

REPEATED CONDITIONING-EXTINCTION SESSIONS AS A FUNCTION OF THE REINFORCEMENT SCHEDULE¹

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Weissman (1959) has reported on the behavior of rats under conditions of mix FR 24 ext 10 minutes and mix FI 2 minutes ext 10 minutes. "A ratio of responses in each 10-minute extinction period to responses per reinforcement" yielded a range of 2.6–5.3 for the FR 24 rats and of 2.8–3.2 for the FI 2 minutes rats. In this paper, data are reported for pigeons after sessions consisting of 20 FR 10 ext 60 minutes and 20 FI 26 seconds ext 60 minutes, following the procedure of Bullock and Smith (1953).

METHOD

Six adult, male White Carneaux pigeons (5–6 years old) were maintained at 80% of their free-feeding body weights and given preparatory training similar to that described in Ferster and Skinner (1957). After several CRF sessions, each bird was given a 60-minute extinction session, as recommended by Clark (1958) for eliminating "superstitious" behavior acquired during magazine training and shaping of key pecking. Three pigeons (505, 1442, 2556) were then placed on FR 10 and given 4000–5000 reinforcements during several sessions lasting 30–60 minutes. They were then given daily sessions (except for weekends) in which 20 FR 10's were followed by ext 60 minutes without any change in the discriminative stimuli. The other three birds (1826, 3017, 4105) were placed on FI 26 seconds and given 900–1000 reinforcements during several sessions lasting approximately 60 minutes. They were then given daily sessions (except for weekends) in which 20 FI 26 seconds were followed by ext 60 minutes without any change in discriminative stimuli.

RESULTS

The number of responses during the conditioning portion of each session and the number of responses per the 60-minute extinction portion were estimated by measuring cumulative-response records. The number of "response units" per extinction period was then determined by dividing the total number of extinction responses by the average number of responses per reinforcement, the procedure used by Weissman (1959). Figure 1 presents the range of total extinction responses (responses divided by 10) and the range of extinction response-units for the FR 10 and FI 26 seconds groups during the first 18 sessions. Table 1 presents the number of extinction response-units per pigeon for Sessions 14–18.

Weissman (1959) reported ranges of response-units of 2.6–5.3 for rats on FR 24 and ranges of 2.8–3.2 for rats on FI 2 minutes. Despite the differences in species (rats vs. pigeons), procedures (mixed extinctions vs. repeated conditioning-extinction sessions), and the actual FR and FI values, the data from the present study are very similar to those reported by Weissman. In general, the performances during the final sessions for both groups were characterized by an initial "priming run" of either ratio (FR group) or interval (FI group)

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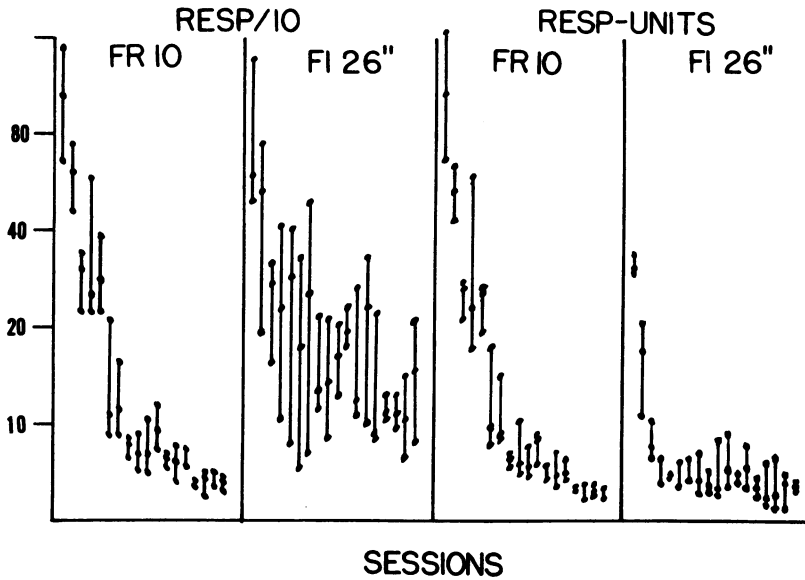


Figure 1. The range of (a) total extinction responses (RESP/10) and (b) extinction response-units for the FR 10 and FI 26 seconds subjects, Sessions 1-18.

character, followed by periods of no response in which response bursts occasionally occurred. The precision with which the organism can "discriminate" the "moment of non-reinforcement" in extinction contingencies has obvious implications for the analysis of extinction behavior. Therefore, the research is being continued, in which the values of FR and FI are varied and the effects of variable-ratio and variable-interval schedules are examined.

Table 1

The Number of Response Units per 60-minute Extinction during Sessions 14-18 for Pigeons on FR 10 and FI 26 Seconds

Session	Pigeons on FR 10			Pigeons on FI 26 Seconds		
	No. 505	No. 1442	No. 2556	No. 1826	No. 3017	No. 4105
14	4.2	4.9	6.4	3.5	2.4	4.6
15	3.1	3.5	3.3	1.5	2.6	5.9
16	3.8	2.3	3.8	1.3	2.8	6.4
17	3.8	3.0	2.7	1.1	3.9	4.7
18	2.2	3.5	3.5	3.4	3.1	4.1
Medians	3.8	3.5	3.5	1.5	2.8	4.7

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