The Father of Applied Behavior Analysis in Autism: Charles B. Ferster

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Charles B. Ferster (circa 1972)  
(1922-1981)
Charles B. Ferster: Prior to Autism


Forecasting Ferster’s Early Work in Autism


Background:
Autism, Behavior Analysis, and Indiana University
Background in Autism: Differential Diagnosis


Background in Autism: Etiology


Background in Autism: Treatment

Psychological


Medical


Background in Behavior Analysis: B.F. Skinner and Research
Background in Behavior Analysis: B.F. Skinner


Background in Behavior Analysis: Research


Background in Behavior Analysis: Research (Cont.)


Background at Indiana University: The School of Medicine and Marian K. DeMyer
LaRue D. Carter Memorial Hospital
(1952-1996)
Marian K. DeMyer (circa 1964)  
(1922-2002)
Clinical Research Center Room
Ferster’s Appointment and Initial Research and Scholarship
Experimental Analysis of Behavior


Behavioral Neuroscience


Behavioral Applications


an introduction

to the SCIENCE

of HUMAN BEHAVIOR

NURNBERGER
FERSTER
BRADY
A Behavioral Interpretation of Autism

The Experimental Analysis of the Behavior of Children with Autism


Introduction
Method
Photo of the experimental room
Schematic of Room
8-Column vendor
Results
forcement as gradually as possible so that the child's behavior would be maintained strongly throughout. In general the frequency of tantrums declined continuously during the course of the experiment.

THE EARLY DEVELOPMENT OF A PERFORMANCE

Food and candy appear to be the major reinforcers available, and candy was therefore the reinforcer used during the child's first introduction to the experimental procedures. Thereafter, the candy vending machine was supplemented by the gradual addition of the different reinforcing devices. Reinforcement conditions were manipulated during the early part of the experiment to give an estimate of how much activity might be controlled by the coin reinforcement and to demonstrate how much of the child's activity in the room was under the control of the specific parts of the environment that were manipulated.

When coins were delivered by pressing a simple key the pattern of emission of the child's behavior was like that normally occurring under similar reinforcement conditions in other species. Figure 2, Record A,

![Graphical representation](image)

Figure 2. Graphic record of the subject's responses cumulated against time. The delivery of coins is indicated by the marks oblique to the curve and the scale is given by the grid. For more compact presentation, the records have been "collapsed" by removing the space between the excursions of the recording pen. Record A is for Thomas; Record B for Margie.

shows a record of the performance of the boy when every 15th operation of the key produced a coin (fixed ratio schedule of reinforcement), and when most of the coin-operated reinforcing devices were already present in the room. Following the delivery of each coin (the oblique marks on the record) there is frequently a slight pause ranging from a few seconds to several minutes. Once responding begins, the boy presses the key
from 1 to 20 seconds. During the time out, the device was inoperative and no further coins could be earned. The matching procedure was established gradually by first giving the child a coin when he touched any window, and gradually approximating the final procedure over a period of several months. Once the child matched simple figures (for example, colored dots) the complexity of the material was gradually increased. Here again, introducing stimuli too rapidly would result in many mistakes, an increase in the amount of activity per reinforcement, and a low frequency of reinforcement. We have recorded several large changes in procedure precipitating severe tantrums. On the other hand, procedural changes sometimes of an unusual sort had little effect when they did not change the frequency or amount of activity per reinforcement.

Figure 3 contains performances recorded on the matching-to-sample procedure where the stimuli being matched were large bold drawings of a circle, star, rectangle, square, and a triangle. Each time the child matched correctly, the device moved to the next problem, but every incorrect match interrupted the procedure for 6 seconds by disconnecting all of the circuits. Every 2nd correct match delivered a coin. Figure 3,
Discussion
Behavioral Pharmacology in Autism

Introduction
Method
Matching-to-sample device
Results
Fig. 1. Number of matching-to-sample sequences emitted as a function of prochlorperazine administration.
Discussion
Application: 
Teaching New Social Behavior

Introduction

[T]he continuous efforts to treat these…children have met with only sporadic success. Much of the literature dealing with [them]…discusses types of approaches used in the one-to-one therapy situation by professionally trained therapists. This paper tells of a study in a residential treatment setting using untrained psychotherapists, consisting of child-care workers, nurses, and teachers, as the principal therapists of a group of autistic …children. The treatment is a combined individual-milieu process directed by a psychiatrist.
Introduction

Since all psychotherapy is essentially a learning experience, with the therapist becoming for the child one of the chief reinforcers and punishers of behavior, the question was raised as to whether a less complex theory of learning might be used by child-care workers in a treatment situation.... On the basis of its simplicity and thus its potential workability by untrained therapists, the theory of operant conditioning with the concept of reinforcement (Skinner, 1953; Ferster, 1958) was chosen as a therapeutic tool.
Method
Results
Discussion


After Ferster, After Indiana
DeMyer after Ferster
Indiana After Ferster

Basic Research
Applied Research
Intervention Research
Ferster after Indiana

In Autism

In Behavioral Analysis
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