A RELATIONSHIP BETWEEN RESPONSES PER REINFORCEMENT AND PREFERENCE DURING CONCURRENT VI VI

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Consider a concurrent schedule of reinforcement (involving two manipulanda) in which the number of reinforcements per hour following each response is controlled; for instance, conc VI VI. The number of reinforcements obtained per hour is designated as p_A for response A, and as p_B for response B. Similarly, r_A and r_B are the number of responses per hour. Thus, the number of A responses per A reinforcement is r_A/p_A ; for B responses, it is r_B/p_B .

Herrnstein (1961) has found that pigeons on conc VI VI with changeover delay will respond so that the following relationship holds:

$$(1) \quad \frac{r_A}{r_B} = \frac{p_A}{p_B}.$$

The correctness of equation (1) implies:

$$(2) \quad \frac{r_A}{p_A} = \frac{r_B}{p_B}.$$

That is, the subject has so distributed its responses that the number of responses per reinforcement is equal for A and for B.

Suppose that the subject so distributes its responses that equation (1) is incorrect as follows:

$$(3) \quad \frac{r_A}{r_B} > \frac{p_A}{p_B}.$$

This implies that the number of responses per reinforcement is greater for A than for B; that is:

$$(4) \quad \frac{r_A}{p_A} > \frac{r_B}{p_B}.$$

There is an interesting relationship between these properties of the reinforcement schedule and the following hypothetical feedback mechanism. The preference for response B is hypothesized to increase when inequality (3) holds because the number of B responses per B reinforcement is less than for A. This means that the ratio r_A/r_B will decrease so that a closer approximation to equation (1) will be obtained. Therefore, if such a mechanism is the only factor regulating preference, equation (1) will tend to be empirically validated (although, of course, other mechanisms may produce the same end result). Conversely, in any experimental situation in which equation (1) is shown to be incorrect, this mechanism cannot possibly be the only factor regulating preference.

REFERENCE

- Herrnstein, R. J. Relative and absolute strength of response as a function of frequency of reinforcement. *J. exp. Anal. Behav.*, 1961, 4, 267-272.