

LESSON PLAN TEMPLATE:

This is a template for a lesson plan structure, so we can start turning our curated resources in the [Table of activities](#) into full lesson plans with learning outcomes. Please either create copies of this template and upload to our [OSF project page](#) or create your own lesson plan and paste it in the [landing page](#).

Name of the class: “Prediction Markets”	
Seminar originally developed by Charlotte R. Pennington, Lecturer in Psychology. E-mail: c.pennington@aston.ac.uk	
FORRT cluster: Reproducibility & Replicability Knowledge	
Suitable context: (e.g., entry-level/ undergraduate/postgraduate)	Undergraduate/Postgraduate After teaching students about the Replication Crisis, I use the following activity within a seminar to reinforce learning. This is an exercise where students are shown an original/classic study (e.g., Srull & Wyer, 1979) and the associated findings, and then are given some preliminary detail about an associated Registered Replication Report (RRR; e.g., McCarthy et al., 2017) and are asked a series of questions such as "Do you think this will replicate or not?", "Why do you think it will replicate or not?", "Are there any differences between when the study was performed and now, which might explain differences in findings? (e.g., historical, contextual)?" The findings of the RRR is then discussed, highlighting the importance of replication and the difference between direct/exact and conceptual replications.
Total time: (e.g., 1 hour, 2 hours, 1 day)	30 minutes 15 minutes per each example.
Pre-requisites:	Some knowledge of replicability issues in psychology (e.g., Replication Crisis) and Open Science practices (e.g., Registered Replication Reports) is beneficial for this seminar. For example, a



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	<p>1-hour lecture could introduce students to replication, reproducibility, and open science, with this seminar activity reinforcing learning.</p>
<p>Related resources (e.g. slides, assignment materials, lecture recordings, etc)</p>	<p>It would be useful for students to read two original studies:</p> <ul style="list-style-type: none"> - Srull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. <i>Journal of Personality and Social Psychology</i>, 37, 1660–1672. doi:10.1037/0022-3514.37.10.1660 - Experiment 1 from Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. <i>Journal of Marketing Research</i>, 45, 633–644. doi:10.1509/jmkr.45.6.633" <p>However, presentation slides can also be used, without the need for prior reading, to introduce students to these studies (e.g., aims, method, results).</p> <p>After the seminar, students can be directed to the associated Registered Replication Reports (RRRs):</p> <ul style="list-style-type: none"> - McCarthy, R. J., Skowronski, J. J., Verschuere, B., Meijer, E. H., Jim, A., Hoogesteyn, K., ... & Yıldız, E. (2018). Registered replication report on Srull and Wyer (1979). <i>Advances in Methods and Practices in Psychological Science</i>, 1(3), 321-336. - Verschuere, B., Meijer, E. H., Jim, A., Hoogesteyn, K., Orthey, R., McCarthy, R. J., ... & Yıldız, E. (2018). Registered replication report on Mazar, Amir, and Ariely (2008). <i>Advances in Methods and Practices in Psychological Science</i>, 1(3), 299-317.
<p>Learning outcomes:</p>	<ol style="list-style-type: none"> 1. To understand replication within the scientific method. 2. To distinguish direct/exact and conceptual replications. 3. To understand contemporary issues in psychology, i.e., the replication crisis and open science. 4. To critically assess original research findings and replication attempts.

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Time	Activity	Instructor notes
<ul style="list-style-type: none"> ● 10 minute introduction to ‘Original Study 1’. ● 10 minutes student discussion time, groups of 3-6 ● 10 minute discussion 	<p>Prediction markets: Do the results from Srull & Wyer (1979) replicate?</p>	<p>Instructions can be brief: This seminar activity works best when students have a basic understanding of replication (e.g., the replication crisis) and open science (e.g., Registered Replication Reports).</p> <p>Provide students with an overview of the first original study - we will focus here on Srull & Wyer (1979). You can do this either with PowerPoint slides (or similar), or by giving each group of students the original study to briefly read (a print out shared between 2 students works best, with students split into groups of 3-6).</p> <p>“Psychology students took part in two replications of classic social psychological studies. The first study aimed to replicate Srull and Wyer (1979), who showed that exposure to aggressive stimuli increases perceived aggression. Participants were asked to complete a sentence unscrambling task which differed in the number of aggressive sentences that were included (they either read 80% or 20% of aggressive scrambled sentences). They were then asked to read about a man named Donald”.</p> <p>“The original study found that participants exposed to the higher number of aggressive sentences would consider Donald’s behaviour more aggressive.”</p>

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		<p>Aggression prime (80/20%)</p> <div data-bbox="1077 304 1314 405" style="border: 1px solid black; padding: 5px;"> <ol style="list-style-type: none"> 1. child the punish torture 2. shoot I'll you hurt 3. the man child hang </div> <p style="text-align: center;">➔</p> <div data-bbox="1442 288 1659 453" style="text-align: center;">  <p>Morally ambiguous situation</p> </div> <p style="text-align: center;">➔</p> <div data-bbox="1805 288 2002 453" style="text-align: center;">  <p>Increased perceived aggression</p> </div> <p><u>Discuss the following in groups:</u></p> <ol style="list-style-type: none"> 1. Do you think this study replicated? 2. Why/Why not? 3. Are you surprised? Why/why not? 4. What are the potential issues with this classic study? i.e., has anything changed over time? Would the findings replicate in different cultures? <p>The findings from the RRR are then outlined.</p>
<ul style="list-style-type: none"> ● 10 minute introduction to ‘Original Study 2’. ● 10 minutes student discussion time, groups of 3-6 ● 10 minute discussion <p>[please note, you can repeat</p>	<p>Prediction markets: Do the results from Mazar et al. (2008) replicate?</p>	<p>“Psychology students also took part in a second study. The second study aimed to replicate a finding from Mazar, Amir and Ariely (2008), which examined whether priming people with moral values influenced honesty.</p> <p>Students were asked to complete a series of problems with a chance of winning £10 (REALLY!) for each successfully completed task. The tasks were in fact very difficult or impossible, tempting people to cheat.</p>

these activities as many times as you would like, using different original studies and their associated RRRs - I find that two works well within a 30 minute period and keeps students engaged]

Prior to providing this information, half of the participants were asked to list the 10 commandments (moral reminder) and half were asked to recall a list of books (no moral reminder).

According to the original study, the moral reminder should have encouraged participants to report their results more accurately (cheat less).”



Discuss the following in groups:

1. Do you think this study replicated?
2. Why/Why not?
3. Are you surprised? Why/why not?
4. What are the potential issues with this classic study? i.e.,

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		<p>has anything changed over time? Would the findings replicate in different cultures?</p> <p>The findings from the RRR are then outlined. The activity concludes by highlighting the importance of replications and distinguishing between exact/direct and conceptual replications. Advantages and proposed limitations between exact-conceptual replications can also be discussed.</p>
<ul style="list-style-type: none"> • 5 minute summary - discuss the differences between direct and conceptual replications, and the importance of replication within the scientific method. 	<p>Roundup discussion, and quiz to reinforce the learning objectives</p>	<p>“As a group, try to identify the missing words” [missing words are shown in green and only appear once students have identified them, using a PowerPoint slide:]</p> <p>“Psychology students took part in a study that aimed to REPLICATE two classic studies. This was then published as a REGISTERED REPLICATION REPORT This RRR was based on the class studies by SRULL & WYER (1979) and MAZAR ET AL. (2008).</p> <p>This week, [edit with the lecturer’s name] provided an overview of these findings in a lecture about the REPLICATION CRISIS in Psychology. She discussed how SMALL SAMPLES in original studies may influence the likelihood of replication, and questionable research practices such as HARKing. She also discussed PUBLICATION BIAS; a phenomenon whereby journals only like to report positive or novel research findings.”</p> <p>Suggested further reading:</p> <ul style="list-style-type: none"> • McCarthy, R. J., Skowronski, J. J., Verschuere, B., Meijer, E. H., Jim, A., Hoogesteyn, K., ... & Yıldız, E. (2018). Registered replication report on Srull and Wyer (1979).

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		<p><i>Advances in Methods and Practices in Psychological Science</i>, 1(3), 321-336.</p> <ul style="list-style-type: none">• Verschuere, B., Meijer, E. H., Jim, A., Hoogesteyn, K., Orthey, R., McCarthy, R. J., ... & Yıldız, E. (2018). Registered replication report on Mazar, Amir, and Ariely (2008). <i>Advances in Methods and Practices in Psychological Science</i>, 1(3), 299-317.
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