

**The complexity of neophobia in a generalist foraging corvid:
the common magpie, *Pica pica***

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Signature: __Toni Vernelli_____

ABSTRACT

It is often suggested that species differences in neophobia are related to differences in feeding or habitat specialisation. Generalist species, which have more to gain from exploring novel resources, tend to be less neophobic than specialists. However, some successful generalists including ravens, brown rats and coyotes also demonstrate high levels of neophobia. I explored this paradox using common magpies, a widespread generalist opportunist that displays behaviour indicative of high neophobia. Using a combination of field and short-term captive studies, I investigated whether novelty reactions were a fixed trait or varied according to object features and context as well as for different categories of novelty (i.e. objects, food, location). I found that novelty reactions in magpies were not influenced by object features such as colour, shape or size but varied greatly depending on environmental context and novelty category. Birds did not show avoidance of novel objects presented in novel environments but were extremely wary of similar novel objects presented in familiar environments, suggesting that violation of expectations may be more important than absolute novelty. Magpies could overcome the neophobia through repeated exploration of the objects over longer periods of time, but it affected their foraging behaviour. To avoid interactions with novel objects, wild-living magpies successfully employed an innovative technique that involves observing and pilfering from caching squirrels. Less aversion was shown towards novel food than to novel objects, while familiar objects and food encountered in novel locations were generally accepted. In total, this thesis suggests that neophobia is a complex and dynamic phenomenon in generalist foragers which may set protective limitations on the level of exploration. It can be overcome through learning and the development of alternative behavioural tactics such as kleptoparasitism.

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