

and tools of the culture. Vygotsky (1978) puts it this way:

Action in the imaginative sphere, in an imaginary situation, the creation of voluntary intentions, the formation of real-life plans and volitional motives—all appear in play and make it the highest level of preschool development. The child moves forward essentially through play activity. Only in this sense can play be considered a leading activity that determines the child's development.

For instance, children might build a structure with blocks; the teacher encourages them to draw the building and then map the entire block corner as a village or neighborhood. The adult serves an important role as an intellectual mediator, continually shifting to another set of symbols to give children a different way of looking at the same thing.

- *Individual differences.* Individual differences still matter. In a Vygotskian classroom, activities are planned to encourage both assisted and cooperative learning. Teachers observe for opportunities to increase an individual's ZPD by planning experiences for extending the upper limit. Classrooms work best with multiaged grouping, or at least with plenty of opportunity for older "buddies" to lead and younger ones to help.

Ecological Theory

The ecological theory is based on the premise that development is greatly influenced by forces outside the child. "No person can be understood in isolation, at just one moment in time. Urie Bronfenbrenner deserves credit for recognizing this fact" (Berger, 2011). Bronfenbrenner applied a general systems theory to human development in the 1970s, as the ecology movement began in the United States and Europe. Development is "a joint function of person and environment and human ecosystems include both physical factors—climate, space, home, and school—and the social environment—family, culture, and the larger society" (Bronfenbrenner, 2000).

Urie Bronfenbrenner

Born in the former Soviet Union, Bronfenbrenner emigrated to the United States at age 6, settling in New York. After studying psychology and music at Cornell University, he did graduate work in developmental psychology. He served as a clinical psychologist in the U.S. Army during World War II. When he returned to civilian life, he worked on the faculties of the University of Michigan and Cornell University, where he crafted the well-known ecological systems theory (Bronfenbrenner, 1979).

Ecological Systems Theory

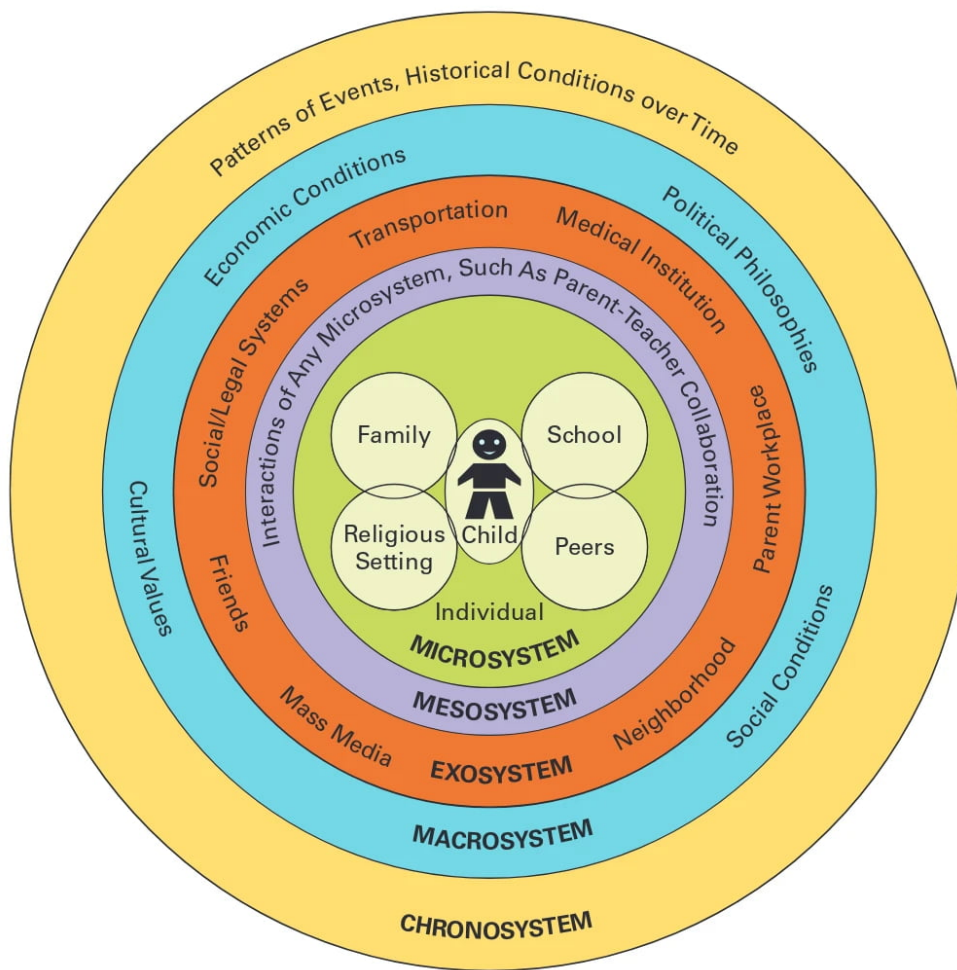
Bronfenbrenner's model describes four systems that influence human development, nested within each other like a circle of rings. With the child at the center, these four are the settings in which a child spends a significant period of time, the relationships of those settings, the societal structures, and then the larger contexts in which these systems operate (see Figure 4-10). The influences among these systems are critical to acknowledge: Just as in nature, activity in one part affects all the other parts. For example, a sudden income drop affects the family in many ways: The parents may be preoccupied and unavailable to the child, who may then need more attention from the caregivers at school, who in turn may ask for more resources from the community for the family.

Applying Ecological Theory to Work with Children

The usefulness of this theory is in its combining of many methods—multidisciplinary, multicultural, and multidirectional—to understand the developing child. The values of the community (the exosystem) can influence social conditions (the macrosystem) and, in turn, be influenced by the individual family or program (the microsystem). For example, think of an area where several families with young children move into the neighborhood. The community priorities shift to incorporate more family interests; parents get everyone involved in creating a neighborhood playground. In doing so, the city council lobbies the state legislature to adopt more "family-friendly" political policies. Many systems thus have a profound effect, both directly and indirectly, on children's development.

Imagine if the situation were reversed. Parents with very little voice in their community might have had a city council that was unresponsive to their needs. The playground would never have been built, the children would have little visibility in the neighborhood except to be troublesome, and the families would feel like outsiders in the community. Thus, the dynamic nature of many systems is described well in ecological theory.

The ecological theory underscores the need for working partnerships between early childhood programs, the families they serve, and the societal structures that children need to grow. The mesosystem, for instance, involves all the connections between the microsystems. Put the young child in the center (see Figure 4-10), and it includes all the communication processes between the child's family and teachers. Therefore, letters home, parent-teacher conferences, chats on arrival and departure, and phone calls all contribute to the child's mesosystem.



■ **FIGURE 4-10** Ecological theory shows the various systems that influence a child's development.

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In this regard, the ecological theory possibly best encompasses most of the questions about the nature of development posed at the beginning of the chapter.

Multiple Intelligences Theory

There is a century-old argument about whether intelligence is a single, broad ability (as measured by an IQ test) or a set of specific abilities (more than one intelligence). Gardner's theory promotes the idea of many, or multiple, intelligences.

Howard Gardner

Howard Gardner, a professor of human development at the Harvard Graduate School of Education, has been very influential in the ongoing debate about the nature of

intelligence. Born in Pennsylvania, he earned both bachelor and doctorate degrees at Harvard University and was fortunate to have Erikson as a tutor. Influenced by the works of Piaget and working with Jerome Bruner, Gardner became part of Harvard's Project Zero, a research center for education, where he wrote several seminal books on this theory (Gardner, 1983, 1993, 2000). He currently teaches classes at Harvard in education and at Boston University in neurology.

Theory of Multiple Intelligences

The theory of **multiple intelligences** asserts that there is strong evidence, both from brain-based research (BBR; see the discussion on this topic in this chapter) and from the study of genius, that there are at least nine basic different intelligences. Gardner's view of the mind claims that "human cognitive competence is better described in terms of sets of abilities, talents, or mental skills, which we call

How Are You Smart?

Area

Musical Intelligence



Definition

The capacity to think in music, to be able to hear patterns, recognize them, and then remember them.

Example

Gardner cites the importance of music in cultures worldwide, as well as its role in Stone Age societies, as evidence of this.

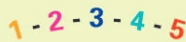
Bodily-Kinesthetic Intelligence



The capacity to use part or all of your body to solve a problem or make something.

We can see this in a person's ability in sports (to play a game), in dance (to express a feeling, music or rhythm), in acting, or in making a product.

Logical-Mathematical Intelligence



The capacity to think in a logical, often linear, pattern and to understand the principles of a system; most common intelligence tested with standard IQ tests.

Problem solving is often remarkably rapid (as in gifted children), and this thinking is often nonverbal (the familiar "Aha!" phenomenon).

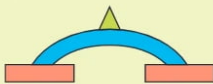
Linguistic Intelligence



The capacity to use language to express thoughts, ideas, and feelings and the ability to understand other people and their words.

The gift of language is universal; spoken language is constant across cultures, and the development of graphic language is one of the hallmarks of human activity.

Spatial Intelligence



The capacity to represent the world internally in spatial terms, as in problem navigation, in the use of maps, and in reliance on drawings to build something.

Playing games such as chess and all the visual arts—painting, sculpting, drawing—use spatial intelligence, as do sciences such as anatomy, architecture, and engineering.

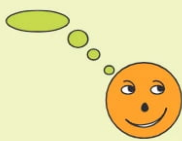
Interpersonal Intelligence



The capacity to understand other people and focus on contrasts in mood, temperament, motivations, and intentions.

Master players in school notice how others are playing before entering; some children seem to be born leaders; teachers, therapists, religious or political leaders, and many parents seem to have the capacity to notice distinctions among others.

Intrapersonal Intelligence



The capacity to understand yourself, knowing who you are, how you react, and the internal aspects of one's self.

Often having special access to their own feelings, they draw on a range of emotions as a means of understanding and guiding their own behavior. Children with an innate sense of what they can and cannot do and often know when they need help.

Naturalist Intelligence



The capacity to discriminate among living things (plants, animals), as well as a sensitivity to other features of the natural world (clouds, rock configurations).

This intelligence is valuable for hunters, gatherers, and farmers, and it is also important to botanists and chefs.

Existential Intelligence



The ability to contemplate questions beyond sensory input, such as considering the infinite or unexplained phenomena.

Individuals who are drawn to issues of life and death and questions of morality, and ponder the meaning of existence and other matters of the spirit, such as clergy, shamans, and spiritual leaders.

■ FIGURE 4-11 Gardner's multiple intelligences theory describes a new way of looking at intelligence.

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