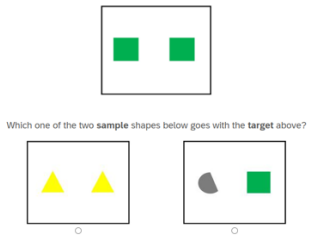
Relational Match-to-Sample Task

In this task, participants are shown one image on top and two images on the bottom and asked which "goes with" the sample (see example). In this example, the option on the left is considered a "relational" match because both the sample and that option have the same *relation* between the objects (i.e., two of the same) even though they are not the same shapes or colors. The option on the right is considered an "object" match because it does not share the same relation (the two objects are different), but does have one of the same shapes as the sample. We are interested in whether people tend to select the object match or the relational match.



The data is stored in: MFIndD_analogy.csv
There is one row per trial per participant, with the columns as follows:

file	name	description
MFIndD_analogy.csv	qualtrics_id	unique identifier for each participant
MFIndD_analogy.csv	trial_number	unique identifier for each trial
MFIndD_analogy.csv	match_type_0	match type presented on the left (0)
MFIndD_analogy.csv	match_type_1	match type presented on the right (1)
MFIndD_analogy.csv	response	whether they selected the left (0) or right (1)
MFIndD_analogy.csv	response_type	match type the participant selected

If you want more information on this task, I'd recommend looking at:
https://www.sciencedirect.com/science/article/pii/S2352154620301650
https://www.sciencedirect.com/science/article/pii/S0010028517300567
https://onlinelibrary.wiley.com/doi/full/10.1111/cogs.12099