

## Abstract 27:

Moving out: do the costs of extra-territorial movement explain delayed dispersal in cooperative breeders?

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Individuals in many species remain as non-breeding helpers in their natal group before they leave to reproduce themselves, which apparently contradicts evolutionary theory of maximising reproductive success. Such delayed dispersal is predicted if high-quality breeding positions are limited and costly to obtain while staying provides benefits through nepotism, group benefits or indirect fitness. Although exemplary studies support these hypotheses, their relative importance across species remains unclear. The assumption that extra-territorial movement is costly is incorporated in those explanations of delayed dispersal, yet rarely addressed or tested directly. We therefore conduct a systematic literature review on empirical evidence for costs of extra-territorial movement in cooperatively breeding vertebrates. We predict that individuals suffer from lower survival rates and worse body condition while moving through unfamiliar environments without their group. Such costs may be caused by higher predation risk, lower foraging efficiency, and more frequent aggressive interactions with territory holders. We investigate if alternative strategies such as temporarily exploring foreign territories while staying most of the time in the natal territory, or dispersing in coalitions with other individuals, are less costly than lone and potentially long wandering through territories on search or waiting for a breeding vacancy. This review will thus reveal if extra-territorial movement is indeed costly and improve our understanding of the variation of dispersal costs and their weight in the evolution of cooperative breeding.