

1 Supplemental Materials

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4 Simulating participant behavior in non-stimulus trials

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6 We conducted a simulation to determine whether the number of times individuals first
7 approached a given side (i.e. left room or right room) in their three non-stimulus trials differed
8 from that expected by chance. In our simulation, we randomly selected the left or right room
9 (with 50:50 chance) for each participant for each of three trials. We repeated these
10 randomizations 1000 times and compared this null dataset to the observed data. For each
11 outcome calculated from the observed data, we found the proportion of simulated outcomes that
12 fell below it. If the proportion was greater than 0.5, we subtracted this value from 1. We then
13 multiplied this proportion by 2 to obtain the 2-tailed p-value (Farine, 2017) (Supplemental Table
14 2).

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16 Simulating participant behavior in study trials

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18 We simulated an experiment to generate a null dataset that retains most aspects of the observed
19 data while removing any relationship between the side from which a stimulus is presented and
20 the side a participant first approaches. For each participant, we chose the room they approached
21 first in each of the study conditions (Silence, Control Call, Rough-grunt) by randomly selecting
22 (with no replacement) one of the sides they approached in their three non-stimulus trials. This
23 simulates a context in which participants display realistic behavior that is not impacted by the
24 presentation of stimuli. For the Rough-grunt and Control Call trials, we then randomly assigned
25 the side from which the stimulus was presented to each participant, while keeping the number of
26 times a stimulus was presented on the left vs. right side the same as in the experiment. For
27 example, in the Rough grunt condition, 8 participants were presented with the stimulus on the
28 right side and 4 were presented with the stimulus on the left side. We then calculated how many
29 times participants first approached the side from which the stimulus was presented. We repeated
30 these randomizations 1000 times, and compared this null dataset to the observed data. For each
31 outcome calculated from the observed data, we found the proportion of simulated outcomes that
32 fell below it. If the proportion was greater than 0.5, we subtracted this value from 1. We then
33 multiplied this proportion by 2 to obtain the 2-tailed p-value (Farine, 2017) (Supplemental Table
34 3).

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36 References

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38 Farine, D. R. (2017). A guide to null models for animal social network analysis.
39 <http://doi.org/10.1111/2041-210X.12772>

41 Supplemental Table 1. Basic demographic information for study participants

Participant ID	Group ID	Age	Sex	Birth and Rearing Environment
BD	1	32	Female	Captive Born, Nursery Reared
JD	1	20	Male	Captive Born, Nursery Reared
KB	1	38*	Male	Wild Born
PT	1	41*	Female	Wild Born
TK	1	30	Female	Captive Born, Mother Reared
QY	1	39*	Female	Wild Born
BK	2	25	Female	Captive Born, Nursery Reared
GI	2	27	Male	Captive Born, Mother Reared
KK	2	26	Male	Captive Born, Mother Reared
KP	2	19	Female	Captive Born, Mother Reared
NO	2	24	Male	Captive Born, Mother Reared
TA	2	21	Female	Captive Born, Mother Reared

42 Data on each participant's age and rearing environment were obtained from records kept by staff
 43 members at KCCMR. Asterisks following the ages of the wild-born participants indicate that
 44 their ages are estimated since their exact years of birth are not known. Age is calculated with
 45 reference to the start of our study in June 2010.

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48 Supplemental Table 2. Results of simulating participant behavior in non-stimulus trials

	Observed	Lower 95% Confidence Interval in Simulation	Upper 95% Confidence Interval in Simulation	P-value
Number of participants that first approached the left and right rooms at least once	10	6	11	0.74
Number of participants that first approached the right room on all three trials	1	0	4	0.42
Number of participants that first approached the left room on all three trials	1	0	4	0.39
Number of participants that first approached more rooms on the right side than the left side	9	3	9	0.14

49 A comparison of results from our simulated and observed datasets regarding participant
 50 tendencies to first approach the left and right rooms during non-stimulus trials (i.e. Training Trial
 51 1, Training Trial 2, Silence condition).

52 Supplemental Table 3. Results of simulating participant behavior in study trials

	Observed	Lower 95% Confidence Interval in Simulation	Upper 95% Confidence Interval in Simulation	P-value
Number of participants that first approached the right room	8	4	10	0.72
Number of participants that first approached the stimulus room in the Rough Grunt condition	10	3	9	0.046
Number of participants that first approached the stimulus room in the Control Call condition	7	2	9	0.58

53 A comparison of results from our simulated and observed datasets regarding the number of
 54 participants that first approached given rooms during study trials (Silence, Rough Grunt, Control
 55 Call conditions)

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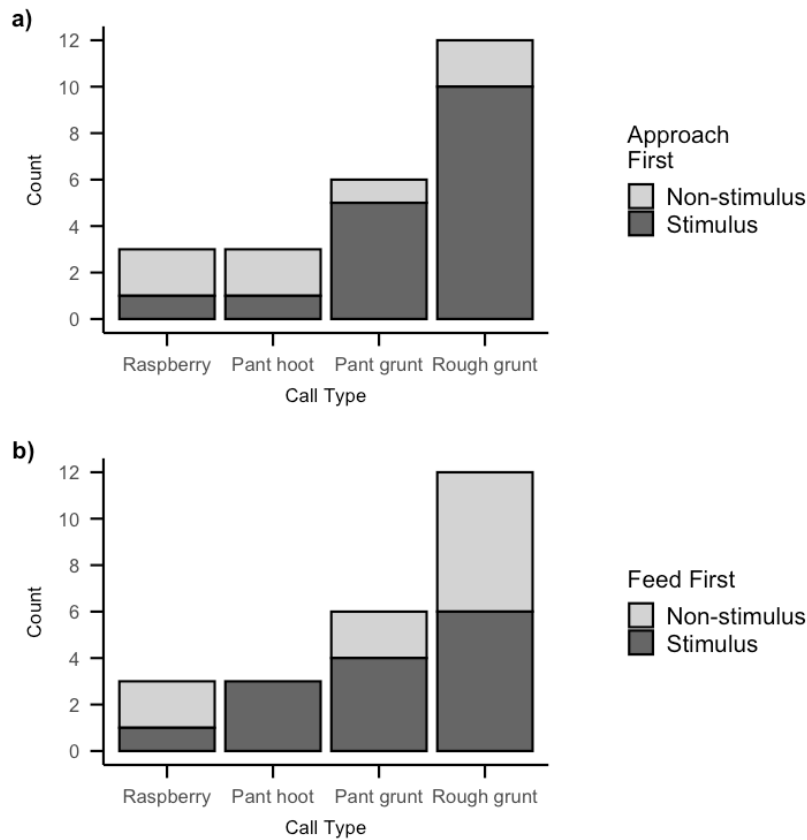
58 Supplemental Table 4: Investigation and feeding behavior of participants in each condition

Participant ID	Trial Type	Trial Order	Stimulus Side	Approach First	Feed First
BD	Training 1	1	NA	Right	Right
	Training 2	2	NA	Left	Left
	Control	3	Left	Right	Right
	RG	5	Right	Right	Right
	Silence	4	NA	Right	Right
PT	Training 1	1	NA	Right	Left
	Training 2	2	NA	Right	Left
	Control	4	Left	Left	Left
	RG	3	Right	Right	Left
	Silence	5	NA	Left	Left
KB	Training 1	1	NA	Right	Right
	Training 2	2	NA	Right	Right
	Control	4	Right	Left	Left
	RG	5	Right	Right	Right
	Silence	3	NA	Left	Left
BK	Training 1	1	NA	Right	Right
	Training 2	2	NA	Right	Right
	Control	5	Right	Right	Right
	RG	4	Right	Right	Right
	Silence	3	NA	Right	Right
GI	Training 1	1	NA	Right	Right
	Training 2	2	NA	Left	Left
	Control	3	Right	Right	Right
	RG	5	Right	Right	Right
	Silence	4	NA	Right	Right
NO	Training 1	1	NA	Left	Left
	Training 2	2	NA	Right	Right
	Control	4	Left	Right	Right
	RG	5	Right	Right	Right
	Silence	3	NA	Right	Left
JD	Training 1	1	NA	Right	Right
	Training 2	2	NA	Left	Left
	Control	3	Right	Right	Right
	RG	5	Right	Right	Left
	Silence	4	NA	Right	Right
TK	Training 1	1	NA	Left	Left

	Training 2	2	NA	Left	Left
	Control	5	Left	Left	Left
	RG	3	Left	Left	Left
	Silence	4	NA	Left	Left
QY	Training 1	1	NA	Left	Left
	Training 2	2	NA	Right	Right
	Control	5	Left	Left	Right
	RG	4	Right	Left	Left
	Silence	3	NA	Left	Right
KK	Training 1	1	NA	Left	Right
	Training 2	2	NA	Left	Left
	Control	4	Left	Left	Left
	RG	3	Left	Right	Right
	Silence	5	NA	Right	Left
KP	Training 1	1	NA	Left	Right
	Training 2	2	NA	Right	Right
	Control	5	Left	Right	Left
	RG	3	Left	Left	Right
	Silence	4	NA	Right	Right
TA	Training 1	1	NA	Left	Right
	Training 2	2	NA	Right	Right
	Control	3	Left	Right	Left
	RG	4	Left	Left	Right
	Silence	5	NA	Right	Right

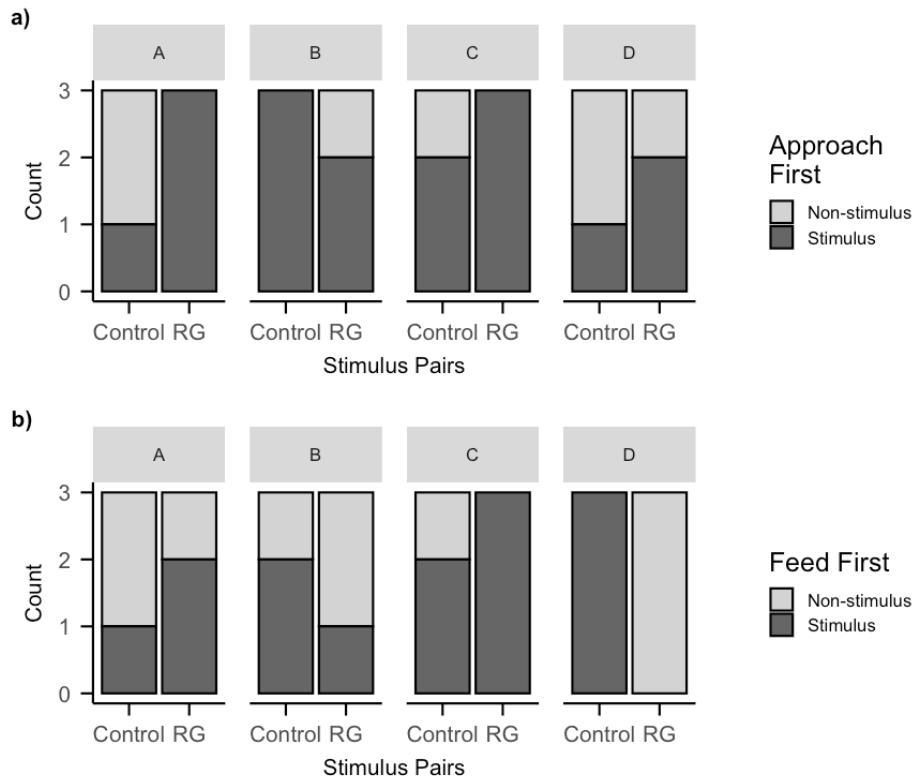
59 The 'Stimulus side' column indicates whether a given stimulus was broadcast from the left or
60 right food presentation room in the Rough Grunt and Control Call conditions.
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62 Supplemental Figure 1
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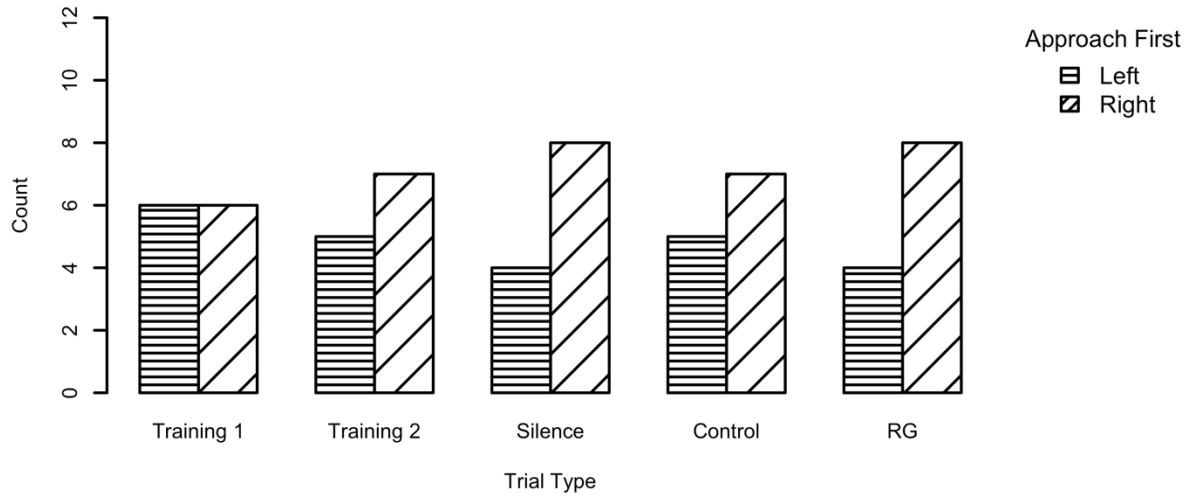
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 65 A count of the number of participants that a) first approached or b) first fed in the Stimulus or
 66 Non-stimulus Room when presented with each call type. Raspberry, pant hoot and pant grunt
 67 vocalizations were presented in the Control Call condition. Only rough grunts were presented in
 68 the Rough Grunt condition.

69 Supplemental Figure 2
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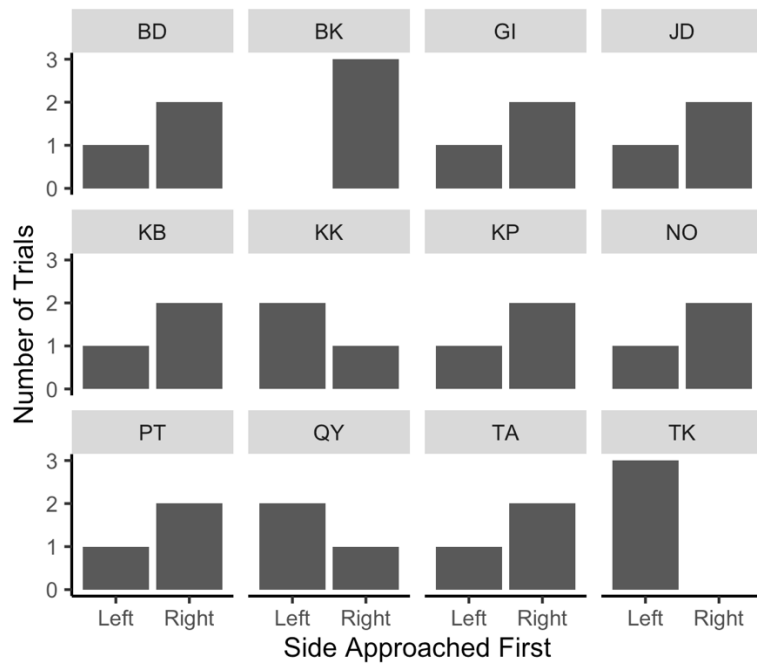
71 A count of the number of participants that a) first approached or b) first fed in the Stimulus or
 72 Non-stimulus Room when presented with control calls (“Control”) or rough grunts (“RG”)
 73 belonging to a given stimulus pair (A-D). Each stimulus pair was produced by one of four
 74 individuals. Three participants were presented with one stimulus pair which was recorded from a
 75 member of their own social group (Table 1).
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78 Supplemental Figure 3
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81 The number of participants that first approached the room on the left or right side in each
82 condition

83 Supplemental Figure 4
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87 The number of non-stimulus trials (Training Trial 1, Training Trial 2, Silence condition) in
88 which each participant first approached the room on the left or right side

89 Supplementary Audio Files

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91 Audio files of all playback stimuli used in the study have been provided in the Supplementary
92 Materials. Rough grunt and control call file labels A-D correspond to the information provided in
93 Table 1 and Supplemental Figure 2.