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Appendix B from S. Fischer et al., "Rearing-Group Size Determines Social Competence and Brain Structure in a Cooperatively Breeding Cichlid" (Am. Nat., vol. 186, no. 1, p. 000)

Comparison of the Size of Test Fish in the Social-Challenge Test

To test whether the rearing treatment (small or large groups) or day of isolation from the family group (isolations days 0–60) affected standard length (SL), we used a linear mixed model with size of test fish as the dependent variable, isolation day as covariate, and treatment (small or large group) as a fixed factor. Furthermore, as the behavioral analysis showed that aggression and submission were interactively influenced by the day of isolation and treatment, we included the two-way interaction between isolation day and treatment. Group identity was included as a random effect. Rearing-group size (large vs. small group) did not affect body size of test fish, either as a main effect or in interaction with isolation day (see the nonsignificant interaction "treatment × isolation day" in table B1). There was a nonsignificant trend of fish to be smaller when they had been isolated from their group later during the experiment (see the factor "isolation day" in table B1). However, the mean size difference between isolation days 0 and 60 was only 0.16 mm, a difference that is unlikely to influence the behavior toward a much larger conspecific.

Table B1: Comparison between the standard lengths of individuals used for the social-challenge test on day 71

Factor	Estimate ± SE	t	P
Intercept	1.573 ± .079	19.996	**<.001**
Treatment	−.009 ± .115	−.079	.937
Isolation day	−.003 ± .001	−1.957	*.054*
Treatment × isolation day	0 ± .002	−.004	.997

Note: Treatment: small- or large-group rearing of juveniles; isolation day: day when a juvenile was isolated from its family group. Reference category for the estimate treatment: small groups. $N = 17$ family groups and 103 test fish. Boldface indicates $P < .05$ and italics $.05 < P < .1$.