Table 3-2	General Versus Complex Systems	
General Systems (Structural)	**Complex Systems (Pragmatic)**	
Structured: interactions among variables are defined and static	Pragmatic: interactions among parts of the system are dynamic and transactional	
Hierarchical: organization of variables is based on top-down linear sequences	Self-organizing: variables form patterns based upon specific intentions and situations	
Objective realities: system parts and interrelationships are defined by external observations of therapist or researcher	Subjective realities: system changes with each individual participant's perceptions and interpretations of components	
Interactional: concepts define system's organizational structure, and these interact in predictable ways	Transactional: parts of the system influence one another during interactions, enabling adaptation and self-correction along the way	
Linear: in the human body, atoms make up molecules, which make up cells, which together form organs; our solar system comprises planets, moons, and stars moving in predictable trajectories.	Nonlinear: when encountering problems, parts of a system may become chaotic and disorganized until a more adaptive pattern of multiple cooperating components emerges (Lazzarini, 2016, p. 189)	
Predictable: small changes to the system produce inconsequential outcomes; previously established causes will produce similar effects	Unpredictable: small changes in initial conditions can have disproportionally dramatic effects to outcomes	

feedback from a client's environment that have led to his or her occupational performance. From a systems perspective, an occupational therapy practitioner would take the time to evaluate the client's habits, routines, and role behaviors by observing the whole process rather than breaking it down into separate isolated parts. There is not one thing that has created the presenting problem for a given client, but rather a series of forces that have contributed to the client's present state of being. Feedback has both positive and negative influences on a person's behavior. Therapeutic change is a continuous process and not an event that happens at one point in time, such as one session or one therapy group. The client's problem will not be truly understood if one employs linear reasoning as an attempt to fit events and behaviors into the equation $A + B = C$ (cause-and-effect thinking). Client behaviors are viewed as a complex outcome of interactive variables that change over time.

SOCIAL COGNITIVE THEORY

Social cognitive theory is a good example of combining the micro and macro dimensions of human behavior. Some of the long-held beliefs about the origins of social behaviors, such as Bandura's social learning theory (2001), have now been validated through neurological studies of the human brain. Bandura acknowledges the "co-evolution of biological and social development," uncovering neurological explanations for human learning and behavior while retaining a holistic perspective of human transactions with others as they shape and manage the everyday world around them (2001, p. 18).

Some lively interdisciplinary debate continues involving the role of *human agency*, defined as the amount of volitional control people exert over their own thoughts, feelings, and behaviors. Biological researchers argue that behaviors originate in molecular brain structures, while psychologists contend that outward experiences shape and set ones brain structures in motion. Social cognition research attempts to explain some of the complex transactions between internal (biological and psychological) and external influences (social), with both nature and nurture playing a part but neither having control over the other. This is the nonlinear thinking that helps us to understand why people often act and react in unpredictable ways.

Bandura's View of Human Agency

Bandura (2001) defines *human agency* as the capacity to influence self and others (p. 18). In his view, agency goes beyond self-determination to also include *proxy agency*, in which one person advocates or acts on behalf of another, and *collective agency*, in which people act together to influence the destiny of the entire group. In understanding this theory, it is helpful to examine the four core features of human agency: intentionality, forethought, self-reactivity, and self-reflection. We add Bandura's concept of self-efficacy because of its profound effect upon the attainment of goals and motivational impact toward self-actualization.

Intentionality

An intention is an internal representation of a future course of action. This is different from an expectation or prediction, which is outwardly motivated, either by oth-