Spring 2023 PSY 2201 Learning Lab Experiment

**Design:** 17 sessions with all birds with 9.5-s IL (programmed as 4.75 single VI IL timer) then switch half to shorter IL duration and half to longer IL duration for 27 additional sessions

**SiGN Predictions**:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| IL (if Concurrent) | IL as Single VI Timer | TL | SiGN Prediction | Session Duration |
| 9.5 | 4.75 | 8 | .50 | 12 min |
| 3.4 | 1.7 | 8 | .80 | 10 min |
| 70 | 35 | 8 | .20 | 27 min |

**Schedules:**

Initial Links: VI as listed above (programmed as a single VI timer at half value)

Terminal Links: FT 8

5 s ITI; 5-s food or BO

**30 trials total:** (9-12 total reinforcers)

10 FE Sig 20% (8 BO, 2 Food)

10 FE Unsig 50% (5 BO, 5 Food)

10 Choice Trials (2-5 food)

* E**nd session after 40 minutes** to make sure they can get in and out of the lab in the hour.

**Programming Details**

**\*\* Measure latency to first peck**

Every block of 3 trials is

* 1 FE 20% (7)
* 1 FE 50% (8)
* 1 Choice (6)

If FE 20%, then select without replacement from list of 5 values.

1: TL A 🡪 food

2-5: TL B🡪BO

If FE 50%, then select without replacement from list of 10 values.

1: TL C 🡪 food

2: TL C 🡪 BO

3-6: TL D 🡪 food

7-10: TL D🡪 BO

If Choice, then identical lists as above but used only for choice trials.

**Single VI Timer:** Used by Roper & Zentall for FI 6” IL ("a choice was defined as the key first pecked after 6". Also used by McDevitt & Williams (2001).

Rewired stimuli to use X as IL, switched chamber and sides from last experiment.

First Condition Stimuli: Left X, yellow, red; Right X, blue, white.

Second Condition Stimuli: Left ?, yellow, red; Right ?, blue, white.

From Cunningham & Shahan (2020, p. 387)

**While the evidence is clear that suboptimal choice increases with longer TL durations, it is currently less clear whether IL**

**duration influences suboptimal choice**. Limited evidence suggests that longer IL durations, via longer IL interval schedules (e.g., Experiment 3 from Dunn & Spetch, 1990; Kendall, 1985; Zentall, Andrews, & Case, 2017) or larger IL ratio schedules (Pisklak, McDevitt, Dunn, & Spetch, 2019), decreases suboptimal choice in pigeons. Furthermore, there is some evidence suggesting that long TL durations do not increase suboptimal choice when IL duration is relatively long (Experiment 2 from Dunn & Spetch, 1990). However, longer IL durations do not always decrease suboptimal choice in pigeons (e.g., Experiment 1 from Dunn & Spetch, 1990), and the influence of IL duration on suboptimal choice can be inconsistent across pigeons (e.g., Pisklak et al., 2019; Zentall et al., 2017). Given the uncertainty surrounding such effects, some theories of suboptimal choice do not include a role for IL duration (e.g., Daniels & Sanabria, 2018; Zentall, 2016). Nevertheless, based on these limited data, the temporal information-theoretic model accounted for a broader range of data with pigeons by assuming that longer delays to temporally informative TL stimuli (via longer IL durations) decrease the likelihood of suboptimal choice in pigeons by influencing competition between relative temporal information and the relative rate of food delivery (i.e., w).