Supporting Information

Cuckoo hosts shift from accepting to rejecting parasitic eggs across their lifetime

Mercedes Molina-Morales\textsuperscript{a,b,1}, Juan Gabriel Martínez\textsuperscript{a}, David Martín-Gálvez\textsuperscript{b,*}, Deborah A. Dawson\textsuperscript{b}, Terry Burke\textsuperscript{b}, Jesús M. Avilés\textsuperscript{c}

Supporting Information. Differences in color appearance of eggs between rejecter and accepter females

In 2012 we measured with a Minolta spectrophotometer magpie eggs in 29 complete clutches in which we tested rejection of models in our population for a different purpose. This allowed us to test whether egg appearance of rejecter and accepter magpies do actually differ in our population. If they do not differ, this would constitute a proof that different magpies were exposed to similar mimicry challenges in our work as the appearance of models we used in the study was highly consistent (see methods). Principal component analysis (PCA) was performed on reflectance data (five measures for each magpie egg) to reduce the number of correlated variables (reflectance at 10 nm) into a few orthogonal variables summarizing color variation (see for instance Cuthill \textit{et al.}, 1999; Avilés \textit{et al.} 2006). PCA allowed us to distinguish between achromatic “brightness” variation represented by the first principal component (PC1) and chromatic variation represented by PC2 and PC3 (Endler and Théry 1996). Together these three first components explained 99.87\% of the total variance in spectra of magpie eggs (see figure below). PC1 was flat and described achromatic variation explaining 99.2\% of the overall variation. PC2 and PC3 were not spectrally flat and together they accounted for 83.36\% of the chromatic variance (see Figure S1). PC2 had high and positive loadings
at short wavelengths and high negative ones at intermediate wavelengths and could therefore classify the sampled eggs along a gradient of long ultraviolet-blue-greenness. PC3, however, had high positive loadings approximately at the green (475-550 nm) wavelength and thus could be described as a greenness gradient. The average value of PC1, PC2 and PC3 scores attained for all host eggs in a clutch was used as an index of egg coloration.

Figure S1. Principal components in relation to wavelength, derived from reflectance spectra from magpie eggs in each clutch. PC1 indicates principal component 1, PC2 principal component 2, and PC3 principal component 3.

In the table S1 are shown average values of PCs scores for accepter and rejecter females. A GLM in which we entered as dependent variables the scores of these three PCs revealed that eggs of magpies that rejected models (N=10 females) did not significantly differ in coloration from those of females that accepted them (N=19) (N=29, Wilks Lambda=2.60, d.f=3,25, P=0.074) suggesting that coloration of magpie eggs do not obviously differ between accepter and rejecter females.
Table S1. Average values of PC color scores for nests that accepted and rejected model eggs.

<table>
<thead>
<tr>
<th></th>
<th>PC1</th>
<th>PC2</th>
<th>PC3</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptor</td>
<td>-0.27 (1.59)</td>
<td>-0.10 (0.38)</td>
<td>0.07 (0.68)</td>
<td>19</td>
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<tr>
<td>Rejecter</td>
<td>0.19 (0.10)</td>
<td>0.19 (0.22)</td>
<td>-0.33 (0.67)</td>
<td>10</td>
</tr>
</tbody>
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References

