Chapter 6
The Development of Self-Determination During Childhood

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Abstract Although self-determination is associated with adolescent development, the antecedents and precursors of its development lie within the development of foundational skills during the early childhood years. Adolescents become self-determined as they learn, refine, and practice knowledge, skills, beliefs and actions that enable them to respond to contextual and environmental challenges (opportunities, threats) that energize basic psychological needs and resultant autonomous motivation, stimulating a causal action sequence in which volitional and agentic actions are mediated by action-control beliefs, resulting in experiences of causal agency. This chapter explores the early development of foundational skills that enable children to make choices and express preferences, solve problems, engage in making decisions, set and attain goals, self-manage and self-regulate action, self-advocate, and acquire self-awareness and self-knowledge.

Although self-determination is associated with adolescent development, the antecedents and precursors of its development lie within the development of foundational skills during the early childhood years (Doll et al. 1996; Palmer 2010; Wehmeyer and Palmer 2000; Wehmeyer et al. 1997). Adolescents become self-determined—that is, having the dispositional characteristic of self-determination—as they learn, refine, and practice knowledge, skills, beliefs and actions that enable them to respond to contextual and environmental challenges (opportunities, threats) that energize basic psychological needs and resultant autonomous motivation, stimulating a causal action sequence in which volitional and agentic actions are mediated by action-control beliefs, resulting in experiences of causal agency. The specific knowledge, skills, beliefs, and actions are identified as component elements within Causal Agency Theory (Table 6.1) and include learning to make choices and express preferences, solve problems, engage in making decisions, set and attain goals,

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Table 6.1 Component elements of self-determination under Causal Agency Theory

Essential characteristics	Component constructs	Component elements
Volitional action	Autonomy	**Causal capabilities**
	Self-initiation	Choice-making skills
		Decision-making skills
		Goal setting skills
		Problem solving skills
		Planning skills
Agentic action	Self-regulation	**Agentic capabilities**
	Self-direction	Self-management skills (self-monitoring, self-evaluation, etc.)
	Pathways thinking	Goal attainment skills
		Problem solving skills
		Self-advocacy skills
Action-control beliefs	Psychological empowerment	Self-awareness
	Self-realization	Self-knowledge
	Control expectancy	
	Agency beliefs	
	Causality beliefs	

self-manage and self-regulate action, self-advocate, and acquire self-awareness and self-knowledge.

The lives of young children are, necessarily, still mediated primarily by adults, who care for their physical, social, and psychological needs; nurture and support their growth, development, and education; and ensure their safety and protection. As Summers et al. (2014) noted, "since young children remain dependent upon others for caregiving and support, they are not developmentally ready to act in a self-determined manner, fundamentally due to a lack of maturity, experience, and overall capabilities" (p. 175). However, although young children are not causal agents in their own lives, the acquisition of skills, knowledge, and abilities and the experiences that lead to self-determination in adolescence have their developmental roots in early childhood development. As such, we refer to *building the foundations for self-determination* in early and middle childhood when discussing the development of these component elements (Palmer et al. 2012).

This chapter provides a broad look at the development of foundational knowledge, skills, and beliefs leading to the development, use, and refinement of causal and agentic capabilities (which enable one to engage in volitional and agentic action) and action-control beliefs that, in turn, enable experiences of causal agency, repeated experiences of which lead to enhanced self-determination. The actual developmental aspects of most of these foundational skills are discussed in subsequent chapters, so this chapter provides a broad look at these foundational skills, or component elements, as identified in Table 6.1.

Environment and the Development of Self-Determination

Human agentic theories "share the meta-theoretical view that organismic aspirations drive human behaviors" (Little et al. 2006, p. 61), and that people are active contributors to their behavior. Such organismic approaches "acknowledge the complex interplay between a person and their environment" (Shogren 2013a, p. 496). Further, "contexts reflect specific constellations of features at both the molar and micro levels that both constrain and afford behavior" (Little et al. 2002, p. 390) and an individual "both influences and is influenced by the contexts in which she or he acts and develops" (p. 390). For example, the very nature of self-regulation, discussed in detail in Chap. 17, involves one's interaction with the 'molar and micro levels' of the environment. An agentic person engages in self-regulated and goal-directed action, they "plot and navigate a chosen course through the uncertainties and challenges of the social and ecological environments… continuously interpreting and evaluating actions and their consequences" (Little et al. 2002, p. 390). As noted in Chap. 2, in fact, causal action (which leads to the development of self-determination) is action in response to opportunities or threats in one's environment that provoke organisms to engage in volitional and causal action and employ action-control beliefs to act as a causal agent in one's life.

Abery and colleagues (Wehmeyer et al. 2003) have written extensively about ecological processes at work in issues pertaining to self-determination, noting that "viewed from an ecological perspective, the exercise of self-determination can be conceived as a by-product of an ongoing interaction, across the life span, between individuals and the environments in which they function" (p. 65). Abery and Stancliffe (2003) used Bronfenbrenner's (1979) ecological systems theory to identify the wide array of environmental influences—at the microsystem, mesosystem, exosystem and macrosystem levels—that influence the expression and development of self-determination.

According to Causal Agency Theory, opportunities or threats that require causal action can be generated by the child him or herself (e.g., created opportunities), or emerge from any level of the ecological system (found opportunities, threats). As Fig. 6.1 illustrates, a myriad of environmental factors alone and in combination and at various levels of the ecosystems require causal action. Changes in family status or school variables, either at the district level or the teacher level, may directly impact the development of a child's self-determination, as can interactions among systems at the mesosystem level (for example, family-school conflict), changes or issues at the exosystem level (school board policy or decisions, access to health care) or at the macrosystem level (new legal protections).

Little et al. (2006) note that action-control beliefs differentiate over a child's elementary years, and become *domain* as well as *means* specific. Children begin to understand that different domains of functioning "have different challenges and require different skills" (Little et al. 2006, p. 397). Further, children develop means-specific beliefs as they begin to differentiate between outcomes associated with luck versus effort or ability or, importantly to the development of causal agency, between

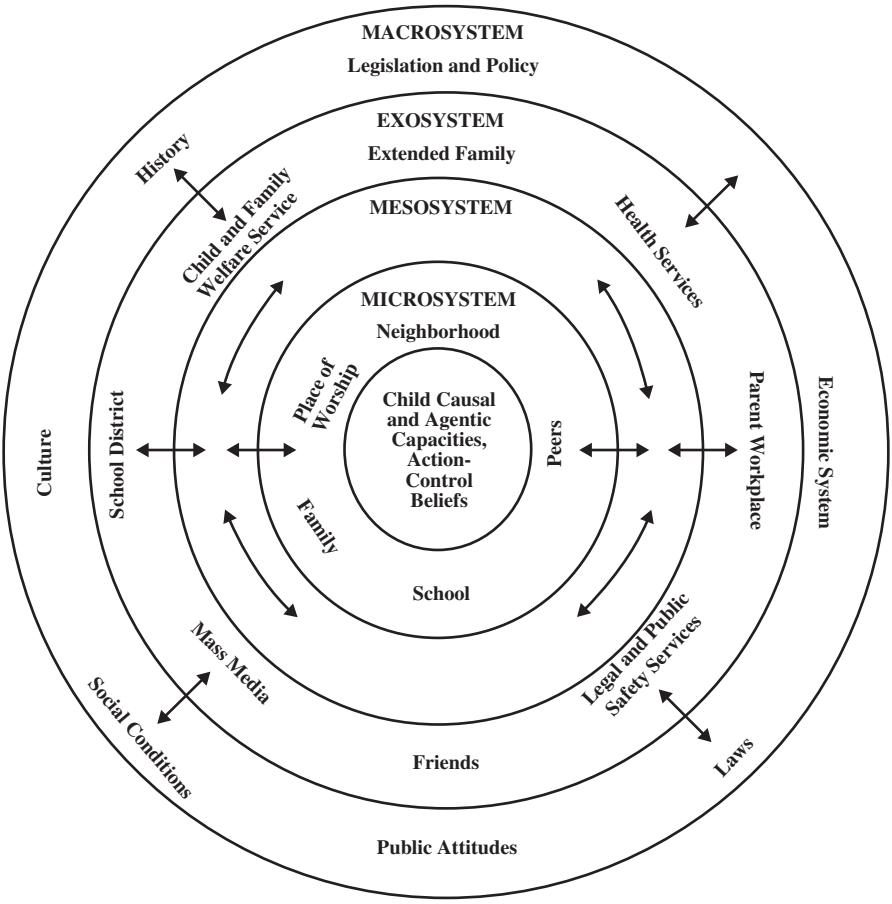

Fig. 6.1 Ecologocial system impacting child causal action and self-determination based upon Bronfenbrenner

outcomes associate with others or powerful others and self. Such differentiation occurs as a function of caregiver-child interactions, the exercise of autonomy and competence, opportunities associated with an expanding social context (Little et al. 2006).

Deci and Ryan (2012) noted that "contexts vary in the degree to which they support the individuals' autonomy versus control their behaviors, thoughts, and feelings" (p. 86). As has been noted in reference to Bronfenbrenner's ecological system theory, SDT posits that "both proximal interpersonal contexts (e.g., the behavior of people's parents or managers) and distal contexts (e.g., the cultural norms and economic structures of their society) can variously support or undermine intrinsic motivation…" (p. 86). Most of the research within SDT has addressed the former (proximal interpersonal contexts), though Deci and Ryan observe that, even then, distal contexts influence those proximal contexts (e.g., teachers work within the context of school districts).

Foundational Skills to the Development of Self-Determination

So, acknowledging the critical role in environment and context in the experience of causal action and the development of self-determination, we now turn to look at the development of specific skills—skills related to causal and agentic capacity, or the capabilities to initiate, regulate, and sustain causal action—across childhood, and we begin by noting that broad developmental tasks of children often involve component elements of self-determination. For example, in infancy to preschool, developmental tasks include attachment to caregiver (Ainsworth and Bell 1974), language development (Dale 1976), differentiation of self from the environment (Damon 1983), and self-control and compliance (Macoby and Martin 1983). For middle childhood, tasks are school adjustment, academic achievement, getting along with peers, and rule-governed conduct (Masten and Coatsworth 1998). However, although these broad developmental milestones are important to the development of skills leading to later self-determination, there are specific skills that warrant particular attention that enable children to exercise causal and agentic capabilities.

Choice-Making Skills

Chapter 15 discusses the development of Preference and Choice Expression, so a detailed discussion on developmental issues will be held until that chapter. Choice making is fundamental to dignity, responsibility, and opportunity and is a basic human right that is important for the development of self-determination (Shogren 2013b). Volition is, of course, the expression of conscious choice, and the expression of preferences is central to autonomous motivation, causal action, and self-determination. Essentially, there are two components to the act of making a choice. First, an individual identifies a preference and then, the act of choosing completes this skill (Reid et al. 2001). Thus, someone engaged in choice-making must have at least two options from which to choose, then determine a preference for one of the options, and finally, indicate their selection. Wehmeyer et al. (2007), suggest a person should be familiar with the options, be able to choose without coercion, and clearly be able to express a preference in some modality, not necessarily vocally or through pointing (Wehmeyer 2003).

Choice supports autonomy, increases motivation to learn, and may prevent problem behaviors (Bambara and Kroger 2005). Deci and Ryan (1985) observed that "[w]hen autonomy-oriented, people use available information to make choices and to regulate themselves in pursuit of self-selected goals" (p. 154). Young children engage in rudimentary choice-making very early in life. Infants and young children often choose through eye gaze or pointing at one option instead of another (Stern 1985). Between 15 and 18 months, young children can choose two familiar objects upon request; by 2-years-of age, a child can choose one object from a group of five upon request (Rossetti 1990). Strategies for preference and choice making are often

used as language acquisition techniques with young children or children who experience language delays (McCormick et al. 2003). Being able to point to a preferred object or activity precedes making a verbal choice and encourages engagement with the function of language. Practitioners can decide whether to use exact objects, visual representations of objects, or verbal cues to represent an array of choices, depending on the child's understanding of abstract representation.

Adults can ensure choices are valid and reasonable, that there is enough information to make wise choices, and immediately and consistently respond to a child's choices. Older children and youth must connect choice making and consequences of a choice, to consider the outcomes of choice and make responsible choices with regard to what will occur next.

Problem-Solving Skills

Problem-solving skills are those skills which enable a person to identify one or more solutions to a problem. Chapter 19 covers the development of problem solving in greater detail. Problem solving is "what children do when they have a goal in mind but are encountering an obstacle to reaching the goal and do not know how to achieve it" (Landy 2002. p. 474). The challenge for problem solvers, according to Landy, is determining causation, believing in a good outcome, and choosing a solution related to the problem. First one must understand what the problem is and then be able to generate at least one solution to the problem. With more possible solutions, decision-making comes into play, so the problem solver must then assess the value of each of the possible solutions, choose a solution, implement the solution, and decide whether or not the problem is solved.

Social problem solving for young children often involves a need to work through problems in social interaction such as sharing a valued possession with others, getting along with peers, or resolving disagreement between children (Ramani and Brownell 2014). Addressing social linkages, children who are judged to be securely attached appear to be better problem solvers, concentrate better, plan, and use strategies in efficient ways (Landy 2002). Cognitive problem solving emphasizes critical thinking skills related to outcomes more academic in nature, such as solving a problem about how to accomplish school work. But, these strategies for social and cognitive problem solving overlap and are less unique, beyond the emphasis of purpose for social or cognitive purposes (Wehmeyer et al. 2007).

The child development literature includes a number of theories on children's mental processing and problem solving. Perspective taking evolves at around 4 years of age when children begin to understand that the thoughts, motivations, and desires of others are different from their own, which helps the ability to consider all perspectives regarding problem solving (Selman 1980). Others see executive function (developing between 12 months and 5 years of age) supporting problem solving. Executive function is a general term with "widespread influences on the

organization of behavior and behavioral control" (Buss and Spencer 2014, p. 1). Planning, forming mental representations, and the ability to attend to relevant stimuli are part of executive functioning that support problem solving (Best and Miller 2010; Garon et al. 2008). Executive functioning can be understood in age-related increases in complexity of rules children can formulate and use when solving problems, and is closely associated with development of self-regulation (Zelazo et al. 2003).

Another dominant cognitive theory, that of Piaget (1963), described the adaptation to invariant schemas or plans children make to understand their world. But some authors believe Piagetian theory may have constrained our understanding of problem solving (Sigler 1996; Willatts 1990). Although Piagetian theory suggests children begin to problem solve around the age of 4 years, Sigler (1996) looked at within-child variability to conceptualize changes in children's strategies. Sigler (1996) views thinking processes within an overlapping waves metaphor, which purports children have access to a number of strategies for problem solving and can choose adaptively among the strategies depending on the situation and application. Instead of a stair-step, normative description, Siegler theorizes that children use multiple ways of thinking about problems with continuously changing frequency, rather than simple replacement of old strategies to become more efficient strategy users. Farrington-Flint et al. (2009) investigated the variability of children's problem solving in math and reading in an applied study of 50 children between ages 5 and 7 years. In general, children moved over time from less sophisticated procedural strategies for problem solving to much more efficient methods, and those who successfully used strategies in math also used more advanced strategies in reading tasks.

Concentrating on more than one idea, manipulating solutions, making decisions about what is important or not, and evaluating solutions makes problem solving a task for children often activated and achieved through scaffolding by adults. Scaffolding provides support to operate within a zone of proximal development - where one is now and somewhat beyond, to learn and grow in abilities (Vygotsky 1962).

Young children use social problem solving on shared goals within cooperative play in preschool settings (Ramani and Brownell 2014). Through social play, children can begin to practice problem solving in a controlled context within everyday routines. Shared goals require the mutual understanding of the task, the final product or goal outcomes, and the process needed to fulfill the outcome – problem solving (Tomasello 2009). Although children beginning at 18 months occasionally solved a cooperative task problem (Brownell and Carriger 1990, 1991), by 24-months-of age, this activity was more consistent. In a series of studies, children at ages 2 and 3 years were able to attend to the task, monitor the actions of their cooperative partner, and accommodate their actions together to solve the problem (Brownell and Carriger 1991). Although problem solving and goal setting are interdependent, we address each as a single component.

Decision-Making Skills

As noted, problem-solving skills are those skills which enable a person to identify one or more solutions to a problem. Alternatively, decision-making skills refer to a broader set of skills that incorporate problem-solving and choice-making skills in a process to select one of several already identified solutions. Decision making involves considering alternate courses of action, thinking about the consequences of each action, whether each consequence is possible, choosing the best alternative, and taking action on the choice/decision that is made (Furby and Beyth Marom 1992). Although seemingly a simple action, decision making is a "complex mental function influenced by the multiple interactive processes of cognition, motivation, and emotion" (Hickson and Khemka 2013, p.211).

Young children can begin to make decisions earlier in life with support, but more independent decision making improves with the development of perspective taking. Selman (1980) conducted a series of cross-sectional interview studies to identify stages within the ongoing process of children beginning to understand the point of view of another person over time. At 3 years extending to 6 years of age, children take more egocentric, undifferentiated roles, but notice people are different from them and have different thoughts and feelings. Between 6 and 8 years of age, children can detect that two different people have different perspectives or opinions on things that can lead decisions in two different directions in a more unilateral style. Then between 8 and 10 years, children grasp a somewhat more reciprocal, self-reflective type of role taking in understanding other people can evaluate their own actions. By 10–12 years, according to Selman, children use mutual role taking and often take two points of view simultaneously as a perspective in the decision making process. Finally, between 12 and 15 years of age, youth can assume a more interdependent role within perspective taking by viewing decisions from the perspective of others as well as their own views.

Decision making is an aspect of adaptive social functioning – reflecting on past events, considering the present environment, and making decisions and future predictions. Garon and Moore (2004) studied the development of decision making in 69 children ages three, four, and six using a child-adapted version of an adult gaming task. As expected, the 6-year-olds were better able to understand the task and performed significantly better than the younger children. Later in childhood, children and then adolescents showed even higher performance levels on the decision making task (Blair et al. 2001). Although young children often use some of the same decision rules as adults do, children in elementary grades can begin to use statistical information to make social judgments. Craig and Myers (1963) found similar results with two-choice, sequential decision making with children in Kindergarten not implementing consistent, logical patterns of selection, but fourth- and eighth- graders making decisions similar to those of adults, identifying patterns and repeating these selections in relevant conditions. This ability to use decision rules increases with age in parallel with biases in decision making such as stereotypical thinking or social beliefs about groups of people (Jacobs and Klacqynski 2002). But there is

little research to document relationships among age, emotions, and decision making processes.

Individuals use decision making skills to initiate volitional action in response to environmental demands and to maintain agentic action. However, as with problem solving, there is no single developmental path regarding decision making. Although we realize problem solving, use of memory strategies, and other cognitive skills increase with age, even young children are capable of making decisions about known activities and options, especially with adult guidance (Jacobs and Klacqynski 2002). The more children know about a particular instance or set of options, the better their ability to make decisions (Sigler 1996). Decision making is part of problem solving, described subsequently, wherein a problem is identified and various solutions are posed with a decision about a course of action needed to complete the problem solving process (Agran and Wehmeyer 2005).

Goal Setting and Attainment

A goal is a plan, a target for what one wants to accomplish: goals can be simple or complex and inherently encourage individuals to be more involved in focused actions (Doll and Wehmeyer 2005). Steps in formal goal setting begin with goal identification, looking at options, choosing and acting, and evaluating to either finalize completion or revise goals. Chapter 18 provides a detailed description of goal setting and attainment. Obviously, goal-related actions are at the heart of causal action, causal agency, and self-determination. Bullock and Lutkenhaus (1988) stated that "much of human activity is volitional: one acts in order to achieve a particular outcome or goal" (p. 664). Bullock and Lutkenhaus described the development of volitional action over time in the context of outcome completion. Even though infants display intentional action, a child is more likely to attain outcomes when they develop skills to regulate behavior for goal attainment. Infants begin to recognize intentional relations between actors and goals as precursors to intentional actions of goal setting (Gerson 2014). For instance, at 6 months of age, habituation studies show that infants are able to grasp the relation between actor and object (Gerson and Woodward 2013) and at 7 months, infants imitate other's behavior by reaching for the same toy as experimenters (Hamlin et al. 2008). By 11 months, infants are able to anticipate the expected goal prior to any action, and even anticipate goals with multistep sequences (Cannon and Woodward 2012). These underlying abilities for goal direction precede later volitional action to accomplish formalized goals. Although young children can detect goal-directed activity, depending upon their familiarity with the context, Trabasso et al. (1992) found at age four, children are able to identify a goal in a series of pictured events, and at age five, can link goals and actions.

For young children, formal goals are generally set by adults, with minimal child involvement. However, a series of studies involving goal-directed planning and shopping for a specific event at a pretend grocery store conducted by Hudson and

Fivush (1991) showed children's planning becoming more complex and flexible with age. For example, 3-year-olds could carry out simple planning and execution of a plan or goal with support. Four-year-olds showed transitional abilities, which become more solid at 5-years-of age, when children show flexible planning and execution of more complex ideas. Children can be involved in some aspect of goal completion, including self-monitoring of goal attainment behaviors (King-Sears and Carpenter 2005). But, with age, it is important to involve children in the act of setting and attaining self-selected goals, to encourage the development of volitional action (Wehmeyer and Palmer 2000).

Domain and Means Specific Beliefs

Means-end or causal beliefs "represent behavior-event contingencies internalized partly through repeated person/environment interactions" (Geldhof and Little 2011, p. 49) and contribute to causal action (Little and Lopez 1996). Means-end beliefs can be classified into three categories: a) interagentic mean-end beliefs for personal effort and personal attributes (ability), b) beliefs about powerful others and luck, and c) unknown or unknowable causes (Skinner 1990). Younger children tend to overestimate their role as a causal agent, but between ages 7 and 10 years, there is a reduction in this thought pattern, and belief in causal agency diminishes. Then, between 10 and 12 years of age, children are able to increase their differentiation of means-end beliefs. Throughout this process the individual is becoming more of becoming an active agent in their own development (Hawley and Little 2002).

An added consideration for development of means-end beliefs is whether one can distinguish between effort and ability. Nicholls (1978) identified four levels of reasoning about ability and effort: at first, efforts and outcome are not distinguished as cause and effect (5–9 years), between 7 and 9 years children attribute outcome solely to effort, between 10 and 11 years, an inconsistent ability/effort connect is present, until by age 12 years ability is correctly inferred from effort and outcome. Folmer et al. (2008) confirmed these levels in a study of 166 children, ages five to fifteen. Children and youth who believed "effort and ability are important causes of actual school performance also performed better than those who believed less in the causal relevance of these dimensions" (Little et al. 1999, p. 816). In other words, believing in a positive outcome of effort and ability was beneficial.

Beyond volitional action, one must enact agentic action, which involves the ability to self-regulate, keep goals in mind to work toward completion, and monitor progress toward goal attainment. By the end of the second year of life, children firmly self-recognize and become more involved in problem-solving tasks that are part of goal setting and attainment. In one study, intentional tasks of block building and clean-up were presented to 82 children in the following age groupings: 15–18 months, 19–22 months, 23–28 months, and 29–35 months (Bullock and Lutkenhaus 1988). Each task had a standard, with examples and specific directions. Results showed the frequency of outcome-oriented behavior increased with age, with the

children 23 through 35 months showing outcome-directed behavior in all tasks. These children were able to understand the standard for each task and accomplish the tasks in an acceptable manner, often by making adjustments, as needed (Bullock & Lutkenhaus). Children increasingly learn to understand how to self-regulate and self-correct during tasks to bring about goal attainment, generating multiple pathways to achieve their goal, using agentic action.

Self-Regulation

Self-regulation skills are critical to the development of self-determination, as discussed in greater detail in Chap. 17. Self-regulation is a response system to help individuals regulate coping responses to aspects within their environment, making decisions about how to act, to act, to evaluate outcomes of their action, and to revise the plan, if needed, according to Whitman (1990). Karoly (1993) viewed self-regulation as an internal process directing goal-guided activities over time and across contexts, describing agentic action. These definitions are examples of many that exist, depending on the theory posed or the aspects of thought or behavior considered. Self-regulation and mechanisms related to this construct are integrated into broader theories of development (Denissen et al. 2013) and have been mentioned already in regard to problem solving and goal setting. In infancy, self-regulation may be associated with eating, sleeping, and adjusting to the environment. But as a child grows and develops, self-regulation becomes more complex, involving "patterns of physical, psychological, educational, and social need" (Mithaug 2003, p. 137).

Early self-regulation is influenced by physical environments and caregiver interactions with infants, beyond the basic psychological makeup of an individual. Adults can learn to read each child's signals and provide consistent caregiving to provide reasonable order, predictable routines, and periods of quiet and activity. Bronson (2000) stated that "from the earliest months of life, the environment can support a child's intrinsic capacity to be rewarded by prediction, effectance, and control" (p.180). Shonkoff and Phillips, (Shonkoff and Phillips 2000) typify the development of self-regulation as "a cornerstone of early childhood development that cuts across all domains of behavior" (p.3). Thus, self-regulation is viewed broadly, encompassing complex behaviors and emotional control in a number of activities under regulatory control of an organism. Although there are a number of individual differences within developing children, as children become more autonomous, they need to become more self-regulating to be able to function in personal and social settings (Bronson 2000; Shonkoff and Phillips 2000). Being self-regulated earlier in life predicts later self-regulated behavior (Mischel et al. 1989; Moffitt et al. 2011).

The capacity to develop self-regulation is present at birth (Barkley 1997; Kopp 1982) and by 3 months of age, many infants can calm or self-quiet for brief periods, sleep regularly, have a predictable eating schedule, quiet when picked up, and have

cycles of other predictable states (Landy 2002). As infants become children, self-regulation may involve different behaviors or previous behaviors may have different functions (i.e. crying in infancy is a form of signaling to caregivers, but later it is perceived as a sign of social immaturity) (Shonkoff and Phillips 2000). Cultural implications and expectations of families, individually or driven by ethnic affiliation, interfere with a clear and concise picture of the development of self-regulation (Rogoff 2003), but overall the business of infancy is about sleeping, eating, and growing with the help of adult caregivers (Landy 2002).

Self-regulation is often associated with behavior regulation as a type of self-control or "ability to contain and manage his own behavior without relying on caregivers to guide him", (Landy 2002, p. 369). In this manner, self-regulation is paired with the child internalizing expectations for behavior, including expectations for what is acceptable and not acceptable in different contexts. Indeed, self-regulation is an important topic during early childhood and school readiness for formal education beginning at age 5 or 6 years of age (Shonkoff and Phillips 2000).

Regarding early school success, McClelland and Cameron (2011) define self-regulation as "the capacity of controlling or directing one's attention, thoughts, emotions, and actions", (p.136). The increasing demands for self-regulation challenge children, parents, and teachers when children begin to attend school. In this context, McClelland and Cameron suggest the multiple demands of school imply self-regulation has nuances related to executive function, including attentional or cognitive flexibility, voluntarily focusing and sustaining attention to task, working memory, and inhibitory control (Shonkoff and Phillips 2000).

During the school years, self-regulation is often applied to the context of learning. Zimmerman (2008) connects self-regulation to learning as "the self-directive processes and self-beliefs that enable learners to transform their mental abilities, such as verbal aptitude into an academic performance skill", (p.166). Within self-regulated learning, including activities of children in elementary grades and beyond, one must consider whether or not a learner displays personal initiative, perseverance, and adaptive skills as part of motivational feelings and beliefs and metacognitive strategies (Zimmerman and Schunk 2007).

Other researchers typify self-regulation within an action-control model (Skinner et al. 1988), or as bidirectional person-environment interactions leading individuals "to develop beliefs about actors, means, outcomes, and their interrelationships" (p. 47, Geldhof and Little 2011). The action-control model places the agentic self within goal setting and accomplishment that applies at later ages in childhood. This model of *selection, optimization*, and *compensation* (SOC; Baltes and Baltes 1990) describes a fully self-regulated person interacting with the environment, especially during adolescence and later. But first, one must grasp means-end beliefs, previously described within problem solving, to understand causality of actions. Within means-end beliefs, as discussed earlier in the chapter, one can develop a personal strategy specific to oneself in determining effective outcomes within goal setting developing action-control beliefs.

Conclusions

This chapter has provided a broad look at the development of skills that are foundational to the development of self-determination in adolescence. Table 6.2 provides a snapshot of the development of these component elements as described in this chapter.

Returning, though, to the discussion early in the chapter with regard to the role of environment in the development of self-determination, it is important to consider the progression described in Table 6.2 and in narrative in this chapter in the context of not only proximal, but also distal environmental and contextual factors. To assist in the development of self-regulation over the age span, Bronson (2000) stresses the importance of family environments for self-control and self-regulation, and this is obviously equally true for the development of self-determination. Effective child-rearing practices - having a set of expectations, challenges, a range of options, and support systems within the environment, and promoting children's individual perception of their own competence and abilities are critical. It is important for families (and other adults) to be emotionally supportive, responsive to children, be consistent in responses and expectations, encourage responsibility, and teach problem solving strategies to support growth to meet the needs of the culture. Problem solving is "enhanced by interactions with parents and caregivers that encourage a sense of competence, self-efficacy, and problem solving that show warmth, acceptance, responsiveness, and delight in achievement (Landy 2002, p. 485).

Table 6.2 Developmental progression of foundational skills for later self-determination

Early childhood (2–5 years)	Early elementary (6–8 years)	Late elementary (9–11 years)
Self-awareness and self-knowledge		
Have a sense of self as being separate from caregivers.	Accurately label the feelings of happy, sad, afraid, and angry.	Actively seek information about task performance in order to fine-tune approach.
Understand their own feeling states and recognize them in a pictured person.	Understand how different dispositional characteristics might be expressed in different situations	
Understand that people have characteristic features (dispositional characteristics).	Selected approaches to tasks reflect accurate understanding of personal competencies.	
Tend not to self-reflect on their own thinking.		

(continued)

Table 6.2 (continued)

Early childhood (2–5 years)	Early elementary (6–8 years)	Late elementary (9–11 years)
Domain and means specific beliefs		
Self-descriptions of abilities are strikingly inaccurate and capricious.	Self-estimates of ability become stable and global across tasks.	More adept at comparing performance to a peer group and less likely to inflate achievement.
Typically overestimate the quality of their performance relative to others.	Begin to understand that task abilities can be compared among children.	Use self-evaluations as the basis for appropriate decisions to request help.
Can accurately judge the quality of their work compared to models or templates.	Understand ability as a place on a peer continuum of task performance.	Distinguish between luck and effort and understand that games of chance cannot be improved with effort or ability.
Attribute success or failure to effort rather than ability or luck.	Believe that practice can improve their performance on games of chance.	
Choice-making, Problem-solving and decision-making skills		
Routinely express preferences, verbally or non-verbally.	Can decide what kind of instructional support is required.	Understand what is required to state a preference regarding medical treatment.
Can think of solutions to social problems similar to those of older children, although fewer pathways identified and less detailed.	Able to describe 50% more solutions to social problems than younger children.	Monitor problem solving and systematically modify their approach in the face of evidence that isn't working.
Language comes to replace nonverbal gestures as the primary mode of expressing preferences.	Can use language-based rules to mediate problem solving	Capable of identifying the risks and benefits of therapy.
Choices tend to reflect instantaneous whims.		
Goal setting and attainment skills		
Play reflects children's preconceptions about their future lives.	Set goals that get them to learn information.	Can set goals to increase skills and abilities, will set moderately difficult goals, take reasonable risks, and can cope with failure.
	With teacher praise for incremental increases, can gradually increase a personal work goal.	Differentiate between goals related to ability, effort, and performance.

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