

## Supplementary Materials for

### **Success of cuckoo catfish brood parasitism reflects coevolutionary history and individual experience of their cichlid hosts**

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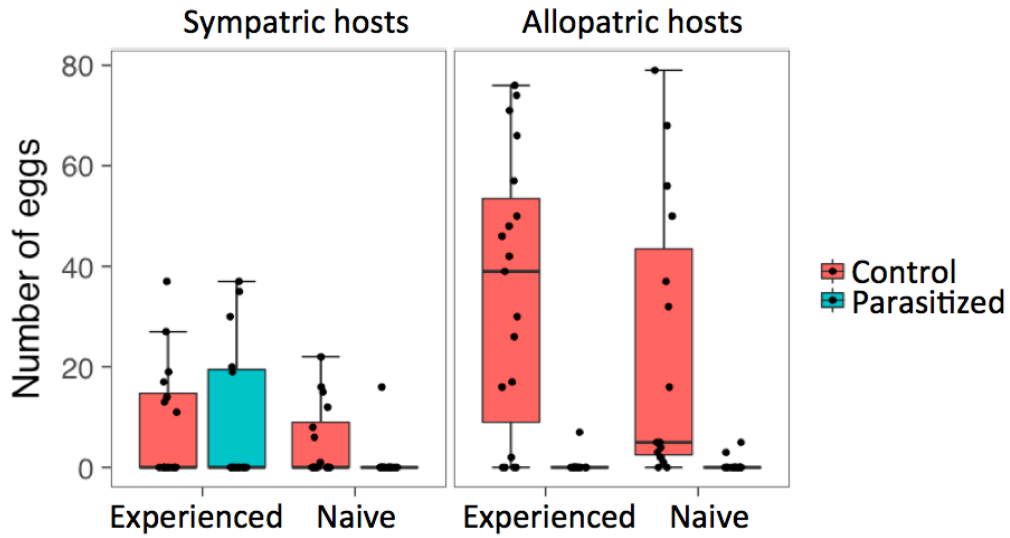
#### **The PDF file includes:**

- fig. S1. The cost of experimental parasitism in terms of the size of host own brood.
- table S1. Full analysis of variance (ANOVA) table for a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 24 hours.
- table S2. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on parasite brood survival over the incubation period.
- table S3. Full ANOVA table of a Bernoulli GLM testing the roles of parasite treatment, evolutionary experience, and individual experience on host brood survival over the incubation period.
- table S4. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 2 hours.
- table S5. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of own eggs following experimental parasitism over the first 2 hours.
- table S6. The number of eggs rejected over 2 and 24 hours by experimental females.
- table S7. The results of a bivariate GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 24 hours.

#### **Other Supplementary Material for this manuscript includes the following:**

(available at [advances.sciencemag.org/cgi/content/full/4/5/ear4380/DC1](https://advances.sciencemag.org/cgi/content/full/4/5/ear4380/DC1))

- movie S1 (.mp4 format). Undisturbed spawning of sympatric cichlid hosts, *Simochromis diagramma*.
- movie S2 (.mov format). Spawning of sympatric host *Simochromis diagramma* with repeated cuckoo catfish intrusions and spawning.
- movie S3 (.mp4 format). Undisturbed spawning of allopatric host *Haplochromis aeneaocolor* followed by cuckoo catfish intrusions and spawning.



**fig. S1. The cost of experimental parasitism in terms of the size of host own brood.** The cost of experimental parasitism in terms of the size of host own brood. Median (line), interquartile range (box), non-outlier range (whiskers) and observed data points are plotted.

**table S1. Full analysis of variance (ANOVA) table for a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 24 hours.**

Effect	Estimate	Std Error	z	P
(Intercept)	2.64	1.04	2.55	0.0108
Individual experience (ref naive)	-0.77	1.28	-0.60	0.5501
<b>Evolutionary experience (ref allopatric)</b>	<b>-4.51</b>	<b>1.28</b>	<b>-3.51</b>	<b>&lt;0.0001</b>
Interaction	-16.93	2776.67	-0.01	0.9951

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05

**table S2. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on parasite brood survival over the incubation period.**

Effect	Estimate	Std Error	z	P
(Intercept)	-1.87	0.76	-2.46	0.0137
<b>Evolutionary experience (allopatric)</b>	<b>3.66</b>	<b>1.08</b>	<b>3.40</b>	<b>0.0007</b>
Individual experience (naive)	-0.07	1.07	-0.07	0.945
Interaction	0.15	1.52	0.10	0.9192

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05

**table S3. Full ANOVA table of a Bernoulli GLM testing the roles of parasite treatment, evolutionary experience, and individual experience on host brood survival over the incubation period.**

Effect	d.f.	Deviance	P
<b>Treatment</b>	<b>1</b>	<b>32.83</b>	<b>&lt;0.0001</b>
<b>Evolutionary experience</b>	<b>1</b>	<b>4.43</b>	<b>0.0353</b>
Individual experience	1	0.25	0.6143
<b>Treatment by Individual experience</b>	<b>1</b>	<b>7.459</b>	<b>0.0063</b>
Treatment by Evolutionary experience	1	1.399	0.2370
Evolutionary by Individual experience	1	1.848	0.1740

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05

**table S4. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 2 hours.**

<b>Effect</b>	<b>d.f.</b>	<b>Deviance</b>	<b><i>P</i></b>
Individual experience	1	0.29	0.5919
<b>Evolutionary experience</b>	<b>1</b>	<b>44.46</b>	<b>&lt;0.0001</b>
Interaction	1	0.00	1.0000

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05

**table S5. The results of a Bernoulli GLM to test the roles of evolutionary experience and individual experience on rejection of own eggs following experimental parasitism over the first 2 hours.**

<b>Effect</b>	<b>d.f.</b>	<b>Deviance</b>	<b><i>P</i></b>
<b>Individual experience</b>	<b>1</b>	<b>5.76</b>	<b>0.0164</b>
<b>Evolutionary experience</b>	<b>1</b>	<b>6.28</b>	<b>0.0122</b>
Interaction	1	0.20	0.6522

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05

**table S6. The number of eggs rejected over 2 and 24 hours by experimental females.**

	<b>Evolutionary contrast</b>	<b>Individual contrast</b>	<b>Total number of broods</b>	<b>Rejected eggs over 2h</b>	<b>Rejected eggs over 24h</b>
(a) Parasite eggs	Sympatric	Experienced	15	12	13
		Naive	15	10	14
	Allopatric	Experienced	15	0	2
		Naive	15	0	0
(b) Host eggs in parasitized broods	Sympatric	Experienced	15	6	7
		Naive	15	1	3
	Allopatric	Experienced	15	1	2
		Naive	15	0	0
(c) Host eggs in control broods	Sympatric	Experienced	16	2	7
		Naive	16	4	8
	Allopatric	Experienced	15	0	0
		Naive	15	0	1

**table S7. The results of a bivariate GLM to test the roles of evolutionary experience and individual experience on rejection of parasite eggs over the first 24 hours.**

<b>Effect</b>	<b>d.f.</b>	<b>Deviance</b>	<b><i>P</i></b>
Individual experience	1	2.11	0.1462
<b>Evolutionary experience</b>	<b>1</b>	<b>66.67</b>	<b>&lt;0.0001</b>
Interaction	1	2.70	0.1002

Bold text indicates effect with *P*-value below the generally accepted threshold of statistical significance of 0.05