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# Apostatic selection on prey that match the background

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# Abstract

There is good experimental evidence that predators often remove disproportionately more of the common prey types. This ‘apostatic selection’ could maintain colour polymorphisms within prey species. In nature, morphs of many species appear to match components in the background, but most of the experiments that have tested apostatic selection have used prey that were conspicuous. In work described in this paper, wild birds at one site were presented a random order of 51 experiments. Seventeen frequencies of orange and grey pastry prey were presented on each of three types of background: a hessian sheet scattered with either orange and grey stones (the ‘matching’ background), or lilac and yellow stones, or green stones (two sorts of ‘control’ background). Each experiment consisted of four trials in succession and the numbers of the two colours eaten in each trial were recorded when about half the total prey had been eaten. Two methods of graphical analysis revealed that apostatic selection occurred on the prey on all three backgrounds, but was strongest in the grey/orange one. This last result must have been caused by some effect of the match between prey and background colour, and behavioural explanations are suggested. It is unclear whether the prey were exhibiting ‘crypsis’ or ‘masquerade’.

**Keywords:** [Apostatic selection—](#), [polymorphism—](#), [frequency-dependent selection—](#), [predation—](#), [crypsis—](#), [masquerade](#)

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