Introduction The Problem of Determinants and Mechanisms of Child Development; The Structure and Content of the Book

Having reviewed studies in the field of developmental psychology, Hetherington and McIntyre (1975) came to a sad conclusion:

> Perhaps the most marked feature in the field of developmental psychology is the lack of satisfactory theories of child development. Many investigators seem to have coped with this problem by doing completely atheoretical research; others are busy patching, mending, and modifying old theories; and some are building mini-theories that deal with very restricted areas of behavior. Although some modest theoretical convergence between areas is occurring, notably in the increased awareness of the role of cognitive factors in a variety of behaviors, one comes away from a review of the literature feeling that developmental psychologists working in different areas don't talk to each other. . . . The literature is replete with highly redundant, often trivial research or "single shot" studies that add little to our understanding of developmental processes. It seems to be an inefficient approach to the study of children's behavior. . . . The current need is for a careful analysis, synthesis, and evaluation of the information we now have and an attempt to evolve theories which will result in more systematic and fruitful strategies of research. (pp. 125–126)

This comment on the absence of a satisfactory theory of child development in Western developmental psychology of the 1970s is also

applicable to the current state of developmental psychology in the West. In contemporary Western psychology, there are detailed studies of the development of perception, memory, cognition, and other mental processes in each period of the child's life. What is missing, however, is a powerful theory of child development. Dissatisfaction with existing theories among contemporary developmental and child psychologists reveals itself in the advocacy by some of reductionist approaches in which, for example, developmental biology is suggested as a "metatheory for cognitive development" (Bjorklund, 1997, p. 144).

What are the reasons for this broad disappointment with existing theories of child development? The kernel of any theory of child development is the description of *the determinant of development* (that is, the major factor that leads to development) and the explanation of *the mechanism of development* (that is, the analysis of how the suggested determinant of development leads to development). What follows is a discussion of how determinants and mechanisms of child development are presented and explained in the most popular Western theories of child development.

Approaches to Determinants and Mechanisms of Child Development in Western Psychology

Theories of child development in Western psychology can be classified into three general approaches based on the suggested determinants of child development (Cole, 1992).

THE NATIVIST (MATURATIONAL) APPROACH TO CHILD DEVELOPMENT

Early nativists (Bühler, 1918/1930; Gesell, 1933; Hall, 1904) saw genetically predetermined maturation as the major (if not only) determinant

of children's development. According to Bühler (1918/1930), for example, even criminal behavior is the result of "bad" heredity. Although most contemporary nativists would not take such an extreme stand as to attribute criminal behavior to inherited criminal predispositions, their explanations of the determinants of child development are still not far from those of early nativists. Scarr (1992), for example, although not denying the role of environment in child development, claims that *how* the environment influences children's development depends on children's genotypes rather than on the characteristics and quality of their environment:

> Ordinary differences between families have little effect on children's development . . . Children's outcomes do not depend on whether parents take children to the ball game or to a museum so much as they depend on genetic transmission, on plentiful opportunities, and on having a good enough environment that *supports children's development to become themselves*. (p. 15, emphasis mine)

Similar positions have been taken by those nativists who derive their models of development from the principles of evolutionary natural selection (Cosmides & Tooby, 1987, 1994; Geary, 1995). Geary (1995), for example, holds that "the biologically primary cognitive abilities," which have been selected for in evolution, "appear to orient the child to relevant features of the environment and guide the processing of those features" (p. 27).

The major problem with the nativists' views is that, when discussing neo-formations in the development of children's cognition, personality, and so forth, they do not "answer the question: Where do these wonderful things *really* come from?" (Richardson, 1998, p. 79). This shortcoming of nativist explanations becomes especially clear in the case of nativist stage-by-stage theories of development. Why, for example, does a child transit from the oral to anal stage of development in Freud's (1920/1955) developmental model, or from the "trust versus

mistrust" to "autonomy versus shame and doubt" stage in Erikson's (1963, 1968) model? The statement that these transitions primarily have been the result of maturation can hardly be accepted as a satisfactory explanation of the mechanism of development. In fact, "invoking the concept of innateness amounts to abdicating responsibility for explaining development" (Johnston, 1994, p. 721).

THE BEHAVIORIST (ENVIRONMENTAL) APPROACH TO CHILD DEVELOPMENT

The behaviorists' view (Skinner, 1953; Thorndike, 1914; Watson, 1925) of the determinant of child development is just the opposite of the nativist position in this respect. For early behaviorists, Scarr's (1992) statement that children develop "to become themselves" (p. 15) would not make any sense because they considered a newborn child to be a tabula rasa, a blank slate, and attributed all the child's developmental accomplishments to the child's environment. A classic quote from Watson (1925) is revealing in this respect: "Give me a dozen healthy infants, well-formed, and my own specified world to bring them up in and I'll guarantee to take any one at random and train him to become any type of specialist I might select" (p. 82). Although later behaviorists would avoid making such provocative statements, their position in regard to the determinant of child development is very similar to the position of early behaviorists (see, for example, Bijou, 1976, 1992).

In contrast to nativists, behaviorists not only describe the determinant of development but also explain the mechanism of children's development. For them, the development of new responses in children is the result of conditioning, that is, the creation of new associations between stimuli and responses as the result of practice and reinforcement. It turned out, however, that the mechanism of conditioning could not explain the development of new behavioral patterns, even

in animals (Köhler, 1930; Tolman & Honzik, 1930), not to mention children. Therefore, since the 1960s, behaviorist theories of development have lost their popularity among American psychologists (for one of a few exceptions, see Bijou, 1976, 1992).

As Gesell (1933), with a touch of sarcasm, characterized the behaviorist approach to child development, it suggests "that the individual is fabricated out of the conditioning pattern" (p. 230). This characteristic of behaviorism accentuates one of the major shortcomings of this approach: Behaviorists consider children to be passive recipients of environmental influences rather then active contributors to their development. Similar criticism, however, can be applied to the nativist views of child development, including the view of Gesell himself. Whereas behaviorists tend to view children as "fabricated" by the environment, nativists tend to view them as "fabricated" out of genetically predetermined maturation. An important accomplishment of the constructivist approach to child development is that it overcomes the nativists' and behaviorists' view of the child as a passive object of internal or external development-generating forces.

THE CONSTRUCTIVIST (INTERACTIONAL) APPROACH TO CHILD DEVELOPMENT

The major representative of this approach is the theory of Piaget (1936/1952, 1955, 1923/1959). Piaget holds that the major determinant of children's development is their activity aimed at the exploration of the external world. In the course of this activity, children come across new environmental phenomena and try to "assimilate" them into their mental schemas (that is, into their existing ways of thinking). These new environmental phenomena, however, often do not fit exactly into children's mental schemas, which creates "disequilibrium" between children's mental schemas and the external world. Therefore, children need to "accommodate" their mental schemas to

the new environmental phenomena, which leads to the development of these schemas and their integration into new cognitive structures. As a result, temporary "equilibrium" between children's mental schemas and the external world is achieved, which lasts until children come across new environmental phenomena that create a new state of disequilibrium. Thus, Piaget views children as active "constructors" of their cognition.

Although Piaget's idea of equilibration (that is, the reaching of equilibrium between children's mental schemas and the external world) as the mechanism of development explains the development of mental schemas in children, this explanation has a weak point. Indeed, what makes children, according to Piaget, leave their comfortable state of equilibrium (that is, the state of adaptation to their environment) and explore the external world, which will inevitably lead to the state of disequilibrium? Piaget (1936/1952) answers this question by assuming that children's exploratory activity is driven by their curiosity, a quality with which children are born and that is similar to the "curiosity" of research scientists. In chapter 3, the limitations of such an explanation for children's exploratory activity are discussed in some detail. At this point, I merely note that not all the children have been shown to demonstrate such innate "curiosity" toward the external world (Bowlby, 1951; Kistyakovskaya, 1970; Rozengard-Pupko, 1948; Spitz, 1945, 1946).

Even more problematic is Piaget's explanation of the mechanism of children's stage-by-stage cognitive development. Indeed, Piaget holds that microdevelopmental changes in children's cognition (that is, the development of mental schemas) eventually results in a major qualitative shift in their cognitive development (that is, in their transition to a new stage of cognitive development). Discussing the mechanism of such transitions, however, he could not give a more satisfactory explanation of this mechanism than stating that these transitions "become necessary with development" (Piaget, 1971b, p. 9). Piaget

(1971b) himself formulated the weakness of such an explanation: "This solution is difficult to prove. It is even difficult to express or to explain" (p. 9). Everybody would probably agree that a solution that is difficult to prove, express, and explain can hardly be accepted as a satisfactory solution.

Attempts to explain children's stage-by-stage transitions have been made within neo-Piagetian theories of child development. These explanations, however, typically refer to genetically predetermined maturational processes as the mechanism of such transitions. For Pascual-Leone (1970) and Case (1985), for example, stage-by-stage transitions are the result of maturation of an innate information-processing capacity. For Karmiloff-Smith (1993), these transitions occur because of innately predetermined "redescriptions" of children's representations. Thus, in their attempts to support Piaget's theory of stage-by-stage development by suggesting the genetically predetermined maturational processes as the mechanism of such development, the neo-Piagetians take the stand of "nativist predeterminism that Piaget was striving to overcome" (Richardson, 1998, p. 168).

THE LACK OF A SATISFACTORY EXPLANATION OF THE MECHANISM OF CHILD DEVELOPMENT AS THE MAJOR SHORTCOMING OF NATIVISM, BEHAVIORISM, AND CONSTRUCTIVISM

I suggest that there are two major reasons for the lack of a satisfactory explanation of the mechanism of child development in nativism, behaviorism, and constructivism. The first is that these approaches are built around inadequate understanding of the determinants of child development. Indeed, despite substantial differences between the discussed approaches, they have an important point in common: Their founders and advocates do not see a *principal* difference between the development of animals and humans. To be sure, they are far from claiming that the outcomes and accomplishments of child development are

comparable to those of animal development. The determinants of child development as they describe them, however, can easily be applied to the explanations of animal development. In nativism, animal development would be attributed to genetically predetermined maturation, in behaviorism to environmental influences, and in constructivism to animals' activity aimed at the exploration of the external world. If we assume (as is elaborated in this book) that the determinants of development are principally different in animals and humans, this may explain to a large extent the failure of nativists, behaviorists, and constructivists to give a satisfactory answer to the question of the mechanism of child development.

The second suggested reason for the failure of these approaches to give a satisfactory explanation of the mechanism of child development is that the proposed theories address, as a rule, just one of the aspects of such development without considering the development of the whole child. For example, psychoanalytic theories (Freud, 1954; Erikson, 1963) address the development of children's personality, whereas Piaget (1936/1952, 1955, 1923/1959) and neo-Piagetian theorists (Case, 1985; Karmiloff-Smith, 1993) emphasize children's cognitive development. Several attempts have been made to "expand" existing theories of child development to explain certain aspects of child development other than those addressed in these theories. Kohlberg (1984), for example, used Piaget's theory of cognitive development as the foundation for his model of moral development in children. Similarly, Clayton and Birren (1980) used Erikson's (1963, 1968) theory of personality to explain certain aspects of cognitive development. These "expanded" developmental models, however, have not resulted in a holistic view of child development because they do not describe interrelationships of different aspects of child development. Rather, a "secondary" aspect of development is derived in these models from the expansion of the "central" developmental aspect.

The Neo-Vygotskian Approach to Child Development as an Alternative to the Nativist, Behaviorist, and Constructivist Approaches

The goal of this book is to introduce to English-speaking readers the neo-Vygotskian approach to child development, which was founded by Vygotsky and elaborated by his Russian followers.[1] I see two major differences between this approach and the approaches discussed earlier in this Introduction. The first pertains to an innovative view of Vygotsky and his followers on the determinant of child development. As I discussed, nativists, behaviorists, and constructivists do not see a principal difference between the determinants of animal and human development. In contrast, Vygotsky and his followers argue that these determinants are principally different because of the dominant role of the social environment in human development. This statement needs a more detailed discussion to avoid possible misunderstanding.

To be sure, none of the prominent scholars whose theories I discussed would disregard the role of social environment in child development. Nevertheless, although nativists, behaviorists, and constructivists "implicitly or explicitly suggest that the environment side of the equation can be partitioned into culture or social factors versus the physical environment, these distinctions are not well developed in their writings" (Cole, 1992, p. 735). In fact, they consider social

[1] Russian followers of Vygotsky were not the only ones who elaborated his ideas in their research and writings. In particular, a number of American scholars (Berk, Cole, Rogoff, Valsiner, and Wertsch, to name just a few) contributed much to further elaboration of some of Vygotsky's notions. It has been Russian neo-Vygotskians, however, who have elaborated Vygotsky's contentions into a theory that describes and explains the stage-by-stage development from birth through adolescence of children in industrialized societies. Therefore, the definition of this theory as *the* neo-Vygotskian approach to child development, from my point of view, is legitimate.

phenomena and physical phenomena to be two components of environment, which are more or less equally important for children's development and which facilitate their development in similar ways. This statement will probably evoke objections from those Piagetians who would argue against Bruner's (1985) characterization of Piaget's approach as that in which "a lone child struggles single-handed to strike some equilibrium between assimilating the world to himself or himself to the world" (p. 25). Doise (1988), for example, emphasized Piaget's idea that cognitive conflict arising between peers in the course of their interaction results in disequilibrium, which turns on equilibration as the mechanism of development. From this perspective, Piaget does admit an important role of social interactions in cognitive development. The point is, however, that the Piagetian mechanism of equilibration in the case of peer interaction is not any different from the equilibration in which the child gets involved when dealing with a new physical object. In other words, in Piaget's developmental model, interactions with peers contribute to the child's state of disequilibrium, but not to the child's construction of a new, more advanced mental schema. Thus, to reach a new state of equilibrium, the Piagetian child does struggle, using Bruner's words, as "a lone" and "single-handed" child.

According to Vygotsky and his Russian followers, social environment is not just a context in which children develop and to which they struggle to adapt. Rather than that, adults, as representatives of children's social environment, supply them with so-called psychological tools, which, being acquired and internalized, come to mediate children's mental processes. From this perspective, human mental processes are not independently "constructed" by children (as constructivists would say), nor do they "unfold" as a result of children's maturation (as nativists would hold), nor are they inculcated into children by adults (as behaviorists would hold). Rather than that, the development