**1) Data collection. Have any data been collected for this study already?**

A)Yes, we already collected the data.  
****  B) No, no data have been collected for this study yet.  
  C) It's complicated. We have already collected some data but explain in Question 8 why readers may consider this a valid pre-registration nevertheless.   
(Note: *"Yes"* is not an accepted answer.)

**2) Hypothesis.**What's the main question being asked or hypothesis being tested in this study?

In this study, participants will be presented with a bowl with two types of marbles in varying proportions. In each trial, participants will be shown two groups of marbles and told that another agent sampled one of them with their eyes closed and the other with their eyes open. Using a 2AFC paradigm, participants will be asked which of the groups was sampled with the agent’s eyes closed and which with the agent’s eyes open.

We predict that participants’ answers will be consistent with the relative probability of drawing each sample, with the exception of trials where at least one of the samples has a structure that suggests that an agent generated it (see conditions below). Specifically, in cases where it’s more likely to sample a particular configuration of marbles (e.g., 8 blue and 8 white vs. 7 blue and 9 white), we expect participants to sway away from the more “structured” option despite it being more statistically probable. We also predict that structure will have a larger effect on larger sample sizes (e.g., 8 blue and 8 white will look less random than 2 blue and 2 white).

**3) Dependent variable.**Describe the key dependent variable(s) specifying how they will be measured.

The dependent variable in each trial will be which of the two responses participants chose in each trial.

**4) Conditions.**How many and which conditions will participants be assigned to?

We will have two conditions that vary the proportion of blue and white marbles in the bowl. In one condition (the “equal” condition), there will be an equal proportion of blue-to-white, while the other condition (the “unequal” condition) will have a ratio of 3:1 blue-to-white.

The stimuli will consist of eight trials shared across both conditions (all tested across participants) with two warmup trials per condition (see <https://osf.io/qhg3c/?view_only=6b5bb19b01d24fb4b42578c12757da0a> for trial descriptions).

**5) Analyses.**Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Our first analysis will consist of correlating participants’ responses with the responses predicted by a simple model that selects choices proportional to their probability of being sampled. We predict that this model will correlate highly with participant responses, but will differ in the “structured” arrangements (see **Q2**), where participants will judge them as less likely to have been generated with eyes closed, relative to the model’s predictions.

Our second analysis will consist of correlating participants’ responses with the predictions of a model that combines both the probability of sampling arrangements by chance, with the probability that different arrangements would be intentionally sampled by an agent. The probability that an arrangement is sampled by an agent will be computed through the assumption that agents sample “structured” arrangements, which can be formalized as samples that can expressed in a compact way under a simple pFCG that generates sampling programs (e.g. “take n objects”, or “take one red ball and three blue balls”).

We will also compute the percentage of choices in each trial along with 95% bootstrapped confidence intervals. In addition, the distribution produced by bootstrapping responses will be used to compute the probability that the effect size is in a certain range.

**6) Outliers and Exclusions.**Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

Because the task requires participants to understand the proportion between the blue and white marbles, we employ two warmup trials (per condition; see **Q3**) in order to get participants familiar with the task. When participants fail a warmup trial, the experimenter will discuss the trial with them to help them understand the task. Participants who fail one or both of these catch trials more than once will be excluded.

**7) Sample Size.**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 target sample size is of 40 participants per condition (80 total), not counting excluded participants. However, because data collection in the Tsimane’ is unpredictable (e.g., due to bad weather), if we do not reach our target sample size before departure from the Amazon (on 08/25/2018), the sample size reached to that point will be considered the final sample size.

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

<https://osf.io/qhg3c/?view_only=6b5bb19b01d24fb4b42578c12757da0a>

**9) Name.**Give a title for this AsPredicted pre-registration   
Suggestion: use the name of the project, followed by study description.

Tsimane’ Sampling