Many birds have bright, ornamental plumage. Most often it is displayed by the male of the species, who is believed to use the plumage to attract females. The female may select male breeding partners on the basis of this feather advertisement, perhaps assessing their health. According to evolutionary theory, it behooves the female to choose a strong, healthy male to be the father of her chicks, not only because the male helps to feed them but also because the chicks will carry dad's healthy genes. Darwin labeled such mate choice "sexual selection."

Another possible form of plumage selection has been studied by biologists in Canada. They think that the parents of certain bird species may select the "prettiest" chicks out of a nest as favorites and feed them better (why they might do this is an interesting question).

American coots are birds that live in the marshes of western North America. As adults they are grayish-black and have a spot of white on their bills. The chicks are unusual, for unlike most birds whose nestlings are usually drab, coot chicks are surprisingly conspicuous. They have long, orange-tipped, slender feathers, brilliant red papillae around their eyes, a bright red bill, and bald red head. The chicks lose this colorful appearance at three weeks. The Canadian biologists speculated that the plumage may make some chicks more attractive to their parents; possibly the most "attractive" chicks might be able to successfully beg for more food from their parents and have a better chance of survival. That seemed possible since sometimes one-half of all chicks died from starvation. But how could the authors test such an unusual notion?

Here is your challenge:

- First, identify the specific question(s) the authors are asking.
- Second, what is the hypothesis that they suggest?
- Third, what predictions (deductions) can you make if the hypothesis is correct?
- Fourth, how can we test the predictions, i.e., what exactly might we do if we were the authors who had studied coots for several years?

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