

## **SOCIAL TRANSMISSION OF CANNIBALISM**

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We hypothesised that social learning is involved in the transmission of cannibalism in domestic fowl. Evidence suggests that cannibalism, which involves the consumption of blood and other tissues of conspecifics, is redirected foraging behaviour. We randomly assigned flocks of White Leghorn pullets to one of two treatments: Experimental - flocks with trained demonstrators (n=9), and Control - flocks with naïve demonstrators (n=8). Two birds per flock were demonstrators and the remaining 10 hens were observers. For ethical reasons, we used a chicken model - a petri dish containing chicken blood covered by a membrane (“skin”) - rather than real chickens as a cannibalism stimulus. We trained demonstrators in Experimental flocks to break the membrane and consume the blood. To assess the effect of proximity to the cannibalism stimulus during demonstrations, we randomly assigned observer pairs to one of two observer treatments: (1) through a fence and (2) within the same pen. We conducted five 10-min demonstration sessions and test trials over a period of 15 days when the birds were 41-55 days of age, and two further test trials at 63-64, and 91-92, days of age. Pairs that observed trained demonstrators breaking a membrane and consuming blood were more likely to perform this task when later tested in the absence of demonstrators than control pairs ( $p=0.044$ ). Learning of the task was enhanced by demonstrations within the pen rather than through a fence ( $p=0.009$ ). This study provides the first experimental evidence that social learning can contribute to the spread of cannibalism in flocks of domestic fowl. We suggest that stimulus enhancement and observational conditioning are the mechanisms involved.