

The blue tit and the milk bottle

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The United Kingdom has a long standing system of delivering milk in bottles to the door. At the beginning of the 20th century these milk bottles had no top. Birds had easy access to the cream which settled in the top of the bottle. Two different species of British garden birds, the blue tits and red robins, learned to siphon up cream from the bottles and tap this new, rich food source.

This innovation, in itself, was already quite an achievement. But it also had an evolutionary effect. The cream was much richer than the usual food sources of these birds, and the two species underwent some adaptation of their digestive systems to cope with the unusual nutrients. This internal adaptation almost certainly took place through Darwinian selection.

Then, between the two world wars, the UK dairy distributors closed access to the food source by placing aluminium seals on their bottles.

By the early 1950's the entire blue tit population of the UK, about a million birds, had learned how to pierce the aluminium seals. Regaining access to this rich food source provided an important victory for the blue tit family as a whole; it gave them an advantage in the battle for survival. Conversely, the robins, as a family, never regained access to the cream. Occasionally, an individual robin learns how to pierce the seals of the milk bottle. But the knowledge never passes to the rest of the species.

In short, the blue tits went through an extraordinarily successful institutional learning process. The robins failed, even though individual robins had been as innovative as individual blue tits. Moreover, the difference could not be attributed to their ability to communicate. As songbirds, both the blue tits and the robins had the same wide range of means of communication: colour, behaviour, movements, and song. The explanation could be found only in the social propagation process: the way blue tits spread their skill from one individual to members of the species as a whole.

In spring, the blue tits live in couples until they have reared their young. By early summer, when the young blue tits are flying and feeding on their own, we see birds moving from garden to garden in flocks of eight to ten individuals. These flocks seem to remain intact, moving together around the countryside, and the period of mobility lasts for two to three months.

Robins, by contrast, are territorial birds. A male robin will not allow another male to enter its territory. When threatened, the robin sends a warning, as if to say "Keep the hell out of here." In general, red robins tend to communicate with each other in an antagonistic manner, with fixed boundaries that they do not cross.

Birds that flock, seem to learn faster. They increase their chances to survive and evolve more quickly.

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