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Supplemental information

**Sex-dependent features of social behavior
differ between distinct laboratory
mouse strains and their mixed offspring**

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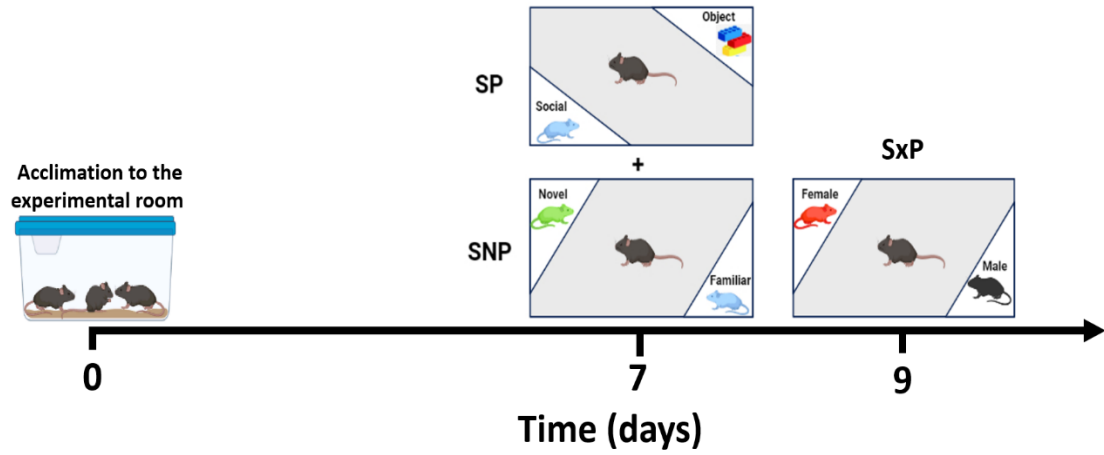
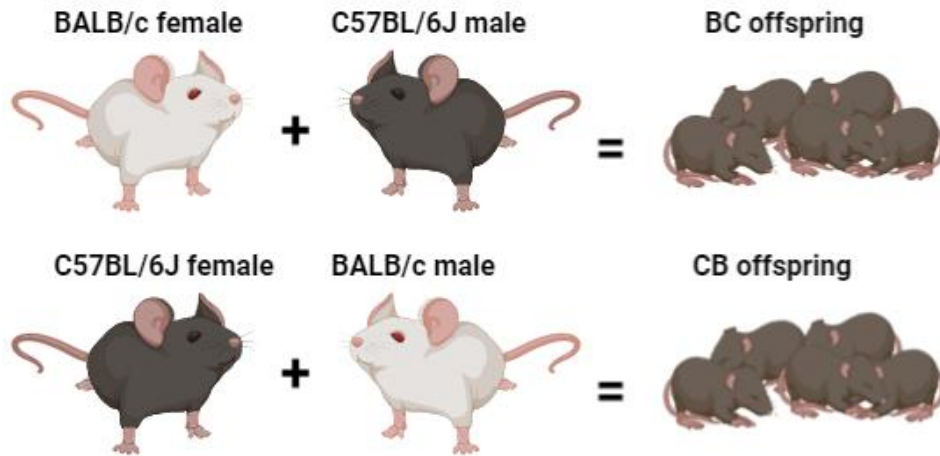
A**B**

Figure S1. Schematic depiction of the experimental designs, related to STAR Methods

(A) Timeline of the experiments.

(B) Cross-breeding scheme.

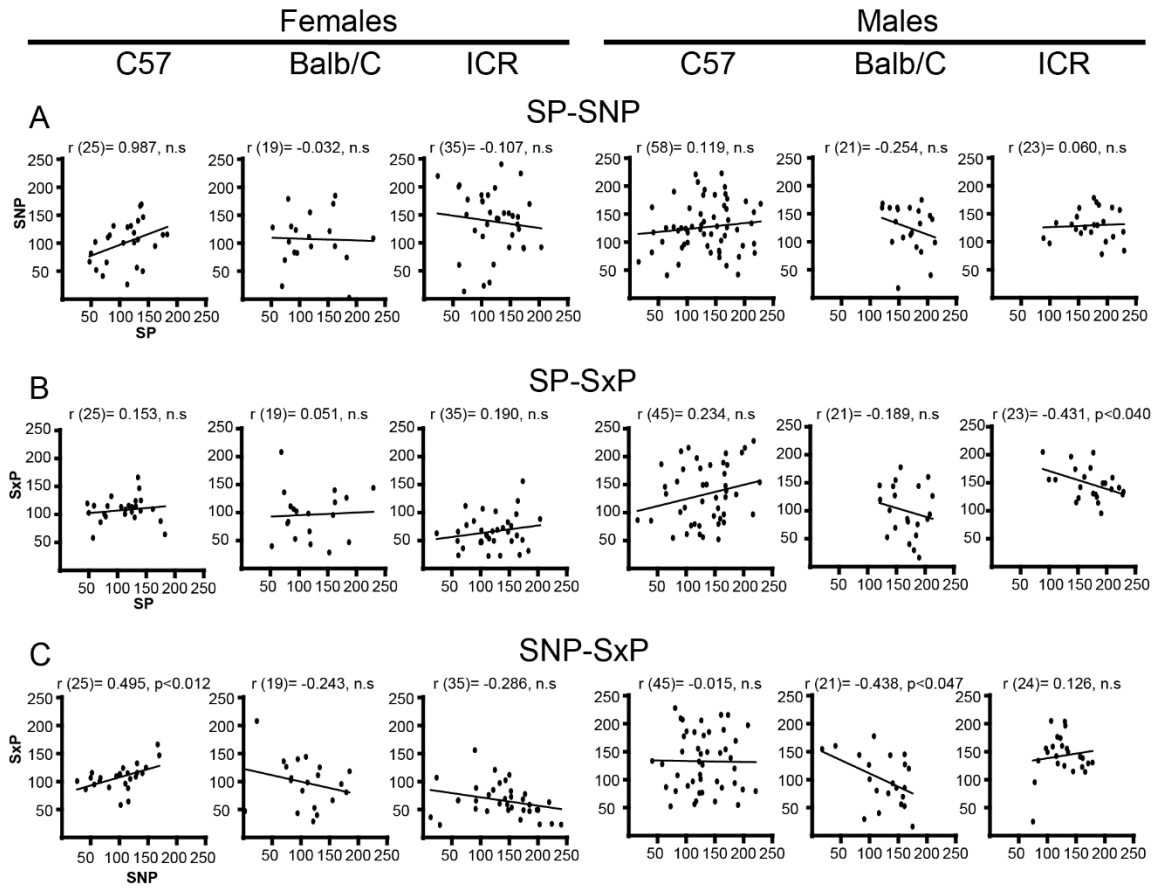


Figure S2. Correlations of ΔIT between the various experiments, related to Figure 2

Pearson's correlations of ΔIT for each mouse of the various groups, between SP and SNP tests (A), SP and SxP tests (B) and SNP and SxP tests (C). regression (r) and significance (p) values are depicted above each plot.

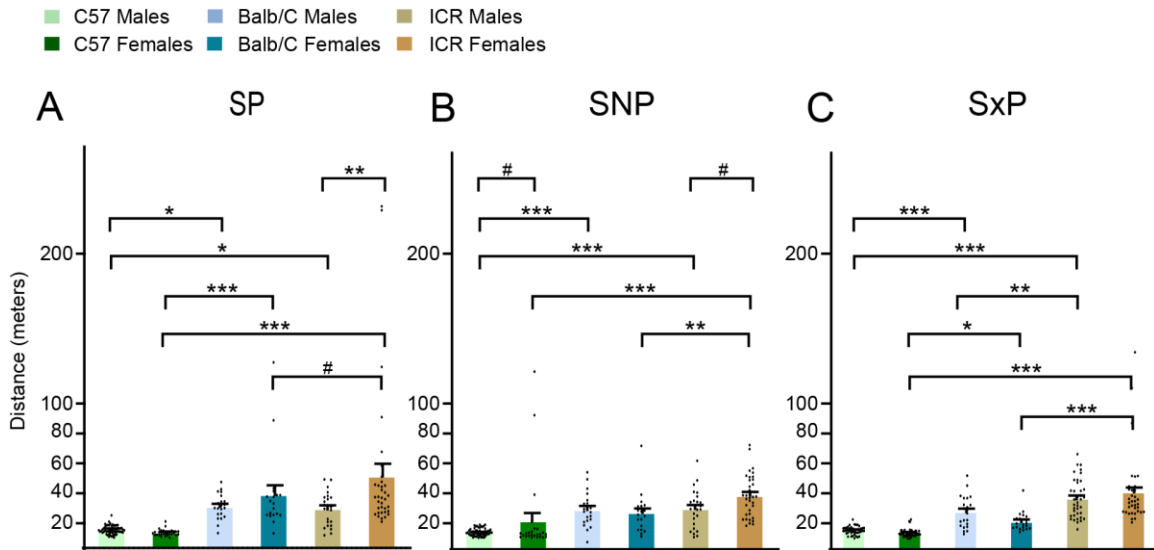


Figure S3. Strain-, but not sex-dependent difference in the distance traveled during the various experiments, related to Figure 1

Analysis of the mean distance (\pm SEM), traveled by the various experimental groups during the SP (A), SNP (B) and SxP (C) tests. # $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, *post hoc* Holm-Sidak test, following main effect in two-way ANOVA test.

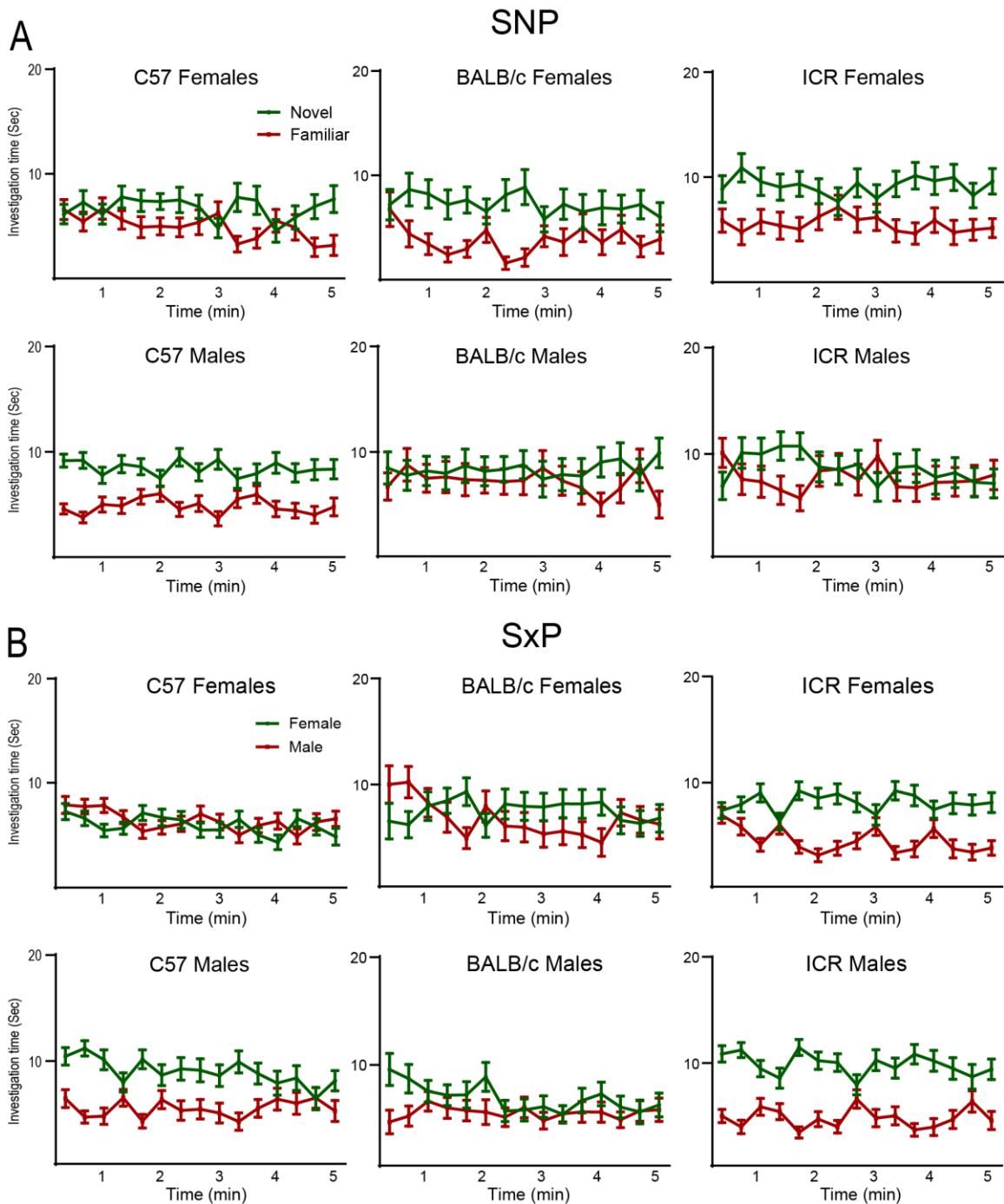


Figure S4. The behavioral dynamics of investigation behavior during the SNP and

SxP tests, related to Figure 5

Mean investigation time (\pm SEM), measured separately for each stimulus along the time course of the SNP (A) and SxP (B) session (20-s bins) for females (upper panels) and males (lower panels) of the three strains.

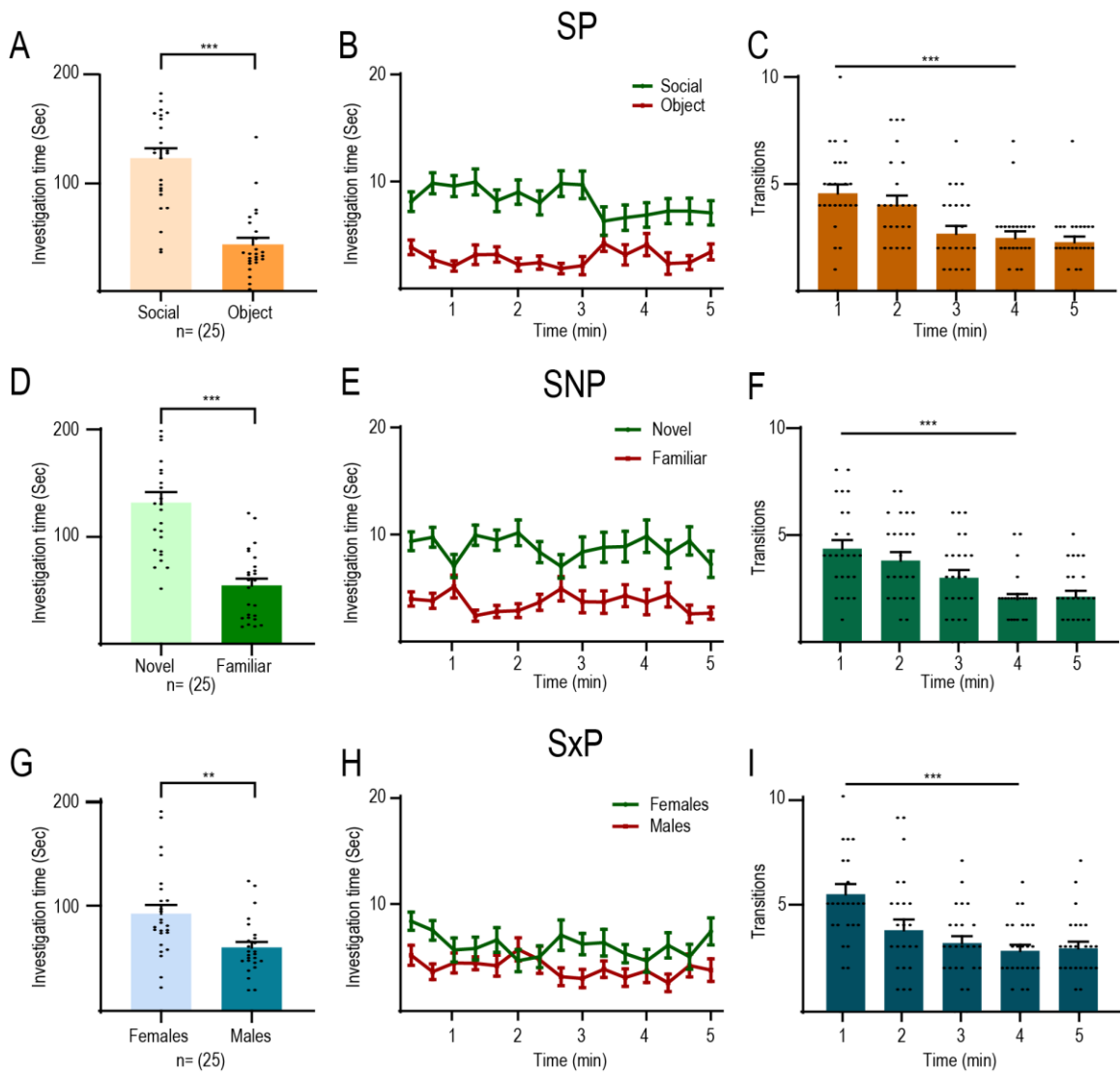


Figure S5. Behavioral analysis of C57BL/6J male mice raised in our colony, related to Figure 7

(A) Mean investigation time (\pm SEM), for each stimulus during the SP test performed by C57BL/6J mice raised in our colony ($n=25$). *** $p<0.001$, paired t-test.

(B) Mean investigation time (\pm SEM), measured separately for each stimulus along the time course of the SP test session (20-s bins).

(C) Mean (\pm SEM), number of transitions between the two stimuli made during the SP test. *** $p<0.001$, one-way repeated ANOVA.

(D-F) As in A-C, for the SNP test.

(G) As in A, for the SxP test. ** $p<0.01$, paired t-test.

(H) As in B, for the SxP test.

(I) As in C, for the SxP test. *** $p<0.001$, one-way repeated ANOVA

Beha' test	Groups	Repetitions	p value (t-test)
SP (Related to Fig.1)	C57 males	Group 1 (n=19)	p=0.001
		Group 2 (n=15)	p=0.001
		Group 3 (n=24)	p<0.0001
	BALB/c males	Group 1 (n=13)	p<0.0001
		Group 2 (n=8)	p=0.001
	ICR males	Group 1 (n=14)	p<0.0001
		Group 2 (n=9)	p=0.001
	C57 females	Group 1 (n=11)	p=0.022
		Group 2 (n=16)	p=0.010
	BALB/c females	Group 1 (n=19)	p=0.006
	ICR females	Group 1 (n=20)	p<0.0001
		Group 2 (n=15)	p=0.006
SNP (Related to Fig.1)	C57 males	Group 1 (n=19)	p=0.122
		Group 2 (n=15)	p<0.0001
		Group 3 (n=24)	p<0.0001
	BALB/c males	Group 1 (n=13)	p=0.077
		Group 2 (n=8)	p=0.945
	ICR males	Group 1 (n=15)	p=0.640
		Group 2 (n=9)	p=0.115
	C57 females	Group 1 (n=10)	p=0.001
		Group 2 (n=15)	p=0.348
	BALB/c females	Group 1 (n=20)	p<0.0001
	ICR females	Group 1 (n=20)	p=0.006
		Group 2 (n=15)	p=0.054
SxP (Related to Fig.1)	C57 males	Group 1 (n=20)	p<0.0001
		Group 2 (n=25)	p=0.159
	BALB/c males	Group 1 (n=13)	p=0.556
		Group 2 (n=9)	p=0.081
	ICR males	Group 1 (n=23)	p<0.0001
		Group 2 (n=15)	p<0.0001
	C57 females	Group 1 (n=15)	p=0.011
		Group 2 (n=15)	p=0.540
		Group 3 (n=20)	p=0.517
	BALB/c females	Group 1 (n=20)	p=0.469
	ICR females	Group 1 (n=20)	p=0.001
		Group 2 (n=15)	p=0.001
SP (Related to Fig.7)	BC	Group 1 (n=19)	p=0.094
		Group 2 (n=17)	p=0.157
	CB	Group 1 (n=24)	p=0.153
		Group 2 (n=23)	p=0.018
SNP (Related to Fig.7)	BC	Group 1 (n=12)	p=0.680
		Group 2 (n=7)	p=0.735
	CB	Group 1 (n=13)	p=0.175
		Group 2 (n=11)	p=0.760
SxP (Related to Fig.7)	BC	Group 1 (n=16)	p<0.0001
		Group 2 (n=17)	p=0.184
	CB	Group 1 (n=22)	p<0.0001
		Group 2 (n=23)	p<0.0001

Table S1. Repetitions on the various experiments , related to Figure 1 and Figure 7
Statistical tests conducted separately for each cohort of animals, as related to figures 1 and 7.