

A note on the acquisition of responding for food in the presence of free food

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Welker and Weidenman (1978) suggested that the difference between acquisition and maintenance of responding was obscured in my review of the "contrafreeloading" literature (Osborne, 1977), and that only scant evidence supported the statement that animals readily acquire an operant response for food in the presence of free food. However, I fear the authors have fallen victim to their own argument. They use the data from two studies (Coburn & Tarte, 1976; Kopp, Bourland, Tarte, & Vernon, 1976) which show a low rate of *maintained* responding to argue against the statement that animals *acquire* an operant response. Yet Kopp et al. (p. 52) reported that three of their four rats developed consistent barpressing within several days, a time period similar to that necessary for naive pigeons to learn a food-producing response in the presence of free food (Neuringer, 1969). McLaughlin, Kleinman, and Vaughn (1973) reported that naive rats acquired a barpress response within 7 to 10 days, although responding was again maintained at a low rate, and Coburn and Tarte (1976) found that rats reared in impoverished environments began responding for food from the outset of their experiment.

The finding that maintained responding occurs at a low rate when rats are first required to learn the food-producing response is consistent with data indicating that prechoice exposure to free and response-produced food affects subsequent choice behavior. That is, in the time period prior to response acquisition, food is taken exclusively from the free-food source, and this differential exposure to the two food sources may later bias animals against responding for food. Lack of prechoice exposure to response-produced food does not appear to have any serious effect on pigeons' subsequent choice behavior (cf. Bilbrey, Patterson, & Winokur, 1973). Accordingly, pigeons continue to respond for food at a high rate even when they must first learn the food-producing response (Neuringer, 1969).

A major source of confusion here, I believe, is that acquisition and maintenance of responding represent arbitrarily defined segments of a continuous process. While acquisition frequently is defined as the time, or number of trials, necessary for some criterial number of responses to occur, it remains to be defined for free-food experiments. A nominal

definition of acquisition for present purposes might be the time necessary for reinforced responding to consistently exceed the rate of responding to an identical response operandum but one for which there are no programmed consequences (cf. Kopp et al., 1976).

Several additional points need to be clarified. First, the treatment of acquisition data in the review was not for the exposition of acquisition per se, but instead was used to discount various explanations of the free-food phenomenon. While the data base was insufficient for the former, it clearly was adequate for the latter. Second, the use of the term "readily acquire" in the review might well be replaced by "reliably acquire" because "readily" implies some promptness with regard to time. However, the several days necessary for the acquisition of responding is not as outrageously long as it may seem, especially when the experimental situation is taken into account. An experimentally naive animal is placed in an environment with abundant free food continuously available; hence, motivation for seeking additional food sources probably is low. Nonetheless, the animal must make contact with the programmed contingency with sufficient frequency to learn the response-reinforcer relationship and, in turn, "choose" to respond. In my estimation, the fact that this ever occurs is striking; that it takes only several days to develop is phenomenal. The finding by Coburn and Tarte (1976) that rats reared in enriched environments failed to acquire a barpress response appears attributable to the fact that these animals only rarely strayed from the free food source (p. 92) and consequently made only infrequent contact with the programmed response-reinforcer contingency.

On the one hand, I disagree with Welker and Weidenman (1978) that existing data fail to support the statement that naive animals acquire an operant response for food in the presence of free food. On the other hand, I wholeheartedly agree that at present only a dearth of data exist concerning acquisition. Moreover, existing data consist entirely of demonstration types of experiments which provide little information about acquisition itself, or about its controlling variables as they differ from the variables that control the maintenance of responding. I, too, see this as a potentially rich research area.

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