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FIXED-INTERVAL WORK HABITS OF CONGRESS

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The rate at which Congress passes bills during its legislative session exhibits a fixed-interval pattern: the rate of passage is extremely low three to four months after commencement followed by a positively accelerated growth rate that continues until the time of adjournment. This scalloped configuration appears uniformly in each of the eight Congresses sampled, from 1947 to 1968, and in both sessions of each Congress.

It is probably true that for the vast majority of human endeavors, the environment arranges intermittent reinforcement gained by some frequency or amount of emitted behavior, rather than by a single act following a passage of time. That is, ratio in contrast to interval schedules of reinforcement tend to dominate most forms of human occupation (Ferster and Perrot, 1968). The impressive array of circumstances depicting large outputs of human effort because of ratio influence (*c.f.,* Skinner, 1953), however, should not diminish the power and significance of temporally based schedules in certain milieus.

Temporal schedules should prevail whenever a clock (or calendar) partially determines the maximum number of reinforcements a given performance may receive within a set of prescribed time periods. If every interval in the set assumes a constant duration, and reinforcement is delivered for a specified response immediately after the interval ends, rather than for any responses that occur before its termination, we have the case of a fixed-interval schedule. Even though there is no *a priori* reason for responses to be evident before a reinforcement is scheduled, the actual performance during the interval's life usually demonstrates a predictable pattern. Well practised fixed-interval performance commonly manifests a low or zero response rate after reinforcement delivery, which starts the interval, followed by an accelerated upswing as the interval draws to a close and the next reinforcement is scheduled.

Some of the conditions under which this performance pattern can occur with humans have received intensive analysis in controlled laboratory settings (Weiner, 1969). In the natural milieu, the same pattern is likely where individuals and groups are governed by important calendar events and deadlines that recur at more or less regular intervals. Thus, certain actions of state and federal legislative and judicial bodies may reveal a fixed-interval character, since, out of tradition or mutual agreement, the length of their deliberative sessions routinely span prearranged time periods. We should not be surprised, then, if the cumulative number of bills passed each month by so prestigious a body as the U.S. Congress resembles a fixed-interval pattern, as it does indeed in Figures 1 and 2.

There is remarkable consistency in the shape of the curves among the various Congresses and between the two sessions of each Congress. Common to each record is a period of legislative in-

[1]The phenomenon of a fixed-interval work pattern by Congress was originally put forth by Dr. Joseph V. Brady (now at Johns Hopkins University) in a presentation to the District of Columbia Psychiatric Society, parts of which appeared on the front page of the *Washington Evening Star,* September 28, 1957. Reprints may be obtained from Paul Weisberg, Department of Psychology, University of Alabama, University, Alabama 35486.

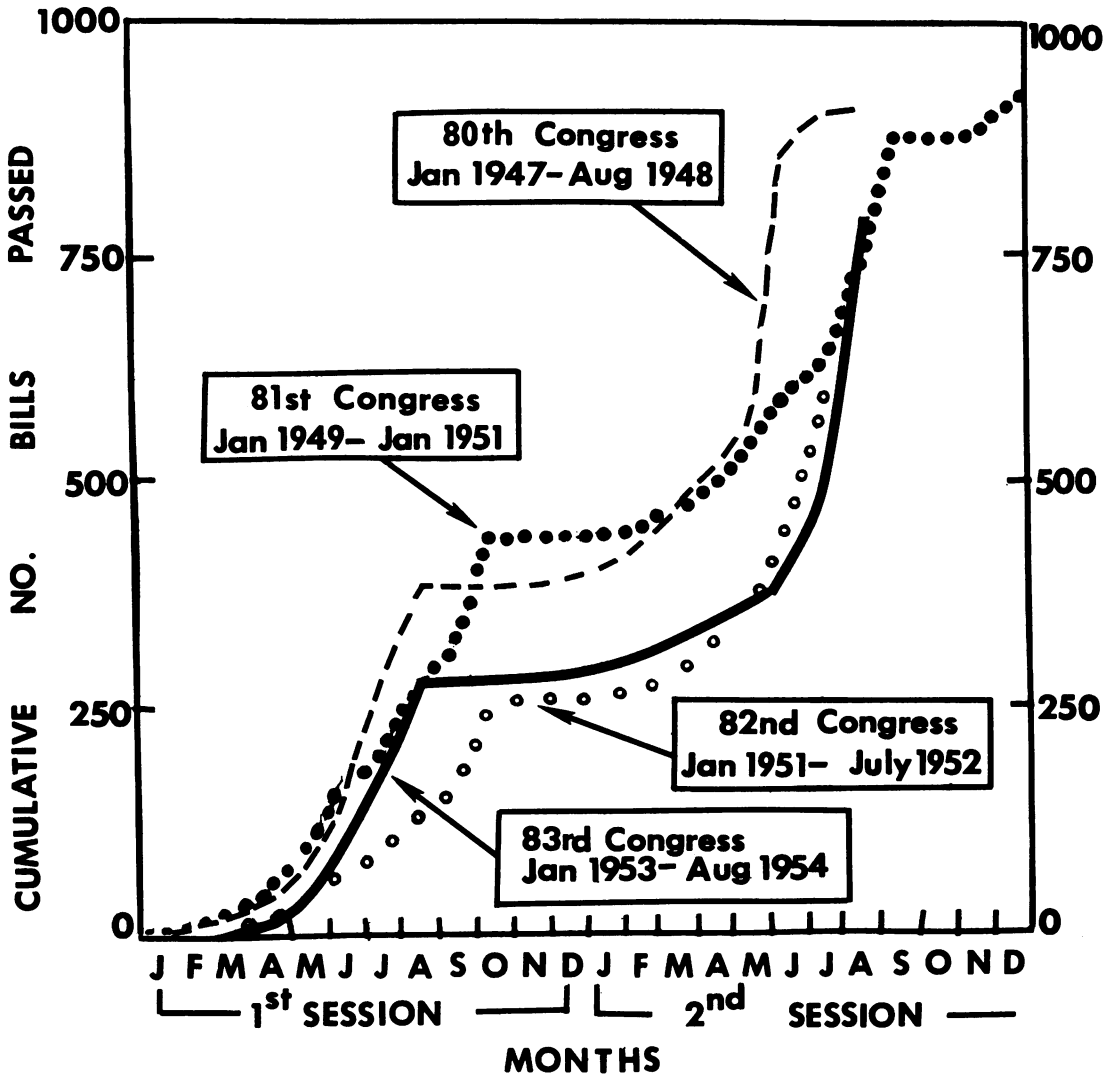

Fig. 1. Cumulative number of bills passed during the legislative sessions of Congress from January 1947 to August 1954.

activity three to four months subsequent to commencement, after which the pace of Congressional enactment becomes positively accelerated with a peak reached before adjournment. A distinctive scallop best portrays the cumulative rate at which Congress passes bills. The earliest Congress graphed is the eightieth, since it marked the appearance of the Congressional Digest (1947 to 1968), the only source that enables one to derive a monthly tabulation of bills passed by both Houses. As is evident, the pace of legislative action of the more recent Congresses (Figure 2) is the same as their predecessors (Figure 1).

In contrast to functional analysis of schedule performances within laboratory settings, wherein the suspected controlling dimensions are susceptible to experimental manipulation, the specification of the controlling environmental variables in the present descriptive study can only be surmised. Accordingly, it is necessary to speculate on the nature of the consequent events that have maintained the legislative habits of Congress. At first blush, enactment of a bill and the

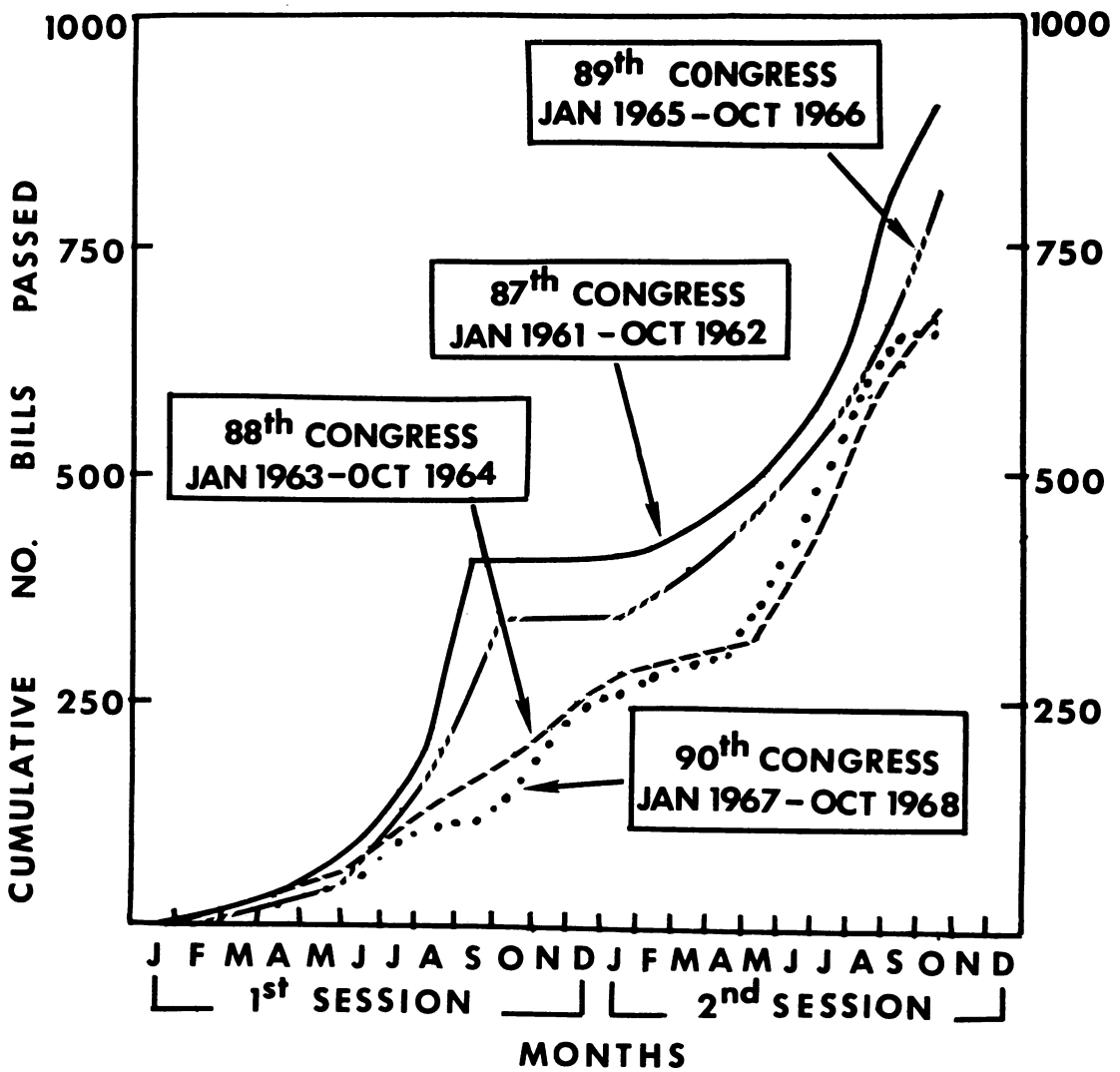

Fig. 2. Cumulative number of bills passed during the legislative sessions of Congress from January 1961 to October 1968.

chain schedule of ensuing public acclaim Congress receives might serve as a potent positive reinforcer for Congress to continue its good work. However, two pieces of information argue against Congressional enactment functioning as a durable conditioned reinforcer. If passage of bills were to fill this role, its frequency would be expected to mount with each succeeding Congress. However, the trend since 1947 has been a fluctuating one and, an independent count of the total number of bills passed for each session since 1953, including those from 1955 to 1961, has revealed a downward deflection. Secondly, a Congress striving to turn out bills presumably would demonstrate a high and uniform production rate throughout its session, a characteristic performance typical of ratio schedules, not the scalloped pattern that actually develops.

Since each house of Congress can provide for *sine die* adjournment, and thus Congress can, more or less, control the length of time it will not meet until the next session, the duration of the rest period yielded by this process looms as

another potential positive reinforcer. Assuming that the number of bills enacted reliably indexes the amount of legislative work, one might expect more "productive" Congresses to extend themselves longer rest periods than less "productive" Congresses. In confirmation of this expectation, the mean number days spent in adjournment for the eight most productive Congresses selected from 1947 to 1969 was 109 compared to 93 for the eight least productive; however, the difference, as assessed by the Mann Whitney test was not significant ($U = 25.5$, $p = 0.253$).

Every two years the terms of one third of the Senators and all of the Representatives expire. Election to these offices is always held during even numbered years so that adjournment might be expected to begin earlier during the second session of Congress, when electioneering is common for all members. Contrary to expectation, during 1947 to 1968 the median date of adjournment for second-session Congresses, which fell on October 13, did not occur much earlier than first-session Congress, which fell on October 20. However, second-session Congresses were much more productive than first-session Congresses in terms of the number of bills passed ($U = 11$, $p < 0.002$, two tailed test), and from the sample of Congresses illustrated in Figures 1 and 2, the cumulative rate of positive acceleration was typically steeper in the second than in the first session. It should be noted that while the opportunity to campaign for office may positively reinforce the scallop pattern observed in the second session, it is hard to see how opportunity to campaign can, at the same time, influence FI scalloping in the first session, unless, of course, we are witnessing a chained FI FI schedule of positive reinforcement (Ferster and Skinner, 1957).

It is entirely possible that at an earlier time in history, when Congress held three relatively short sessions and its adjournment dates were more predictable (partly because lengthy transportation to the home state involved greater planning for the majority of its members), a definite contingency existed between the sharp upswing in legislative activity before adjournment and the ensuing positive reinforcers of the day. Once acquired, the FI scallop could have been perpetuated as a superstition by modern Congresses whose dates of adjournment may now be less dependent upon any single behavioral pattern. Zeiler (1968) has shown that the scallop shape of fixed-interval schedules initially engendered by response-dependent reinforcers will be retained when the reinforcers are subsequently scheduled at fixed periods in the independence of behavior.

To argue that the threat of the President's perogative to reconvene Congress increases the quantity of bills passed before adjournment has no immediate historical justification. The last time Congress was reconvened was on July 26, 1948 when President Truman reassembled the second session of the Republican dominated eightieth Congress. By his own admission, Truman (1956) made this unusual move for purely political reasons. The just-completed Republican Convention had set forth a relatively liberal platform, possibly to "steal the thunder" from the Democrats. To test this theory, a Special Session was called and, as predicted by Truman, the Republican controlled Congress did not enact any liberal measures. Thus, Truman's decision to reconvene was politically motivated rather than specifically based on the frequency and time at which the eightieth Congress passed its bills.

Probable elements maintaining FI performance are the insistent and somewhat strong demands that stem from organized lobbies, special interest groups, and influential constituents, especially during election years. Since the frequency and intensity of these demands usually mount as the date hinted for adjournment draws nearer (Kefauver and Levin, 1947), part of the late upswing in Congressional performance may represent FI escape behavior (Azrin, Hake, and Holz, 1965).

The view that the high rate of pre-adjournment legislation simply reflects the culmination

of a long line of well-intentioned and prudent judgment based on the most objectively determined investigatory measures is seriously questioned. Every year the Congressional Record abounds with transcripts of appeals by legislators for the end-of-the-session "trade off" of bills that have a rather short deliberative history. Conversely, many thoroughly researched and long debated bills favored by the majority have actually been "pigeon-holed" by committee chairmen adverse to their passage. It is suggested that Congressional members are able to discriminate the fixed-interval nature of their actions because it appears to be a common ploy to wait until the end of a session, when the agenda is heaviest, to attach less-favored riders and amendments to bills awaiting affirmative action.

REFERENCES

Azrin, N. H., Hake, D. F., Holz, W. C., and Hutchinson, R. R. Motivational aspects of escape from punishment. *Journal of the Experimental Analysis of Behavior,* 1965, **8,** 31-44.

Congressional Record: Daily digests, 1947-1968, Vols. 93-114, Washington, D.C.: United States Government Printing Office.

Ferster, C. B. and Perrott, M. C. *Behavior principles.* New York: Appleton, 1968.

Ferster, C. B. and Skinner, B. F. *Schedules of reinforcement.* New York: Appleton Century Crofts, 1957.

Kefauver, E. and Levin, J. *A twentieth-century congress.* New York: Duell, Sloan, & Pearce, 1947.

Skinner, B. F. *Science and human behavior.* New York: MacMillan, 1953.

Truman, H. S. *Memoirs: Years of trial and hope.* Vol. 2, New York: Doubleday, 1956.

Weiner, H. Controlling human fixed-interval performance. *Journal of the Experimental Analysis of Behavior,* 1969, **12,** 349-373.

Zeiler, M. D. Fixed and variable schedules of response independent reinforcement. *Journal of the Experimental Analysis of Behavior,* 1968, **11,** 405-414.

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