Before a pair of zebra finches can settle down to start a family, they have to find a place to live. Whether that’s in a tree or in a constructed nest box, the responsibility for finding a good nest site typically falls to the male—though the female’s opinion can make or break a decision. The male will kind of Gates a nest site to the nest, and ‘they’ll check it out together,’” explains evolutionary biologist Kerianne Wilson, who spent hundreds of hours during the 2010s observing the behavior of zebra finches in aviaries as part of her PhD at the University of California, Irvine. “If the female doesn’t like it, she’ll leave,” in which case the male will usually “have to coax her into house-hunting again.”

Disagreements about potential nest sites can crop up for various reasons, Wilson says. Aggressive neighbors are a particular irritation for communal songbirds such as zebra finches (Taeniopygia guttata), which typically live in colonies of several dozen members. But individual birds differ in their assessments of the pros and cons of a particular nest site, and it’s here that problems can arise for socially monogamous zebra finch couples, which live together and share parenting responsibilities. “The male will kind of go from one nest site to the next, and it’s here that problems can arise for socially monogamous zebra finch couples, which live together and share parenting responsibilities as they raise multiple cohorts of young. Some pairs simply seem to be incompatible in the house-hunting department, Wilson says, leading to protracted searches. These birds risk missing out on a good, or at least a passable, nest site. If the male and the female “really can’t get on the same page,” they may in rare cases end up trying to raise their young across two different nests, Wilson says. More often, though, incompatibility in nest preference foreshadows a more decisive outcome: divorce.

In recent experiments with flocks kept in aviaries in California, Wilson and colleagues studied the behavior of zebra finches. These birds risk missing out on a good, or at least a passable, nest site. If the male and the female “really can’t get on the same page,” they may in rare cases end up trying to raise their young across two different nests, Wilson says. More often, though, incompatibility in nest preference foreshadows a more decisive outcome: divorce.

In 1987, two researchers in Ontario produced a detailed review of divorce among gulls (family Laridae). In it, the scientists considered multiple independent accounts of apparently monogamous birds leaving their partners. Both within breeding season—often after an initial clutch of eggs had been destroyed or eaten by predators—

The group’s work, which was published online late last year, is one of just a handful of projects that have experimentally investigated the reasons that pairs of monogamous animals split up. In the “evolutionary standpoint,” says Wilson, now a postdoc at the University of California, Riverside, at all ‘helps us understand what makes individuals more successful or less successful based on the pairing they have.”

This recalibration has led to new distinctions between genetic monogamy (reproductive fidelity to a single partner) and social monogamy (shared parenting and other behaviors for a sustained period of time). It’s also renewed interest in the demographic and environmental factors that make or break animal couples, particularly among species of birds, which have a far higher rate of social monogamy—around 90 percent of species—than any other group of vertebrates. A small number of long-term observational studies are trying to uncover these factors, understand the costs and benefits for the individual animal involved, and even measure how divorce rates change over time—potentially affecting the size and survival of populations. From an evolutionary standpoint, says Wilson, “the more we know about the factors that lead to divorce among gulls, the less likely it is that a gull will ‘fall for another’ because you try to mate with individuals outside their pair. This revelation has led researchers to distinguish between genetic and social monogamy.

VARIETIES OF MONOGAMY
Annik as such as birds that live and raise young in pairs were once considered to be monogamous in all senses of the word—they exclusively live and mate with one other individual. However, genetic studies over the last few decades have revealed that many of these species are not exclusive, mating with individuals outside their pair. As the research has expanded, it’s become clear that the full complexity of animal mating systems has only been revealed thanks to genetic studies, notes Antica Culina, a senior scientist at the Radboud Boekholt Institute in Croatia and an honorary fellow at the Netherlands Institute of Ecology. Researchers have been forced to update traditional descriptions of monogamy—once defined as “a system where males and females form some kind of bonds and then they’re relatively exclusive,” says Culina, whose PhD at the University of Oxford focused on divorce in birds—in light of genetic data showing that many supposedly monogamous species actually produce young with a much greater number of partners than researchers have observed with them.

SOCIAL MONOGAMY: When individuals form social bonds and perform behaviors such as parenting in pairs, but don’t necessarily mate exclusively.

GENETIC MONOGAMY: When individuals mate only with partners that share genetic material.

EXTRA-PAIR PATERNITY: When a male fathers offspring outside of his social pair.

Why are you leaving?
In 1967, two researchers in Ontario produced a detailed review of divorce among gulls (family Laridae). In it, the scientists considered multiple independent accounts of apparently monogamous birds leaving their partners. Both within breeding season—often after an initial clutch of eggs had been destroyed or eaten by predators—

If a mate ends up being a good partner, you’ll want to mate with them again, conceivably, because you had great fitness.