

BEGGING BY NESTLINGS

READING PRACTICE SETS

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TOEFL iBT READING PRACTICE SET

Directions: Read the passage and answer the questions. Give yourself 18 minutes to complete this practice set.

BEGGING BY NESTLINGS

- 1 Many signals that animals make seem to impose on the signalers costs that are overly damaging. **[A]** A classic example is noisy begging by nestling songbirds when a parent returns to the nest with food. **[B]** These loud cheeps and peeps might give the location of the nest away to a listening hawk, raccoon, or opossum, resulting in the death of the defenseless nestlings. **[C]** In fact, in the experiment performed by Susan Leech and Marty Leonard in 1995, when tapes of tree swallow (*Tachycineta bicolor*) begging calls were played at artificial swallow nests each containing a quail egg, experimental “noisy” nests were depredated before control “quiet” nests in 29 of 37 trials. **[D]**
- 2 Further evidence for the costs of begging comes from David Haskell’s study of differences in the begging calls of warbler species that nest on the ground versus those that nest in the relative safety of trees. The young of ground-nesting warblers produce begging cheeps of higher frequencies than do their tree-nesting relatives. These higher-frequency sounds do not travel as far, and so may better conceal the individuals producing them, which are especially vulnerable to predators in their ground nests. In the mid-1990s, while conducting his Ph.D. research at Cornell, David Haskell created artificial nests with clay eggs and placed them on the ground beside a tape recorder that played the begging calls of either tree-nesting or ground-nesting warblers. The eggs “advertised” by the tree-nesters’ begging calls were found bitten significantly more often than the eggs associated with the ground-nesters’ calls.
- 3 The hypothesis that begging calls have evolved properties that reduce their potential for attracting predators yields a prediction: baby birds of species that experience high rates of nest predation should produce softer begging signals of higher frequency than nestlings of other species less often victimized by nest predators. This prediction was supported by data collected in a survey of 24 species of birds carried out in Arizona forests by James Briskie, Paul Martin, and Thomas Martin in 1987-1997, and more evidence that predator pressure favors the evolution of begging calls that are hard to detect and pinpoint.
- 4 Given that predators can make it costly to beg for food, what benefit do begging nestlings **derive** from their communications? One of the possibilities is that a noisy baby bird provides accurate signals of its real hunger and good health, making it worthwhile for the listening parent to give it food in a nest where several other offspring are usually available to be fed. If this hypothesis is true, then it follows that nestlings should adjust the intensity of their signals in relation to the signals produced by their nestmates competing for parental attention. For example, in the experiment carried out by Henrik Smith and Robert Montgomerie in 1989, when experimentally deprived American robin (*Turdus migratorius*) nestlings were placed in a nest with normally fed siblings, the hungry nestlings begged more loudly than usual – but so did their better-fed siblings, though not as loudly as the hungrier birds.
- 5 If parent birds use begging intensity to direct food to healthy offspring capable of vigorous begging, then parents should make food delivery decisions based on their offspring’s calls. Indeed, it has been demonstrated that if you take baby tree swallows out of a nest for an hour, feeding half the set and starving the other half, when the birds are replaced in the nest, the starved youngsters beg more loudly than the fed birds, and the parent birds feed the active beggars more than those that beg less vigorously.
- 6 As these experiments show, begging apparently provides a signal of need that parents use to make judgments about which offspring can benefit most from a feeding. However, the question that arises is why nestlings do not beg loudly when they are not all that hungry. By doing so, they could possibly secure more food, which should result in more rapid growth or larger size, either of which is advantageous. It appears that the answer lies not in the increased energy costs of exaggerated begging – such energy costs are small relative to the potential gain in calories – but rather in the damage that any successful cheater would do to its siblings, which share genes with one another. An individual’s success in propagating its genes can be affected by more than just its own personal reproductive success. Because close relatives have many of the same genes, animals that harm their close relatives may in effect be destroying some of their own genes. Therefore, a begging nestling that secures food at the expense of its siblings might actually leave behind fewer copies of its genes overall than it might otherwise.

1. According to paragraph 1, which of the following does the experiment with tapes of begging tree swallows show?
 - (A) Begging by nestling birds can attract the attention of predators to the nest.
 - (B) Nest predators attack nests that contain nestlings more frequently than nests that contain only eggs.
 - (C) Tapes of begging nestlings attract predators to the nest less frequently than real begging calls do.
 - (D) Nest predators have no other means of locating bird nests except the begging calls of nestling birds.

2. Paragraph 2 indicates that the begging calls of tree-nesting warblers
 - (A) put them at more risk than ground-nesting warblers experience
 - (B) can be heard from a greater distance than those of ground-nesting warblers
 - (C) are more likely to conceal the signaler than those of ground-nesting warblers
 - (D) have higher frequencies than those of ground-nesting warblers

3. Which of the following conclusions does the experiment described in paragraph 2 support?
 - (A) Predators are unable to distinguish between the begging cheeps of ground-nesting and those of tree-nesting warblers except by the differing frequencies of the calls.
 - (B) When they can find them, predators prefer the eggs of tree-nesting warblers to those of ground-nesting warblers.
 - (C) The higher frequencies of the begging cheeps of ground-nesting warblers are an adaptation to the threat that ground-nesting birds face from predators.
 - (D) The danger of begging depends more on the frequency of the begging cheep than on how loud it is.

4. The word **derive** in the passage is closest in meaning to
 - (A) require
 - (B) gain
 - (C) use
 - (D) produce

5. In paragraphs 4 and 5, what evidence supports the claim that the intensity of nestling begging calls is a good indicator of which offspring in a nest would most benefit from a feeding?
 - (A) When placed in a nest with hungry robins, well-fed robins did not beg for food.
 - (B) Among robin nestlings, the intensity of begging decreased the more the nestlings were fed.
 - (C) Hungry tree swallow nestlings begged louder than well-fed nestlings in the same nest.
 - (D) Hungry tree swallow nestlings continued to beg loudly until they were fed, whereas well-fed nestlings soon stopped begging.

6. It can be inferred from paragraphs 4 and 5 that parent songbirds normally do not feed
 - (A) nestlings that are too weak to beg for food as vigorously as their nestmates
 - (B) more than one hungry nestling during a single visit to the nest
 - (C) offspring that were fed by the parents on the previous visit to the nest
 - (D) nestlings that have been removed and then later put back into their nest

7. In paragraph 6, the author compares the energy costs of vigorous begging with the potential gain in calories from such begging in order to
- (A) explain why begging for food vigorously can lead to faster growth and increased size
 - (B) explain how begging vigorously can increase an individual's chances of propagating its own genes
 - (C) point out a weakness in a possible explanation for why nestlings do not always beg vigorously
 - (D) argue that the benefits of vigorous begging outweigh any possible disadvantages
8. According to paragraph 6, which of the following explains the fact that a well-fed nestling does not beg loudly for more food?
- (A) There is no benefit for a nestling to get more food than it needs to survive.
 - (B) By begging loudly for food that it does not need, a nestling would expose itself to danger from predators.
 - (C) If a nestling begs loudly when it is not truly hungry, then when it is truly hungry, its own begging may be drowned out by that of its well-fed siblings.
 - (D) More of a nestling's genes will be propagated if its hungry siblings get enough food to survive.
9. Look at the four squares [A-D] that indicate where the following sentence could be added to the passage.

The cheeping provides important information to the parent, but it could also attract the attention of others.

Where would the sentence best fit?

10. **Directions:** An introductory sentence for a brief summary of the passage is provided below. Complete the summary by selecting the **THREE** answer choices that express the most important ideas in the passage. Some sentences do not belong in the summary because they express ideas that are not presented in the passage or are minor ideas in the passage. **This question is worth 2 points.**

Experiments have shed much light on the begging behaviors of baby songbirds.

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Answer Choices

- (A) Songbird species that are especially vulnerable to predators have evolved ways of reducing the dangers associated with begging calls.
- (B) Songbird parents focus their feeding efforts on the nestlings that beg loudest for food.
- (C) It is genetically disadvantageous for nestlings to behave as if they were really hungry when they are not really hungry.
- (D) The begging calls of songbird nestlings provide a good example of overly damaging cost of signaling.
- (E) The success with which songbird nestlings communicate their hunger to their parents is dependent on the frequencies of the nestlings' begging calls.
- (F) Songbird nestlings have evolved several different ways to communicate the intensity of their hunger to their parents.