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INTELLIGENCE AND CHILD DEVELOPMENT: WHAT INTELLIGENCE IS AND HOW IT IS LEARNED AND FUNCTIONS*

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Acknowledgments 238
Summary 239
I. General introduction 240
II. Experiment 1: Increasing number-concept intelligence 244
III. Experiment 2: Increasing geometric-design and mazes intelligence 253
IV. Experiment 3: Increasing similarity intelligence 262
V. General discussion 275
References 297

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SUMMARY

The social-behaviorism approach requires a theory of intelligence to specify what intelligence consists of, how it is caused, and how intelligence has its effects. The social-behaviorism theory itself is that intelligence is composed of basic behavioral repertoires that are learned, but in a special human process called cumulative-hierarchical learning. Intelligence has its effects in determining how the individual responds in many situations and how she/he learns more advanced cognitive skills. The theory is based upon a long series of studies involving the development of procedures and principles for training children in complex language-cognitive repertoires. The methods were developed to produce skills necessary for the child's future cognitive development. But the theory also stipulated that the training would increase the child's measured intelligence. The specific analysis provided specific predictions concerning what types of intelligence growth would result from the acquisition of what types of learned basic behavioral repertoires. Three experiments were based on the theory. One showed that learning particular basic behavioral repertoires increased the child's intelligence on the Mazes and Geometric Design subtests of the WPPSI, as well as the child's alphabet-writing and reading abilities. Another experiment showed that learning general number-concept repertoires increased the child's intelligence on *different* number-concept-intelligence-test items. A third experiment elaborated the theory and showed that the learning of certain language repertoires increased the child's intelligence score on similarity-intelligence test items, on an object-sorting conceptual task, on a reasons-for-sorts task, and on a category-identification task. The various results verify the Staats social-behaviorism theory of intelligence that in its explicitness has many implications for applied and basic developments, as well as for understanding intelligence.

I. GENERAL INTRODUCTION

Long-standing controversies have swirled around the concept of intelligence, as well as the measurement of intelligence and the use of intelligence tests. A classic argument has ensued between hereditarians (e.g., 13, 26, 27, 28, 29) and environmentalists (e.g. 2, 97, 103, 104, 105, 110) and this disagreement has had its modern counterpart on the one hand in the statements of Burt (9), Hernstein (34), Jensen (40), and Schockley (66), and on the other hand in the statements of Bronfenbrenner (6), Brace and Livingstone (5), Deutsch (15), Kamin (43), Senna (64), and Voyat (102).

The arguments have remained unresolvable, in the present view, because the theories of intelligence have remained as general, social philosophies. The concept of intelligence that is popularly followed, by environmentalists as well as hereditarians, is that it is a personal, global quality within the individual. Although intelligence is considered to have some parts, at least in some theories, none of the positions provides analytic understanding of what intelligence is, at least in the causative sense to be indicated here. The research methodologies of both the genetic and environmental positions, following the vague conception, make manipulations that are not analytic with respect either to the environment or to the organism or to the characteristics that are termed intelligence.

The hereditarians have generally remained at the level of attempting to demonstrate—by genetic-intelligence correlations (47, pp. 85-86)—that intelligence is inherited. Correlations between family relationships and intelligence may provide encouragement for a general hereditarian view, but advancement of this approach toward creation of a specific explanatory theory requires direct investigation of the biological mechanisms the approach infers. The approach cannot *remain* on an inferential level. Presently, knowledge in this area generally is not analytic with respect to genetic, anatomic, or physiological conditions thought to be independent variables (causes). Moreover, the dependent variable (or effect) of intelligence is also largely unspecified and unanalyzed.

The environmentalist approach (and the environment-genetic interaction approach as well) has likewise been generally unanalytic with respect to what intelligence consists of accepting, rather, traditional definitions of intelligence. Nor has the environmentalist view provided an analytic theory of environmental conditions that affect intelligence—tending, instead, to consider large-scale, unanalyzed environmental units, such as socioeconomic class, education level of parents, number of books in the home, and so on.