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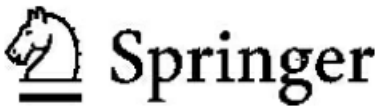
Development of Self-Determination Through the Life-Course



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Preface

The self-determination construct is one of the foundational constructs in the discipline of positive psychology. The millennial issue of American Psychologist , published in January of 2000, was dedicated to introducing the science of positive psychology and included articles on optimism, hope, creativity, and self-determination (Ryan and Deci 2000). In their landmark contribution, Ryan and Deci noted that the "fullest representation of humanity show people to be curious, vital, and self-motivated. At their best, they are agentic and inspired, striving to learn; extend themselves; master new skills; and apply their talents responsibly" (p. 68). The article's synthesis of how Self-Determination Theory (SDT) describes the impact of social contexts on self-motivation and the optimizing of a person's development, performance, and well-being firmly established the construct's importance to the new discipline of positive psychology. As SDT grew into an important motivational metatheory, another movement embraced the self-determination construct in configuring strength-based approaches. That movement was the disability rights movement, and research and theory development in that field examined the importance of self-determination to enable people with disabilities to achieve better quality lives. The applied disciplines of special education and rehabilitation, among others, developed interventions informed by theory and research on self-determination in motivation, including research on creating autonomy-supportive classrooms, but that provided interventions that were, in essence, autonomy supportive as well and intended to promote self-determination. This text provides a comprehensive examination of the development of self-determination in the context of two related theories of self-determination emerging from these two uses of the self-determination construct: SDT and (from the disability sphere) Causal Agency Theory. The intent is to provide a theoretical frame in which SDT and Causal Agency Theory are used to describe a lifespan approach to the development of self-determination. The text examines how organismic efforts to fulfill basic psychological needs to maintain autonomous motivation lead to causal action, which in turn leads to greater psychological need fulfillment, repeated experiences with causal action, and, ultimately, greater self-determination. The text is structured into parts with chapters that go into depth on themes and topics pertinent to motivation, causal action, and the development of self-determination. The first part (Overview of Self-Determination and Theories of Self-Determination) provides an overview of the self-determination construct itself (Chap. 1) and of human agentic theories (Chap. 2), within which both SDT and Causal Agency Theory situate the self-determination construct. Chapter 2 culminates with the description of a theoretical model of the development of self-determination (Fig. 2.1) that forms the basis for later chapters examining such development in childhood, adolescence, and adulthood. Chapter 3 provides a look at how the development of self-determination is situated in the context of overall adolescent development and other theories pertinent to adolescent development. Chapters 4 and 5 provide detail about the two major theories covered in the text, SDT needs to maintain autonomous motivation lead to causal action, which in turn leads to greater psychological need fulfillment, repeated experiences with causal action, and, ultimately, greater self-determination. The text is structured into parts with chapters that go into depth on themes and topics pertinent to motivation, causal action, and the development of self-determination. The first part (Overview of Self-Determination and Theories of Self-Determination) provides an overview of the self-determination construct itself (Chap. 1) and of human agentic theories (Chap. 2), within which both SDT and Causal Agency Theory situate the self-determination construct. Chapter 2 culminates with the description of a theoretical model of the development of self-determination (Fig. 2.1) that forms the basis for later chapters examining such development in

childhood, adolescence, and adulthood. Chapter 3 provides a look at how the development of self-determination is situated in the context of overall adolescent development and other theories pertinent to adolescent development. Chapters 4 and 5 provide detail about the two major theories covered in the text, SDT (Chap. 4) and Causal Agency Theory (Chap. 5). The second part (Developmental Origins and Life-Course Trajectory of Self-Determination) examines issues pertaining to the development of self-determination across the lifespan utilizing the theoretical frame described in Chap. 2 . Chapter 6 examines the development of self-determination during childhood, describing the development of foundational skills leading to later self-determination across childhood and, specifically, overviewing the 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. Chapter 7 examines developmental milestones in knowledge, skills, and beliefs that emerge during adolescence and lead to enhanced self-determination, including choice making, self-initiation and planning, problem solving, decision making, goal setting and attainment, and self-regulation. The chapter concludes with a brief overview of issues in adolescent development as it pertains to motivational aspects of self-determination. In Chap. 8 , attention is turned to the educational context to examine autonomy-supportive practices that lead to the development of autonomous motivation and greater self-determination. Chapter 9 examines what is known about self-determination in the disability context, while Chaps. 10 and 11 focus on self-determination in adulthood and aging life stages. This part is concluded with a chapter examining issues of culture and self-determination. Chapters in the third part (Self-Determination Theory and Healthy Psychological and Physical Development) explore the role of self-determination in healthy psychological development, with chapters focused on the role of parenting in promoting children's psychological health (Chap. 13) and on identity development in adolescence (Chap. 14). Chapters in the final three parts address development of causal action, beginning with the fourth part (The Development of Volitional Action), which includes chapters that focus on the development of preference and choice expression (Chap. 15) and self-initiation and planning (Chap. 16). The fifth part (The Development of Agentic Action) includes chapters on the development of self-regulation (Chap. 17), goal setting and attainment (Chap. 18), problem solving (Chap. 19), decision making (Chap. 20), and pathways and agentic thinking in the development of hope (Chap. 21). The final part (Action-Control Beliefs) has a single chapter (Chap. 22) focused on the role of action-control beliefs in causal action. Reference Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. American Psychologist, 55 , 68–78.

Part I
Overview of Self-Determination and Theories of Self-Determination

Synopsis The chapters in this part provide a comprehensive overview of the self-determination construct. Chapter 1 overviews the historical meanings and uses of the self-determination construct in philosophy, psychology, social welfare, education, and disability rights. Self-determination is framed, in this chapter, within the context of overarching theories of human agentic behavior. Human agency refers to the sense of personal empowerment involving both knowing and having what it takes to achieve goals. Human agentic theories share the meta-theoretical view that organismic aspirations drive human behaviors. An organismic perspective of self-determination portrays people as active contributors to, or "authors" of their behavior, where behavior is defined in terms of self-regulated and goal-directed actions. Chapter 2 reviews the major theories of human agentic behavior and examines the role of self-determination in each. This chapter culminates with the description of a theoretical model of the development of self-determination (Fig. 2.1) that forms the basis for later chapters examining such development in childhood, adolescence, and adulthood. Chapter 3 discusses adolescent developmental theories, first reviewing neurological growth and restructuring that occurs in the brain during adolescence. Next, cognitive and affective processes, including metacognition, self-regulation, and self-determination are described. Finally, identity development and agency and their role in adolescent development are described, followed by discussion of the role of culture and context in adolescent development. Chapters 4 and 5 provide detail about the two major theories covered in the text, SDT (Chap. 4) and Causal Agency Theory (Chap. 5).

1. Introduction to the Self-Determination Construct

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Abstract Self-determination is a construct with a rich history in philosophy, social welfare, psychology, and education. This chapter overviews the origins of the self-determination construct, beginning with its application in philosophy, it's linkages to discussions of free will and volitional action, and continuing through to its implementation in motivation and personality psychology. The chapter introduces and overviews the origins of Self-Determination Theory and briefly introduces Causal Agency Theory.

KeywordsSelf-determination – Determinism – Autonomy – Agency – Choice, volition – Intrinsic motivation – Corporate or national self-determination

This text provides a comprehensive examination of the development of self-determination in the context of two related theories of self-determination. We begin with an introduction to the self-determination construct and its historical uses in philosophy and psychology and other disciplines related to human development and behavior (education, social welfare, etc.). At the onset, it is important to understand that we position self-determination as a general psychological construct within the organizing structure of theories of human agentic behavior. Human agentic theories are discussed in Chap. 2, but at a general level, self-determination, as a psychological construct, refers to self- (vs. other-) caused action—to people acting volitionally, based on their own will. Individual chapters in this first section discuss how self-determination is defined in specific theoretical models, so the intent of this

chapter is to trace the development of the construct over time, and to provide a general understanding of the construct.

Self-Determination in Philosophy

The Oxford English Dictionary (Simpson and Weiner 1989) identified the earliest use of the term self-determination as occurring in the year 1683 and defined the term as referring to the "determination of one's mind or will by itself toward an object" (p. 919). A second meaning of the term identified by the Oxford English Dictionary is "the action of a people in deciding its own form of government" (p. 919), with the first use of that meaning of the construct occurring in 1911. It is the first sense of the term (e.g., the personal sense) that we explore in depth in this text. As the Oxford English Dictionary definition shows, this personal sense of the term pertains, at its fundamental level, to issues of human action as a function of mind, will, and/or volition. Other definitions illustrate this basic emphasis. Webster's Third New International Unabridged Dictionary (Gove 1967) defined self-determination as the "determination of one's acts or states by oneself without external compulsion" (p. 2059). Similarly, the American Heritage Dictionary of the English Language (1992) defined self-determination as the "determination of one's own fate or course of action without compulsion; free will " (p. 814). Self-determination, in essence, refers to acting based on one's own mind or free will, without external compulsion. Finally, the American Psychological Association Dictionary of Psychology (VandenBos 2007) defines self-determination as "the control of one's behavior by internal convictions and decisions rather than by external demands" (p. 829).

These definitions provide an indication of the basic intent of the construct called 'self-determination' and reflect the sense of its historical antecedent, the philosophical doctrine of determinism . The self-determination construct emerged from centuries-old debates about free will and determinism and to understand the intent of the self-determination construct as used today one must begin with an examination of issues pertaining to determinism.

Determinism posits that events, in this context human behavior and actions, are effects of preceding causes. There are generally two forms of the philosophical doctrine, hard and soft determinism. Hard determinism is the doctrine that every event and every action is caused in accordance with causal laws that account completely for the event's or action's occurrence. Hard determinists believe that even when human actions are posited to result from mediating determinants or causes, such as wants, wishes, desires, motivations, or feelings, those same wants, wishes, desires, motivations, and feelings are, themselves, caused by specific antecedent conditions that ensure their occurrence. Alternatively, the soft determinism position argues that an act can be both caused and free. This is because, according to the soft determinist, the hard determinist mistakenly equates "caused" with "forced" or "compelled." The soft determinist believes that every action is caused somehow; but not every action is compelled. The indeterminist's or anti-determinist's position differs from both hard and soft deterministic positions by positing that there are no causes for events or actions, and that humans act completely from free will.

This question of free will verses determinism is generally identified by philosophers to be one of the most enduring philosophical problems of all time, bound inextricably with religious theologies about the

free will of man versus the control and authority (determinism) of God. The Catholic Encyclopedia (Herbermann et al. 1914) stated the dichotomy as such:

> On the one hand, does man possess genuine moral freedom, power of real choice, true ability to determine the course of his thoughts and volitions, to decide which motives shall prevail within his mind, to modify and mold his own character? Or, on the other, are man's thoughts and volitions, his character and external actions, all merely the inevitable outcome of his circumstances? Are they all inexorably predetermined in every detail along rigid lines by events of the past, over which he himself has had no sort of control? This is the real import of the free-will problem.

In his important work, An Essay Concerning Human Understanding, published in 1690, John Locke provided a synopsis of the "free will problem ." Trying to illustrate the importance of connections in human thought to understanding, Locke wrote:

> this proposition "men can determine themselves" is drawn in or inferred from this, "that they shall be punished in the other world." For here the mind, seeing the connexion there is between the idea of men's punishment in the other world and the idea of God punishing; between God punishing and the justice of the punishment; between justice of punishment and guilt; between guilt and a power to do otherwise; between a power to do otherwise and freedom; and between freedom and self-determination, sees the connexion between men and self-determination (Locke 1690).

Locke is considered a soft determinist, someone who saw both causality and free will at work in human behavior. Elsewhere in the Essay, which was intended to establish the foundations for a new science of human understanding and knowledge, Locke hypothesized that all human thought comes from sensation and reflection and, consequently, all human action comes from human thought. Writing in an "Abstract of the Essay" published in 1688, he stated:

> In the thoughts I have had concerning the Understanding, I have endeavoured to prove that the mind is at first rasa tabula. The mind having been supposed void of all innate characters, comes to receive them by degrees as experience and observation lets them in; and we shall, upon consideration, find they all come from two originals, and are conveyed into the mind by two ways, viz. sensation and reflection. The mind, taking notice of its own operation about these ideas received by sensation, comes to have ideas of those very operations that pass within itself: this is another source of ideas, and this I call reflection; and from hence it is we have the ideas of thinking, willing, reasoning, doubting, purposing. From these two originals it is that we have all the ideas we have; and I think I may confidently say that, besides what our senses convey into the mind, or the ideas of its own operations about those received from sensation, we have no ideas at all (Locke 1688).

As illustrated above, Locke adamantly opposes any notion that ideas are innate as had been suggested by other philosophers, most noticeably in Descartes' declaration that we are born with the idea of God planted in us by God. All human ideas and knowledge, according to Locke, emerge from experience (sensation) and from reflection on that experience or sensation. That is, Locke's view places self-determination as a developmental phenomenon – as a guiding feature of development and as an outgrowth of developmental experiences.

Locke classified ideas as simple and complex, with complex ideas derived from relations between simple ideas, generated by reflection. Among these complex ideas were what Locke called "Modes" or ideas that combine simpler elements to form a new whole that does not exist except as a part or feature of something else. For example, we understand the 'idea' of infinity without ever having to see it exist as an actual object that can be counted. Mixed modes, which combined both sensory and reflective elements, were especially important to Locke since they encompassed the ideas of human actions, including the ideas of power, volition, and liberty. Locke defines power as the ability to make (active power) or receive (passive power) change (Kemerling, 2000–2001). According to Locke, the human mind has the active power of beginning or ceasing its own operations as activated by a preference. The exercise of that power is volition or will. Freedom or liberty (a complex mixed mode idea) is "the power to act on our volition, whatever it may be, without any external compulsion or restraint" (Locke 1690; Chapter II, XXI). Locke avoids entanglement in the free will problem by noting that the cause of the volition is irrelevant, since it is the agent, not the will, which is free. Human beings act freely just insofar as they are capable of translating their mental preferences to do or not to do into their actual performance of the action in question (Kemerling 2000–2001). Locke writes:

> Every one, I think, finds in himself a power to begin or forbear, continue or put an end to several actions in himself. From the consideration of the extent of this power of the mind over the actions of the man, which everyone finds in himself, arise the ideas of liberty and necessity. All the actions that we have any idea of reducing themselves, as has been said, to these two, viz. thinking and motion; so far as a man has power to think or not to think, to move or not to move, according to the preference or direction of his own mind, so far is a man free. Wherever any performance or forbearance are not equally in a man's power; wherever doing or not doing will not equally follow upon the preference of his mind directing it, there he is not free, though perhaps the action may be voluntary. So that the idea of liberty is, the idea of a power in any agent to do or forbear any particular action, according to the determination or thought of the mind, whereby either of them is preferred to the other: where either of them is not in the power of the agent to be produced by him according to his volition, there he is not at liberty; that agent is under necessity. So that liberty cannot be where there is no thought, no volition, no will; but there may be thought, there may be will, there may be volition, where there is no liberty (Locke 1690; Book II, Chapter XXI).

Freedom (from the Latin libertas), a frequent target of hard determinists like B.F. Skinner, is conceptualized as the human capacity to act (or not to act) as we choose or prefer, without any external compulsion or restraint. Freedom in this sense is usually regarded as a presupposition of moral responsibility: that is, the only actions for which I, as an autonomous person, may be praised or blamed, rewarded or punished, are just those that I perform freely (Herbermann et al. 1914). This view is the crux of the free will problem in determinism; that an omnipotent being (God) can only hold humans accountable for their behavior and actions if, indeed, those humans had the autonomy and free will to act based on their own volition as opposed to all actions being predetermined by God.

Locke's proposals about the causes of human action as both caused and volitional are important as the foundation for understanding the modern sense of the term self-determination. Note Locke's soft deterministic distinction that it is the agent (the person him or herself) who is free to act, not the action itself (since it is 'caused' by perception or sensation). From Locke and onward, determinism was gradually decoupled from the sole form of determinism considered to that point, theological

determinism. Today we recognize numerous 'determinants' of human behavior , including physiological, structural, environmental, and/or organismic factors. Theories of human behavior recognize the impact on human actions and behavior of biological or genetic determinism (behavior as an effect of biological functions such as genes or neurochemicals), familial or relative determinism (human behavior as an effect of family or parental influence or treatment), environmental determinism (behavior as an effect of the environment), psychological determinism (behavior as an effect of how we perceive or understand situations), economic determinism (action as an effect of economic forces or circumstances) and so forth.

With the turn of the twentieth century and the emergence of psychology as a discipline distinct from philosophy, the philosophical discussion of determinism and self-determination as it pertains to human action and behavior becomes overshadowed by discoveries and theories in biology, psychology and anthropology. Nevertheless, even as the meaning or sense of the construct changes as it is used in other disciplines, it is important to remember that the construct's roots lie in the free will problem that was the basis of philosophic discussions for centuries. That is, is human behavior the effect of human thought, free will, and volition or are such actions predetermined and indeterminant? As discussed subsequently, the scope of the question altered somewhat during the twentieth century and there is currently less focus on theological determinism and more on biological, psychological, environmental or other forms of determinism. Nevertheless, self-determination still refers fundamentally to and its meanings derive directly from the philosophical debates around determinism.

Self-Determination in Psychology

In the last half of the nineteenth century the rapidly growing discipline of psychology brought its empiricism and experimentalism to bear on questions that had previously been the sole domain domain of introspective philosophers and, in so doing, changed the question posed by the free will problem slightly, from whether human behavior is the effect of free will or is predetermined to whether human behavior is caused by internal versus external forces. In essence, the anti-determinist or indeterminist view espoused in philosophy was never adopted by psychologists, leaving only the hard versus soft determinism perspectives. This separation is likely a function of several factors. The earliest psychologists were heavily influenced in the early 1900s by the perceived explanatory power of the 'new biology' which featured the merger of Darwinian evolutionary theory with the newly rediscovered mechanisms of Mendelian genetics (Cravens 1978). To the pioneers trying to establish psychology as a viable science, the new biology could, seemingly, explain the causes of human behavior through mechanistic and deterministic means without having to resort to the introspective techniques that dominated philosophy. Psychologists looked toward these biological models of determinism to begin to explain human behavior, focusing first on what were identified as social problems, like mental deficiency, feeblemindedness, crime, pauperism, and so forth. This focus was no more clearly in evidence then in the establishment of the field of mental measurement in the early 1900s. While Binet and Simon held what might be seen as a soft determinist position regarding intelligence, crediting both nature and nurture, the field of intelligence testing in America, led by Goddard, Terman, and Yerkes, rapidly became firmly associated with a hard determinist perspective of the hereditary nature of intelligence and, indeed, with the strong determinist position of eugenicists, which claimed social ills like crime, prostitution, and poverty were attributable almost exclusively to heritability in intelligence (or the

lack thereof, feeblemindedness). Even Edward Thorndike, the founder of the mental measurement movement in education, held strongly eugenic, and thus deterministic, beliefs. The field was not exclusively hereditarian and deterministic, of course. William Bagley, in his 1925 text Determinism in Education rails against the assumptions of hereditarian determinists' conception of intelligence, writing:

> It is the purpose of the present paper to show that the sanction which mental measurements apparently give to this particular variety of determinism [note: referring to the hereditarian position in intelligence] is based, not upon the facts that the measurements reveal, but upon the hypotheses and assumptions that the development of the measures has involved; that these hypotheses and assumptions, while doubtless justified for certain purposes, are at basis questionable in the last degree; and that the present tendency to extend them ad libitum beyond a very restricted field is fraught with educational and social dangers of so serious and far-reaching a character as to cause the greatest concern (Bagley 1925, pp. 11–12).

Nevertheless, a hard deterministic view of human behavior held sway in early psychology. Skinnerian psychology rejected the claim that behavior is a function of volitional thought or ideas or, indeed, any internal mechanisms. In Beyond Freedom and Dignity Skinner challenged the existence of "autonomous man" and labeled as myths, illusions, or 'prescientific superstitions' all such constructs associated with 'autonomous man,' including reason, mind, values, concepts, thought, judgment, volition, purpose, memory, independence, or self-esteem. Skinner's hard deterministic position is, in essence, that all human behavior is governed (caused) by laws of operant conditioning – all functions that other psychological perspectives apply to 'autonomous man,' including volitional thought, can be explained by reinforcement contingencies. Skinner (1971) stated:

> To be for oneself is to be almost nothing. The great individualists so often cited to show the value of personal freedom have owed their successes to earlier social environments. The involuntary individualism of a Robinson Crusoe and the voluntary individualism of a Henry David Thoreau show obvious debts to society. If Crusoe had reached the island as a baby, and if Thoreau had grown up unattended on the shores of Walden Pond, their stories would have been different. We must all begin as babies, and no degree of self-determination, self-sufficiency, or self-reliance will make us individuals in any sense beyond that of single members of the human species. (pp. 123–124.)

Not surprisingly, modern behaviorists continue to hold this perspective with regard to the self-determination construct. Baer (1998) noted, in discussing "problems in imposing self-determination" (p. 50), that proposals with regard to promoting self-determination are, fundamentally, ideologies (such as personal autonomy or freedom) as opposed to behavioral science, and that if the goal of practitioners is to ensure that people with disabilities (the topic of the special issue of a journal he was commenting on) have greater choice opportunities and experience greater control, then the course of action to follow is to arrange the environments of people in ways that they want them arranged. Baer explained that this environmental control can be achieved through the use of a concurrent schedules approach, where the intervener creates two environments that differ in only one dimension, provides the person with the disability access to those environments, and measures how much time the person spends in each environment.

It was not until the establishment of the field of personality psychology as a discipline distinct from general psychology in the late 1930s that issues pertaining to self-determination were addressed with

any systematic focus by psychologists. Just as the free will problem had been one of the dominant themes in philosophy in the preceding centuries, issues pertaining to causation of human behavior became central to the emerging discipline of personality psychology. In his early text titled Foundations for a Science of Personality, Angyal (1941) proposed that an essential feature of a living organism is its autonomy , where autonomous means self-governing or governed from inside. According to Angyal, an organism "lives in a world in which things happen according to laws which are heteronomous (e.g., governed from outside) from the point of view of the organism" (p. 33). Angyal stated that "organisms are subjected to the laws of the physical world, as is any other object of nature, with the exception that it can oppose self-determination to external determination" (p. 33). Angyal suggested that the important task for developing a science of personality was in identifying principle(s) of the biological total process – the movement of organisms from undifferentiated parts to an organized whole. He defined the "biological total process" as a trend toward autonomy and argued that the science of personality is, in essence, the study of two essential determinants to human behavior, autonomous-determinism (or self-determination) and heteronomous-determinism (other-determined). He noted that "in the realm of organismic happenings we find neither entirely autonomous nor entirely heteronomous determinants" (p. 21), and suggested a psychology of individual differences by noting that, within nature, there are marked variations in the importance and balance of autonomous and heteronomous determinants to behavior. Nonetheless, Angyal places primary importance for laying the foundation for a science of personality in the fact that a central process of an organism is the movement toward autonomous-determination. He showed this by stating:

> It would probably be generally agreed that without autonomy, without self-government, the life process could not be understood. Selection, choice, self-regulation, adaptation, regeneration are phenomena which logically imply the autonomy of the organism. Selection, that is the search for certain environmental conditions, is only possible in a being capable of self-directed activity (p. 34).

Angyal's links to issues arising from biological determinism are evident here (e.g., [natural] selection, [species] adaptation), and the central problem he poses is the degree to which human behavior is caused by internal versus external factors. Nonetheless, autonomous-determination, or self-determination, as described by Angyal returns the discussion to the issues characterizing the discussion of self-determination in philosophy; that of human action as both internally-determined and volitional . Themes of choice and autonomy that are today accepted as primary to defining the construct appear in Angyal's proposal for the new science of personality psychology, though without the baggage of philosophy's free will problem. Self-determination had moved from its philosophical alignment with the problem of free will versus theological determinism to one of autonomous-versus heteronomous-determination. Furthermore, Angyal's use of the term moves away from the hard determinism that dominated the psychology of previous decades toward a soft determinism that considers the importance of both nature and nurture. He noted:

> …the autonomy of the organism is not an absolute one. Self-determination is restricted by outside influences which, with respect to the organism, are heteronomous. The organism lives in a world in which processes go on independent of it. The organism asserts itself against the heteronomous surroundings (p. 38).

This use of the construct not only typifies a soft deterministic perspective, but also embodies Locke's distinction of the person being free to act, but not the action itself being free from causality.

Self-Determination in Motivational Psychology

The most influential use of the self-determination construct in psychology emerged from the work of psychologists Edward Deci, Richard Ryan, and colleagues. Although Self-Determination Theory (SDT) is covered in detail in subsequent chapters, given the importance of this work in moving the application of the self-determination construct forward, it is relevant to highlight some of Deci and Ryan's early work as critical to the general or overall understanding of self-determination. Edward Deci, in an early text, The Psychology of Self-Determination (Deci 1980), discussed, as we have in this chapter, distinctions concerning self-determination, will, and free will. Deci argued that, despite the lack of a focus in psychology on issues of freedom and self-determination evident at that time, movement away from mechanistic theories and the recognition that "[i]nternal, mental events ... have been shown to be useful in explaining behavior, and numerous phenomena have been investigated that are relevant to the larger issue of the interplay of freedom and boundedness in human behavior" (p. 3). Such developments, suggested Deci "set the stage for an extended discussion of self-determination" (p. 3). He argued that in focusing on self-determination, "we are really raising the question, 'To what extent can people decide their own behaviors'" (p. 4). Deci (1980) answers this question as such:

> People have considerable capacity for self-determination, and the operation of will—that capacity to choose behaviors based on inner desires and perceptions—is the basis of self-determination (p. 5).

At this juncture in the development of the self-determination construct, Deci proposed that "will is the capacity of the human organism to choose how to satisfy needs" and that "self-determination is the process of utilizing will" (p. 26). Will is the "capacity for conscious choice to determine behavior" (p. 26) and is "inextricably involved with the intrinsic need for competence and self-determination" (p. 26). Further, Deci (1980) argued, "the conceptualization of intrinsic motivation as a basic human need for feeling competent and self-determining provides a framework for studying self-determination and will…" (p. 27).

In 1980, Deci and Ryan articulated a formal theory of intrinsic motivation that incorporated a central role for self-determination, and in 1985 they expanded this to be a theory of both intrinsic motivation and varied forms of extrinsic motivation. Working from White's (1959) proposal of an innate, intrinsic energy source, labeled by White as effectance motivation , which was theorized to motivate a wide variety of human behavior, and also building on work by cognitive theorists on personal causation and perceived locus of causality (deCharms 1968; Heider 1958), Deci and Ryan (1985) proposed that intrinsic motivation and self-determination were "necessary concepts for an organismic theory " [of motivation] (Deci and Ryan, p. 7).

In fact, Self-Determination Theory has gradually expanded over time. In 1980 Deci and Ryan presented a formal theory to explain empirical findings concerning the effects of external events on intrinsic motivation. Called Cognitive Evaluation Theory , it contained three primary propositions: (1) intrinsic

motivation requires a sense of autonomy or self-determination; (2) intrinsic motivation also requires a sense of competence and mastery; and (3) events relevant to the initiation and regulation of intrinsically motivated behavior have three aspects (informational, controlling, and amotivating) that can be differentially salient to people, thus enhancing or undermining their motivation. Deci and Ryan (1985) later expanded SDT to include a theory of internalization and the development of autonomous forms of extrinsic motivation and self-regulation (Organismic Integration Theory or OIT). Still later they articulated a need based theory of well-being (BPN; Basic Psychological Needs Theory Deci and Ryan 2000; Ryan and Deci 2000). These formulations, along with other mini-theories are collectively described as Self-Determination Theory (see Chap. 4, this volume).

Importantly, Self-Determination Theory has continuously asserted the importance for modern psychology of concepts of autonomy and volition, arguing that these are not in any way problematic for a thoroughly deterministic understanding of behavior. Indeed, SDT suggests that both autonomous and controlled behaviors have distinctive neuropsychological underpinnings, and both harness both implicit and explicit mental processes (e.g., Ryan and Deci 2006).

Today Self-Determination Theory (SDT; Deci and Ryan 2000; Ryan and Deci 2000, 2011) represents the most extensive use of the self-determination construct in the field of psychology during the second half of the twentieth century to the present, and subsequent chapters will provide more detail on the current status of the theory. Meanwhile, other disciplines were applying the construct to their fields as well.

Self-Determination in Social Welfare

For much of the 20th Century a guiding principle of social work was the client right to self-determination (Biestek and Gehrig 1978; McDermott 1975). Owing much to the sense of the term as a national or political right, which emerged in the early twentieth century and which is discussed subsequently, the emphasis in social work on client self-determination became a principle that guided the way in which services should be provided by social workers. More than just a right of people in general, however, the use of the construct in social work embodies a respect and value for the rights of individuals to make choices and decisions and to, in essence, live autonomous lives.

…

Self-Determination in Education

In the early 1990s, the growing emphasis on self-determination in the disability rights movement entered into national efforts to educate students with disabilities . Over the course of 25 years, researchers and interventionists in special education have examined the role of self-determination, and efforts to promote self-determination, on the lives of students with disabilities (see Wehmeyer et al. 2003 for overview). Many of these interventions were conceptualized more by the rights-based language used in the empowerment or disability rights movement (e.g., rights to make decisions, control one's life, live independently, etc.). Causal Agency Theory, discussed in a subsequent chapter, is one such theoretical model, conceptualizing self-determination determination as a dispositional

characteristic (and not explicitly within a motivational framework), but drawing from and aligning with the organismic nature of SDT.

Conclusion

From its initial use in philosophy to modern usages pertaining to volitional action and autonomous motivation, the self-determination construct has proven to be a useful heuristic across multiple disciplines. The following chapters will further the examination of the construct in the larger context of human agentic theories and in adolescent development.

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2. Human Agentic Theories and the Development of Self-Determination

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Abstract

Self-determination theories are housed within theories of human agentic behavior. Human agency refers to the sense of personal empowerment involving both knowing and having what it takes to achieve goals. Human agentic theories share the meta-theoretical view that organismic aspirations drive human behaviors. An organismic perspective of self-determination portrays people as active contributors to, or "authors" of their behavior, where behavior is defined in terms of self-regulated and goal-directed actions. This chapter will review the major theories of human agentic behavior and will examine the role of self-determination in each.

Keywords

Human agentic theories – Organismic perspective of self-determination – Causal action – Action-control theory – Psychological needs – Causal agency theory

Theories of human agency provide a framework for understanding human behavior. Human agentic theories , including theories of self-determination, share the meta-theoretical assumption that

organismic aspirations drive human behavior (Little et al. 2006). Organismic aspirations can be understood as the drive to be active contributors to, or agents of, one's behavior. Thus an agentic person, driven by organismic aspirations, seeks to be the origin of his or her actions (Little et al. 2002). Human agentic theories assume that actions are volitional and that an agentic person uses self-regulated and goal-directed agentic actions to "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). This ongoing process of navigating challenges and engaging in self-regulated, goal-directed actions gives rise to a sense of personal empowerment and action-control beliefs, or the sense that one knows and has what it takes to achieve goals, which contributes to the development of a sense of causal agency ; that is, that the person acts with an eye toward causing an effect to accomplish a specific end or to cause or create change in his or her life. Repeated experiences of causal agency lead to enhanced self-determination.

In the following sections, we describe the general assumptions of human agentic theories and the features that differentiate such theories from other theories of understanding human behavior. We will also describe how human agentic theories provide a broad framework for organizing constructs related to causal agency and the development of self-determination.

Assumptions of Theories of Human Agency

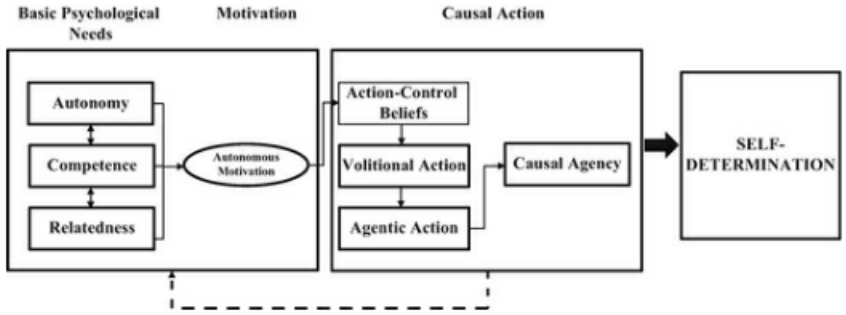
Theories of human agency differ from other frameworks for understanding human behavior (e.g., theories that emphasize stimulus-response accounts of behavior) because of the assumption underlying all theories of human agency that each person is integral to his/her organismic functioning. Unlike stimulus response theories which, by and large, assume that stimuli in the environment drive behavior, agentic theories assume that the person actively shapes his or her environment and responses to that environment. Contextual factors are still highly relevant, as contexts provide supports and opportunities as well as hindrances and impediments for volitional and agentic action, but it is the individual and their drive to act as a causal agent (not environmental stimuli) that is the primary driver of behavior. People who consistently engage in causal action to exert causal agency are self-determined. Specifically, as individuals strive to meet basic psychological and biological needs, they engage in self-regulated, goal directed action, or causal action , that enables them to navigate varying environmental and contextual challenges and they become more effective in their causal action and develop a sense of causal agenc y and enhanced self-determination.

The process of engaging in causal action has a self-evaluative feedback process, where persons continuously interpret and evaluate their actions and the consequences of actions. This meta-cognitive monitoring shapes, on an ongoing basis, each individual's action-control beliefs about the activities that he or she is capable of in varying contexts. Specifically, people are always learning under what conditions their causal actions will have desired effects. Under optimal circumstances, this continually evolving and actively monitored self-system gives rise to a strong, integrated sense of causal agency—a self-determined person. A highly self-determined person is the primary origin of his or her actions, has high aspirations, perseveres in the face of obstacles, sees more and varied options, learns from failures, and has a strong sense of well-being. A less self-determined person is shaped by extra-personal influences, has low aspirations, struggles with problem solving and goal setting, and often feels hopeless. Thus, theories of human agency have an explicit focus on the person-environment fit. It is in

the context of this interaction between personal competencies and environmental demands that people become agents of their own action or causal agents over their lives, and, ultimately, self-determined.

In addition to the assumptions regarding organismic aspirations and contextual influences, theories of human agency also assume that: (a) Actions are motivated by both biological and psychological needs . (b) When actions are directed toward self-regulated goals, this serves biological and psychological needs, both short-term and long-term. (c) Actions are volitional and agentic and shaped by understandings about general action-control behaviors that entail self-chosen forms and functions (Deci and Ryan 2002; Little et al. 2002).

These assumptions create an organizational framework for a theoretical model of the development of self-determination (see Fig. 2.1). In the following sections, we will further describe this model, specifically discussing the various human agentic theories that contribute to an understanding of the development of self-determination.



Theoretical Model of the Development of Self-Determination

As described previously, Fig. 2.1 provides a theoretical model of the development of self-determination. At the start of this system are basic psychological needs for autonomy , competence , and relatedness proposed by Self-Determination Theory (SDT) and discussed in more detail subsequently in Chap. 4. Satisfaction of these basic needs facilitates autonomous motivation , defined as intrinsic motivation and well-internalized extrinsic motivation (Deci and Ryan 2012, p. 88). Consistent with assumptions of organismic theories, the interplay between the context and the individual's psychological needs satisfaction is complex and reciprocal. When a motive or motives are salient, people are in a position to select goals on the basis of their expectations about the satisfaction of these motives (Deci and Ryan 1985, p. 235). As per Fig. 2.1, these psychological needs initiate a causal action sequence that, through interaction with environmental supports and opportunities, enables the development of a "synergistic set of action-control beliefs and behaviors that provide the self-regulatory foundation that is called upon to negotiate the various tasks and challenges of the life course" (Little et al. 2002, p. 396). Action-control beliefs about the link between the self and the goal (control expectancy beliefs), the links between the self and the means that are available for use to address a challenge (agency beliefs), and about which specific means are most effective for reaching one's goals (causality beliefs) (Little et al. 2002, p. 396)

interact with and mediate volitional and agentic actions (employing causal and agentic capabilities), resulting in causal agency. Repeated experiences with the causal action sequence leads to multiple experiences with causal agency and, as a result, enhanced self-determination. In the following sections, we describe each of these contributors to the development of self-determination in greater depth.

Psychological and Biological Needs

As mentioned previously, a fundamental assumption of human agentic theories is that actions are motivated by both psychological and biological needs , and that if psychological and biological needs are addressed overall, well-being is supported. For purposes of this text, we are focusing on the psychological needs that motivate causal action, but, of course, biological needs also motivate action. In terms of biological needs, an assumption of human agentic theories is that all organisms require resources for physical growth and development (Hawley 1999; Little et al. 2002). These resources create an appetite for biological needs; however, to meet biological needs there is an evolutionarily duality that shapes action in pursuit of resources. On one hand, people can participate in social groups, using social connections and capital to acquire needed resources. This social group, however, can also become a source of competition as multiple people in the social group pursue resources. Within social groups, therefore, people experience both supports and threats to the attainment of resources. Ethologists describe this duality as a dominance hierarchy. Hawley (1999) further defined such hierarchies as the emergent ordering of individuals based on their relative competitive abilities. People that become highly agentic are more likely to attain needed resources, whereas those with less developed causal agency experience fewer opportunities to access resources (Hawley 1999; Little et al. 2002). Thus, contextual factors interact with the pursuit of resources to meet biological needs that shape the development of personal agency. Essentially, as people are able to meet their biological needs, they learn the types of volitional and agentic actions that enable them to access needed resources. They learn that goals can be set and met, that they can influence their environment, and that their future efforts are likely to be successful (Hawley and Little 2002). This cyclical process is why biological (and psychological needs, discussed subsequently) are foundational elements to the development of causal agency and self-determination.

Of particular focus in this text, human agentic theories also assume that there are basic psychological needs —organismic necessities for psychological growth, integrity, and wellness—that shape the development of self-determination, defined such hierarchies as the emergent ordering of individuals based on their relative competitive abilities. People that become highly agentic are more likely to attain needed resources, whereas those with less developed causal agency experience fewer opportunities to access resources (Hawley 1999; Little et al. 2002). Thus, contextual factors interact with the pursuit of resources to meet biological needs that shape the development of personal agency. Essentially, as people are able to meet their biological needs, they learn the types of volitional and agentic actions that enable them to access needed resources. They learn that goals can be set and met, that they can influence their environment, and that their future efforts are likely to be successful (Hawley and Little 2002). This cyclical process is why biological (and psychological needs, discussed subsequently) are foundational elements to the development of causal agency and self-determination.

Of particular focus in this text, human agentic theories also assume that there are basic psychological needs —organismic necessities for psychological growth, integrity, and wellness—that shape the

development of self-determination, result in autonomous motivation, and motivate causal action (volitional action, agentic action, and action control beliefs). As mentioned previously, Self-Determination Theory (see Chap. 4 for overview) describes three fundamental psychological needs: Competence, Relatedness, and Autonomy (Deci and Ryan 2002). Self-Determination Theory assumes that social contexts motivate human action to meet these basic psychological needs. The need for competence is defined as the need to successfully engage, manipulate, and negotiate the environment. The need for relatedness reflects the desire for close emotional bonds and feelings of connectedness to others in the social world. The need for autonomy reflects the need to feel that one's actions are predicated on the self or volitional in nature (Vansteenkiste and Ryan 2013). These basic psychological needs serve as the "energizer of behavior" (Deci and Ryan 2012, p. 101) or, within this theoretical model of the development of self-determination, the autonomous motivation that energizes causal action.

A significant body of research has emerged documenting the efforts undertaken by individuals to address their need for autonomy (Deci et al. 1991; Vansteenkiste et al. 2012). Deci and Ryan (2012) observed that:

> To be autonomous means to behave with a sense of volition, willingness, and congruence; it means to fully endorse and concur with the behavior on is engaged in. Autonomy—this capacity for and desire to experience self-regulation and integrity—is a central force within both the life span development of individuals and in the movement of history toward greater freedom and voice for citizens within cultures and governments.
>
> In healthy individual development, people move in the direction of greater autonomy. This entails internalizing and integrating external regulations over behavior and learning to effectively manage drives and emotions. Additionally, it means maintaining intrinsic motivation and interest, which are vital to assimilating new ideas and experiences." (p. 85).

As Deci (1996) noted, "without choice, there would be no agency, and no self-regulation" (p. 222). Autonomy is therefore understood as a critical need, and actions undertaken to address this need are critical to the development of a sense of causal agency and self-determination.

As organisms take action to meet these three basic psychological needs, this energizes the development of autonomous motivation, consisting of intrinsic motivation (doing an activity because it is enjoyable) and/or internalized extrinsic motivation (doing an activity because it leads to a valued consequence separate from the activity itself) (Deci and Ryan 2012, p. 88). The interaction between the organism's efforts to meet basic psychological needs and the resultant autonomous motivation stimulates causal action, discussed in the next section.

Causal Action

While the self-system processes pertaining to psychological needs and autonomous motivation are detailed and explained by Self-Determination Theory, we turn, by and large, to Action-Control Theory (Chap. 22) and Causal Agency Theory (Chap. 5) to explain causal action and the development of causal agency leading to self-determination. As mentioned previously, human agentic theories assume that actions are volitional and that an agentic person uses causal actions to "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 discussed in Chap. 1 self-determined action is self-caused action. Organisms act volitionally and self-initiate action based upon conscious choices that reflect one's preferences in pursuit of goals that enhance personal well-being. The interaction between causal action and the context or environment is complex, but in essence, reflects the organism's response to opportunities or threats in the environment. As depicted in Fig. 2.2, these two classes of challenges to which the organism responds (opportunity or threat) are composed of three distinct contextual conditions. Opportunity refers to situations or circumstances that provoke the organism to engage in causal action to achieve a planned, desired outcome that is available because of the opportunity. Opportunity implies that the situation or circumstance provides a chance for the person to create change or make something happen based upon his or her individual causal capability (knowledge and abilities leading to volitional action, discussed subsequently). If a person has the causal capability to act on the situation or circumstance, that situation or circumstance can be construed as an opportunity. If the person is unable to act on the situation or circumstance because of limitations to causal capability, that may be a 'missed opportunity.' However, if the person has limited causal capability, the situation or circumstance is not an opportunity. An opportunity is definitionally bound to the person's causal capability. Opportunities can be "found" (unanticipated, happened upon through no effort of one's own) or "created" (the person acts to create a favorable circumstance).

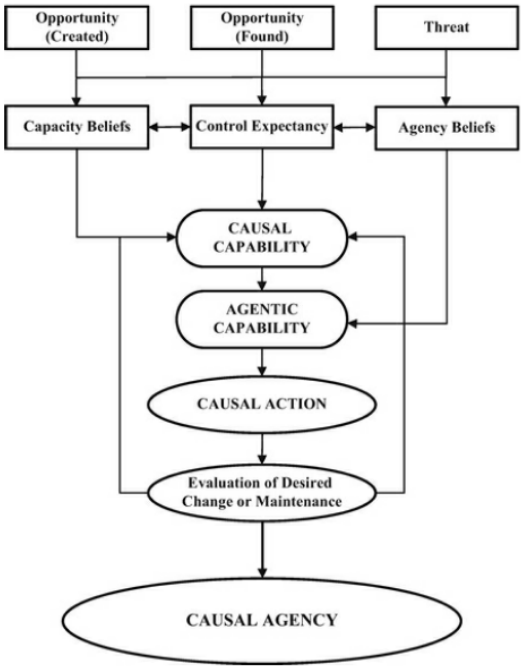


Fig. 2.2 Causal action schema

The second challenge condition, threat, involve situations or circumstances that threaten the organism's self-determination and provoke the organism to exercise causal action to maintain a preferred outcome or to create change that is consistent with one's own values, preferences, or interests, and not the values, preferences or interests of others. The interplay between autonomous motivation and these

challenge conditions is, as mentioned previously, complex. In the case of created opportunities, it is the organism's autonomous motivation that directly motivates the effort to create the opportunity. In the case of found opportunities or threats, these contextual challenges emerge unsolicited by the organism, so that it is the context or the condition that triggers the autonomous motivation to take advantage of the opportunity or minimize the impact of the threat. In all cases, though, the emergence of these environmental and contextual conditions lead to the innervation of a set of action-control beliefs that mediate volitional and causal action.

Action-Control Theory

The interaction between the organism's efforts to meet basic psychological needs and the resultant autonomous motivation and the environmental conditions of opportunity or threat stimulate causal action, beginning with "self-perceptions about the means and competencies one has to reach one's goals" (Little et al. 2002, p. 396). These self-perceptions are articulated through Action-Control Theory as a set of action-control beliefs:

> From this view point, the general agency system of individuals gives rise to a synergistic set of action-control beliefs and behaviors that provide the self-regulatory foundation that is called upon to negotiate the various tasks and challenges of the life course. More specifically, action-control theory focuses on the role of specific self-regulatory beliefs as mediators of motivated action (i.e., they are the proximal links to behavior). (Little, Hawley, Heinrich, & Marsland, 2002, p. 396).

These self-regulatory beliefs involve:

> Control Expectancy Beliefs : Control expectancy beliefs "reflect the general expectations about the link between the self and the goal" (Little et al. 2006, p. 70); they reflect "the general perception of the degree to which a person feels that he or she can attain a given goal" (Little et al. 2002, p. 396). Agency Beliefs:
>
> Agency beliefs "reflect the links between the self and the various means that they are relevant for attaining a chosen end" (Little et al. 2006; p. 71); they are "beliefs about whether these means are personally available for use" (Little et al. 2002, p. 396).

Greater detail about these action-control beliefs can be found in subsequent chapters. Before moving to the operators involved in volitional and agentic action (as per Fig. 2.1), it is important to note that these interrelated action-control beliefs contribute jointly to the initiation of volitional action, but also contribute uniquely. Control expectancy beliefs are more generalized beliefs about one's ability to set and attain goals, influencing both capacity and agency beliefs as well as the initiation of volitional action. Capacity beliefs contribute more directly to the initiation of volitional action (and specific causal capabilities), while agency beliefs contribute more directly to agentic action and the agentic capabilities that energize that action. Each of these is described in greater detail in the next section.

Causal Agency Theory

As will be detailed in Chap. 5 Causal Agency Theory specifies how one becomes self-determined. Within Causal Agency Theory, self-determination is defined as:

> …dispositional characteristic manifested as acting as the causal agent in one's life. Self-determined people (i.e., causal agents) act in service to freely chosen goals. Self-determined actions function to enable a person to be the causal agent is his or her life. (Shogren et al., 2015, p. 257)

Causal Agency Theory holds that self-determined action is characterized by three essential characteristics – volitional action , agentic action , and action-control beliefs . As has been discussed, the causal action sequence depicted in Fig. 2.2 begins with the organism's response to (or attempt to create) environmental opportunities and threats, resulting in the stimulation of action-control beliefs. In turn, these beliefs mediate causal action in the form of volitional and agentic action.

Briefly, as per Causal Agency Theory, volitional action is defined as making conscious choices based on one's preferences and engaging in self-initiated actions that promote autonomy. Agentic action refers to the process of identifying pathways that lead to specific ends and engaging in self-directing and self-regulating action to navigate environmental opportunities and threats. The primary operators in propelling volitional and agentic action involve the capability to perform causal actions or behaviors, subdivided into causal capability and agentic capability. Capability refers to the condition of being capable; that is, having requisite mental or physical capacity to accomplish a particular task. Two types of capabilities are important to causal agency; Causal Capability and Agentic Capability. These capabilities differentiate between the two aspects of causal action; (1) causing something to happen (e.g., Volitional Action) and (2) directing that action toward a preferred end (e.g., Agentic Action). As can be seen in Table 2.1, these capabilities provide an overarching theme for the skills and knowledge needed to develop and acquire in relation to the essential characteristics of Volitional Action and Agentic Action.

Table 2.1 Component elements of 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	

Causal capability refers to the mental or physical capacity (e.g., the ability to perform an action or behavior) that enables a person to cause or make something happen. Such capacities include the skills and knowledge associated with making a choice or a decision, setting a goal, solving a problem, planning a course of action; the skills and behaviors that enable self-initiation and autonomous functioning and, as such, volitional action. However, we would emphasize that limitations to the number or complexity of such capacities that might otherwise hinder causal or agentic action can, in fact, be mitigated by a wide array of supports, including technological devices, social networks and supports, and so forth, thus enabling people who might otherwise not be able to perform requisite actions to, in fact, engage in causal action and become more self-determined.

Conclusion

Figure 2.1 introduced a theoretical model of the development of self-determination. This process involves the stimulation of action through the organism's response 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. Repeated experiences of causal agency result in enhanced self-determination. Though explained by three different theories (Self-Determination Theory, Action-Control Theory, Causal Agency Theory), all share the broad metatheoretical assumptions inherent within human agentic theories that organismic aspirations drive behavior, and that humans engage in goal-directed activity to meet basic biological and psychological needs, influenced by contextual and environmental challenges, and that, by learning to engage in volitional and agentic action and developing action-control beliefs, causal agency increases ultimately enhancing self-determination and the agentic self. The following chapters will provide more detail on specific theories and process that also influence the development of the agentic self.

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3. A Context for Self-Determination and Agency: Adolescent Developmental Theories

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Abstract
This chapter discusses adolescent developmental theories, first reviewing neurological growth and restructuring that occurs in the brain during adolescence. Next, cognitive and affective processes, including metacognition, self-regulation, and self-

determination are described. Finally, identity development and agency and their role in adolescent development are described, followed by discussion of the role of culture and context in adolescent development.

Keywords Adolescent developmental theories – Neuroscience – Metacognition – Self-regulation – Self-determination theory – Identity development – Agency – Culture and context

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The aim of this chapter is to situate the discussion of agency and self-determination within the broader context of adolescent developmental theory . There are few theories that focus solely on adolescence; most are based on lifespan models (e.g., Piaget's theory of cognitive development). There is also no shortage of theories on human development, with each theorist providing a different lens through which to view the processes of maturation, e.g., Vygotsky and Erickson. In addition to these lifespan theories, over the last twenty years there has been a flurry of neuroscience research on adolescent brain growth. At first glance, much of the neuroscience research appears void of guid-

ing developmental theory, emphasizing instead biological or medical models of growth. However, even these biological/medical models use a default model when interpreting the findings, frequently characterizing adolescence as a "storm and stress" period of development (Hall 1904). Given the range of theories that could be included in this chapter, we narrowed the focus to those that we consider the most relevant to the processes through which adolescents' transition into adult roles in society.

To accomplish the chapter aims, we begin by first examining the foundations of adolescence —the remarkable puberty-initiated neurological growth and restructuring of adolescents' brains. Drawing on relatively recent neuroscience research, we suggest that adolescents are ontogenetically primed for developing capacities relevant for self-determination and agency. We next examine changes in fundamental cognitive and affective "processes" during adolescence: metacognition, self-regulation, and self-determination (i.e., basic psychological needs). Although one could argue that self-regulation is a developmental task, we chose to treat it as a cognitive-affective process that supports other developmental tasks. In the third

section we focus on identity and agency development. Many consider identity the quintessential developmental task of adolescence. Identity development and agency are linked to creating purpose and meaning within society, which takes center stage as adolescents begin to assign value to their "future selves" (Markus and Nurius 1986). The fourth major section we devote to discussion of how culture and context intersect with adolescent development. The point we reach in the concluding section is that adolescence represents a unique window of opportunity for specific, accelerated development in the human lifespan.

Puberty and Adolescence

Youniss (1983) argued that "[a]dolescence is socially constructed" and, as a social construct, represents shared socio-cultural understandings and beliefs that have emerged over time as a way to 'make sense' of physical and neurological changes brought on by puberty. These shared understandings and beliefs are the basis for what we expect from and how we treat adolescents. While many of our understandings and beliefs are explicit and

defined (e.g., legal culpability), just as many, if not more, are implicit and only visible in society's embedded socio-cultural norms and practices. The social construction process makes adolescence a dynamic construct, with physical and neurological changes being the only constants.

The foundation for understanding adolescence is puberty . Strictly speaking, puberty refers to three overlapping neuroendocrinological events (adrenarche, gonadarche, and growth axis activation) associated with sexual maturation, which result in reproductive capabilities characteristic of adult members of a species (Rosenblum 1990). Among humans, an early first stage of sexual maturation, andrenarche , involves an increasing production of adrenal androgens, starting between ages 6–9 in girls and 7–10 in boys, building to an apex approximately 10 years later and continuing into the 20s, although it slows considerably after this apex (Blakemore et al. 2010; Dorn et al. 2006). This increase in androgens is associated with development of pubic and axillary hair and a slightly accelerated rate of bone growth (Cutler 1991). Gonadarche is a second phase of puberty in which the hypothalamic-pituitary-gonadal (HPG)

axis is "reactivated" resulting in pulsatile production of gonadotropin hormone that stimulates the release, via the follicle-stimulating and luteinizing hormones, of gonadal hormones—testosterone in males, estrogen in females (Spear 2000). Gonadarche begins around age 11 for girls, with a range of 8–14, and around age 12 for boys, with a range of 9–15 (Blakemore et al. 2010). The HPG axis is active early in life but becomes "deactivated" during childhood only to become reactivated during adolescence, which then continues to be active throughout adulthood. Coinciding with gonadarche is an increase in growth hormone (GH) production giving rise to the development of secondary sexual characteristics (e.g., breast development) and rapid growth (e.g., growth spurt) that changes body size and composition, which occurs around age 12 for girls and age 14 for boys (Blakemore et al. 2010; Spear 2000). The start of adolescence is typically associated with changes related to gonadarche and activation of the growth-axis , perhaps because these neuroendocrine events produce more visible changes in the adolescent.

The criteria for identifying the conclusion of adolescence vary greatly. We summarize this

variability into two 'camps' based on operational definitions evident in the literature that can often be traced to underlying assumptions regarding adolescence as a biological and/or a social construction (e.g., nature versus nurture). The *neurobiological* camp focuses on identifying an end of adolescence that is associated with the normalization of neuroendocrinological functions (e.g., gonadotropic functions). For the neuro-biological camp, the end of adolescence occurs approximately around age 18 (c.f. Spear 2000). The second camp focuses on *socially-constructed* definitions to identify the end of adolescence. For example, as educational requirements for gainful employment in the United States have increased, along with other macrostructural changes (Mortimer and Larson 2002), some scholars extend the upper boundaries of adolescence well into the middle 20s or even age 30 (Arnett 2000). The social-construction camp typically relies on neuroendocrinological events for the start of adolescence but then switches to social definitions to determine the endpoint.

Neurobiology of Puberty

The neuroendocrinological events of puberty

result not simply in sexual maturation but they also trigger profound changes in the brain that impact "the perceptions, motivations, and behavioral repertoire of the individual" (Blakemore et al. 2010, p. 926). These changes accelerate learning for an ontogenetic purpose—to provide flexibility (neuroplasticity) to rapidly learn and adapt to environmental needs and demands, presumably to promote learning associated with functioning as a member of adult society (Bourgeois et al. 1994; Keating 2004; Spear 2000). There are two broad domains of brain changes, and each domain is associated with a specific learning potential that focuses and prioritizes the 'object' of learning. These changes support the apparent ultimate ontogenetic outcome for brain development during adolescence: the integration/coordination of affective and cognitive brain systems that make possible, but do not ensure, a more fully reflective, consciousness for self-directed thought and action (Keating 2004). We next review research findings on the two domains of brain development during adolescence in order to provide a neurobiological backdrop for understanding the normative development tasks of contemporary adolescence (e.g.,

identity, agency).

Neurogenesis, Pruning, and Myelination

In response to hormonal events of puberty, adolescents' experience a massive overproduction and pruning of neurons (Huttenlocher 1979). The magnitude of this neuron generation (neurogenesis) and pruning is startling, with some reasonable estimates of pruning of around 30,000 synapses (connection between two neurons) *per second* in the primate brain, and a similar rate in humans during adolescence (Huttenlocher 1984; Rakic et al. 1994). Pruning is an essential process for organizing neural connections into networks that support functioning in an environment; the pattern of connections, not a greater number of neurons per se, is related to skill development and improved functioning. Only during the early years of life (e.g., ages 0–3) is the rate of neurogenesis and pruning roughly equivalent to that during adolescence. By approximately age 16, the rate of production and pruning peaks and begins to slow to adult-typical levels (He and Crews 2007; Huttenlocher 1979). One indication of this slowing of neuron production is the relative volume of grey matter (neurons). Grey matter volume is reduced

and becomes roughly equivalent to adult levels around ages 18–20 (Giedd et al. 2010; Nelson et al. 2006; Sowell et al. 2001).

Myelination of the axons of neurons (white matter) is important for skill learning because it increases the efficiency and speed of neuronal firing for performing a task (e.g., cognitive, affective, or behavioral task). White matter density increases proportionally based on the degree to which specific neural pathways are repeatedly used, and thus reflects learning. The pattern of white matter development shows a linear increase throughout adolescence and it continues throughout adulthood (Paus 2010; Sala et al. 2012). The *rate* of white matter formation, however, follows a similar pattern as grey matter development, peaking and then slowing to a more adult-typical rate after age 18.

Emotional and Motivational Sensitivity

Coinciding with accelerated grey and white matter changes during adolescence are alterations in incentive and emotional processing brain systems—subcortical systems . We use the term 'alteration' instead of change to indicate a more transitive or temporary state, rather than a permanent change

to motivational and emotional processes systems. Overall, there is an intensification and sensitivity to affective and motivational cues and rewards, which appears tied to alterations in the number of and responsiveness to neurotransmitter receptors, such as dopamine (DA) and GABA—gamma-amino butyric acid (Somerville et al. 2010; Spear 2000). The density of dopamine receptors in the striatum, which is associated with reward motivation and movement, peaks in early adolescence and by mid-to-late adolescence the density of receptors returns to its previous levels (Casey and Jones 2010; Seeman et al. 1987). A shift in the value of incentive stimuli during adolescence appears to support greater novelty-induced reward seeking, which is frequently cited as a causal mechanism for 'characteristic'[1] adolescent sensation seeking or risk-taking behaviors that can have negative consequences (Steinberg 2008; Sturman and Moghaddam 2011). Although such implied causal relationships are commonly made, there is no compelling ontogenetic argument to support this *a priori* assumption given that such behaviors are a function of context, opportunity, and learning (Casey et al. 2006). More importantly, raising the

sensitivity of affective and motivational brains systems to coincide with the flood of new neurons and rapid pruning makes ontogenetic sense—since affect and motivation have a powerful organizing and guiding effect, serving to focus learning on relevant tasks (e.g., Rakic et al. 1994).

Puberty and Experience-Dependent Neuroplasticity

Although the rapid neuronal growth and restructuring during adolescence occurs across cortical regions, it is particularly concentrated in prefrontal cortex (PFC). PFC is implicated in numerous higher-order cognitive processes, including metacognition, prospective thinking, planning and organization, executive function, and response inhibition (Casey et al. 2008; Keating 2004; Luna and Sweeney 2004; Spear 2000). One of the results of changes in PFC is the "top-down" or cognitive coordination[2] of goal-directed thought and action. Luna and Sweeny (2004, p. 298) describe the coordinating function as "the ability to voluntarily/cognitively choose what stimuli or ideas will guide our behavior, and inhibit responses to competing ideas of events that could be less adap-

tive (Bjorklund & Harnishfeger, 1995; Dempster, 1992; Fuster, 1997)." Although children exhibit fundamental capacities for cognitive coordination, during adolescence the explosion of neurons and pruning in PFC results in the rapid expansion of existing capacities (Luna and Sweeney 2004) and the development of new ones. Cognitive coordination in PFC does not occur independent of other systems, however, rather it is subserved by "widely distributed and integrated brain systems" (Luna et al. 2010). That is, PFC co-ops existing and emerging functions of other systems to expand its own functional capacities for the voluntary/conscious *suppression* of irrelevant and off-task behaviors that could interfere with goal attainment, as well as for *advancing* salient and on-task behaviors that lead to the intended goal.

The remarkable growth in PFC, with its aim of coordinating and directing thought and behavior, often overshadows an equally important change between the top-down functions of PFC and the 'bottom-up' functions of subcortical, affective systems. During adolescence there is an increase in the number and myelination of long neuronal tracks between PFC and subcortical regions, result-

ing in the integration of and greater coordination between the functional capacities of affective and cognitive systems (Keating 2004; Luna and Sweeney 2004). By more fully integrating affect and cognition, there is an increase in adolescents' capacities for self-direction and regulation of effort, motivation, thought, and behavior (Casey et al. 2008).

Importantly, neurobiological changes in brain structure during adolescence only represent a *potential* for the expansion of functional capacities, rather than some ontogenetically ensured outcome of neurobiological growth. A basic function of the human brain is to learn how to successfully function within an environment by interacting with it (Amso and Casey 2006). This experience-dependent plasticity is essential for adaptive learning that is distinctive to an individual and maximizes his or her chances, not only of survival in a particular setting, but also successful functioning in it (Greenough et al. 2002a, b). Experiences in the environment influence which neurons are pruned and which ones remain; experience 'sculpts' the emergent networks of synaptic connections for functioning within an environment

(Blakemore et al. 2010; Markham and Greenough 2004). Interactions with the functional demands of an environment, then, provide essential information for adaptive learning. However, different environments will vary in the types, number, and frequency of demands and experiences, e.g., their complexity (Grossman et al. 2002). Similarly, any two individuals in the same environment can perceive very different information depending on prior learning, personality, and personal interests. Thus, the experience-dependent adaptive learning hinges on experiences in an environment and on individual's past learning and propensities.

Unfortunately, neuroscience is not yet capable of examining specific neurobiological changes related to learning specific complex capacities for functioning, including capacities needed for adulthood. However, neuroscience research suggests that adolescents are developmentally primed for experience-dependent accelerated learning related to the *conscious coordination and regulation their own thoughts, affect, and behavior* (Luna and Sweeney 2004). Thus, we propose that adolescence provides a distinct neurobiological window of development that is intended to maximize chances

for learning self-regulatory capacities in preparation for functioning in adult society. Furthermore, research suggests that *specific experiences within an environment play in an essential role in sculpting adolescents' brains.* Conversely, if there are not sufficient experiences during adolescence that demand learning to regulate the 'self,' there is little reason to expect such capacities to flourish.

Changes in Fundamental Cognitive and Affective "Processes"

Before examining key developmental tasks of adolescence, we examine changes during adolescence in three "processes" that operate across the different tasks: metacognition, self-regulation, and self-determination. The term 'processes' is used to indicate that we are treating them as fundamental processes of the mind (cognition, affect, and behavior) that support developmental tasks (defined below). Metacognition (c.f. Miller et al. 1970) and self-regulation (c.f. Bandura 1986) share the following conceptual core: "individuals

make efforts to monitor their thoughts and actions and to act accordingly to gain some control over them" (Dinsmore et al. 2008, p. 404). The two constructs, however, have distinct research traditions, with metacognition focused on maturation of individuals' awareness of their thoughts (Moshman 1982) and self-regulation focused on development of behavioral and emotional regulation from interactions within an environment (Bandura 1982). We also treat the basic psychological needs in Self-Determination Theory (SDT) as fundamental processes; these processes may help explain underlying intentions for metacognition and self-regulation.

Metacognition

Metacognition is essentially about individuals' monitoring of their own thinking, which includes the now classic "thinking about thinking" moniker (Miller et al. 1970). Operationally, metacognition emphasizes metacognitive knowledge and experience, goals, plans, and strategies for the intentional monitoring or regulating of one's thoughts, presumably to achieve some outcome or engage in some action. The study of metacognition has

strong ties to Piagetian theory (Inhelder and Piaget 1958) with an emphasis on formal operational thinking (logical reasoning) and judgement and decision making. From a Piagetian perspective, the emergence of formal operational thinking is a hallmark of adolescence, although it is more accurate to consider it a potential development during adolescence rather than a guaranteed one (Keating 2004). Formal operation thinking can be defined as hypothetical, deductive reasoning (e.g., , hyothetico-deductive reasoning) to arrive at necessary and logical inferences, as opposed to inductive, concrete operational reasoning that begins with what is observed and then infers a hypothesis (Foltz and Overton 1995). Research indicates adolescence is associated with increased formal operational reasoning (e.g., higher-order, complex logical thinking and problem solving) but this capacity *does not* result from completion of some ontogenetic structural goal to shift thinking from concrete to formal logical processing (Klaczynski 2001a; Moshman 1998). A particular challenge in the study of metacognition as formal operations is how much this logical reasoning predominates everyday decision-making and behaviors among

adolescents and adults.

Metacognition has been applied in the context of adolescent judgments and decision-making. Two fields of research, neuropsychological and cognition, indicate that everyday judgments and decision-making rarely, perhaps if ever, follow only logical-based rules (Bechara et al. 1997; Evans 1996). Instead, "heuristic" thinking is the brain's default mode for decision-making, with analytic thinking asserting itself when heuristic processing is not sufficient or does not lead to desired outcome (Klaczynski et al. 2001; Papies and Aarts 2010). In a dual processing model (heuristic and analytic thinking) *affect* directs, at least initially, attention and influences selection/application of a response that is similar or pertinent to the present context (Klaczynski 2001b). This affective processing, which is typically carried out unconsciously, provides an efficient (e.g., reduced cognitive load) and effective method for making the myriad of advantageous decisions necessary in our daily lives that would otherwise require laborious and time consuming cognitive processing (Keating 2004). In situations where previously learned responses are not sufficient to guide decisions, analytic thinking

is employed to further guide the decision-making process. Research on the relative balance between heuristic and analytic thinking among adolescents indicates that analytic processing increases with age, while heuristic thinking is less age bound and more experiential and context specific (Klaczynski 2001a, b). To be clear, analytic thinking is not independent of heuristic thinking, and vice versa. Successful analytic thinking, for example, can lead to the modification of a decision-making heuristic. This line of research suggest that adolescence is associated with an increasing coordination between heuristic (e.g., affective) and analytic (e.g., cognitive) systems, which is consistent with the neurological research presented in the previous section, as well as research findings on the development of self-regulation. Finally, experiential and contextualized learning are essential to support heuristic thinking, including the heuristic thinking that has been modified through analytic processes. Thus, in order for heuristic and analytic cognition to become coordinated for (advantageous) judgment and decision-making, experiential and contextualized learning is a must.

Self-Regulation

Self-regulation focuses on decision-making and judgment aspects in the domains of behavioral and motivational regulation, as well as in more traditional cognitive domains (Zimmerman 1989, 2008; Zimmerman and Schunk 2008). At its optimum, self-regulation is the ability to "withstand temptations, persist through obstacles, and delay gratification" (Fitzsimons and Finkel 2011, p. 407). Self-regulation among adolescents (and children) has been studied primarily within the academic setting, frequently termed self-regulated learning (SRL), although it has also been applied to the sport and physical activity setting. Zimmerman (2008, pp. 166) defined SRL 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, such as writing." (Academic skill in this instance refers to metacognitive processes, such as goal setting, strategy selection and monitoring.) Given the extent of research on self-regulation and SRL, we will only highlight the relevant findings for adolescents (see Boekaerts et al. 2005 for review).

Self-regulation development parallels the cognitive changes occurring during adolescence. A particularly important cognitive change associated with prefrontal cortical maturation (Paus et al. 1999; Sowell et al. 1999) is the capacity for the temporal organization of and execution of behavior, speech, and cognition (Fuster 2001). Thus, in addition to the expansion of higher-order reasoning capacities, the maturation of prefrontal cortex supports the growth of the temporal representation of goal-directed actions, including actions extending further into the future, which become integrated with inhibitory control processes (Fuster 2002). Research on self-regulation indicates that adolescents' become increasingly capable of regulating their actions through forethought, advanced planning, goal setting, and acting with intention, that is, *planfulness*, something not fully possible prior to puberty (Demetriou 2000). Thus in many respects, adolescence is the 'golden age' of regulatory development since most of the neurological growth is directed toward integration and coordination of cognition, affect/motivation, and behavior for planfulness.

An important 'outcome' of self-regulation is

a growing sense that the individual has control over his or her own behavior (e.g., "self-agency"). A sense of self-agency is important because it serves to motivate and guide behaviors for goal achievement, often without much conscious deliberation (Gollwitzer and Sheeran 2006; Papies et al. 2009). However, it is only through repeatedly experiencing a sense of control over outcomes that a generalized sense of self-agency is built, and conversely, in the absence of such reinforcing experiences an individual may learn that efforts to regulate his or her actions to achieve an outcome have little benefit (Papies and Aarts 2010).

Self-Determination: Basic Psychological Needs

The exercise of volition is a basic assumption across the literature on self-regulation . The importance of volition for human development is suggested in the extensive body of research emanating from Self-Determination Theory (SDT) . We acknowledge that the term 'self-determination' has been criticized, and sometime rightly so, as a Western construct that reflect an individualistic worldview. Our reading and understanding of SDT, however,

suggests we take a more generic view of self-determination, and similarly of autonomy, and consider it as a motivational component of human beings that operates in distinct ways depending on the contexts (e.g., culture) in which they are learned and exercised.

Within the SDT framework, the three basic psychological needs—competence , autonomy , and relatedness —are fundamental affective processes proposed to motivate human behavior and action (Ryan and Deci 2000). Theoretically, these needs operate across the full range of cultures, domains, and social and personal contexts, although their idiosyncratic expression will also vary within these contexts. (Chaps. 2 and 4 in this book cover SDT in detail, thus we omit discussion of it here.) From a developmental perspective, the relative importance of each need could wax and wane depending on the period or age in the lifespan. Consequently, while all three needs constantly interact to affect growth across the lifespan, we suggest adolescents may particularly need to experience their 'self' as the originator of decisions and volition over actions in order to support the emergent neurological potentials (discussed in a previous section). The experi-

ence of the self being the originator of one's action becomes self-reinforcing (Deci and Ryan 2002) and an individual's environment can support or thwart this self-propagating experience of self-determination (Ryan and Deci 2000). Since volition and choice are instrumental to the experience of autonomy, an important question to address is how much choice and volition do the different environments of adolescents' daily lives permit. In schools in the United States, for example, adolescents' volitional actions can be relatively limited.

Key Developmental Tasks of Adolescence

Havighurst (1948) introduced the concept of a developmental task as a physical, cognitive, and/or emotional skill that needs to be learned during a particular period of the lifespan. Learning these specific skills (e.g., language) is integral for subsequent periods of development. The ontogeny of particular skills during a particular period results from genetically-propelled physical/neurological maturation that is affected by the environment in which it occurs. Although the concept of develop-

mental tasks has been applied to various points in the lifespan (e.g., emerging adulthood), we prefer a narrower definition in which the emergence of new developmental tasks in the lifespan ends at a point where genetically-driven physical/neurological growth is complete, e.g., an organism has reached its mature state. We find this narrow definition helps identify a *specific learning need* that arises during a genetically-driven period physical/neurological growth, and thus also defines *specific types of experiences in an environment* that are important for supporting the development of a given task. An absence of particular experiences in an environment to support a physical/neurological learning need, then, would undermine the developmental task.

Developmental Task: Identity

Adolescence has long been associated with the search for identity or purpose—to understand one's self (e.g., "Who am I?") and role in adult society (Erikson 1968; Hill and Burrow 2012). Identity/purpose development occurs across the lifespan, but it is particularly acute during adolescence as a neurobiological push to integrate cognition and

affect appear to promote questioning related to valuing and meaning. Although issues of identity/purpose extend into young adulthood and beyond in contemporary Western society, it remains a central task for adolescents (puberty through high school). Identity is important as research suggests that those with a strong sense of identity are better able to self-direct and flourish both presently and in adulthood, e.g., strive toward goals (Hill et al. 2013).

Erikson's stage of identity development has dominated Western psychology and research, although it is important to keep in mind identity was but one stage of Erikson's lifespan theory of psychosocial development (Erikson 1950, 1968). According to Erikson, individuals either successfully achieve a sense of identity during adolescence or they do not. More current thinking, however, is that achieving a sense of identity is best conceived as an ongoing process, which takes on heightened importance during adolescence. Achieving a sense of identity requires adolescents to resolve conflicts or crises regarding how they view their 'self' and their role as an adult in society. Exploring different selves and roles is an important process in

Erikson's theory as exploration leads to awareness of conflicts, for example, conflict between expectations about what one should do and what one actually did. Achieving a sense of identity, then, entails progressively resolving conflicts until some stable point is reached in which conflicts become minimized, e.g., personal fidelity. Thus, identity development during adolescence is an iterative process (Crocetti et al. 2008, 2012) leading to a stable sense of self.

Theoretically, achieving a stable identity is not the only possible outcome of adolescence. Adolescents may, for example, commit to an identity without having sufficiently explored alternative options (e.g., experienced conflict from role commitment). James Marcia (1967, 1987) was instrumental in operationalizing Erikson's crisis, exploration, and commitment dimensions, leading to the differentiation of identity statuses: achieved, diffused, moratorium, and foreclosure. Within Marcia's framework (Marcia 1966, 1967), individuals with an achieved identity status have cultivated resilience since they have explored choices, made decisions on their own terms, and are not easily overwhelmed by new experiences, responsibilities,

or changes in their environment. Individuals with a foreclosed status however, risk vulnerability since they tend to make a commitment before experiencing a period of intensive exploration on which to base the commitment, and their rigid adherence to the expected path precludes adaptability to ambiguous or unexpected situations (Marcia 1966, 1967; Muuss 1996). A diffused status indicates little commitment to or exploration of an identity, while a moratorium status represents active exploration without firm commitment.

Identity serves a self-regulating role by directing adolescents' attention and influencing the selection of goals and actions. Similar to Baltes (1997) self-regulation theory, Crocetti et al. (2008, 2012) suggest that the process of identity formation proceeds from the selection of identity-appropriate goals and actions, and then once enacted the goals and actions become a source of information about the value and usefulness of the identity. Over time, an adolescent may abandon, modify, or maintain her commitment to the identity. The selection and enactment of identity-relevant goals and actions is not, however, independent of socio-cultural factors. Rather the process of

identity formation is embedded within the social, economic, and cultural contexts and systems in an adolescent's daily life (Cote and Levine 2014; Phinney 1989; Phinney and Chavira 1992; Phinney and Ong 2007; Schwartz et al. 2012; Sellers et al. 1998; Umaña-Taylor et al. 2014). These contexts and systems are not simply the testing grounds for adolescents' identity exploration but they also provide access to information on different identities. Not surprisingly since most of adolescents' daily lives are highly age-graded, peers are an important source of identity normative information; education is another prominent source.

A particular challenge adolescents face is learning to balance being presently guided by more immediate identity-relevant goals and actions or by more future ones (.g., possible self; Markus and Nurius 1986). The relative weighting of immediate and future identities depends on many interacting factors (e.g., personality), but we suggest support for autonomy or self-direction is essential since individuals' engage in self-directed actions that are consistent with what they value and find meaningful (Vansteenkiste et al. 2010). Encouraging adolescents' self-direction, then, would foster interest

as well as the creation of purpose and meaning (Hidi and Renninger 2006; Hill et al. 2013). Thus, a greater degree of freedom to self-direct within the contexts and systems of adolescents' lives should facilitate identity development.

Developmental Task: "Real-World" Agency

The development of identity is closely linked to the development of capacities for exercising agency — a learned ability to deliberately act in order to set and achieve desired goals or outcomes (c.f. Bandura 2006; Larson 2000). Although agency can certainly be considered as a generalized pattern for engaging one's environment (Little et al. 2006), in this section we focus on a line of research by Larson and colleagues on adolescents' development of a specific set of skills for the exercise of agency within real-world, adult-typical settings (Larson and Hansen 2005; Larson and Angus 2011; Larson et al. 2005; Larson et al. 2014). In the United States, capacities for exercising agency under real-world conditions are increasingly needed across domains of adult life (Larson 2000). For example, adults need "skills to set goals, formulate plans, and

work over time to achieve the goals. Most importantly, they need to do this in ways that anticipate the open-ended and not-always-logical system dynamics of real-world environments" (Larson et al. 2014, p. 3). Youth programs, such as leadership, arts, and civic action programs, are a common setting in adolescents' lives for learning skills for agency (Gootman and Eccles 2002; Mahoney et al. 2005). An important feature of youth programs is that adolescents' participation is voluntary, which should promote self-direction within this setting.

Motivationally, exercising agency under real-world conditions requires the "the ability to be motivated from within to direct attention and effort toward a challenging goal" (Larson 2000, p. 170). The key to developing this capacity is the pairing of intrinsic motivation (e.g., enjoyment) with challenge, that is, addressing the challenges and demands of a task or activity become a primary source enjoyment (Csikszentmihalyi and Rathunde 1993; Larson 2000; Moore and Hansen 2012). Intrinsic motivation (e.g., enjoyment), then, is an important, albeit not sufficient, mechanism that supports sustained engagement in an activity or task (Ryan and Deci 2000). Cognitively, exercising

agency under real-world conditions requires learning "strategic thinking" skills, including planning and forethought (e.g., problem representation, tasks sequencing) that is less rigid and more adaptive, higher-order abstract reasoning for understanding and coordinating actions within complex institutional systems, and advanced perspective taking that can anticipate others' actions, intentions, and reactions (Larson and Hansen 2005; Larson and Angus 2011; Larson et al. 2014). Furthermore, these advanced motivation and cognitive capacities are predicated on the expansion of metacognition and self-regulation capacities.

Grounded theory research suggests adolescents' learn skills for the exercise of agency through three processes (Larson and Hansen 2005; Larson and Angus 2011; Larson et al. 2005; Larson et al. 2014). First, adolescents' learn agency from engaging with the *a priori* requirements (e.g., "I had to) and tactical demands (e.g., challenges of the work, such as logistics of running event) of their work on projects (Larson et al. 2005). By engaging these demands, adolescents' appear to develop strategies for self-motivation as well as creative and analytic reasoning about how to meet the

demands, e.g., concrete organizing skills (Larson and Hansen 2005; Larson et al. 2014). Second, adolescents appear to learn agency from feedback on the success and failure of their work, e.g., how effective their strategies were. Finally, adults in the youth programs can provide instrumental support as adolescents work on their projects (Larson and Angus 2011). Adults can support adolescents' learning by "keeping youth on track" (e.g., reminder of looming deadline), and by keeping control over the work with the adolescents, often resisting the urge to take over youths work to ensure intended outcomes (Larson and Walker 2010). The research of Larson and colleagues suggests adolescents are capable of learning skills to exercise "real-world" agency and that the setting and its supports can promote, or conversely thwart, their agency development.

Cultural and Agency

From a cultural psychological perspective, culture shapes the mind and the mind in turn creates culture in a cycle of mutual construction (Adams 2012). Given that adolescence is a social construct (Youniss 1983), different societies are likely to

have varying constructions of what adolescence represents, how adolescents are expected to develop, and how they should behave. Moreover, because of the adolescent brain's plasticity and experience-dependent developmental systems, the cultural environment is likely to greatly affect neural reorganization during adolescence. Therefore, the ways in which adolescents' metacognition, self-regulation, and self-determination shape their expressions of identity, purpose, and agency will vary across cultures.

Cultural mandates about self-construal likely define the developmental tasks that are seen as culturally-appropriate for adolescents, which in turn are manifested in psychological tendencies (Kitayama et al. 2009; Markus and Kitayama 1991). For example, research by Higgins and colleagues has shown that while self-regulation might be a common cognitive process for all humans, there are differences in the regulatory focus of goals pursued (Higgins and Silberman 1998; Shah et al. 1998). In Western or individualistic cultures, goals that allow self-promotion tend to be favored, but in non-Western or collectivistic cultures goals that prevent social disharmony tend to be favored (Lee

et al. 2000). Preferences for different types of goals may be shaped by differing parenting practices and socialization strategies that emphasize nurturance (favoring promotion goals) or security (favoring prevention goals) (Higgins and Silberman 1998). In turn, these preferences and differences in regulatory-focus may impact the types of role models that adolescents' gravitate toward (Lockwood et al. 2002) and their motivational-regulation of distal vs. proximal goal achievement (Pennington and Roese 2003). In addition, research by Kagitcibasi (2005, 2013) has shown a view of adolescent development that emphasizes individuation-separation (as opposed to a self-determination focus on autonomy and volition) may not be applicable to non-Western cultures, such as Turkey, where autonomy-relatedness in the family context is a more optimal outcome for adolescents. Similarly, in some East Asian societies, reciprocal filial piety —not emotional separation—is seen as a developmental strength or desired dispositional trait for autonomous adolescents and young adults (Pan et al. 2013).

Identity is another aspect of adolescent development that varies across cultures due to the fact

that identity is shaped by the dynamic ecological systems in which the individual is embedded. For example, Côté and Levine (2014) emphasize the ecological aspects of Erikson's adolescent identity development theory in their explanation of a culture-identity framework that is influenced by macro-level structural shifts in societies over time. These authors' argue that in modern societies, adolescents' and young adults' experience an almost perpetual state of moratorium and diffusion driven by the image-oriented management of loosely structured identities in a cycle of continuous discovery. Similarly, others have theorized that globalization presents a multiplicity of pathways to adolescent identity that can complicate cultural identity formation (Arnett-Jensen 2003; Jensen et al. 2011). There is also research suggesting that hegemonic cultural globalization can lead adolescents from non-Western Caribbean cultures to incorporate aspects of Western, Americanized identities into their own local cultural identities (Ferguson and Bornstein 2012, 2015).

However, culture is not solely a deterministic force; rather, culture can be viewed as a tool for agentic identity construction. According to Hol-

land (2001, p. 4) "identities are improvised—in the flow of activity within specific social situations—from the cultural resources at hand." In this way, tangible and intangible sociocultural/psychological affordances (such as level of education and resilience) serve as identity capital for malleable configuration of the self and strategic investment in the self and salient others or ideologies (Cote and Levine 2014). The amount of identity capital that individual adolescents are afforded in their cultural environment will vary by specific social situations, and will impact (1) the extent to which they are able to explore and master different identity roles, and (2) the level of agency that they exercise in fulfillment of valued roles (Cote and Levine 2014; Côté and Schwartz 2002). Thus, culturally-embedded learning processes shape identity and agency development (Flum and Kaplan 2012).

Conclusion

Adolescence represents a remarkable time of accelerated development, unparalleled at any other point in the lifespan after early childhood. Within the puberty-driven physical and neurological

changes, societies have constructed what it means to be an adolescent, including what we think adolescents are and are not capable of. We can boil down this chapter to two major points. First, adolescents' rapidly become capable of learning skills for directing and regulating themselves, as well as making a meaningful contribution (e.g., identity) to society by learning skills for exercising agency. Second, whether or not adolescents accomplish important developmental tasks is less about their cognitive and affective capabilities than it is about how society, and the contexts within it, support these developmental tasks. Our present view is that adolescence represents a unique window of learning opportunity but this opportunity we think is being squandered, for example through overly restrictive and rigid standards-driven education that minimizes self-determination and agency, as well as pervasive age-grading across most domains of adolescents' lives that limits their access to socially relevant models of agency among adults. Without offering concrete solutions for how to support self-determination, identity, and agency, we run the risk of be a critic, but to offer 'solutions' here would far exceed the scope of the chapter. How-

ever, we suggest that asking how the settings and institutions in adolescents' life presently support or thwart these important developmental task is a needed first step in finding solutions.

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4. Self-Determination Theory

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Abstract
This chapter provides an introduction to Self-Determination Theory, a macro-theory that details the origins and outcomes of human agentic

action. Basic psychological needs for autonomy, competence, and relatedness in Self-Determination Theory are introduced as is the relationship of need satisfaction to intrinsic motivation and the regulation of extrinsic motivation. Mini-theories associated with self-determination are introduced, and research on self-determination summarized.

Keywords Self-determination theory – Motivation – Autonomous motivation – Cognitive evaluative theory – Organismic integration theory – Causality orientations theory – Basic psychological needs theory – Goal content theory – Relationships motivation theory

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Self-Determination Theory (SDT) is one of several prominent approaches to studying human motivation (Weiner 1990). A departure from most theories that treat motivation as a unitary concept, SDT differentiates motivation into autonomous and controlled types (Deci and Ryan 2008). The initial work leading to SDT began in the 1970s and was formalized especially in the eighties by Edward L Deci and Richard M Ryan (e.g., Deci and Ryan 1980, 1985b). Since then the formal theory and applica-

tions of SDT have expanded greatly (Deci and Ryan 2000; Ryan and Deci 2000, 2011).

Today SDT represents a comprehensive macro-theory that details the origins and outcomes of human agentic action (Vansteenkiste et al. 2012). SDT is based on the *organismic paradigm* or *metatheory*; one that assumes humans are active organisms, motivated to assimilate and integrate knowledge and capacities in both their physical and social environments. (Ryan 1995). As a contrast to theories that stress the dependence of behavior on environmental or biological contingencies, SDT views human behavior as growth-oriented and proactive (Deci and Ryan 2012). According to this theory, both the bright and dark sides of human behavior—its active constructive nature and its passive and defensive manifestations are both understood as outcomes of the interaction between people's basic psychological needs and the sources of need support or thwarting in social environments (Vansteenkiste and Ryan 2013).

SDT initially grew from a foundation of research on the effects of intrinsic and extrinsic rewards on human motivation (Deci and Ryan 1980). Early evidence suggested an external incen-

tive such as receiving monetary reward for solving puzzles can decrease intrinsic motivation for that task (e.g., Deci 1971). Conversely, when given positive, competence relevant feedback, participants' intrinsic motivation could be enhanced. These findings prompted further study of the quality of motivation, which, before SDT, had historically been primarily studied in quantity only (Deci and Ryan 1985b, 2008).

The effects of extrinsic rewards on autonomous motivation can be understood in terms of both ones perceived locus of personal causality, or autonomy, and basic psychological needs satisfaction (Ryan and Deci 2000). deCharms (1968) originally described the concept of perceived locus of causality in terms of the "Origin-Pawn" concept, an issue he understood to be central to human motivation. To illustrate the origin-pawn concept, we describe a longitudinal study deCharms (1972) conducted to test whether treating students as origins or pawns affected their perceptions of personal causality, and indirectly, their academic achievement. Students in an experimental (trained) group were encouraged over the course of several years to determine realistic goals for themselves, know

their strengths and weaknesses, determine actions they could take to reach their goals, and evaluate whether their actions were leading to the desired outcome. Compared to students in the non-trained group, students in the trained group had increased scores on measures tapping their sense of being an origin for their behaviors, and ultimately, they also showed improved academic achievement. The origin measures included categories for internal goal setting, internal determination of instrumental activity, reality perception, personal responsibility, self-confidence, and internal control. deCharms previously had referred to the underlying construct related to origin behavior as intrinsic motivation or internal causation, but emphasized the concept of origin-pawn to highlight the locus of causality associated with internal versus external motivations (1968).

Deci and Ryan (1985b) were early on influenced by both deCharms' (1968) origin-pawn distinction and by White's (1959) conceptualizations of effectance motivation as applied to intrinsic motivation. Deci and Ryan built upon these concepts in their early theorizing about the determinants of intrinsic motivation, and later expanded SDT

as a full motivational theory, concerned with the energization and direction of intrinsic and extrinsic behavior (1985b).

Deci and Ryan (1985b, 2000) emphasize that SDT, as an organismic meta-theory, views humans as proactive beings with the propensity to assimilate and integrate both their internal states and their mastery and understanding of the social and environmental circumstances they encounter. Humans, that is, are viewed as striving toward growth and optimal development, not merely shaped by social learning or stimulus response pairing. Yet in order to attain optimal development and functioning, people require certain positive supports from the environment. Hence, SDT frames optimal human development as the interaction between growth-striving humans and their social environment in which *basic psychological needs* are either supported or thwarted. When needs are supported both greater growth and higher well-being result.

According to SDT, the critical social environment supports are described in terms of three specific basic psychological needs, namely the needs for competence, autonomy, and relatedness (Deci and Ryan 2000; Ryan 1995). In social envi-

ronments that support the satisfaction of these needs, optimal growth and positive development are expected whereas in social environments that thwart satisfaction of any of these fundamental needs, greater passivity, alienation and ill-being are expected.

Satisfaction of the three basic psychological needs is thus a foundational concept to SDT and considered essential for maintaining intrinsic motivation and the self-regulation of extrinsic motivations (Deci and Ryan 2000). The *need for competence* reflects humans' desire to effectively master their environment and experience a sense of competence in it. An important distinction is that humans experience satisfaction of the need for competence not necessarily as an absolute level of achievement but instead as a "phenomenological" experience in which a person experiences increasing mastery and effectance (Deci et al. 2013, p. 112). The *need for autonomy* is satisfied when an individual experiences choice and volition in their action, and perceives themselves to be the origin of their actions. Autonomous actions are those that are self-endorsed, and congruent with one's values and interest (Vansteenkiste et al. 2010). Finally, the

need for relatedness is associated with social belonging. Relatedness is a satisfaction derived from a sense of connectedness with others; to care and be cared for by others (Deci et al. 2013; Ryan and Deci 2000).

In the development of self-determination theory, Deci and Ryan incorporated the fundamental concepts of motivation and basic psychological needs into six mini-theories, each addressing different problems of motivation theory. Together, these mini-theories explain the operations of self-determination theory in a complex social world (Deci and Ryan 2012). Described below, the mini-theories are cognitive evaluative theory (CET), organismic integration theory (OIT), causality orientations theory (COT), basic psychological needs theory (BPNT), goal content theory (GCT), and relationships motivation theory (RMT). These mini-theories each explain a set of observed motivation phenomena in various domains of functioning (Ryan and Deci 2011).

Deci and Ryan (1980) first introduced *cognitive evaluation theory* (CET) to organize empirical research uncovered in experimental manipulations and field studies related to how external events

could enhance or diminish intrinsic motivation. CET argues that autonomy supportive social contexts enhance intrinsic motivation, whereas controlling social contexts undermine it. In addition CET suggests that positive competence feedback enhances motivation whereas feedback suggesting incompetence diminishes it. Subsequently, Deci and Ryan introduced a new mini-theory to further explain individual differences in motivation-related behavior, proposing trait-like motivational orientations. *Causality orientations theory* (COT) proposes three different personality orientations based on people's tendencies to orient to different sources of behavioral initiation and regulation, specifying three types of orientation, autonomous, controlled, or impersonal (Deci and Ryan 1985a). An individual with autonomous orientation is said to orient toward internal and external cues in a way that supports their autonomy and provides information significant to their actions. An individual with controlled orientation is said to focus on external cues and contingencies in regulation actions, and thus is prone to more extrinsic and controlled types of motives. Finally, an individual with impersonal orientation is said to be especially

sensitive to cues as indicators of incompetence and is linked with amotivation.

Acknowledging that most common daily activities are not intrinsically motivated, Deci and Ryan developed a third mini-theory under the SDT umbrella detailing the degree of autonomy involved in extrinsically motivated behavior. O *rganismic integration theory* (OIT) explains behavior that is extrinsically motivated can be either controlled or autonomous (1985b). Thus, they recognized that motivation exists on a continuum and the quality of an individual's motivation and engagement depends on the type of extrinsic motivation they exhibited. OIT details six types of motivation existing on a continuum from extrinsic to intrinsic; amotivation, external regulation, introjected regulation, identified regulation, integrated regulation, and intrinsic motivation. Researchers have used this theory to explain how desirable behaviors that are more autonomously regulated tend to be maintained. Also, more autonomous forms of regulation have been shown to be associated with positive outcomes such as wellness, engagement, and perceived competence (Deci and Ryan 2012). Figure 4.1 illustrates the continuum of motivation

from extrinsic to intrinsic and includes the source of regulation associated with each.

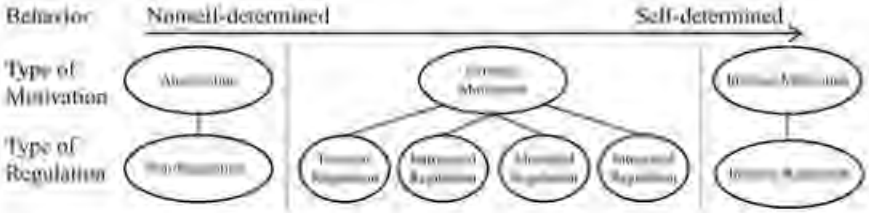

Fig. 4.1 The continuum of self-determination as described by organismic integration theory showing the variation in degree of self-determination according to the motivational and self-regulatory origins of behavior (Adapted from Ryan and Deci 2000)

With mounting empirical evidence for the above mini-theories, Deci and Ryan (2000) noted continuing support for the importance of the three basic psychological needs; autonomy, competence, and relatedness (2012) for psychological well-being. They further formalized *basic psychological needs theory* (BPNT) based upon ample findings that environments and contexts where psychological needs were satisfied were associated with greater feelings of well-being, psychological health, and greater positive affect in multiple domains (Ryan et al. 2010).

Kasser and Ryan (1996) and colleagues further developed SDT by focusing research not just on *why* people were motivated to act, but also *what* they were pursuing in terms of the content focus of their goals and aspirations. The resulting theory, *goal content theory* (GCT) posits that extrinsic goals such as financial wealth, image, and fame are less likely to satisfy the three basic psychological needs compared to intrinsic goals such as personal growth, community and emotional closeness (Ryan et al. 1996, 1999). Research evidence for GCT indicates that pursuit of extrinsic goals leads to less well-being and poorer performance whereas pursuing intrinsic goals leads to greater well-being; a phenomenon best explained by increased satisfaction of the basic psychological needs (Deci and Ryan 2012).

Finally, and most recently Deci and Ryan (2014) articulated *relationships motivation theory* (RMT) to describe the need supportive elements most likely to lead to sustained and satisfying relationships. Beyond the idea that intimacy is about warmth, involvement and security, RMT argues that true relationship satisfaction depends on respect and caring for the *self* of the other. RMT helps explain

variations in security of attachment as a function of autonomy support (e.g., La Guardia et al. 2000), and why parental styles such as contingent regard hamper both motivation and emotional wellness (e.g., Roth et al. 2009).

SDT's fundamental theoretical foundations; motivation , choice, and attributions, have fueled a rich empirical tradition. SDT has been applied to study a diverse array of issues such as health behavior initiation and maintenance, academics and school adjustment, psychotherapy, and sport and physical activity (Chen and Bozeman 2013; Curran et al. 2013; Gourlan et al. 2013; Vansteenkiste et al. 2013; Wang et al. 2011). Current findings in each of these domains provide additional information about the operation of the multidimensional framework of SDT as a predictor of external behavior, internal states, and other distal outcomes. For example, results of a recent meta-analysis of 184 SDT-based studies in the health domain by Ng et al. (2012) supported the interactions proposed by SDT. Overall, the findings showed that support for autonomy in the health care setting positively predicted patient competence and relatedness as well as autonomy in the health behavior domain.

This analysis also showed that satisfaction of the three psychological needs was associated with moderate to strong levels of patient welfare (Ng et al. 2012). Deci et al. (1999) examined empirical evidence for another fundamental tenet of SDT; the potentially undermining effects of extrinsic rewards on intrinsic motivation. In their meta-analysis including 128 experimental studies, Deci et al. differentiated studies by the type of reward, according to cognitive evaluative theory (CET). Rewards were categorized as tangible or verbal, task-contingent or task-noncontingent, and expected or unexpected. As predicted by CET, all rewards did not affect intrinsic motivation in a uniform manner. Instead, in free-choice behavior, all tangible rewards, all expected rewards, engagement-contingent rewards, completion-contingent rewards, task-contingent rewards, and performance-contingent rewards significantly undermined intrinsic motivation. In general, positive feedback (verbal rewards) enhanced intrinsic motivation but had the opposite effect when delivered with a controlling interpersonal style. Finally a variety of randomized controlled trails have shown the efficacy of SDT as an approach to interventions (e.g.,

see Ryan et al. 2008).

In other recent studies researchers have applied SDT as a process model for change in physical rehabilitation for young adults with a physical disability (Saebu et al. 2013). In this study, researchers hypothesized a SDT process model for change in which perceived autonomy support during a physical activity intervention period would positively predict psychological needs satisfaction at the end of the intervention. In turn, this was expected to increase autonomous motivation and self-efficacy for physical activity which were both expected to lead to increased physical activity over the course of the intervention. Results supported the SDT process model with significant paths to each of the variables except for change in self-efficacy from autonomous motivation which was positive but non-significant (Saebu et al. 2013). SDT is also notably applied in education and academic functioning. A recent application of SDT involved examining the effects of self-talk on students' emotions and perception of their understanding new academic material. Oliver et al. (2010) assessed undergraduate students' self-talk following a lecture on research methods. According to cognitive evaluative theory,

students construe their self-talk as informational or controlling, depending on the functional significance the student attaches to their inner dialogue. The perceived informational or controlling nature of this dialogue has important effects on anxiety and affect. Oliver et al. found students who evaluated their inner dialogue as informational were more likely to report positive affect following the lecture, independent of their understanding of the lecture material. Conversely, controlling self-talk was found to be associated with higher state anxiety following the lecture.

With SDT, Deci and Ryan have emphasized contextual factors and social influences play a significant role for motivation in multiple domains of human functioning. As such, an important aspect of determining sport and physical activity engagement is a coaches' role in creating an autonomy supportive atmosphere for athletes (Bartholomew et al. 2011). For example, using SDT as a framework for predicting behavioral engagement, Curran et al. (2013) found autonomy-supportive delivery of structural supports from coaches, (such as information, strategy, limits, and expectations) fostered ideal conditions for satisfac-

tion of basic psychological needs. These contextual elements were also associated with higher levels of behavioral engagement and lower levels of behavioral disaffection.

SDT provides a comprehensive approach to the study of motivation and its associated antecedents and consequences. Deci and Ryan's multidimensional theory hinges on satisfaction of three basic psychological needs as underlying forces in motivated behavior. The six SDT mini-theories further account for behavior in multiple domains by explaining the complex interactions of environmental and contextual factors with individual traits and their learned behaviors. Viewed holistically, SDT provides a detailed framework for understanding the antecedents and consequences of intrinsic versus extrinsic motivation, and thus, human agency.

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5. Causal Agency Theory

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Abstract
Causal Agency Theory is an extension of the Functional Theory of Self-Determination; both theories describe how one becomes self-determined. These theories have been widely applied in the field of special education, and conceptualize self-determination as a dispositional characteristic (enduring tendencies used to characterize and described

differences between people) based on the *function* given actions serve for an individual. This chapter will introduce and overview Causal Agency Theory, tracing its evolution from the functional model of self-determined behavior and its increasing application to all people, including those with disabilities. Causal Agency Theory will provide an organizational framework for the remainder of the text.

Keywords Self-determination – Causal agency – Causal Agency Theory – Volitional action – Agentic action – Action-control beliefs – Functional model of self-determined behavior

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Causal Agency Theory is a theory that explains how people become self-determined; that is, how they define the actions and beliefs necessary to engage in self-caused, autonomous action (e.g., causal action) in response to basic psychological needs and autonomous motivation as well as contextual and environmental challenges. Causal Agency Theory emerged from and is a reconceptualization of the "functional model" of self-determined behavior, first introduced in the field of special education in

the early 1990s. Causal Agency Theory reflects the ongoing development, refinement, and expansion of the functional model, incorporating theoretical advances in related areas (Self-Determination Theory, Action-Control Theory) and the growth in research in positive psychology . Importantly, Causal Agency Theory aligns work conducted through the functional model of self-determined behavior with Self-Determination Theory (SDT) and Action-Control Theory to form a theoretical model of the development of self-determination (as discussed in detail in Chap. 2). The purpose of this chapter is to describe the functional model and its application to special education and related disciplines and, subsequently, to explain its evolution as Causal Agency Theory. Both the functional model and Causal Agency Theory draw on foundational understandings of self-determination as (a) self-caused action from philosophy (Chap. 1), (b) a central process of an organism in the movement toward autonomous determination, from personality psychology (Chap. 2), and (c) motivated by the basic psychological needs of competence, autonomy, and relatedness from SDT (Chap. 4). However, the purpose of the functional

model, and now Causal Agency Theory, is to explain *how* people become self-determined; that is how they develop the actions and beliefs necessary to engage in self-caused, autonomous action that leads to causal agency. Causal Agency Theory plays a role in the development of self-determination, as introduced in Chap. 2, specifically addressing the causal action sequence leading to the experience of causal agency and, eventually, the development of self-determination. Figure 5.1 highlights the role of Causal Agency Theory in explaining the development of self-determination.

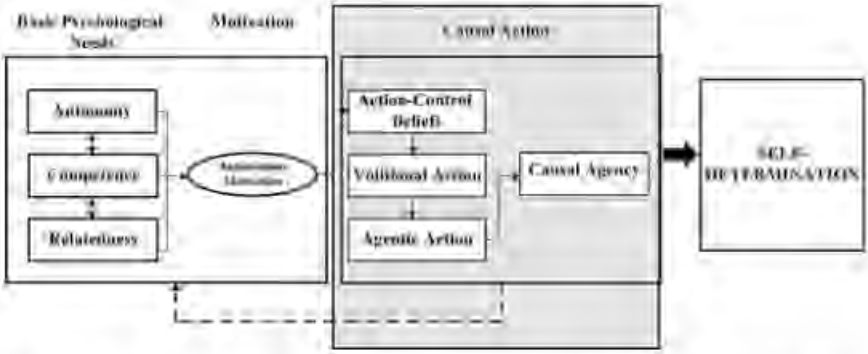

Fig. 5.1 Causal agency theory in the development of self-determination

History of Causal Agency

Theory: Functional Model of Self-Determined Behavior

Promoting the self-determination of adolescents with disabilities began to receive significant attention in the early 1990s in special education, as a means to enable youth and young adults with disabilities to achieve more positive outcomes pertaining to the transition from school to adulthood, such as employment, independent living, and community-inclusion. Throughout history, people with disabilities have often not been viewed as capable of being self-determined; instead the emphasis was frequently on protection, remediation, and control. However, in the last quarter of the twentieth century, changes emerged. Models of disability, referred to as social-ecological or person-environment fit models (Schalock et al. 2010; World Health Organization 2001) were introduced that conceptualized disability not as a deficit the resided within a person, but instead as a function of the interaction between personal competencies and environmental or contextual demands. Such models paved the way for a shift in emphasis in special education and related fields, from

interventions that focused on fixing or curing the person, to interventions that emphasized the role of enhancing personal competency, modifying the environment or context, and providing supports that enabled people to function successfully in typical environments.

Further, professionals in the field of special education were becoming increasingly aware of and concerned about the poor transition outcomes experienced by students with disabilities (e.g., low employment rates, limited engagement in the community post-high school) (Blackorby and Wagner 1996). Relatedly, people with disabilities themselves were increasingly uniting and advocating for their right to make choices and decisions in their lives (Wehmeyer et al. 2000). As a result of this advocacy within the disability community and the concomitant focus within the field of special education on promoting positive post-school outcomes, between 1990 and 1994 the U.S. Department of Education's Office of Special Education Programs (OSEP) funded 26 model demonstration projects to develop methods, materials, and strategies to promote the self-determination of youth and young adults with disabilities during

the transition from school to post-school environments (Sands and Wehmeyer 1996; Ward 1996). These projects resulted in numerous programs to promote goal-setting, problem-solving, decision-making, and self-advocacy skills and specially designed instructional methods, materials, and strategies to promote self-determination in students with disabilities (Carter-Ludi and Martin 1995; Field et al. 1998; Martin and Marshall 1996; Sands and Wehmeyer 1996; Serna and Lau-Smith 1995; Van Reusen et al. 1994; Wehmeyer et al. 1998). Several definitional frameworks for applying the self-determination construct within the special education context (Abery 1994; Field 1996; Field and Hoffman 1994; Mithaug 1996; Powers et al. 1996; Wehmeyer 1996; Wehmeyer et al. 2003, 1996) also emerged. The assumption was that by developing interventions and definitional frameworks to promote self-determination, enhanced adult outcomes related to community participation and employment would result.

Prior to this, there had been limited discussion of self-determination in the disability field. The first discussion of the importance of self-determination to people with disabilities can be traced

to Bengt Nirje's (1972) chapter entitled, *The Right to Self-Determination*, in the book *Normalization: The Principle of Normalization in Human Services* (Wolfensberger 1972). Nirje applied the use of the self-determination construct within more of a rights-based framework, articulating both the right of people with disabilities to live self-determined lives and the need for environmental conditions that supported opportunities for people with disabilities to make their own decisions, and live more independently. Beyond Nirje's early 1970s call for the rights of people with disabilities to live self-determined lives, the only other application of the construct to a disability context was by Deci and Chandler (1986), who discussed the application of SDT for teachers to motivate students with learning disabilities with optimally challenging, non-repetitive, autonomy-enhancing tasks.

It was in this context that Wehmeyer (1992) proposed a 'functional' model of self-determined behavior to drive efforts to promote the self-determination of youth with disabilities. Wehmeyer defined self-determined behavior as "the attitudes and abilities required to act as the primary causal agent in one's life and to make choices regarding

one's actions free from undue external influence or interference" (p. 305). Wehmeyer further elaborated, suggesting that self-determination involves "autonomy (acting according to one's own priorities or principles), self-actualization (the full development of one's unique talents and potentials) and self-regulation (cognitive or self-controlled mediation of one's behavior)" (p. 395). The notion of causal agency reflected the links of the constructs to determinism: people who are causal agents are people who make or cause things to happen in their lives, rather than others (or other things) making them act in certain ways. This early version of what has become Causal Agency Theory was developed with significant reliance on the early work of SDT theorists (Deci 1980; Deci and Ryan 1985) as discussed in Chaps. 1 and 9.

The Functional Model of Self-Determined Behavior

In 1996, Wehmeyer, Kelchner, and Richards published an empirical evaluation of the functional model of self-determined behavior , providing a refinement of the definition and the theoretical

structure within which the construct was framed. It was called the 'functional' model of self-determined behavior because one could not define self-determination in a response-class manner (e.g., by a list of specific behaviors), but instead had to consider the "function" that the action served for the person. It is important to note that the functional model was intended to provide a framework to understand how children and youth became self-determined. Because of the substantial work on self-determination and motivation at that time, there was no attempt to introduce a distinct or separate motivational component.

The refined definition of self-determined behavior introduced by Wehmeyer et al. (1996) was "acting as the primary causal agent in one's life and making choices and decisions regarding one's quality of life free from undue external influence or interference" (p. 632). In a series of discriminant function analyses, the "essential characteristics" of self-determined behavior were empirically evaluated and included: autonomous functioning, self-regulation, psychological empowerment, and self-realization. These essential characteristics became the domains that were measured by *The Arc's Self-*

Determination Scale (Wehmeyer and Kelchner 1995), which operationalized the functional model's structure to measure personal self-determination. The scale was validated with adolescents and adults with intellectual and developmental disabilities and shown to have strong reliability and validity (Shogren et al. 2008; Wehmeyer and Kelchner 1995).

In 2005, Wehmeyer proposed additional refinements to the functional model to address ongoing issues that were impacting the understanding (or misunderstanding) of the self-determination construct, particularly as it pertained to people with more severe intellectual disability. Many people were interpreting the construct as meaning having control over one's life, and assuming that people with the most extensive support needs were not able to be self-determined. Wehmeyer asserted that a critical element of understanding the self-determination construct was not control, but that a person acted volitionally; where volition referred to the act of making a conscious choice. Thus, he proposed a refinement to the functional model's definition, suggesting that self-determined behavior "refers to volitional actions that enable one to

act as the primary causal agent in one's life and to maintain or improve one's quality of life" (p. 117). Again, this refinement emphasizes the role of acting volitionally, and, in this iteration, the fact that one acts volitionally as a causal agent.

Research with Functional Model of Self-Determination

Since the introduction of the functional model of self-determination in the 1990s, a wide range of research has established the relevance of promoting the self-determination of adolescents and young adults with disabilities (see Chap. 9 for more detailed discussion of the application of self-determination in the disability context). Promoting self-determination has been identified as a best practice in secondary education and transition services (Field et al. 1998; Shogren 2013; Wehmeyer et al. 2003, 2007). Research has consistently linked higher self-determination with the attainment of more positive academic (Fowler et al. 2007; Konrad et al. 2007; Lee et al. 2010; Shogren et al. 2012) and transition to adulthood outcomes for youth with disabilities, including more positive employment and independent living (Martorell et al. 2008;

Shogren et al. 2015b; Wehmeyer and Palmer 2003; Wehmeyer and Schwartz 1997) and recreation and leisure outcomes (McGuire and McDonnell 2008), and more positive quality of life and life satisfaction (Lachapelle et al. 2005; Nota et al. 2007; Shogren et al. 2006; Wehmeyer and Schwartz 1998).

There is also a strong body of evidence that when provided instruction and supports to enhance causal action skills, students with disabilities can achieve valued life outcomes (Algozzine et al. 2001; Cobb and Alwell 2009)(discussed in greater detail in Chap. 9). Specific to the research with the functional model, a series of studies evaluated an intervention directly derived from model, the *Self-Determined Learning Model of Instruction* (SDLMI: Wehmeyer et al. 2000), Wehmeyer, Shogren et al. (2012) conducted a group-randomized, modified equivalent control group design study of 312 high school students with intellectual disability or learning disabilities using the SDLMI over a 2 year period. The SDLMI is a teaching model designed to enable teachers to teach students to self-regulate problem solving leading to educational goal attainment. The SDLMI supports students to (a) set

educationally relevant and valued goals, (b) create an action plan to achieve those goals, monitor and evaluate their progress toward their goals, and (c) revise the action plan or goal as necessary based upon those evaluations that is described in detail subsequently. Students who received instruction using the SLDMI showed significant growth in their self-determination scores, compared to students who did not receive instruction, over a 2 year period. Further, students exposed to the SDLMI had significantly greater gains in their goal attainment, specifically transition goals for students with intellectual disability and academic goals for students with learning disabilities, and in their access to the general education curriculum (Shogren et al. 2012). Further, teachers perceived students who were exposed to the SDLMI as having significantly greater capacity and opportunity for self-determination (Shogren et al. 2014).

Causal Agency Theory

The functional model of self-determined behavior had utility over the past two decades to drive research and intervention pertaining to promoting

the self-determination of youth with disabilities. However, with the growth of positive psychology and the growing application of universal or school-wide interventions targeting all students, including students with disabilities, an expansion of the functional model to people without disabilities, incorporating developing knowledge in the field of positive psychology became necessary. Thus, Causal Agency Theory is the most recent iteration of the theoretical framework we have used to drive our efforts to promote self-determination (Shogren et al. 2015a, b). Causal Agency Theory is derived, in part, from the functional model of self-determination and shares much with the Wehmeyer (1992, Wehmeyer 1996, 2005) definitions and conceptualizations, but has moved toward a more action-oriented focus, incorporating knowledge from the fields of motivation and positive psychology. It specifically integrates the emphasis on volitional action from the Wehmeyer (2005) definition, derived from SDT, and adds additional emphasis to agentic action and action-control beliefs. Essentially, people who act to be causal agents in their lives have the dispositional characteristic (e.g., an ongoing quality or characteristic of the person) of

self-determination. This emphasis on self-determination as a dispositional characteristic defined by actions that lead to causal agency is reflected in the definition adopted by Causal Agency Theory.

Definition of Self-Determination

Within the context of Causal Agency Theory , we define self-determination as a

> ...dispositional characteristic manifested as acting as the causal agent in one's life. Self-determined *people* (i.e., causal agents) act in service to freely chosen goals. Self-determined *actions* function to enable a person to be the causal agent is his or her life. (Shogren et al. 2015a, b)

Key Terms and Assumptions

Causal Agency Theory has several key terms and assumptions. First, within Causal Agency Theory, self-determination is conceptualized as a **dispositional characteristic** . A dispositional characteristic is an enduring tendency used to characterize and describe differences between people. While the assumption is that self-determined people have a tendency to act or think in a particular way, there

is also a presumption of contextual variance (i.e., environmental opportunities and threats). More importantly, as a dispositional characteristic, self-determination can be measured, and variance will be observed across individuals and within individuals over time, particularly as the context changes (e.g., supports and opportunities are provided for self-determined action).

Second, is the notion of **causal agency** . As in the functional model, *causal agency* implies that it is the individual who makes or causes things to happen in his or her life. Causal agency implies more, however, than just causing action; it implies that the individual acts with an eye toward *causing* an effect to *accomplish* a *specific end* or to *cause* or *create change*. Self-determined actions enable a person to act as a causal agent. This emphasis on self-determined actions leading to causal agency is a key feature of Causal Agency Theory. Third, Causal Agency Theory is grounded in **human agentic theories** (Chap. 2) which assume that action is self-caused. Human agentic theories differentiate between self-determination as self-*caused* action and self-determination as *controlling* one's behavior. Self-determined action does not imply control over

events or outcomes. Instead self-determined action refers to the degree to which action is self-caused, volitional and agentic, driven by beliefs about the relationships between actions (or means) and ends. Volitional and agentic action and action-control beliefs are central to Causal Agency Theory and reflect the essential characteristics of self-determined action under Causal Agency Theory.

Essential Characteristics of Self-Determined Actions

As shown in Fig. 5.1, these three **essential characteristics** – volitional, agentic, and action-control beliefs – are explained by Causal Agency Theory and contribute to causal agency and the development of self-determination. Thus, Causal Agency Theory builds on the basic psychological needs and autonomous motivation explained by Self-Determination Theory (Chaps. 2 and 4) and explicates the role of causal action in the development of self-determination (Chap. 2, Fig. 5.1). These essential characteristics refer not to specific actions performed or the beliefs that drive action, but to the *function* the action serves for the individual; that is, whether the action enabled the person to act as a

causal agent and enhances the development of self-determination. In the following sections, each type of action is defined, and its linkages to the functional model of self-determination introduced.

Volitional Action

Self-determined people act volitionally. Volitional action is based on conscious choices that reflect one's preferences. Conscious choices are intentionally conceived, deliberate acts that occur without direct external influence. As such, volitional actions are self-initiated and function to enable a person to act autonomously (i.e., engage in self-governed action). Volitional actions involve the initiation and activation of causal capabilities—the capacity to cause something to happen—in one's life.

Agentic Action

An agent is someone who acts. Agentic action is a means by which something is done or achieved. Agentic actions are self-directed toward a goal. When acting agentically, self-determined people identify pathways that lead to a specific ends or cause or create change. The identification of

pathways, or pathways thinking, is a proactive, purposive process. When acting agentically, action is self-regulated, self-directed and enables progress toward freely chosen goals. Volitional actions involve the initiation and activation of agentic capabilities—the capacity to sustain action toward a goal.

Action-Control Beliefs

In applying volitional and agentic actions, self-determined people develop a sense of personal empowerment. They believe they have what it takes to achieve freely chosen goals. They perceive a link between their action and the outcomes they experience; they develop adaptive action-control beliefs . To account for these beliefs and actions, Causal Agency Theory incorporates basic tenets of Action-Control Theory (Chaps. 2 and 22). Action-Control Theory posits three types of action-control beliefs: beliefs about the link between the self and the goal (control expectancy beliefs; "When I want to do ____, I can"); beliefs about the link between the self and the means for achieving the goal (capacity beliefs; "I have the capabilities to do ____"); and beliefs about the utility or usefulness of a

given means for attaining a goal (causality beliefs; "I believe my effort will lead to goal achievement" vs. "I believe other factors – luck, access to teachers or social capital – will lead to goal achievement"). As adaptive action-control beliefs emerge, people are better able to act with self-awareness and self-knowledge in a goal-directed manner.

Environmental and Contextual Influences

As described in Chap. 2, with regard to human agentic theories generally, when acting agentically, people respond to opportunities and threats in their environment. As detailed in Chap. 2, under Causal Agency Theory , we argue that when that people respond to challenges (opportunities or threats) to their self-determination by employing volitional and agentic actions, supported and mediated by action-control beliefs. This leads to the execution of causal actions that allow people to initiate and direct their behavior to achieve a desired change or maintain a preferred circumstance or situation using their causal capabilities. Figure 2.1 provided the Causal Action schema leading to enhanced causal agency. As depicted in Fig. 5.2,

the causal action sequence involving the implementation of causal and agentic capabilities can be further deconstructed into a *goal generation process* leading to the identification and prioritization of needed actions. The person frames the most urgent action need in terms of a goal state, and engages in a *goal discrepancy analysis* to compare current status with goal status. The outcome of this analysis is a *goal-discrepancy problem* to be solved. The person then engages in a *capacity-challenge discrepancy analysis* in which capacity to solve the goal discrepancy problem is evaluated, and appropriate agentic actions utilizing their agentic capabilities that maximize the relationship between capacities and challenges by creating a "just-right match" between capacity and challenge to optimize the probability of solving the goal discrepancy problem.

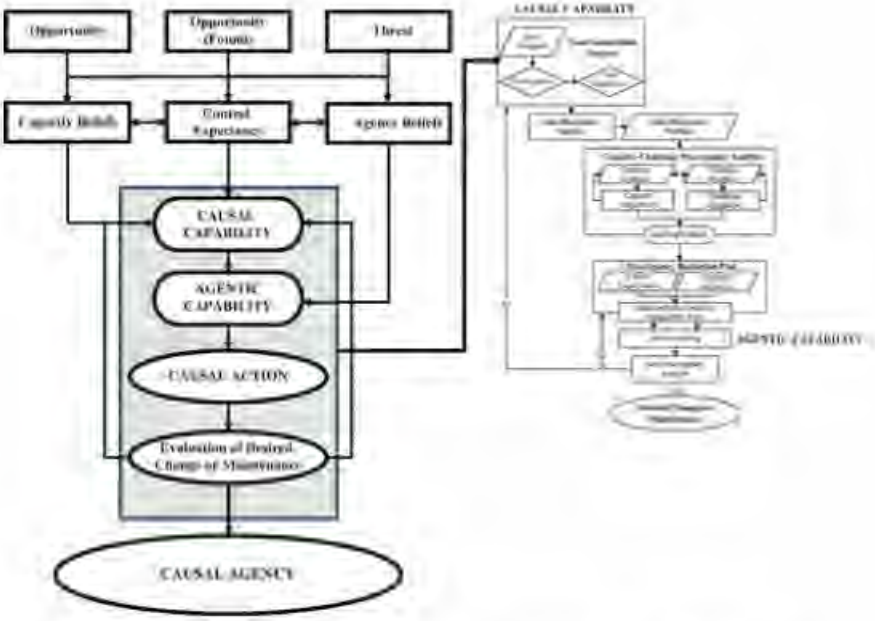

Fig. 5.2 Causal action and goal generation schemas

Then, the person implements this plan and after time has passed, uses information derived from self-monitoring to self-evaluate progress toward reducing the discrepancy between current and goal status. If progress is satisfactory, the person will continue implementing the discrepancy reduction plan. If not, the person either reconsiders the discrepancy reduction plan and modifies that or returns to the goal generation process to re-examine the goal and its priority and, possibly, cycle

through the process with a revised or new goal.

This process will be discussed in greater detail in Chap. 18. But, this iterative goal generation and goal discrepancy analysis using volitional and agentic actions can be taught and is increasingly internalized with repeated opportunities to engage in self-determined action, enhancing action-control beliefs. A critical part of developing causal agency is engaging in repeated opportunities to go through an iterative goal generation and discrepancy analysis process using volitional and agentic actions and developing action control beliefs.
In this process a number of specific skills come into play, including expressing preferences and choice making, decision making, goal setting and attainment, self-management, and self-advocacy. These skills are called the component elements of self-determined action, and are the level at which instruction can occur and environmental supports provided.

Causal Agency Theory and the Development of Self-

Determination

Causal Agency Theory defines self-determination as a general psychological construct within the organizing structure of theories of human agentic behavior. Figure 5.1 depicts the theoretical model of the development of self-determination described in Chap. 2, and depicts the role Causal Agency Theory plays in that developmental model. Causal Agency Theory contributes, along with Self-Determination Theory and Action-Control Theory , to an understanding of the development of self-determination.

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