**Stage 1 Tutorial 2 (Week 5)**

**Session overview**

This session gets students thinking critically about research. The first task asks them to discuss a mock news item, and the second task asks them to interpret experimental data.

These are core critical thinking skills that will be required throughout their studies, but they are particularly relevant for the research they will do in the second half of PSYC421. They will write a research report, with students typically finding the discussion the most challenging section.

By this point students have been introduced to distributions of data, so should be able to interpret the figures included in Task 2. In week 5 they will be introduced to the concept of hypothesis testing so your students might be familiar with this depending on the timing of your session, though it’s not required.

Students have not been taught about correlations (covered in PSYC424 in Semester 2) but this shouldn’t be an obstacle for Task 1.

**Task 1: Pop science**

In this task students will discuss a mock news item about a possible link between chocolate consumption and happiness.

Show students the QR code, which links to a short news item. Read the news item aloud to the group.

As a group, briefly discuss their impressions of the story. Would they believe it? If so, why? They might believe it because of the details of the study, or because of their prior beliefs about chocolate and happiness. What if the story was about washing dishes rather than eating chocolate – would they be more or less likely to believe it?

In small groups (approx. 3 students) ask them to read the method and results sections that the news item is based on. Each group should consider these three questions:

* What might be some limitations to this design?
* What are some external factors that could be confounded and influence both chocolate consumption and happiness?
* How might you design the study if you wanted to know whether chocolate eating causes happiness?

As a group, ask for their ideas. Did reading the details of the study change how likely they are to accept the conclusion that eating chocolate makes people happy?

You will hopefully discuss whether a better approach might be to run an experiment in which chocolate consumption is an independent variable. This leads to Task 2, in which you will discuss the interpretation of experimental data.

**Scientists Discover the Secret to Happiness: It’s All About Chocolate!**

A groundbreaking new study has revealed the astonishing truth about happiness: the key lies in chocolate consumption. The study involved a group of volunteers who were given daily doses of chocolate for several weeks. Researchers monitored the participants’ mood levels throughout the study. The results were astonishing: those who consumed chocolate regularly reported significantly higher levels of happiness and well-being compared to those who did not. The findings of this study suggest that incorporating chocolate into your diet may be a delicious and effective way to improve your overall well-being.

**Method**

**Participants**  
One hundred undergraduate students (65 females, 35 males; *M* age = 20.3 years, *SD* = 2.1) from the University of Plymouth voluntarily participated in the study. Participants were recruited through an online participant pool and received course credit for their involvement. All participants reported no known allergies to chocolate.

**Materials**   
Participants were each provided with a supply of milk chocolate (approximately 1 kg) at the beginning of the study, along with instructions that they could consume as much as they wished each day for the duration of the study (7 days).

Each evening, participants received an online survey that asked two questions:

1. "Approximately how many grams of chocolate did you consume today?" (open-ended numeric response)
2. "How happy did you feel today, on average?" rated on a 7-point Likert scale from 1 (*Not at all happy*) to 7 (*Extremely happy*).

**Procedure**  
Participants completed the study remotely over one week. On Day 1, participants collected their chocolate and received study instructions. For the next 7 days, they were prompted by email at 8:00 p.m. each evening to complete the daily online survey. Participation was monitored to ensure compliance, and data from participants who failed to complete at least 5 of the 7 daily surveys were excluded from analysis.

**Results**

Data were aggregated across the 7-day period for each participant. For each individual, the average daily amount of chocolate consumed (in grams) and the average daily happiness rating were calculated.

A Pearson correlation coefficient was computed to assess the relationship between chocolate consumption and self-reported happiness. The results revealed a significant positive correlation, *r*(98) = .31, *p* = .002, indicating that higher average chocolate consumption was associated with higher reported happiness across the week.

A scatterplot (Figure 1) illustrates the relationship between average chocolate intake and happiness ratings. While the correlation was modest, the trend suggests that participants who ate more chocolate tended to report greater overall happiness during the study period.

A graph with blue dots

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