Free-ranging dogs understand human intentions and adjust behavioral responses accordingly

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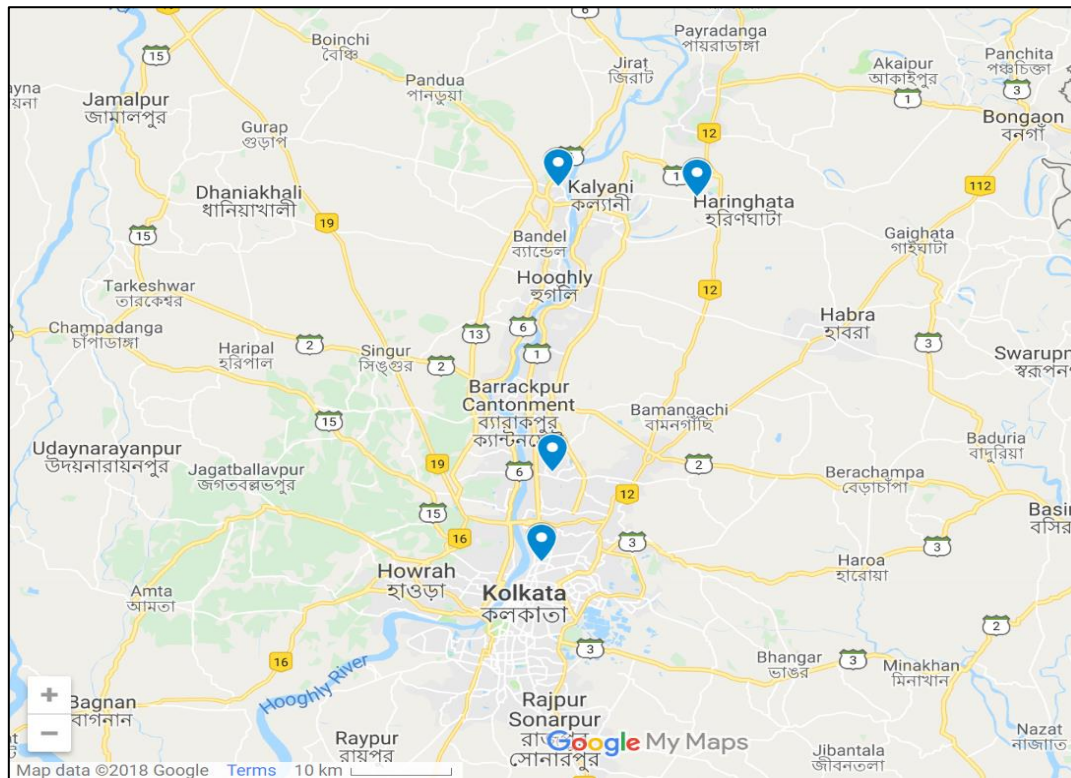E-mail: abhadra@iiserkol.ac.in (AB)

Figure S1(a)

Figure S1(a). Distribution of study sites. All four study locations marked on the map of West Bengal, India using Google maps 2018.

Figure S1(b)

Figure S1(b). Area covered in Kalyani. A total of 7.96 sq km area was covered in Kalyani. Area was calculated using Google Earth 2018. The area within the yellow boundary was covered during the study.

Figure S1(c)

Figure S1(c). Area covered in Kolkata. A total of 31.98 sq km area was covered in Kolkata. Area was calculated using Google Earth 2018. The area within the yellow boundary was covered during the study.
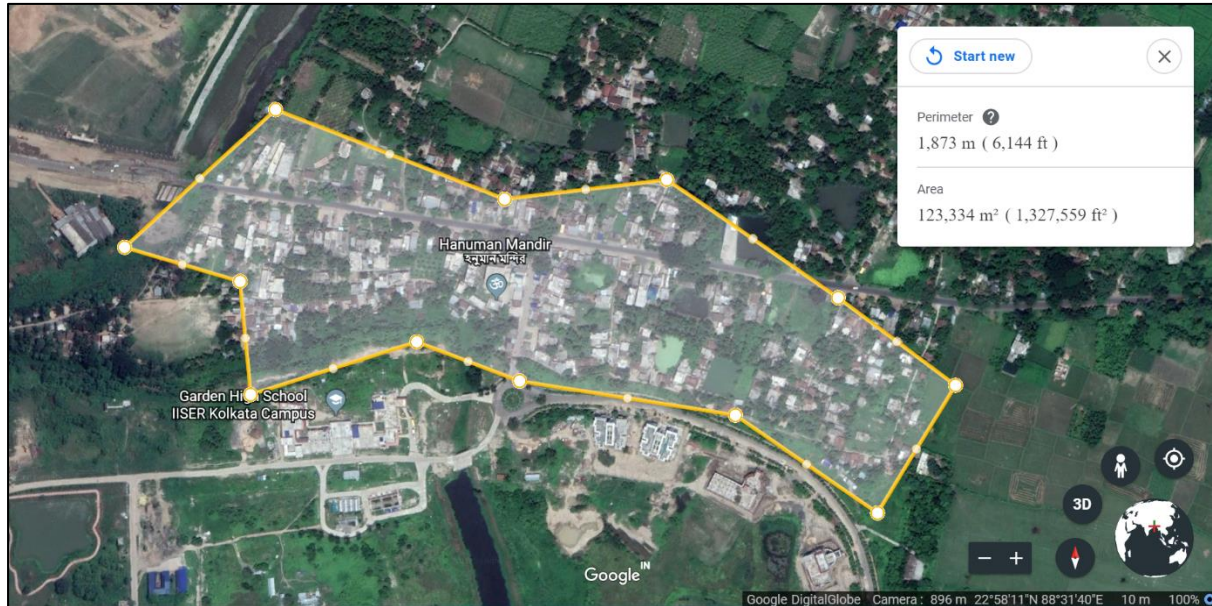
Figure S1(d)

Figure S1(d). Area covered in Mohanpur. A total of 0.12 sq km area was covered in Mohanpur. Area was calculated using Google Earth 2018. The area within the yellow boundary was covered during the study.
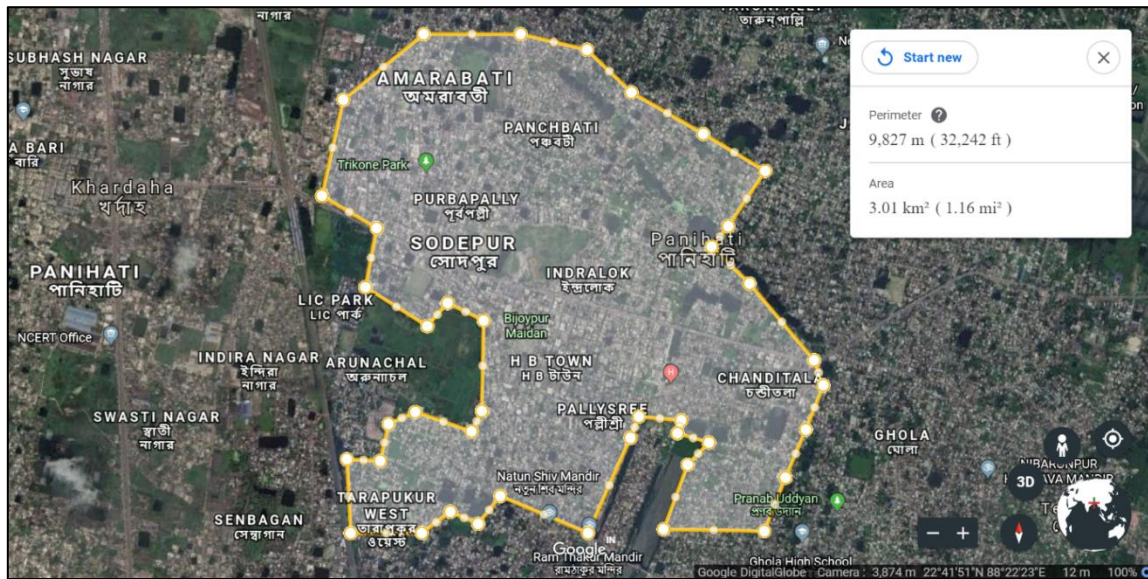
Figure S1(e)

Figure S1(e). Area covered in Sodepur. A total of 3.01 sq km area was covered in Sodepur. Area was calculated using Google Earth 2018. The area within the yellow boundary was covered during the study.
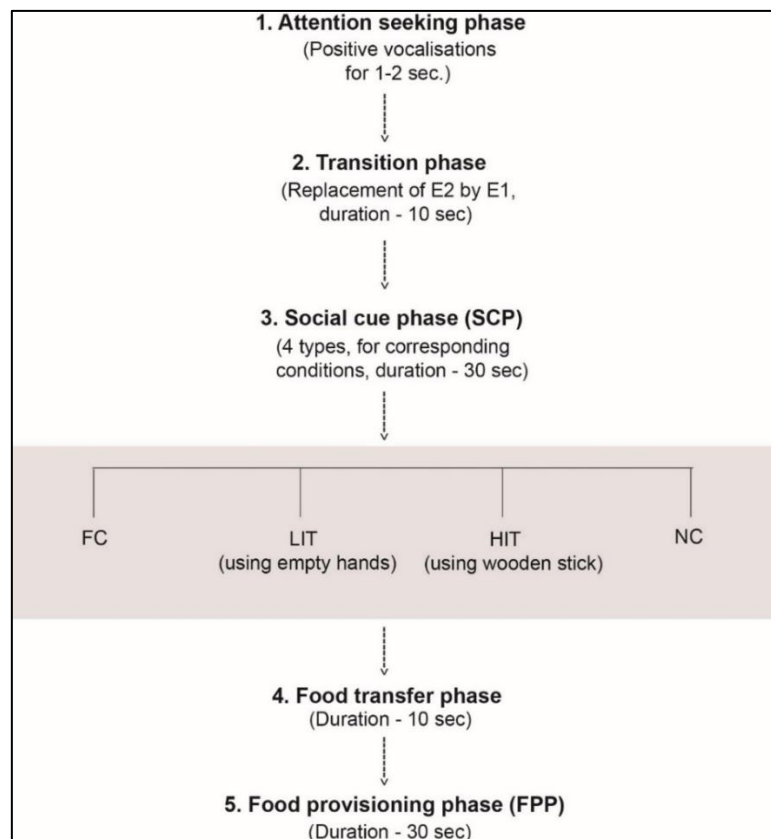
Figure S2

Figure S2. Flow chart of the experimental procedure. Flow chart showing all the phases of the experiment along with the durations.

Figure S3

Figure S3. Examples of friendly cues by humans to free-ranging dogs in Indian streets.

Table S1

Parameters	Comparisons	Statistical test details			
		Test	**Test statistic**	**df**	**P**
No. of approaches	SCP (NC – FC)	Goodness of fit	$\chi^2 = 15.207$	1	< 0.0001
	SCP (FC – LIT)	Goodness of fit	$\chi^2 = 22.154$	1	< 0.0001
	SCP (FC – HIT)	Goodness of fit	$\chi^2 = 25.000$	1	< 0.0001
	SCP (NC – HIT)	Goodness of fit	$\chi^2 = 4.000$	1	0.046
	SCP (LIT – NC)	Goodness of fit	$\chi^2 = 1.800$	1	0.180
	SCP (LIT – HIT)	Goodness of fit	$\chi^2 = 1.000$	1	0.317
	FPP (NC – HIT)	Goodness of fit	$\chi^2 = 14.222$	1	< 0.0001
	FPP (NC – LIT)	Goodness of fit	$\chi^2 = 0.533$	1	0.465
First behavior (SCP only)	NC (Gazing – No reaction)	Goodness of fit	$\chi^2 = 3.000$	1	0.083
	NC (Gazing and no reaction – Tail wag and aggression)	Goodness of fit	$\chi^2 = 19.200$	1	<0.0001
Human proximity	FC - NC	Mann-Whitney U	U = 792.000	30, 30	<0.0001
	FC - LIT	Mann-Whitney U	U = 816.000	30, 30	<0.0001
	FC - HIT	Mann-Whitney U	U = 825.000	30, 30	<0.0001
	NC - LIT	Mann-Whitney U	U = 480.500	30, 30	0.654
	NC - HIT	Mann-Whitney U	U = 495.000	30, 30	0.513
	LIT - HIT	Mann-Whitney U	U = 465.000	30, 30	0.832
Feeding time	NC – FC	Mann-Whitney U	U = 276.500	17, 29	0.499
	NC – LIT	Mann-Whitney U	U = 134.500	16, 13	0.184

Table S1. Compilation of post-hoc tests and the statistical details of a few parameters (phase-specific). Details of some of the post-hoc statistical tests corresponding to specific comparisons of the parameters.
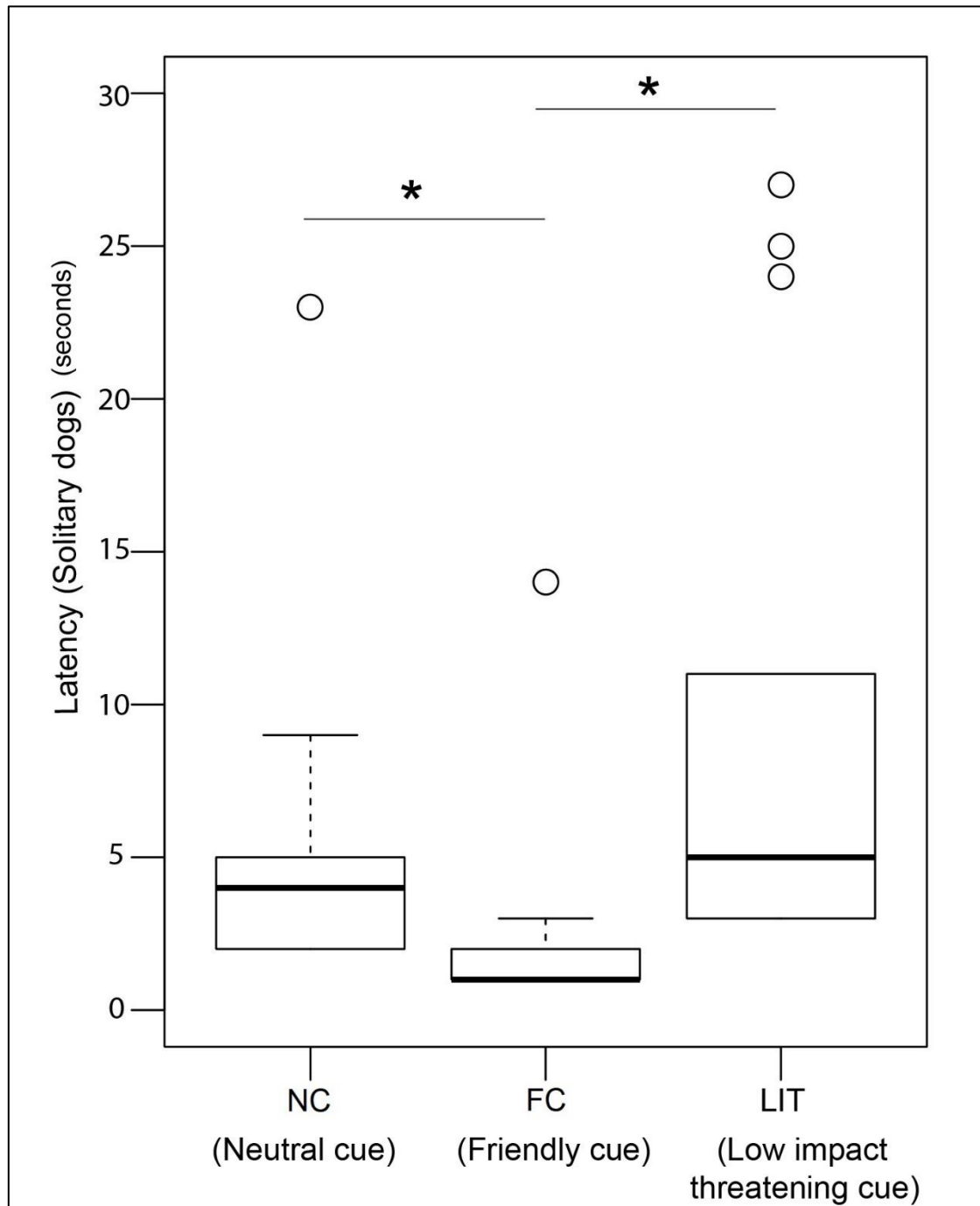
Figure S4

Figure S4. Latency to approach in FPP. Box and Whiskers plot showing the duration of latencies in FPP of the NC, FC and LIT conditions. Dogs showed fastest approach in the FC condition. Boxes represent interquartile range, horizontal bars within boxes indicate median values, and whiskers represent the upper range of the data. Asterisks indicated significant differences.
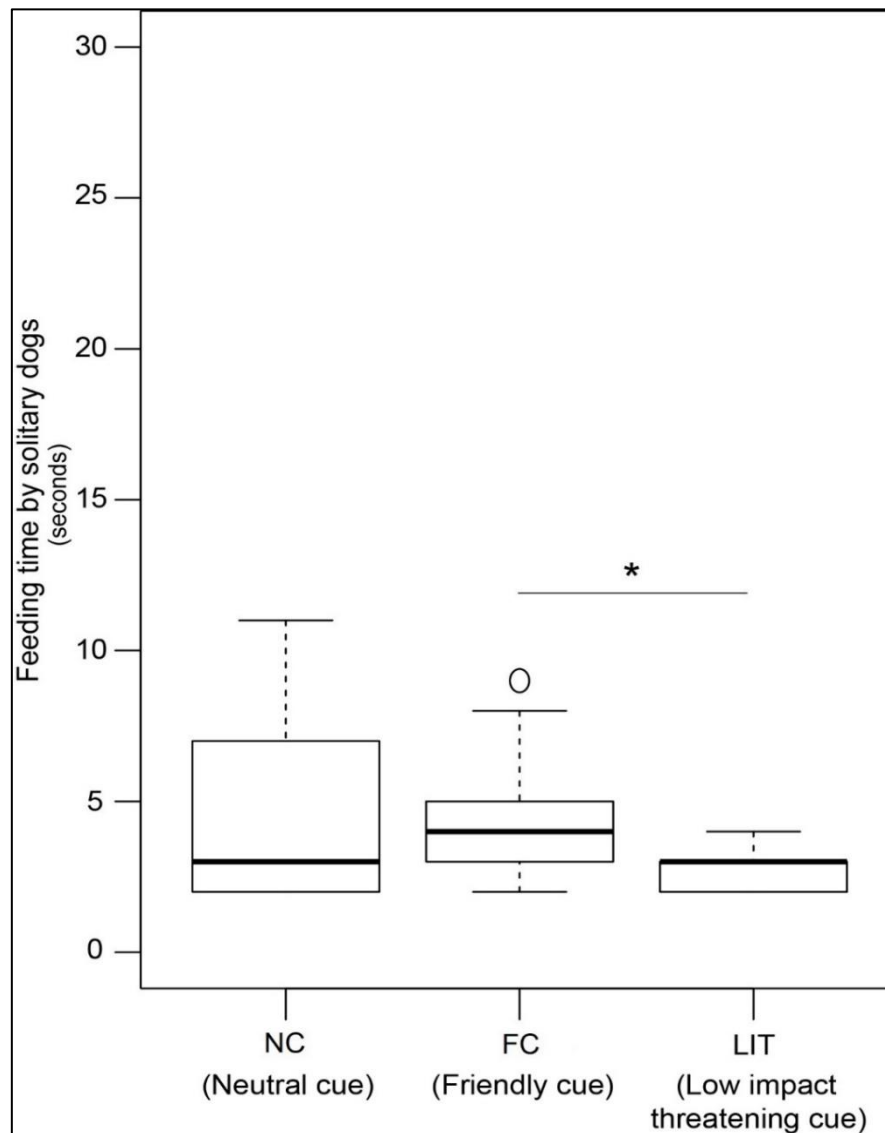
Figure S5

Figure S5. Duration of feeding in FPP of NC, FC and LIT conditions. Box and Whiskers plot showing the duration of feeding in FPP of the NC, FC and LIT conditions. Boxes represent interquartile range, horizontal bars within boxes indicate median values, and whiskers represent the upper range of the data. Asterisks indicated significant differences.

Movie S1. E1 providing friendly social cue to a dog in the SCP of FC condition.

Movie S2. E1 providing low-impact threatening cue to a dog using empty hand in SCP of LIT condition.

Movie S3. E1 providing high-impact threatening cue to a dog using a wooden stick in hand in SCP of HIT condition.

Movie S4. E1 providing food reward in FPP (constant for all the conditions).