

Brief Progressive Relaxation Training as a Function of Locus
of Control and Experimenter-Cued Feedback with Pregnant
Women

by



H. Richard Griffin

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presented to the University of Manitoba
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ABSTRACT

The literature on locus of control and biofeedback yields inconclusive results but tends to favor internals as more effective at achieving physiological self control. However, externals had not been provided with externally-based feedback in most of these studies. The present study, therefore, compared progressive relaxation and experimenter-cued feedback on progressive relaxation as a function of two measures of locus of control, Rotter's IE Scale and Reid and Ware's Self Control Scale. In addition, these two scales were used as predictors of adjustment to pregnancy, labor and delivery.

Subjects were 95 volunteer primiparae pregnant women, enrolled in prenatal courses. Following the completion of a prenatal questionnaire, both locus of Control scales, and Spielberger's A-State and A-Trait Scales, women were randomly assigned to one of four groups: Progressive Relaxation; Experimenter-Cued Feedback; Control I, sitting in silence; and Control II, filling out questionnaires but not participating in the experimental session. Frontalis EMG and A-State measures were taken as indicators of tension reduction. Following delivery subjects returned a postpartum questionnaire tapping obstetrical issues.

Results were generally unresponsive of the hypotheses. There were no significant differences between internals and externals on either relaxation method, while obstetrical measures were not significantly related to the IE Scale. However, internals on the Self Control Scale did have more positive pregnancies than externals. A number of post hoc findings were interesting, in particular, that overall, externals showed more tension reduction than internals, a finding opposite to predictions. In addition, the IE and Self Control Scales seem to be tapping different dimensions, with IE tending to be more predictive of physiological self control and Self Control more related to obstetrical measures, while considering the two scales together yielded a significant interaction on ease of delivery.

Findings were discussed as supporting the concept that the structure of the task seems a more crucial issue than whether internals or externals exhibit greater physiological self control. Suggestions are made for further research with the Self Control Scale and in obstetrical research.

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INTRODUCTION

The present study involved the combination of two areas of research: 1) locus of control, more specifically, the interaction of locus of control and type of feedback in relaxation training; and 2) the general area of childbirth, training for childbirth, and complications of childbirth. A brief overview is presented below to describe the conceptual reasoning of the study followed by a literature review of the relevant areas.

Previous studies investigating the relationship between locus of control and control of physiological functioning, whether through biofeedback or progressive relaxation, have generally not provided optimal conditions for external locus of control subjects. These conditions are that information regarding performance on physiological self control needs to be provided for externals from a source that is clearly directed by someone else and in a way that is meaningful to an external frame of reference. The present study aimed at providing these conditions while training subjects at progressive relaxation.

Pregnant women were used in the study because most major schools of preparation for childbirth use some form of pro-

gressive relaxation, and the ability to attain and achieve muscular relaxation is important for reducing pain in childbirth. Also, by using pregnant women in a training procedure related to childbirth preparation, it was expected that the motivational level would be higher relative to typically-used university subjects who often provide no assurance of sufficiently high motivation toward the experimental task.

In addition to the above manipulation, data were gathered relating locus of control to actual childbirth conditions such as length of labour, amount of medication used, and pregnancy and delivery complications. The gathering of these data was viewed as exploratory research investigating locus of control and psychosomatic aspects of obstetrics, areas which fit together conceptually yet have rarely been studied.

Rotter (1954, 1975) outlines three major determinants of behaviour potential as described by his social learning theory. The first of these is the expectancy that the behaviour will lead to a particular reinforcement. This expectancy is a function of the person's past experiences in that situation (specific expectancies) as well as experiences in situations which the person perceives as similar (generalized expectancies). The relative importance of specific versus generalized expectancies varies according to

the novelty or familiarity of the situation. As the situation becomes more novel or ambiguous, the relative importance of a person's generalized expectancy increases, just as it decreases if the person has had previous experience with that situation or the parameters are very clear. Potter's (1966) Internal-External Locus of Control Scale was designed as a measure of generalized expectancies for reinforcement and therefore is most applicable in situations which are novel or ambiguous. If predictions based upon the I-E Scale were made in situations which are familiar to the subjects or where the parameters are very clear, the predictive validity of the scale would be decreased.

The second determinant of behaviour is the value of the available reinforcements in which a given behaviour results. This variable is crucial to social learning theory, and other behaviour theories, yet many studies fail to take it into account in considering locus of control. As Rotter (1975) states: "Without doubt, the most frequent conceptual problem on the part of a number of investigators is the failure to treat reinforcement value as a separate variable (p. 59)." Rotter cites studies such as those by Seeman and Evans (1962) and Gore and Rotter (1963), in which motivation of subjects was assured by common concerns over tuberculosis or civil rights activism, as examples of assuming a high motivational level for all subjects toward the same goals. To use social learning theory and locus of control scales

adequately, research must account for motivation of subjects by controlling or manipulating reinforcement value.

The third behavioural determinant that Rotter specifies is the psychological situation, which has an effect on both expectation and reinforcement value. To predict behaviour potential, not only must the psychological situation be specified but also there must be some evaluation of the alternative behaviours available to the individual in that situation,

To be justified in using Potter's I-F scale or other general measures of locus of control as predictors of behaviour, a study must therefore involve a novel or ambiguous situation: must assure a high level of motivation across all subjects, thus controlling for reinforcement value; and must assess or control alternative behaviours in that situation.

The present study attempted to meet these requirements. The subjects used were primiparae pregnant women who had therefore never been through childbirth or childbirth training before. The present experiment was concerned with an important aspect of childbirth training and childbirth itself, relaxation training, therefore it dealt with a subject that pregnant women are very concerned about. And finally, the experimental situation was a laboratory setting, where alternative behaviours are minimized. In examining specifically the area of physiological self control

with regard to locus of control, the format of the self control tasks is crucial to determining whether or not internals differ from externals in their self control ability. That is, the source of feedback provided must include that which would be theoretically accessible to externals as well as internals before differential abilities at self control can be determined. According to the locus of control construct, externals would be expected to look at external sources for performance appraisal, while internals would be likely to use their own evaluation as an indication of performance. The present study varied the source of performance information providing conditions of internally-based feedback and externally-cued feedback in an attempt at examining physiological self control within the theoretical parameters predicted by the locus of control construct. By meeting Rotter's (1975) criteria, the present study hoped to identify factors which would allow for more specific training methods of relaxation. That is, if the locus of control construct can discriminate which women are successful at relaxation and if different forms of feedback can improve this success, then it may be useful to include this dimension in assessments to determine the best relaxation approach for a specific individual in other applications besides childbirth preparation, rather than simply applying the same method to all subjects. A review of the relevant literature in locus of control, self control of physiological functioning, and obstetrical factors follows.

Locus of Control

One of the most important products of Rotter's (1954) social learning theory has been the concept of locus of control. Briefly, this construct is seen as an enduring and measurable personality characteristic which considers the generalized expectancy a person has as to the degree of control over what happens to himself or herself. Internal locus of control individuals perceive reinforcements and punishments that they receive as consequences of their own actions and therefore subject to their control, while external locus of control individuals view events and reinforcements as beyond their personal control and responsibility, being determined instead by external forces within the environment.

A great deal of research has been conducted on the locus of control construct. It will not all be reviewed here, as reviews may be found by Rotter (1966), Lefcourt (1966), Joe (1971), Throop and MacDonald (1971), and MacDonald (1973). Studies relevant to the present research will be discussed below. As evidence toward the generality of the locus of control construct, studies in a number of different areas have shown a differential response between internals and externals in performance of tasks, reactions to social influence, and attempts at self control.

Rotter (1966) originally hypothesized that internals would perform better under conditions perceived as being dependent upon the skill of the performer, hence being under their control, while externals would perform better under conditions perceived as determined by chance. Several studies have dealt with this area (Julian & Katz, 1968; Lefcourt, Lewis & Silverman, 1968; Rotter & Mulry, 1965) but not in a consistent or systematic way. However, it appears that there is at least minimal support for differential performance on chance versus skill tasks on the basis of locus of control orientation (Joe, 1971).

Similarly, it has been reported that internals and externals respond differentially to social stimuli applied to influence attitudes or behaviour, with internals seen as more resistant to environmental manipulation in studies by Getter (1966), Pichie and Phares (1969), and Strickland (1970). However, research by Baron (1969), Klemp (1969), and Lichtenstein and Craine (1969), found no difference between internals and externals on this issue. It appears, in fact, that response to manipulation may be more a function of the manner in which the manipulation is presented than the locus of control of the subjects. Sherman (1973) studied attitude change in internals and externals under conditions in which subjects were either forced to follow discrepant behaviour (writing counterattitudinal essays) or exposed to persuasive messages. He found an interaction

between locus of control and influence technique used, with externals changing their attitudes more when subjected to persuasive communications, while internals changed more after writing a counterattitudinal essay. Sherman interprets these results as indicating that internals "... attribute greater responsibility to themselves for the consequences of their acts (p. 26)." Other studies reporting similar results are those by Gore (Note 2) and Ritchie and Phares (1969).

Basically, these results fit logically into the locus of control construct. Internals reportedly feel responsible for their actions and feel superior in dealing with their environment. They do not expect, in fact appear to resist, external manipulation, preferring instead to rely upon themselves for reinforcement. Externals do not feel responsible for their actions, they look for external influence and respond to it when provided more readily than do internals. In applying these concepts, it would appear that internals would be more influenced by situations in which the parameters provided for internal reinforcement, while externals would respond best when something or someone in the environment provided the reinforcement.

In an important series of studies, Baron and Ganz (1972) and Baron, Cowan, Ganz, and McDonald (1974) demonstrated the above concept by varying the manner in which reinforcement