The perception of experimentally-induced success¹

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A complex decision-making environment was used to examine the relationship between experimentally-induced success and Ss' perceptions of success for cognitively simple and cognitively complex Ss. In each case a significant linear relationship between induced success and perceived success was obtained. In addition, higher order trends suggest tentatively that success may constitute a multi-dimensional, rather than a uni-dimensional, phenomenon.

The experimental manipulation of success and failure is rather common in psychological research, but little research has been reported on the relationship between the experimental manipulation of success and failure and the Ss' perceptions of success and failure. It has classically been assumed that there is a direct relationship between induced and perceived success and failure (e.g., Atkinson, 1957). However, the work of Castore & Streufert (1966) indicates that under conditions of increasing failure, the relationship between induced and perceived failure may be linear only in a general fashion. They found that in addition to a linear relationship indicating a general adaptation of the Ss to increasing failure, there was a significant higher-order trend, indicating a series of successive specific adaptations to particular quantities of failure.² The present experiment is concerned with an investigation of the relationship between induced and perceived success.

Simplicity and complexity of conceptual structure (Driver & Streufert, 1966; Schroder, Driver, & Streufert, 1967; Streufert & Driver, 1967) may also be of interest in an investigation of induced and perceived success. If success is perceived as a uni-dimensional phenomenon, then we may expect no difference between cognitively simple and cognitively complex Ss in their perception of the environment. However, if success constitutes a multi-dimensional phenomenon, there should be a tendency for complex Ss to perceive the situation differently from simple Ss (Streufert & Driver, 1965; Streufert & Driver, 1967). For this reason, differences in the simplicity-complexity of conceptual structure in Ss exposed to experimentally-induced success levels are introduced into the present experiment.

Subjects

The Sentence Completion Test (SCT) of Schroder, Driver, & Streufert (1967) and Schroder & Streufert (1963) was administered to 576 paid volunteers from introductory psychology classes at an eastern state university. On the basis of the SCT scores, 23 simple (SCT scores 1 and 2 on a 19-point scale) and 23 complex (SCT scores 10 through 19) were selected at random to participate in a complex decision-making task (see below).

Procedure

The Ss were placed in pairs in the Tactical and Negotiations Game (TNG), a complex decision-making environment developed by Streufert, Castore, & Kliger (1967) and Streufert, Kliger, Castore, & Driver (1967). They were given the responsibility of making military, economic, intelligence, and diplomatic decisions concerned with a small-scale international conflict with some Vietnam characteristics. Ss were told that they were playing the TNG against another team of Ss. In reality, the strategy of the "enemy" team was pre-programmed and all information messages received by Ss during the playing periods were constant across all teams participating in the decision-making task. Validation for the procedures used in this experiment and data indicating face validity of the programmed manipulation of information received by Ss are presented in detail in Streufert (1968a), Streufert, Castore, & Kliger (1967), and Streufert & Streufert (1967).

All teams were exposed to seven levels of success. Information load was held constant at seven inputs per ½-h period. The number of success messages was increased from one out of seven during the first period of play to seven out of seven during the last period of play. The remaining messages for each period were neutral. The reason for perfectly confounding order and success is discussed in detail in Streufert (1968b) and Streufert & Streufert (1967).

All seven game periods were played in one evening. After each playing period was completed, Ss filled out report forms containing several scales. Among the scales were two scales on which the Ss indicated the degree of success and the degree of failure which they felt they had experienced during the preceding period. The data analysis is based on the scores obtained on these two scales.

Results and Discussion

An analysis of variance for simple-complex (A, between) by periods (B, within) resulted in a significant F ratio for factor B, periods ($F = 53.68$, $df = 6/264$, $p < .001$). Since the primary concern of this experiment is with trends which are calculated from simple effects, separate F ratios were obtained for simple and complex Ss. An analysis of variance for simple main effects

Fig. 1. A comparison of perceived and experimentally-induced success for simple subjects.

Fig. 2. A comparison of perceived and experimentally-induced success for complex subjects.

showed a significant effect for complex Ss ($F = 26.12$, $df = 6/132$, $p < .001$) and for simple Ss ($F = 28.62$, $df = 6/132$, $p < .001$). Thus, the results indicate that the level of induced success did affect the Ss' perceived success both for complex Ss and for simple Ss.

The degree of perceived success at each level of induced success for simple Ss and for complex Ss is presented in Figs. 1 and 2, respectively. A trend analysis of the data for complex Ss showed significant linear, cubic, and quintic trends ($F = 136.49$, $df = 1/132$, $p < .001$; $F = 9.60$, $df = 1/132$, $p < .005$; $F = 7.57$, $df = 1/132$, $p < .01$, respectively). These effects accounted for 98% of the variation for complex Ss. For simple Ss the linear and quartic trends were significant ($F = 161.82$, $df = 1/132$, $p < .001$; $F = 8.12$, $df = 1/132$, $p < .01$, respectively). Ninety-nine per cent of the variation for simple Ss was accounted for by these effects. Since the analysis of variance did not yield a significant difference between simple and complex Ss, the major emphasis of the results is on the linear effect which was found both for simple and for complex Ss.

We may conclude from these results that there were two types of adaptation to increasing success taking place. The first type was a general adaptation of the Ss to increasing success, indicated by the linear trends found for both simple and complex Ss. The trend analysis suggested that a second type of adaptation to increasing success consisted of a series of successive specific adaptations to particular amounts of success. This is indicated especially for complex Ss by the cubic and quintic trends, and is suggested for simple Ss by the quartic trend. Thus, in light of the limited conclusions that may be drawn from the trend analysis, success may be multi-dimensional rather than uni-dimensional.

These findings are consistent with those of Castore & Streufert (1966) on the relationship between induced and perceived failure. The fact that a quintic trend was found for complex Ss but not for simple Ss in the present study suggests that the quintic relationship found by Castore & Streufert (1966) may have been produced by complex Ss in their sample. Castore and Streufert did not distinguish between simple and complex Ss in their research.

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NOTES

1. Research support from the Office of Naval Research, Group Psychology Branch, is gratefully acknowledged.
2. The suggestion that Ss' perceptions of success and failure may show successive adaptations to the situation may be predicted from the theoretical position of Driver & Streufert (1965).