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Physical Pragmatics - Conventional No-Cost vs. Low-Cost Doors (#119414)

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1) Have any data been collected for this study already?
No, no data have been collected for this study yet.

2) What's the main question being asked or hypothesis being tested in this study?
In a previous study (see pre-registration #9750), we showed that when participants were presented a door with an unconventional object in front of it–unconventional in its use as a deterrent–they would interpret the object as a deterrent signal significantly more than when the object was placed beside the door. We hypothesized that participants arrived at this interpretation by reasoning about the cost the object imposed. However, conventional knowledge also matters, so in this experiment we replicate the previous study but with conventional objects. Here we hypothesize that (1) when presented a door with a conventional object near it, but not imposing a cost, participants will rely on their conventional knowledge of the object and interpret the object as a deterrent signal significantly higher than chance, and (2) when presented a door with a conventional object in front of it, imposing a low cost, participants will use both their conventional knowledge and the cost the object imposes to interpret that object as a deterrent signal significantly higher than when the object does not impose a cost.

In this experiment, all participants will be presented with a single pair of doors: one with an object near it (which we refer to as the "modified door") and one with nothing near it (which we refer to as the "unmodified door").

3) Describe the key dependent variable(s) specifying how they will be measured.
The key dependent variable will be whether people infer that they should or should not walk through the modified door. This will be collected via a 2AFC, which will ask participants "What do you think someone was trying to tell you about the door with the OBJECT", with the possible choices being "You *should* avoid the door with the OBJECT" or "You *should not* avoid the door with the OBJECT" (text surrounded by asterisks in bold).

We will also have two auxiliary variables, that are elicited from participants after the dependent variable. In the first, we ask participants which door they think would take more effort to walk through (with three options: the modified door, the unmodified door, or equal), and in the second, whether or not they would be physically able to walk through the modified door if they wanted to (with two options: yes or no).

4) How many and which conditions will participants be assigned to?
All participants will undergo a single trial where they will be presented with a pair of doors: a modified and unmodified door. Participants will be randomly assigned to one of two conditions that vary the placement of the object near the modified door. In the first condition (the "low-cost" condition), the object is placed so that it is a minor, but not insurmountable, obstacle to crossing the door (usually by placing the object in the center). In the second condition (the "no-cost" condition), the object is placed so that it is not an obstacle when walking through the door (usually by placing it on the side of the door). The objects we have chosen for our stimuli are: a stanchion, construction tape, and a traffic cone.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Our first analysis will consist of a one-tailed t-test between the mean participant judgments in the no-cost condition and chance. Specifically, this analysis will test whether participants interpret the conventional object as a deterrent signal when only relying on conventional knowledge.

Our second analysis will consist of a one-tailed t-test between the mean participant judgments in the low-cost condition and the mean participant judgments in the no-cost condition. Specifically, this analysis will test whether participants interpret the conventional object as a deterrent signal significantly more when it imposes a cost, than when it does not impose a cost.

To supplement these analyses, we will also compute 95% bootstrapped confidence intervals for the percentage of choices for the key dependent variable as a function of the low-cost and no-cost conditions. These confidence intervals will not constitute hypothesis tests and are meant to only help readers in interpreting the data.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Because the unmodified door is never more work to walk through, participants who give this response in the first auxiliary variable (see Q3) will be excluded from the study and replaced until we reach our target sample size (see Q7; note that this implies that although first auxiliary variable has three levels, it will become a binary variable for the analyses).

**7) How many observations will be collected or what will determine sample size? No need to justify decision, but be precise about exactly how the

number will be determined.

Our sample will consist of 60 participants (not counting exclusions; 30 per cost condition and 10 per cost x object bin).

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)

OSF repository containing experiment procedure and stimuli: https://osf.io/57n4g/