

Cognitive Developmental Theory and Spiritual Development

Kelly B. Cartwright¹

Traditional conceptions of cognitive development have failed to account for changes in adult cognition as well as more subjective and intuitive features of human experience. This paper reviews recent theories and research in cognitive development and spirituality with the aim of providing connections between the two domains. Neo-Piagetian and postformal theories of cognitive development suggest that advances in cognition are domain-specific, dependent on individual experience, and can occur at any point in the lifespan. However, theories of spiritual development have not adequately addressed these points. Thus, a novel account of spiritual development is presented that addresses these features with respect to individuals' changing conceptions of their relation to an External Power.

KEY WORDS: postformal thought; spirituality; cognition; faith development; religious development.

Human development is a lifelong process characterized by both predictable patterns and individual variation in multiple domains. The aim of this paper is to highlight potential connections between two of these domains, cognition and spirituality, by applying recent conceptualizations of cognitive developmental theory to spiritual development. The particular focus of this analysis will be the effects of cognitive development on individuals' constructions of the relation of humanity to an External Power, and it is suggested that individuals' level of cognitive development constrains their understanding of this relation. Different faith traditions offer various conceptions of Powers beyond the self: some monotheistic, others polytheistic, or even atheistic. However, most faith traditions share the notion that individuals relate in some fashion to an External Power whether it is referred to as an Ultimate Being, a Higher Power, God, Gods, Fate, or natural energy. Thus, in this paper these terms will be used interchangeably to denote a Power (or Powers) perceived to be external to the self, to which individuals regard themselves to be in relation.

Although attempts have been made to apply Piagetian cognitive developmental theory to the pro-

cess of spiritual development (e.g. see Elkind, 1997; Fleck, Ballard, & Reilly, 1975; Mitchell, 1988), previous accounts of spiritual development have not incorporated features of more recent neo-Piagetian and postformal theories of cognitive development. A review of these theories suggests at least three issues that should be incorporated into a theory of spiritual development. First, traditional Piagetian theory does not address cognitive developmental change in adulthood (i.e. beyond formal operational thought). Therefore, some researchers have proposed postformal theories of cognitive development to account for cognitive change in adulthood (e.g. Labouvie-Vief, 1990, 1992; Sinnott, 1998). Second, some theorists have suggested that cognitive development is not domain-general, as implied in the original Piagetian program, but occurs at different rates within particular domains and may occur at any point in the lifespan (Bidell & Fischer, 1992; Case, 1992; Karmiloff-Smith, 1991; Sinnott, 1998). Finally, traditional Piagetian theory asserts that cognitive development is evidenced by an increasing reliance on objective, scientific reasoning. However, more recent conceptualizations suggest that a comprehensive theory of cognitive development must also incorporate subjective experience such as social, interpersonal, and contextual interactions as these may be instrumental in producing cognitive change (Bidell &

¹To whom correspondence should be addressed at Department of Psychology, Christopher Newport University, One University Place, Newport News, Virginia 23606; e-mail: kewright@cnu.edu.

Fischer, 1992; Blackburn & Papalia, 1992; Case, 1992; Labouvie-Vief, 1990, 1992; Sinnott, 1998).

These critical features of cognitive developmental theory will be described in the following sections, and then theories of spiritual development will be discussed. Finally, these features of cognitive developmental theory will be applied to spiritual development in order to provide a novel approach that might better capture the variation seen in adults' thinking regarding spirituality.

COGNITIVE DEVELOPMENTAL THEORY

In the domain of cognition, Jean Piaget's theory has been tremendously influential, suggesting a predictable sequence of stages for cognitive development: sensorimotor, preoperational, concrete operational, and formal operational. Piaget argued that these stages were characterized by qualitatively different modes of thinking through which individuals pass from infancy to adolescence (for a summary of the theory, see Piaget & Inhelder, 1969). Each successive stage incorporates the features of the preceding mode of thought and adds additional skills that transcend the previous, less sophisticated thought processes. For example, infants in the sensorimotor stage process information that is directly available to them through their sensory experiences and actions on objects in the world around them. As infants pass into the preoperational stage, they add the additional feature of symbolic mental representation, a skill that allows them to transcend their previous understanding of the world by enabling them to think about objects without having to directly experience them through sensory or motor means. Preoperational thought is, however, characterized as subjective and illogical. The subsequent stage, concrete operations, allows individuals the additional development of logical reasoning that is limited to concrete situations; and formal operational thought allows individuals to transcend the limitation of the concrete by reasoning logically about abstract propositions. Although many neo-Piagetian accounts of cognitive development have generally preserved this stage sequence (Case, 1992), Piaget's account of cognitive development has been criticized on several grounds. Descriptions of three of these criticisms follow.

Cognitive Development in Adulthood

Traditional Piagetian theory fails to address the nature of cognitive change in adulthood. Many

researchers have therefore suggested variations in postformal thought (thought processes that develop beyond the traditional Piagetian modes of formal operational reasoning), to rectify this omission and provide a more complete account of cognitive development (e.g., Blackburn & Papalia, 1992; Labouvie-Vief, 1990, 1992; Sinnott, 1998). According to classic Piagetian theory (Piaget & Inhelder, 1969), formal operational reasoning, characterized by the ability to reason logically about abstract propositions, is usually exhibited by most individuals during adolescence and into adulthood. Piaget assessed formal thought, using scientific or mathematical problems, regarding a reliance on scientific, hypothetico-deductive modes of thought as evidence for cognitive sophistication. Thus, he characterized human cognitive development as movement from the more subjective perspectives of young children to more objective modes of thinking seen in adolescents and adults.

Piaget argued that formal reasoning is sophisticated in that it requires individuals to coordinate abstract propositions within a logical system. However, Piagetian theory made no provision for development of reasoning beyond the level of the single logical system. Theories of postformal thought suggest that some individuals move beyond formal operational reasoning because they exhibit the ability to consider and coordinate multiple logical systems of thought and select one particular system as "true" for themselves (Sinnott, 1998). This consideration of multiple logical systems, with the concurrent realization that any of the systems is potentially viable, has been characterized as a new kind of subjectivity that incorporates the objective modes of thought characteristic of formal operational reasoning. Thus, postformal theories of cognitive development suggest that individuals progress from subjective to objective modes of thought as suggested in Piaget's original program and then transcend formal reasoning by integrating the subjective and objective forms of reasoning in adulthood (Blackburn & Papalia, 1992; Labouvie-Vief, 1990, 1992; Sinnott, 1998). Applications of cognitive developmental theory to other domains should reflect the evolution of the theory and include postformal reasoning in their analyses.

Global, Age-Related Developmental Changes in Cognition

A second criticism challenges the traditional Piagetian notion that global changes in cognition

occur at roughly the same ages during childhood and adolescence for all individuals. Recent conceptualizations of cognitive developmental theory suggest that individual cognitive development is not necessarily coherent across domains (Case, 1992; Karmiloff-Smith, 1991; Labouvie-Vief, 1992) and is characterized by tremendous variability that is dependent on individual developmental context (Bidell & Fisher, 1992). Piaget (1972) himself eventually recognized the importance of context to an individual's cognitive development, conceding that individual experiences might produce domain-specific differences in cognitive outcomes. It has been further suggested that when processing information with which they have little experience, adults may actually demonstrate an earlier level of thought before exhibiting more advanced cognitive processes (Sinnott, 1998). When taken together, these ideas indicate that cognitive development within a particular domain may occur at any point in the lifespan, depending upon individual experience. Therefore, cognitive developmental analyses within domains of development should incorporate the notion that different modes of thinking may not be tied to particular age ranges but may be tied, instead, to individual experiences, contexts, and life events.

Social and Contextual Effects on Cognitive Development

Traditional Piagetian theory contends that advances in cognitive sophistication demand an increasing separation from an individual's subjective, personal experience, and an increased reliance on objective, hypothetico-deductive modes of thought. However, contextual variables such as social interactions are said to play an important, and even essential, role in cognitive change into adulthood, especially those interactions that center around the exploration and potential reconciliation of differing viewpoints that occur in significant social relationships (Blackburn & Papalia, 1992; Sinnott, 1998). In fact, Sinnott (1998) suggests that the negotiation of differing viewpoints in social contexts may serve as a catalyst for the development of postformal reasoning because such negotiation forces individuals to simultaneously consider multiple potential systems of thought. Labouvie-Vief (1990) reinforces the importance of subjective experience to development when she argues that reducing conceptions of mature adult thought to only logical modes of thinking omits a

great deal of human experience. As a consequence, "researchers in the adulthood area have concentrated on recovering the dimensions lost to Piaget's description of the mature organism—the subjective and intuitive, the interpersonal, and the imaginative (Labouvie-Vief, 1992, p. 203)." By applying cognitive developmental theory to more subjective domains such as spirituality, it becomes clear that such connections are essential in order to understand the whole of human development.

SPIRITUALITY AND SPIRITUAL DEVELOPMENT

Spirituality can be defined in many ways, and it has been distinguished from religiosity in that spirituality reflects individual, inner experience rather than observance of outward dictates or customs that may be tied to a particular faith tradition (Sinnott, 1998). In the following sections, some representative theories of spiritual development will be reviewed and important features of these theories will be highlighted to facilitate a discussion of potential connections between spiritual and cognitive development in adulthood.

A Brief Review of Theories of Spiritual Development

Previous theories of spiritual development have focused on parallels with many aspects of human development. Some theories, for example, have centered on ego development, autonomy, and self-awareness as they affect and are affected by relationships to others (Conn, 1993; Fowler, 1981, 1994). Other theories have focused on the development of moral understanding and consequent behavior toward others (Fowler, 1981, 1994; Mitchell, 1988). Additionally, some theorists have suggested parallels between children's understanding of religious or spiritual concepts and Piagetian stages of cognitive development (Elkind, 1997; Fleck, Ballard, & Reilly, 1975); however, as is the case with traditional Piagetian theory, these accounts neglected to address spiritual change in adulthood. Comprehensive lifespan perspectives on spiritual development are offered by Fowler (1981, 1994) and Oser and Gmünder (1991; see also Oser, 1991, 1994), and their theories have both been tremendously influential in the study of spirituality in recent decades (Nipkow, Schweitzer, & Fowler, 1991).

Fowler (1981), in his seminal work on faith development, suggests that individual faith development reflects a “meaning-making” process in which individuals seek to understand their own lives and the values and commitments that guide them. His theoretical formulation was based on extensive interview data with hundreds of individuals that suggested different modes of meaning-making across the lifespan. According to Fowler (1981), the individual’s understanding of her- or himself in relation to others and to centers of shared value and commitment is essential in the development of faith. Oser and Gmünder (1991; see also Oser, 1991, 1994) also address the relation of humanity to the Divine with specific attention to individuals’ constructions of their relationship with a Higher Power. Their particular focus is on the development of religious judgment in this relational context, and they suggest that the development of religious cognition is independent of other moral and cognitive developments. Like Fowler, Oser, and Gmünder (1991) conducted extensive interviews in which they required participants to make religious judgments about social dilemmas, and their stages of religious judgment were formulated based on these data. Thus, although their theory is similar in nature to Piagetian cognitive developmental theory because it proposes sequential changes in the structure of individuals’ cognition, the developmental stages they propose are not parallel to traditional Piagetian modes of thought.

Important Features and Potential Criticisms of Theories of Spiritual Development

The theories of Oser and Gmünder (1991) and Fowler (1981) are similar in that they propose stage-like changes in spiritual development from a lifespan perspective. These theories also share a focus on relationships, especially the relation between humanity and a Higher Power. Conn (1993) suggests that mature spirituality involves a kind of self-transcendence where individuals develop the ability to go beyond themselves in truthful knowledge, free commitment, and loving relationship to others, both human and Divine. Conn’s formulation indicates that transcendence of self may be the means by which spiritual development is achieved (Conn, 1993), but she does not provide a formal explanation for this process. Generally, just as mature cognition is refined in the context of relationships to and with others (Sinnott, 1998), spirituality is also understood to develop in the same

context, as reflected in many of these theories. Thus, the concept of relationship and the process of transcendence seem essential to spiritual development and appear to be necessary components of an integrative theory of this process.

As is the case with classic Piagetian theory (Piaget & Inhelder, 1969), the majority of accounts of spiritual development suggest age-related changes that are associated with more general developments in the cognitive, moral, or social domains. Although Oser and Gmünder (1991) assert that the development of religious judgment is independent of development in other domains, they also propose age-related developmental changes in religious cognition. As mentioned previously, neo-Piagetian accounts of cognitive development and recent theories of postformal thought indicate that developmental changes in cognition are not necessarily coherent across domains or constrained by chronological age. Even among adults, there is tremendous variability in levels of cognitive functioning and spiritual understanding. A more comprehensive account of spiritual development must address this issue. Additionally, as noted by an anonymous reviewer of this manuscript, many of the theoretical accounts of spiritual development provide typical descriptions of individual behavior at different developmental levels. However, they do not offer explicit, formal mechanisms for spiritual change in adulthood. These issues are addressed in the theoretical formulation that follows.

INTEGRATING COGNITIVE DEVELOPMENTAL THEORY WITH SPIRITUAL DEVELOPMENT

The previous sections reviewed theories in cognitive and spiritual development, outlining particular criticisms and essential features in each of these domains. In the sections that follow, a novel conception of spiritual development is presented that incorporates features of neo-Piagetian and postformal theories of cognitive development.

A Formal Mechanism for Developmental Change

According to cognitive developmental theory, individuals progress through stages characterized by qualitatively different modes of thought. At each successive stage, individuals build upon and transcend their previous thought processes by incorporating

additional, more sophisticated ways of understanding the world. The transcendence of prior modes of thought characteristic of cognitive development provides a formal mechanism by which spiritual development may also occur. It is asserted that individuals' understanding of their relation to a Higher Power progresses through stages that are parallel in nature to the original Piagetian stages: sensorimotor, preoperational, concrete operational, and formal operational. Additionally, as suggested elsewhere (Sinnott, 1998), individuals' understanding of their relatedness to an External Power can develop beyond formal operational modes of reasoning to include a new subjectivity characteristic of postformal thought. At each stage, an individual's understanding of their relation to an External Power transcends their prior understanding by incorporating additional cognitive skills; however, their understanding is also constrained by their current level of cognitive development. It is further argued that these different modes of spiritual understanding do not emerge at the ages originally proposed in Piagetian theory, nor are they restricted to particular age ranges in development. Rather, passage through these stages may occur at any point in a person's lifetime, depending upon individual experiences, awareness, and motivation.

Traditional cognitive developmental theory has been criticized for its reliance on objective modes of thought and omission of the effects of more subjective factors on cognitive development. However, neo-Piagetian and postformal theories of cognition, as well as theories of spiritual development, emphasize the importance of social and contextual variables to developmental change. It is argued that individuals' subjective experiences, including social interactions, context, and life events, stimulate the process of transcendence by forcing individuals to move beyond prior cognitive processes and engage in new modes of thought. For example, the experience of conflict or adversity in the process of a divorce may promote cognitive development because it necessitates the negotiation of differing views in difficult circumstances (Sinnott, 1998) and often requires individuals to consider other cognitive constructions that transcend their previous understanding of situations or events. In their qualitative study of spiritual development, Hamilton and Jackson (1998) found that participants most often reported adversity or unexpected life events to be the catalyst for their emerging spiritual awareness. Similarly, Fowler (1981) suggested that conflict motivates the development of faith. These ideas are consistent with the Piagetian notion that

conflict produces changes in individuals' cognitive structures. When individuals are faced with circumstances that are not consistent with their current conception of the world, they must look beyond their own constructions of reality to "make sense" of the available information. The following discussion illustrates how spiritual development might be affected by individuals' cognitive developmental level resulting in a changing understanding of their relatedness to a Higher Power.

Cognitive Developmental Stages in Spiritual Development

In Piagetian theory, Sensorimotor thinkers are bound to their own perceptual and sensory realities. Infants in Piaget's sensorimotor stage are, at first, not able to differentiate self from other. For individuals at this level, the only "knowable" information is what is directly detectable by their sensory or motor experience. Because the concept of an external Power is itself abstract and not directly observable by sensory or perceptual means, individuals at this level express no awareness of a spiritual level of reality, a "fundamental reality that is not material in nature (Koplowitz, 1990, p. 105)." Just as the sensorimotor infant is not aware of the existence of "other" as distinct from "self," the individual at this level of understanding does not experience awareness of a Power external to the self unless the person is brought "face to face" with a spiritual level of reality through some conflict or significant life event.

As stated previously, contextual variables often spark changes in spiritual awareness and development. For individuals who begin the process of transcendence, a transition to preoperational modes of thought may occur. Piaget's preoperational stage is characterized by what is termed "pre-causality (Piaget & Inhelder, 1969)," or reasoning that is not yet governed by conventional logical principles. Children at this level often account for events in their lives by mythical means. An individual beginning to contemplate her or his relation to a Higher Power may not have incorporated conventional explanatory mechanisms for the relationship. Instead, these individuals may tacitly accept that there is "something out there" beyond the self that defies explanation. In the case of a near-death experience, for example, an individual at this level might suggest that "Someone up there was watching out for me, but I don't know why or how. It was a miracle." Thus, at this level, the relationship between the individual and an external

Power is understood at a mythical level without logical explanation.

As individuals make the transition to concrete operational thinking, they begin to incorporate conventional explanations into their spiritual understanding and to devalue their subjective experience (Labouvie-Vief, 1990). Concrete operational thought is characterized by adherence to logical reasoning, but it is limited to tangible items and events. At this level, individuals may seek a logical explanation for their relationship to God, being dissatisfied with the mythical, subjective nature of their previous, preoperational understanding. At this point, the social norm of reciprocity offers a logical alternative and may be incorporated into their understanding of this relationship. In order to participate in a benevolent relationship with an external Power, individuals at this level may look for concrete means to insure and explain that relationship. Often, these explanations include behavioral commitments to socially communicated customs, values, or beliefs. Overt behavior such as giving to the needy or abstaining from various activities provides a tangible mechanism by which an individual at the concrete level can comprehend their relation to a Higher Power. Many religious traditions support this level of spiritual development by focusing on overt behavior as evidence for religious or spiritual commitment. Individuals at this level of spiritual development understand that they are a participant in a relationship with a Higher Power because of the concrete activities in which they engage, and this tangible explanation satisfies their need for concrete logic.

When individuals move into the formal operational level of reasoning, Piaget suggested that they are finally capable of reasoning logically about abstract notions. At this level of spiritual development, individuals should begin to consider the abstract principles that govern the behaviors on which they focused in the concrete operational mode of thought. Rather than focusing on specific behaviors, individuals at this level may focus, instead, on the abstract principles that underlie the behaviors. For example, they may focus on benevolence or love for humanity rather than the specific act of giving to the needy. Although individuals at this level are capable of reasoning abstractly, their reasoning is still constrained by (or embedded in) the social contexts in which they find themselves (Ormer & Fowler, 1993). Young adults and adolescents at this level tend to value universal laws and are often tied to concrete conventions (Labouvie-Vief, 1990). Thus, individuals at this level may still be constrained, for example, by the

conventional social norm of reciprocity that governed their understanding at the concrete operational level. Their focus may merely turn from concrete behaviors to abstract principles like love, justice, and mercy. In seeking to explain and insure their relationship to a Higher Power, these individuals may understand that they participate in that relationship by demonstrating love, justice, or mercy to others. Although their focus has shifted to abstract principles, these individuals still view their relationship to God as contingent on their own behavior. Many individuals, regardless of age, remain at this level, without examining or critically evaluating the culturally transmitted conventions in which they are embedded (Ormer & Fowler, 1993).

At the concrete and formal operational levels, individuals tend to cling to objective, logical explanations and eschew any subjectivity in interpretation or understanding. However, once individuals can step away from and out of the culturally transmitted views that have constrained them, they are able to consider those views as potential alternatives rather than absolute truth. The ability to consider multiple alternate versions of reality and select one as appropriate for self is typical of postformal modes of thinking (Sinnott, 1998) and has been characterized as a new kind of objectivity that incorporates the subjective (Labouvie-Vief, 1990). An individual at this level would no longer be embedded in the culturally transmitted framework that guided her understanding at prior levels. For example, individuals at the postformal level might still focus on abstract notions of love, mercy, and justice in relationships. However, because the cultural norm of reciprocity no longer constrains their understanding, behavioral demonstrations of these principles may no longer be seen as necessary to maintain and insure relatedness to a Higher Power. As suggested by Conn (1993) and Fowler (1981), the many, varied relationships between self, others, and an external Power are all vital components of spirituality. Rather than focusing on how they can maintain a relationship with God through the behavioral administration of love or mercy to others (a unidirectional and limited conception), individuals at the postformal level see that these abstract principles are unifying forces in the vast connectedness between self, others, and a Higher Power.

SUMMARY AND DIRECTIONS FOR FUTURE WORK

This paper provided an overview of recent advances in cognitive developmental theory and applied

these to spiritual development to provide a more coherent explanation for the variation and development of spiritual understanding in adulthood. Future work in this area should focus on testing the developmental mechanisms and sequence suggested in this paper. In order to determine whether the sequence of spiritual understanding presented here is supported, longitudinal or cross-sectional studies that examine spiritual development at several points in adulthood might be useful. Because adults may exhibit varying levels of spiritual understanding without regard to chronological age, longitudinal research is probably better suited to the task of determining developmental sequence. Qualitative studies like that of Hamilton and Jackson (1998) involving focus groups or individual interviews may also provide insight into the sequence of changes in spiritual understanding as well as the nature of the events or contexts that promote those changes. "Conversion experiences" are a type of change associated with some accounts of spiritual development. Additional research should also examine whether the mechanism for spiritual development proposed here, transcendence of prior modes of thought, might also account for the changes associated with spiritual conversion. The present conception was framed in terms of individuals' understanding of their relatedness to an External Power. To understand individual spirituality more fully, this focus should be extended to include individuals' understanding of self and their reciprocal relatedness to others. In addition, this model of spiritual development is presented in general terms that may or may not apply to development within particular faith traditions with different cultural influences (e.g., western vs. eastern). Future work in this area should also consider the applicability of cognitive developmental theory to spiritual understanding within particular religious frameworks like Buddhism, Christianity, or Judaism as well as to different cultures. The goal of this formulation was to present a potential integration of cognitive development with a more subjective aspect of human development: spirituality. Additional work investigating connections between the objective and subjective aspects of human experience can only move the field closer to a more complete understanding of human development.

ACKNOWLEDGMENTS

I would like to thank Dr M. Paz Galupo and two anonymous reviewers for their comments and

suggestions regarding an earlier version of this manuscript.

REFERENCES

- Bidell, T. R., & Fisher, K. W. (1992). Beyond the stage debate: Action, structure, and variability in Piagetian theory and research. In R. J. Sternberg & C. A. Berg (Eds.), *Intellectual development*. New York: Cambridge University Press.
- Blackburn, J. A., & Papalia, D. E. (1992). The study of adult cognition from a Piagetian perspective. In R. J. Sternberg & C. A. Berg (Eds.), *Intellectual development*. New York: Cambridge University Press.
- Case, R. (1992). Neo-Piagetian theories of child development. In R. J. Sternberg & C. A. Berg (Eds.), *Intellectual development*. New York: Cambridge University Press.
- Conn, J. W. (1993). Spirituality and personal maturity. In R. J. Wicks, R. D. Parsons, & D. Capps (Eds.), *Clinical handbook of pastoral counseling, Volume 1: Expanded edition* (pp. 37–57). Mahwah, NJ: Paulist Press.
- Elkind, D. (1997). The origins of religion in the child. In B. Spilka & D. N. McIntosh (Eds.), *The psychology of religion* (Chap. 8, pp. 97–104). Boulder, CO: Westview Press.
- Fleck, J. R., Ballard, S. N., & Reilly, J. W. (1975). The development of religious concepts and maturity: A three stage model. *Journal of Psychology and Theology*, 3, 156–163.
- Fowler, J. W. (1981). *Stages of faith: The psychology of human development and the quest for meaning*. New York: Harper Collins.
- Fowler, J. W. (1994). Moral stages and the development of faith. In B. Puka (Ed.), *Moral development: A compendium, Volume 2* (pp. 344–374). New York: Garland Publishing.
- Hamilton, D. M., & Jackson, M. H. (1998). Spiritual development: Paths and processes. *Journal of Instructional Psychology*, 25, 262–270.
- Karmiloff-Smith, A. (1991). Innate constraints and developmental change. In S. Carey & R. Gelman (Eds.), *The epigenesis of mind: Essays on biology and cognition*. Hillsdale, NJ: Erlbaum.
- Koplowitz, H. (1990). Unitary consciousness and the highest development of the mind: The relation between spiritual development and cognitive development. In M. L. Commons, C. Armon, L. Kohlberg, F. A. Richards, T. A. Grotzer, & J. D. Sinnott (Eds.), *Adult development, Volume 2: Models and methods in the study of adolescent and adult thought* (Chap. 6, pp. 105–111). New York: Praeger.
- Labouvie-Vief, G. (1990). Modes of knowledge and the organization of development. In M. L. Commons, C. Armon, L. Kohlberg, F. A. Richards, T. A. Grotzer, & J. D. Sinnott (Eds.), *Adult development, Volume 2: Models and methods in the study of adolescent and adult thought* (Chap. 3, pp. 43–62). New York: Praeger.
- Labouvie-Vief, G. (1992). A neo-Piagetian perspective on adult cognitive development. In R. J. Sternberg & C. A. Berg (Eds.), *Intellectual development*. New York: Cambridge University Press.
- Mitchell, C. E. (1988). Paralleling cognitive and moral development with spiritual development and denominational choice. *Psychology, a Journal of Human Behavior*, 25, 1–9.
- Nipkow, K. E., Schweitzer, F., & Fowler, J. W. (1991). Introduction. In J. W. Fowler, K. E. Nipkow, & F. Schweitzer (Eds.), *Stages of faith and religious development: Implications for church, education, and society* (pp. 1–15). New York: Crossroad Publishing.
- Ormer, R., & Fowler, J. W. (1993). Childhood and adolescence—a faith development perspective. In R. J. Wicks, R. D. Parsons, & D. Capps (Eds.), *Clinical handbook of pastoral counseling*,

- Volume I: Expanded edition* (pp. 171–212). Mahwah, NJ: Paulist Press.
- Oser, F. (1991). Toward a logic of religious development: A reply to my critics. In J. W. Fowler, K. E. Nipkow, & F. Schweitzer (Eds.), *Stages of faith and religious development: Implications for church, education, and society* (pp. 37–64). New York: Crossroad Publishing.
- Oser, F. (1994). The development of religious judgment. In B. Puka (Ed.), *Fundamental research in moral development* (pp. 375–395). New York: Garland Publishing.
- Oser, F. K., & Gmünder, P. (1991). *Religious judgement: A developmental approach*. Birmingham: Religious Education Press.
- Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development, 15*, 1–12.
- Piaget, J., & Inhelder, B. (1969). *The psychology of the child* (Helen Weaver, Trans.). New York: Basic Books (Original work published 1966).
- Sinnott, J. D. (1998). *The development of logic in adulthood: Postformal thought and its applications*. New York: Plenum.