

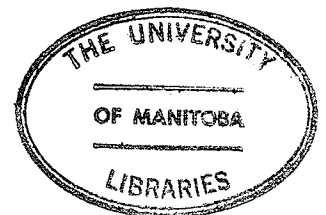
THE ORGANISMIC-DEVELOPMENTAL MODEL OF
SUCCESSIVE TRIALS EFFECTS: PREDICTIONS FOR
LOCUS OF CONTROL AND INSTRUCTIONAL VARIABLES

A Dissertation
Presented to
Faculty of Graduate Studies
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In Partial Fulfillment
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Doctor of Philosophy

by
Christopher A. Bayer
University of Manitoba

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A dissertation submitted to the Faculty of Graduate Studies of
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ABSTRACT

This study was designed for several purposes: assessment of the predictive capacity and generality of the organismic model of trials effects (Bayer, 1972a); determination of the utility of illusions in locus of control research; examination of the effects of objective versus apparent instructions on the Poggendorff and Ingoing Mueller-Lyer illusions; and replication of a trials effect on the Ingoing Mueller-Lyer figure with a method of production.

The trials model was assessed along two dimensions--the locus of control personality variable and instructional set. The model depicts a successive trials effect as a sequential two-factor phenomenon. First, the illusory response is established, and secondly, with repeated presentation of the same data the illusory effect dissipates--information-processing is efficient. Locus of control studies indicated that internals were more adept perceptual learners, more efficient processors of visual information, and more perceptually vigilant than externals. Internals were conceptualized as articulate perceivers, and externals were conceptualized as global perceivers within a Werner-Wapnerian (1957, 1961) framework. Fit into the organismic model, it was essentially predicted that internals would perceive both illusions more accurately over trials than externals. This first set of major predictions was generally confirmed but,

in addition, externals performed more effectively than expected. Instructional set studies suggested that high-cue, objective instructions would be more facilitative of performance than low-cue, apparent instructions. Locus of control findings revealed that internal-external differences are attenuated in structured situations. Therefore, it was essentially predicted that objective instructions would facilitate performance over trials, and that locus of control differences would be maximal under apparent instructions. This second set of major predictions was partially confirmed, and only for the Mueller-Lyer task.

On a post-hoc basis, it was determined, after raw Mueller-Lyer data was examined, that a control condition minimized between subjects error. Further a posteriori analyses challenged an implicit basic assumption of the study: replication of the experiment with different illusions. It was contended that there is no simple relationship between cognitive variables and perception of geometric illusions. The model's predictive capacity was considered fairly adequate, but its generality was limited. Suggestions for future research regarding a variety of information, organismic, and perceptual learning variables were made. Clinical implications were discussed.

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CHAPTER I

INTRODUCTION

This study was concerned with assessing the predictive capacity of the organismic-developmental model of successive trials effects (Bayer, 1972a) for two variables: locus of control and instructional set. Essentially, perceptual performance on successive trials of two different types of geometric illusions (one of direction and one of extent) was investigated as a function of the locus of control personality variable under different instructional conditions. In general, the phenomenon of successive trials effects can be categorized under the rubric of perceptual learning (Epstein, 1967). Subjects become less susceptible to a variety of illusions with repeated exposure; there is a comparatively stable and durable change in perception of the illusory targets which results in more effective responding.

Locus of control and instructional variables were of particular interest to the present study for several reasons. Primarily, the original model of trials effects is an explanatory one derived from previously unexplained data from studies in which the organismic variable of age had been manipulated in the investigation of an illusion of direction. At this point, however, the model has not been employed predictively, and a personality variable has not been used

to test the model for other perceptual illusion tasks. Secondly, basic information-processing concepts contribute heavily to the theoretical structure of the model. Therefore, instructional set was manipulated along a dimension of explicitness of information conveyed to the subject.

As noted above, the phenomenon of successive trials effects can be categorized as an example of perceptual learning. In the present study, however, since the trials effects model is an organismic one and since perceptual functioning was investigated as a function of a personality variable, the more general theoretical framework of the study is within the subject area of perception and personality.

Historical Background: Perception and Personality

Historically, the study of perceptual processes and their relation to personality variables developed out of a movement in psychology known as the "New Look in Perception" (Dember, 1960; Klein & Schlesinger, 1949). The basic rationale for placing the perceiver back into the study of perception developed in an effort to systematically account for individual differences in perceptual processes, rather than assign these differences to random error.

Early "New Look" researchers were interested in how a variety of cognitive and/or experiential states influenced the individual's perception of his world. During the late 1940's and 1950's, investigators began to focus on organismic

variables (such as personality style, age, sex, diagnostic classification, and level of motivation) as an approach to studying the origins and mechanisms of perceptual processes. Frenkel-Brunswick (1949) delineated a distinction between "perception-centered" and "personality-centered" perceptual research. The former approach concentrated on personality variables and their manifestation in perceptual functioning. Gradually, the research emphasis shifted to developing personality-oriented theories of perception (Blake & Ramsey, 1951). The central thesis of this approach was that the study of perceptual functioning provides a basic empirical approach to an understanding of personality and interpersonal relations.

The conceptual impetus for the "New Look in Perception" was closely aligned with the development of the psychoanalytic theory of projective techniques (Chaplin & Krawiec, 1960). Analytic theory hypothesized that responses to unstructured or vague stimuli would be characteristic of the individual's personality. From this theoretical vantage point, psychoanalytically oriented clinicians and test constructors attempted to study unconscious motivation through the modality of perceptual functioning.

Witkin, Lewis, Hertzman, Meissner, and Wapner (1954) were among the first investigators to systematically use controlled S-O-R (stimulus-organism-response) paradigms in the investigation of perception and personality. These researchers developed a theoretical construct of field

dependence-independence which differentiated between individuals who relied on internal, or bodily, cues for perceptual decision-making in the extraction of an item from the field in which it appears, as contrasted with individuals who relied on external cues. The former individual was identified field-independent, whereas the latter individual was designated field-dependent. Field-independent individuals were conceptualized as having more effective categorical abilities.

After Witkin, et al's (1954) initial research, another team of investigators (Gardner, Holzman, Klein, Linton, Spence, 1959) began to approach the subject area of perception and personality from a cognitive perspective. The basic thesis of their work was that a wide range of behaviors, with which an individual encounters reality, may be encompassed by relatively few dimensions of organization. These investigators were interested in studying individual consistencies in cognitive behavior. They articulated the concept of cognitive style, an organizational constant which refers to the arrangement of controls within a personality which represents a relatively stable and durable mode of functioning. More broadly, how an individual copes with and adapts to reality can be considered representative of his cognitive style. The notion of style reflects the pattern of cognitive controls which are relatively stable features of personality organization. The notion of control implies an embeddedness of cognitive functions arranged for

regulation purposes. Another assumption of the Gardner group's research was the individual characteristics expressed in cognitive style are evident over a variety of tasks, situations, and psychological states.

Gardner (1959) further indicates that while earlier research found that individuals can be characterized by enduring response dispositions, termed "perceptual attitudes," that can be expressed in various perceptual behaviors, it was also discovered that these consistencies reflected broader principles of cognitive organization. Essentially, these data supported the personality-centered model of Frenkel-Brunswick (1949) which concentrated on personality (and other higher order cognitive) variables and their manifestation in perceptual functioning. Later, Gardner (1961) found that the cognitive control principles of Field Articulation and Scanning differentially predicted performance on geometric illusions. For example, subjects low in Field Articulation were similar to children in their inability to produce differential responses to parts of stimulus fields which contained conflicting information. Gardner concluded that "these subjects can be conceived of as relatively inefficient in attending to relevant cues and inhibiting attention to misleading irrelevant cues (1961, p. 126)." The crucial point is that cognitive constructs are capable of predicting perceptual performance on geometric illusions. The basis of this theoretical orientation is that perception can be said to depend in

part upon enduring organizations, or cognitive styles, which are superordinate to the actual physical perceptual system itself. Moreover, as cognitive styles are considered to be relatively stable states, one can make precise and consistent predictions based on knowledge of a subject's or group of subjects' cognitive style. Locus of control was the hypothetical cognitive style construct employed here to differentially predict perceptual performance on geometric illusions within the framework of the organismic model of trials effects. After the locus of control construct is explicated, it will be shown how locus of control can be conceptualized to correspond with the trials effect model, and then pertinent locus of control and illusion research will be reviewed.

The Locus of Control Construct

The variable of internal versus external control is most widely known as the locus of control construct (Rotter, 1954, 1966). Essentially, the construct refers to the degree to which an individual believes that reinforcement (or more broadly, what happens to him and/or what he does) is contingent upon his own behavior. The construct is concerned with a person's perception of contingency relationships between his own behavior and events which follow that behavior.

With regard to theory construction, Rotter (1954) and Rotter, Chance, and Phares (1972) have taken a social learning

approach in developing a personality theory. A concept of expectancy learning is considered to play a central role in generating individual differences in behavior change and performance. The notion of expectancy refers to the individual's assessment of the probability of success of a specific behavior. Early research focused on differential expectancy learning as a function of the experimental situation which was usually an ambiguous task that required subtle discrimination (Blackman, 1962; Holder & Rotter, 1962; James & Rotter, 1958; Phares, 1957). With further research, it was determined that systematic changes in expectancy learning were related to the internal or external control orientation of the individual subject (Rotter, 1966). The data revealed that internals exhibit stable expectancies characterized by strong use of previous experience for determining future expectancies whereas externals did not (Petzel & Gynther, 1970).

Rotter's (1954) early model of generalized expectancy can be applied to the later research findings. The conditions of internality and externality can be conceptualized as consequences of prior learning history which, theoretically, should be generalized to a variety of present and future situations (Rotter, 1966). In other words, individuals enter situations with pre-established internal or external control orientations. In this sense, locus of control is considered a personality variable, and can be viewed more broadly as a cognitive style (Lefcourt, 1972). Also, different situations

can be construed by the experimenter and/or perceived by the subject as being an internal or an external control situation. In this sense, locus of control is considered as a situational variable.

More precisely, Rotter (1966) distinguished between individuals who believe they control their reinforcements, and individuals who believe their reinforcements are not under their control. The first individual is considered internally oriented (internal), while the second individual is considered externally oriented (external). Internals are further described as perceiving that their reinforcements are contingent upon their own behavior, whereas externals are described as perceiving that their reinforcements are (comparatively) independent of their own behavior. Thus, an internal may view his reinforcements as a function of his own skill, effort, or ability; and an external may view his reinforcements as a function of fate, luck, chance, or powerful others. In other words, internals appear to perceive what happens to them, or how they perform, in terms of their own behavior, skill, etc. On the other hand, externals seem to perceive what happens to them, or how they perform, in terms of factors outside themselves such as fate, chance, etc.

Rotter (1966) also distinguished between internal and external types of situations. A situation may be perceived by an individual as demanding skill or effort. A different situation may be seen by an individual as demanding chance,

luck, or the control of others. The first situation is designated a skill situation, while the second situation is termed a chance situation. In this case locus of control is determined primarily by the situation or task.

In summary, the trend of the locus of control research has been in two directions. Early work focused on the locus of control situational variable. Tasks were structured so as to induce high or low control expectancies (e.g., skill or chance conditions), and schedules of reinforcement were controlled in learning paradigms. With the development and refinement of the Internal-External Control Scale, or I-E Scale (Rotter, 1966), the performance of individuals, categorized according to the locus of control personality variable, was investigated in a variety of experimental situations in addition to skill-chance ones. Methodologically, then, the locus of control personality variable has been employed primarily as a selection variable.

When locus of control is considered as a personality variable, it appears predominantly cognitive in nature. That is, cognitive processes such as information-processing, thinking, judging, and believing are assumed to mediate the behavior of internals and externals. Of particular interest to students of perception is the perceptual functioning of individuals categorized as internal or external, especially in light of DuCette and Wolk's (1973) contention that the locus of control construct was originally conceptualized and posited as a general, higher order (or cognitive) construct

which was found to be capable of predicting lower level (or attentive) behaviors. For example, internals were found to be more "perceptually sensitive" than externals in a study investigating awareness of reinforcement contingencies (Ude & Volger, 1969). Interestingly, the field dependence-independence variable appears to be related conceptually to the locus of control personality variable. Essentially, both variables can be viewed as hypothetical cognitive style constructs which imply that a variety of behavior can be conceived of as a function of internal or external stimulation, and investigated as a consequence thereof. To continue, it has been implied that the individual's perception of positive and/or negative events as being, or not being, a consequence of his behavior is his locus of control (Lefcourt, 1966; Rotter, 1966). Similarly, in terms of the locus of control situational variable, perception is again implied to serve a central mediational function since the theory suggests that the individual perceives the task as a skill or chance situation (Rotter, 1966). Thus, it appears that some form of perceptual functioning serves an important, if not central, role in the theoretical-conceptual network of the locus of control construct. However, comparatively little attention has been paid to the possible empirical role of perceptual functioning for the locus of control construct. As a result, there have been relatively few systematic studies of the relationships between locus of control and basic perceptual functioning. The organismic