INTRODUCTION

• Humans sometimes make irrational choices (gambling, when the expected return is negative). Optimal Foraging Theory suggests that animals should make rational choices.

• Stagner & Zentall (2010) gave pigeons a task in which choice of one alternative could lead to reinforcement 20% of the time with signaled reinforcement, while choice of the other alternative led to reinforcement 50% of the time, unsignaled (see figure below). They found that the pigeons preferred the 20% reinforcement alternative.

RESULTS

METHODS (cont.)

Procedure

• Experiment 1: On forced trials, either a vertical or horizontal line was presented on one of the side keys.

• If the shape was vertical, for example, a peck would change vertical to one colored light 20% of the time that was followed by 10 pellets of food or another colored light 80% of the time that was never followed by food.

• If the shape was horizontal, for example, a peck would change horizontal to one colored light 20% of the time or another colored light 80% of the time, both of which were followed by 3 pellets of food.

• In each training session, there was a total of 40 forced trials, 20 vertical and 20 horizontal. There were also 20 choice trials in which both vertical and horizontal were presented on the side keys. Following the pigeon’s choice of one of these shapes, the unchosen shape would turn off and the contingency associated with the chosen shape would follow (see figure).

• Pigeons received a total of 40 sessions of training, and colors and shapes were counterbalanced over subjects.

Zentall & Stagner (2010) Sample Choice Trial

PURPOSE

• In the present study we asked if the pigeons were attracted to the signal for reinforcement (100%) or were avoiding the ambiguous signals (50%).

• We manipulated the magnitude of reinforcement rather than the percentage of reinforcement. This made the task more analogous to a human gambling task.

METHODS

Subjects.

• 8 White Carneaux Pigeons 5-8 years of age.

Apparatus.

• A standard 3-key operant chamber.

REFERENCE