switching and conformers should not hesitate to admit that they did switch.

Studies in which public, but not private, conformity has been found have used either stimuli to which there was an objectively correct answer (Asch, 1956) or have employed attitude statements as stimuli (Festinger, 1957). In the former case, all group members except a single naive S give an obviously incorrect answer, and in the latter group members express an opinion opposed to that of the naive S. Both conditions produce considerable ego-involvement. The conforming individual, when placed in such a situation, may publicly agree with the group decision for fear of ostracism, while privately retaining his initial opinion.

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Subject-controlled intertrial intervals in concept learning¹

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Ss were allowed to control their own intertrial interval (ITI) in a two-response concept-learning task. The mean ITI was longer following errors than following correct responses and decreased over trials. The results are compatible with measures of response latency on trials following errors and correct responses, but appear to conflict with results obtained when the length of the ITI is made contingent on the correctness of S's response.

Erickson and his colleagues (Erickson, Zajkowski, & Ehmann, 1966; Erickson & Zajkowski, 1967) have shown that in a concept-learning task, response latencies on trials following errors are longer than those following correct responses. These results provide support for hypothesis-testing models of concept learning, which assign an important role to error trials as occasions for processing information and selecting new hypotheses (e.g., Restle, 1962). It is clear, particularly from Levine's work using the blank-trials task (Levine, 1966) that Ss also profit from information conveyed by correct trials. But the selection of a new hypothesis remains an error-related event. Indeed, Levine

(1966) has suggested that Ss are less efficient in extracting information from errors precisely because the inferential process involved is temporally more demanding.

It is known empirically that a longer intertrial interval (ITI) facilitates concept-learning performance (Bourne & Bunderson, 1963; Bourne, Guy, Dodd, & Justesen, 1965). As Bourne (1966, p. 72) has suggested, hypothesis-testing models would therefore predict more efficient performance when errors are followed by a long ITI and correct responses by a short ITI, than when the contingency is reversed. Bourne, Dodd, Guy, & Justesen (1968) recently tested this prediction and found no difference between the two response-contingent interval conditions.

But suppose that the S himself is allowed to determine the duration of his ITI on each trial in a self-paced procedure. Would he perform in the way that the theoretical reasoning above suggests is most efficient? The experiments of Erickson et al (1966, 1967) suggest that the process of hypothesis selection after an error continues into the next trial when the ITI is held constant. Conversely, if a rather brief, constant time limit is imposed for the response on each trial, would Ss select a longer ITI following errors?

METHOD

The concepts to be learned had one relevant dimension. There were two levels of stimulus complexity: three irrelevant dimensions (ID) and five ID. Stimuli for the three-ID problems were geometric figures composed of four trinary dimensions: color (red, green, blue); shape (triangle, circle, square); size (small, medium, large); and shading within the figure (dots, stripes, crosshatching). For the five-ID problems, there were two additional trinary dimensions: the orientation of a black bar in the upper left corner of the slide (vertical, horizontal, diagonal) and the number of black dots in the upper right (one, two, three). At each complexity level, two different problems were used: one with size relevant ("large figures are A"), the other with shading relevant ("stripes are A"). Equal numbers of positive (A) and negative (B) stimuli were presented in random order, but with the restriction that no more than three A or B stimuli occur consecutively.

The stimuli were photographed on 35-mm slides and shown on a rear-projection screen through a Carousel projector with external timing controls. A panel in front of the screen contained two response levers, labeled A and B, with a red information feedback (IF) light above each lever.

The S was fully instructed concerning the stimuli and the kind of concept to be learned. On each trial, the stimulus was presented and 4 sec later the IF signal was lighted for 1 sec. The S was instructed to respond on each trial before the onset of the IF signal or an error would be counted. There was, on the average, fewer than one such error per S. The Ss were run to a criterion of 16 consecutive correct responses.

The Ss were provided a distinctive button which, when pressed, activated the projector to present the next trial. The elapsed time between the end of the IF signal and the button press was recorded manually from an electric stopclock. Neither the stimulus nor the IF signal was visible during the ITI.

Sixty introductory psychology students at the University of North Carolina-Greensboro served as a course requirement. An equal number of Ss was assigned to each of the four (two complexity levels by two relevant dimensions) problems.

RESULTS AND DISCUSSION

Each S's precriterion trials were divided into a first and a second half. The mean posterror and postcorrect ITI within each half was computed for each S and then averaged across all Ss. These data are

Table 1
Mean ITI (in Seconds) for the First and Second Halves of the Precriterion Trials

	Three-ID Problems		Five-ID Problems	
	First Half	Second Half	First Half	Second Half
After Errors	6.36	3.21	9.67	5.81
After Corrects	3.79	1.97	7.88	3.69
X Trials to Criterion	25.8		22.4	

presented in Table 1; data from 30 Ss are included in each cell.

An analysis of variance of reciprocal time scores indicated that mean ITI was significantly affected by the complexity of the stimulus, $F(1,58) = 8.47$, $p < .01$. The decline in ITI from first to second half of the trials was reliable, $F(1,174) = 29.73$, $p < .01$. The mean ITI was longer following errors than following correct responses, $F(1,174) = 5.33$, $p < .05$. The mean ITI following A and B (positive and negative) instances was virtually identical. The difference between three-ID and five-ID problems in trials to criterion did not approach significance. Ss apparently compensated adequately for the more complex five-ID problem by allowing a longer ITI in that condition.

The mean ITI within the 16-trial criterion run was calculated for successive blocks of four trials. The mean ITIs on successive blocks were 1.12, 0.80, 1.75, and 0.77 sec for the three-ID problems, and 1.80, 1.13, 0.86, and 0.86 for the five-ID problems. The difference between complexity levels was not quite significant, $F(1,58) = 3.51$, $p > .05$. The decline over successive blocks was reliable, $F(3,174) = 9.67$, $p < .01$. This decline contained both a linear component, $F(1,174) = 22.20$, $p < .01$, and a quadratic component, $F(1,174) = 6.67$, $p < .05$.

Subject-controlled ITIs appear to behave in essentially the same way as response latencies on the following trials, both before and during the criterion run (Erickson et al, 1966; Erickson & Zajkowski, 1967; Levine, 1969). A

parsimonious conclusion would be that the two intervals (ITI and pre-response interval on the following trial) are functionally equivalent as occasions for information-processing activity, with the obvious exception of the instance-identifying response itself. Roweton & Davis (1968) have presented data that indirectly support this interpretation under conditions in which both intervals are controlled by E. But on the other hand, Bourne et al (1965) have shown that E-controlled variation in the length of the ITI affects performance even when S's response on the next trial is self-paced. This suggests that Ss may not compensate for brief ITIs by taking longer to respond on the next trial. Thus it remains to be established whether the two intervals function in unique or in equivalent ways.

There remains an unresolved discrepancy between these results and those of Bourne et al (1968). The procedures in the two experiments were very similar, apart from the fact that the ITI was S-controlled in the present study and experimentally manipulated in the other. A tentative hypothesis would be that an equal amount of processing is done after both errors and corrects. But while posterror processing is temporally more demanding, the short interval used by Bourne et al (1968) was so brief that it disrupted processing whenever it occurred.

An alternative interpretation should be mentioned: The longer posterror latency may reflect an emotional disruption effect rather than more strenuous

information-processing requirements. But the latencies decline consistently over trials, while informal observation suggests that Ss react more emotionally to errors on later trials. Nonetheless, it is possible that emotional disruption accounts for at least some of the difference.

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NOTE

1. A preliminary version of this research was presented at the Southeastern Psychological Association meetings in New Orleans, 1969. Gail Simon assisted with data collection.