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Physical Pragmatics - Same-object no-cost vs. low-cost doors (#27915)

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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 for full details) we showed that people infer that they are supposed to avoid a door if an object is blocking the way (e.g., a piece of tape across the door). However, people do not infer this when the object is near the door and does not block the way (e.g., if the tape is taped on the side of the door). Before, participants knew the objects in both cases were meant to be communicative. In this study, we are interested in whether or not people are more likely to see an object blocking the way as communicative, as opposed to an object that does not block the way.

Participants will be presented with two identical doors and will have to decide which door they think appears more communicative. One of the doors will have an object blocking the way (the "low-cost" door) while the other door will have that same object but not blocking the way (the "no-cost" door; see Q8 for stimuli). Participants will be told that an agent placed both of these objects near the doors. Participants will then decide which door appears more communicative using a 2AFC paradigm (see Q3 for dependent variable).

We predict that when participants believe that walking through the low-cost door is harder, they will infer that it is more communicative. In contrast, when participants do not believe that walking through the low-cost door is harder, we predict that they will show a weaker preference for that door, but we do not have expectations about whether they will systematically favor the that door, perform at chance, or have a weak preference for the no-cost door.

3) Describe the key dependent variable(s) specifying how they will be measured.
The key dependent variable will be whether people infer that the low-cost door is more or less communicative than the no-cost door (Which door do you think someone was trying to tell you something?).

We will also have two auxiliary variables that are elicited from participants after the dependent variable, where we ask participants (1) which door they think would take more effort to walk through (Which door requires more work to walk through?; with three options: the low-cost door, the no-cost door, or equal), and (2) whether or not they would be physically able to walk through the door they chose if they wanted to (Do you think you would be able to walk through this door if you wanted to?).

4) How many and which conditions will participants be assigned to?
All participants will see the same set of doors side-by-side, with the same kind of object in front of each door and a random left/right ordering of the doors. After the single test trial, all participants will be asked which door is harder to walk through. Finally, all participants will be asked if they could physically walk through the door they chose if they wanted to.

Each participant will see one of eight objects: a chair, a hat, a string tacked to the door frame (it's also tied to a fishbowl for the low-cost door), a stack of books, a plant, tape, a collection of three rulers, and an unstacked pile of cinderblocks.

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.
Our main analysis consists of a t-test comparing the percentage of participants that endorsed the low-cost door as more communicative than the no-cost door to chance performance (50%). Because our labels of low-cost and no-cost might not match what participants perceive, we will use their judgments of cost instead (see Q3 for the first auxiliary variable). To supplement this analysis, we will also compute 95% bootstrapped confidence intervals for this percentage. We predict that there will be a significant effect of participants endorsing the low-cost door as more communicative than the no-cost door.

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.
Since both types of doors can be passed, participants that respond that they cannot walk through the door they chose as more communicative will be excluded and replaced (see Q7).

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.
We will test 10 participants in each of our eight objects, adding up to a total of 80 participants. Our choice of sample size was determined by the sample size we used in pre-registration #9750. Participants that are excluded (see Q6) will be replaced so that the final sample size is 80 participants.

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

See stimuli and procedure:
https://osf.io/vjwgd/?view_only=f267a9083080431fbb766010b0c4985e