Engaging A Dynamic Environment: A Review of Novak and Peláez's (2004) "Child and Adolescent Development: A Behavioral Systems Approach"

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Abstract

Behavior analyst teaching child development courses would do well to look into this book as the main text for the course. It represents the most comprehensive attempt to date to try and integrate the developmental literature with the study of basic mechanisms of learning. The book is written in a clear and concise manner that can be understood by the average undergraduate. It is also comprehensive enough to be enjoyed by graduate students. This review looks at the book in greater detail.
Key words: Book review, behavior analysis of child development, systems theory, principles and mechanisms of child development

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Since the seminal work of Bijou and Baer (1961), attempts have been made to explain traditional developmental concepts in terms of basic learning principles. Novak and Peláez offers the most sophisticate attempt at this process to date. The most important thing to be said about the book is that it is excellent. This book is well researched, concise, and demonstrates a strong command of traditional and the behavior analytic approach to child development. The scholarship is superior.

As the authors of the text suggest, it is important to look beyond what develops to why it develops. This is a central argument for both behavior analysts and developmental psychologists (Rovee-Collier, 1996). We live in a dynamic and explosive environment. Novak and Peláez integrate basic behavioral principles into dynamical systems theory to produce a unique view of how children become adults. Looking form birth through adolescence, the book looks at traditional behavioral areas such as language learning and more unique areas such as adolescences falling in love. In addition, the book attempts to look at deviations form normal development studying anorexia, bulimia, conduct disorder, autism, depression, anxiety disorders, substance abuse, and mental retardation. In the area of autism, the authors explore the conflicting forces of science, pseudoscience and antiscience in autism treatment.

Overall, Novak and Peláez's selection of chapter topics is very appropriate, providing up to date information theory and research. On specific chapters, the book is divided into 15. They are an introduction, modern development theory, behavioral genetics, prenatal, birth and post natal periods, habituation and respondent learning, operant learning, cognitive development, development of communication, personality and self, social and emotional development, development of antisocial behavior, the family system, schools, adolescence, and behavioral disorders of childhood. Some chapters are worth specific mention.

Chapter 3 is on behavioral genetics. While any discussion of behavioral genetics seems to inspire controversy, Novak and Peláez (2004) present the factual information in the chapter and how genes work in a fair and balanced way.

On cognitive development the book presents a great overview of Piagetian. While many problems have been found in Piaget's stages[1], such as conservation, the approach is still a very informative one and an excellent approach to contrast with learning based approaches such as Fischer's skills model and the research on stimulus equivalence and relational frame theory. The work on stimulus equivalence is particularly well done.

On communication development the chapter presents a solid argument for input and feedback's role in language development. I enjoyed this chapter. If I were to add anything to it, I would think that since behavior analysts have done so much work on language intervention then maybe a section on language intervention would be helpful. Behavioral studies have provided basic techniques for and range of speech and language phenomena. These phenomena include building articulation (e.g., Elbert & McRenyolds, 1987; Bierut, Elbert, & Dinnsen, 1987) and more complex language skills- some with limited generalization of grammatical construction taught such as syntax training for Broca's aphasia (Doyle, Goldstein, & Bourgeois, 1987) and some with profound long-term changes (Warren & Kasier, 1986a,b; Goldstein & Hockenberger, 1991). But here again, I must admit this might be outside the scope of the text and might not be additive.

Two chapters that I believe are very timely and well constructed are the one on social and emotional development and the chapter on the development of antisocial behavior. On social and emotional development, the research on how children can learn fear and anxiety from well-intentioned parents is very compelling. The chapter also devotes a section to a growing topic of concern with morality. I found it to be very enlightening. In chapter 10, the authors offer a series of seminal experiments Martha Peláez (second author) conducted with Jacob Gewirtz in the filed of behavior analysis of infant social learning. These experiments offer a conclusive and alternative explanation for the phenomena of "attachment", 'fear of strangers" 'social referencing" and the reinforcing effects of 'touch" during mother-child interactions. The paradigm offered by the authors is an alternative to the mainstream explanations traditional in the developmental literature (usually couched in attachment theory). If I were to suggest one addition to this chapter, it would be to add information on normal social skills and social competence development. Many behavior analysts and eco-behaviorists are working on the development of social skills and this literature could be of interest here (see Brown & Conroy, 2002; Odom & McConnell, 1993). Social skills seem to be a cusp skill that can have a major impact on children's development (Bosch, & Hixson, 2004). Still, this is a mild oversight and might not even add to what is written.

On antisocial behavior, the book has a nice integration of behavioral genetics information with the current research of Patterson and colleagues. The chapter on antisocial behavior nicely moves with direct ties into parenting and what parents can do to reduce the chances of developing an antisocial child. They end the chapter with the discussion of a behavioral systems approach to physical abuse. Moving beyond the singular view of contingency to incorporate choice would have been a bonus for this chapter. It would have been very interesting for the authors to move into a discussion of the matching law and current research on matching and the selection of antisocial responses (Snyder & Patterson, 1995; Snyder, Stoolmiller, Patterson, Schrepferman, Oeser, Johnson, & Soetaert, 2003)

[1] One issue is that Piaget pointed out have a tendency at the pre-operational stage to have limits to their ability to conserver (Piaget & Szeminska, 1952). While training children to develop conservation skills has been generally successful (Bucher & Schneider, 1973; Waghorn & Sullivan, 1970) it is by no means easy (Field, 1987). Still the issue of conservation is not that it can be trained but that in cases where it has been trained, it does not seem to provide increase intellectual benefit.

The basic reading level of the material in this text make it easily comprehended by the average undergraduate student. Honors students and graduate students in behavior analysis and child development will find the comprehensiveness refreshing. The highlight boxes give a glimpse into current research in an area. Each chapter begins with an outline of the chapter sections to help students to get an overview of the material to follow.

In addition to the above, the chapters help instructors to take behavioral development and put it into the context of guidance for a changing society. Each chapter highlights practical things that students can use in the real world. I particularly enjoyed the discussion on touch therapy for depressed mothers. I think that information like this follows students long after the course has ended and into their personal life.

It is hard to find things to criticize about the book. My only criticism of the book would be that it could have placed greater discussion on the continuity versus discontinuity debate. For example, the book discusses the focus its argument of discontinuous development on babbling. However, babbling of constants has been shown to facilitate expressive language development, while babbling of vowel sounds was shown to hinder expressive language development.(Whitehurst, Smith, Fischel, Arnold, & Lonigan, 1991). A better argument for discontinuity might be found in the study of antisocial behavior (Patterson & Yoerger, 2002). They showed that development of antisocial behavior dos not increase with age but with even antisocial children decrease between 2 and 12 years old. The continuous versus discontinuous argument often has twists and turns. For example the stepping reflex was initially thought to just disappear and thus could not be related to walking. However, Thelen, Fisher, & Ridley-Johnson, (2002) completed some remarkable research to show that the response does not just disappear. They argued that young infants grow at a rapid rate. In addition, they show dramatic changes in body composition. They argued that the behavioral consequences of somatic growth were not adequately explored. They conducted three studies on the relationship between body-build changes and a newborn stepping reflex. In the first study, they compared the number of steps and several body-build measures in 40 infants at 2, 4, and 6 weeks. At each age, they discovered that the overall arousal was the strongest predictor of stepping. Also, when the infants reached four weeks, the infants who gained weight and became "chubby" stepped less. In addition, all infants increased weight and added fat at the quickest rate between weeks 2 and 4. Their second study manipulated leg mass of the infants by adding small weights to the infant's legs. They reported that infants stepped less. In addition, the steps showed weaker flexion movements when they were weighted. In the third, they reduced leg mass/weight by submerging infants' legs in water. The water creates buoyancy making it easier for infants to raise legs. In this case, the stepping rate increased. In addition, the joint flexions were greater. They proposed that muscle strength development may not be synchronous with mass increase and that peripheral as well as central nervous system factors contribute to infant behavioral development. The disappearance of stepping is probably a function of asynchronous physical growth than by previous hypotheses of neurological changes.

This book shows that behavior analysis of child development has matured into a solid mainstream movement. Make no mistake, this is an excellent text, which will appeal to both graduate students and instructors who desire to see developmental psychology move past the simple categorization of behavior, toward understanding the functional characteristics of behavior that lead to children becoming adults. I plan to use this text for my Behavior Analysis and child development graduate course.

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