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Theory of Mind Priming Pilot: Rating the Ambiguity of Revised Lineof Sight Probe Task Stimuli

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Theory of mind (ToM) is the ability to reason about the mental state of another agent, as in considering another agent's beliefs and intentions. While we know that humans possess ToM based upon self-report methods, there is presently no definitive objective test for ToM use. While many approaches have been used to test ToM, they all fail to eliminate the possibility that performance can be explained by proximal causal variables, rather than ToM. We believe ToM can be tested objectively by priming ToM in subjects prior to performing a probe task involving line-of-sight judgments that are likely influenced by ToM under conditions of varying ambiguity. This experiment was necessary to norm the varying ambiguity levels of the stimuli used in this probe task. The stimulus images depict a man in a room looking out a window at a UFO. The height of the man, UFO, and shade on the window differ, creating combinations of varying ambiguity regarding whether or not the man can see the UFO. Responses from sixteen valid participants were recorded. On a computer, each subject viewed each stimulus image ten times, thus completing 270 trials of the line-of-sight judgment task. Ambiguity was defined both by the average number of times a subject deemed the UFO seen for a particular stimulus image (percent called seen), as well as reaction time for each image. The average percent called seen and mean median reaction time was determined for each stimulus image, plotted, and then analyzed using a hierarchical cluster analysis. This cluster analysis was combined with experimenter judgments of ambiguity, and it was found that the data are best fit into seven clusters representing five different levels of ambiguity. With this knowledge, stimulus images from each ambiguity level can be presented at optimal rates during the probe task.