Revisiting Theories of Human Development

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In examining several developmental theories (specifically behaviorism, Piaget's cognitive developmental theory, Gibson's ecological theory, and Fischer's skill theory) it is evident that there is not a universal explanation of the construct of cognition. Despite their use of the same term, these theories do not seem to define the term in the same way. These are all theories that involve meaning of cognition (meaning is in the mind, and also in the world that is independent of the mind), but the meaning of cognition in each theory is defined differently. Piagetians posit a hypothetical construct of cognition that involves how human beings internally construct knowledge and meaning about their world. Gibsonians do not view cognition in the same way as Piagetians, as they assert that because knowledge is directly perceived, there is no internally based hypothetical construct of cognition that intervenes between perception and knowing. To a behaviorist, cognition refers to 'meaning' that lies in the coming together of the self and object at a particular time and place (developmentally speaking), not 'meaning' in the stimulus object nor the individual self. Fischer's theory supports the Piagetian internal construct of cognition, but more emphasis is placed on the importance of content and context in developing a cognitive model in which thinking may be arranged systematically. In trying to delineate these theoretical accounts of cognition, I will now provide my own interpretive definitions of 'cognition' that I feel reflect what each theory means when it makes reference to the term.

Behaviorism is against the notion that human action is caused by ideas or feelings that arise in an unobservable place called 'mind' or 'soul'. Behaviorists are uncomfortable with theories that suggest mental elements (thoughts, attitudes, soul, ego, needs, and preconscious) and hypothetical mental functions (repression, epigenesis, reasoning,

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dispositions). These theorists have not been persuaded that any such elements and functions actually exist because such things as 'mind' or the 'unconscious' have never been seen or directly measured, they have only been explained introspectively. Behaviorism uses reinforcement as a fundamental process of ‘meaning making’ in describing the ecological origins of cognition (psychological experience and action). Therefore, *cognition is a 'meaning making' process of a growing individual's learning more complex and refined ways of acting as a result of the consequences that followed a behavior she/he has attempted.* Cognition develops as the self's historical experiences influence individual understanding of objects, events, and situations in the world; the meaning that comprises cognition must be learned through direct experience over time. Cognition progresses as one experiences the consequences of her/his actions in ecological context and as new meanings emerge. Cognition results from the outcomes of reinforcement which are dependent on particular environment-behavior forces that represent the discovery of particular surface and deep structures the individual will come to know. An individual's cognition is a derivate of her/his social system; categories of thinking and understanding are collective representations, and the underlying mental activities are patterned after the social structure of a group. An association exists between psychological and social structures and is made apparent by the fact that the most fundamental psychological processes (somewhat defined in terms of reinforcement as a basic learning process) are capable of internalizing social structures of one's environment in the individual.

To a Piagetian, *cognition is a hypothetical construct of intellectual development through stages*; it is the expansion of knowledge resulting from longitudinal changes

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between the knower and the known. The building blocks of knowledge that comprise cognition exist within the person at all times; knowledge does not begin with sensation or perception - rather, it is an innate internal process (knowing, to know, knowledge) that is applied to the world. All meaning is in the mind – it does not come in from the outside. Cognition is internally created through mind action (it is knowledge that is assembled in the mind and then applied to the world); there is not mind action preceding motor action, instead they happen together. Cognition is a process of actions rather than an inventory of retained information; to *know* something means to *act* on that thing, with the action being either physical or mental or both. Knowledge is a progression of acting—physically and/or mentally—on objects, images, and symbols that the individual's perceptual lens has combined into arrangements that are somewhat familiar. The objects are found in the world of direct experience, while the images and symbols can be derived from the "real world" and from memory. Cognition is a constant effort by the individual to increase and refine her/his knowledge and repertoire of mental actions, as "all knowledge is continually in a course of development and of passing from a state of lesser knowledge to one which is more complete and effective" (Piaget, 1972, p.5).

Gibsonians view *cognition as direct perception and assert that no hypothetical mental construct intervenes between perception and knowing – knowledge is directly perceived*. To a Gibsonian, cognition is combined with perception in a functional process of thinking and perceiving. Cognition aids perception in that the detection of things and their affordances is the foundation of knowledge about the world. Cognition develops through exploratory behavior and perceptual learning, as categories of events/objects, abstract properties, and causal relations become more advanced. Thus, cognition is the

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actual matching of a person with her/his environment, not just the recognition of what is happening inside the head. Gibsonian theory emphasizes cognition as a direct perception of the environment that includes behaviors involving indirect, interpretational thinking. Although perceptual processes are heavily involved with cognition, much of the learning involves the analysis and categorization of information. From a Gibsonian perspective, it is not clear what is *not* perception (or what the limits to direct perception are) and what *is* cognition.

From Fischer's perspective, *cognition is the construction of hierarchically ordered collections of specific skills*. "A skill is a capacity to act in an organized way in a specific context. Skills are thus both action-based and context-specific. People don't have abstract, general skills. Instead, skills are always skills *for* some specific context of activity" (Fischer & Bidell, 1998, p. 477). Cognition is the skills or techniques that individuals acquire for acting on their world physically, perceptually, or mentally. Fischer heavily emphasizes the importance of meaning, content, and context. Cognition progresses through tiers of development in which each individual's unique environmental experiences and particular genetic structure lead to differences among individuals in skills they acquire, in when they gain the skills, and in what order they gain the skills. Fischer tried to develop a model in which cognition could be put together systematically, thus allowing for structural consistency and variability. He moved toward domain specific analysis, or inter-individual variation, that is dependent on the domain of the cognition that is being considered (Witherington, 2006). To Fischer, cognition is a web of numerous interlinked strands (each involving different developmental levels) that

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expands in different directions and accounts for the variability in the patterning of skills that expresses each person's individuality.

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The findings of research studies indicate that throughout the lifespan, mothers and daughters tend to maintain closer emotional ties than other family dyads. Women have shown to be the primary kinkeepers as they maintain family ties within and across generations. These findings illuminate both similarities and differences between object relations theory and psychosexual theory. As Chodorow's work reveals, feminist views on gender development and sexuality share a common ground with Freudian theory. The reason is that psychosexual theory is most importantly a theory of femininity and masculinity, a theory of gender inequality, and a theory of heterosexuality.

Freud sees the outcomes of gender development in females as negative opposed to male gender development as positive. Through resolution of the Oedipus complex, boys identify with their father and thus gain a stronger morality and identity than females, who achieve a weaker identification with their mother and consequently attain a less developed sense of identity. Because of this, Freud suggests that women are morally inferior to men, lack an established sense of integrity, and are unable to reach full psychological maturity. According to Freud, women's feelings of inferiority are inevitable. Thus, his Oedipus complex gives power to the father, which leads to integration with the institution of male dominance and a strict division of labor within the family.

Chodorow's perspective is based on a branch of psychoanalytic theory called object relations. This approach is significant in examination because it gives precedence to the mother-infant relationship, and also because the qualities it assumes (caring, relating, intimacy, and emotional needs) are the foundation of the mother-infant dyad. Though often unrecognized, object relations theory's fundamental model is the mother-

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daughter relation. In her disagreement with Freud's extreme emphasis on the Oedipus complex, Chodorow concentrated on the pre-Oedipal phase when boys work towards a separation from their mothers, while girls retain the connectedness with their mothers and develop a sense of femininity. According to Chodorow, all children have the basic experience of being raised primarily by women; that women are the primary kinkeepers and caretakers of children suggests that a child's relational capacities will unavoidably be developed through interaction with a woman. Exclusive parenting by women reproduces itself because women have the relational basis for parenting and kinkeeping.

Freud and Chodorow agree that identification is experienced quite differently by male and female children. Whereas females feel a sense of connection with their mothers for sharing the same sex, males experience a sense of danger for having to be dependent on, and to turn away from, a person of another sex. However, from Chodorow's perspective, gender identity in females is viewed as a normal result of early identification with the mother, while gender identity in males is perceived as unstable and conflicted because of its disconnection and disidentification from the mother. Therefore, Chodorow views female development as a positive occurrence while she views male development more negatively (as it involves the suppression of relational needs and any sense of connection). Unlike Chodorow, Freud did not as strongly emphasize relational capacity in the pre-Oedipal period because he focused to stringently on eroticization of the genitalia; however, he did propose that during the course of development, the significance of the child's attachment to the mother changed permanently, and therefore a barrier was required between them.

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Contributing to the idea that mothers and daughters maintain closer emotional ties than other family dyads, Chodorow indicated that a mother is not invested in keeping her daughter from individuating and becoming less dependent. The mother herself has other ongoing communications and relationships with members of the immediate and extended family that help fulfill her own psychological and social needs; these familial connections allow for the maintenance of family bonds within and across generations. In addition, because there are people surrounding the mother while a child is being raised, mediation between mother and daughter is possible; these 'outside' influences (by 'outside' I am referring to people not in the mother-daughter dyad), by providing the daughter with alternative models for personal identification and objects of attachment, contribute to her differentiation from her mother. In a situation such as this, a daughter's identification with her mother is one with a resilient woman who has obvious control over important spheres of life, and whose sense of self-esteem reflects this. Acceptance of her gender identity involves positive evaluations of self, and not an admission of inferiority as Freud suggested.

In agreement with Freud, Chodorow explains that mothering produces dissimilar processes of maturation and development in boys than in girls. Additionally, she states that mothers are close with their infant sons, but that they view their male children as 'different' and do not share with them the same sense of "oneness" that they experience with their daughters. Both males and females are emotionally attached to the mother early in their lives, but males learn to identify with their father by denying or repressing their attachment to their mother. Females, in contrast, can identify with the mother *while* sustaining their attachment to her. Furthermore, the relationship between a boy and his

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father is not as continuous as that between a girl and her mother, mainly because the father is occupied outside the home much of the time. While a female's identification takes place in an ongoing relationship with her mother, a boy's identification with his father is not strictly personal (that is, boys are likely to acquire notions about masculinity from outside cultural influences). As a consequence of interpersonal relationships, boys learn to be oriented externally (i.e. their primary role is be the breadwinner and provide for the family while working outside the home) and girls learn to be oriented internally (i.e. their primary role is that of caretaker and kinkeeper) in relation to the family. By remaining united with their mothers in an affectively disseminated relationship, females will be trained to be ready to mother and maintain unity between multigenerational family members; boys, who are not similarly connected to their fathers and who refuse (for sake of their own masculinity) their attachment to their mother, learn to be fathers who can distance themselves sufficiently in order to invest their energies outside the family. Women tend to maintain family ties and serve as kinkeepers because they are more "field dependent" than men – that is, as girls they have been less able to detach themselves from the mother-child field. Kinkeeping and motherhood are perpetuated by mothers via intergenerational transmission of patriarchal values; this is the outcome of a developmental process in which major features of social organization of gender are transferred by families through parents who are themselves gendered.

The socialization process by which females are allowed to remain close to their mother while males are pushed outward is crucial in examining the mother-daughter dyad and women's kinkeeping tendencies. The distancing of the boy from his mother and his turning outward with his father are essential factors in the maintenance of contact

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between a family and the surrounding society; in contrast, the sustained connection between the girl and her mother is important in maintenance of contact with other family members, both within and across generations and with both sides (paternal and maternal) of the family. Boys are equipped to participate in a firmly established system of exchange so that self-reliance of the family as a group will be prevented (in other words, the family will still need the outside world). This accounts for the fact that where work relations and kinship relations are relatively undifferentiated, women remain objects of exchange while men do the exchanging, therefore leaving women to remain in the domestic realm.

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My junior and senior years of high school mark the beginning of my eating disorder. At this time, I was quite fond of alcohol (mainly beer) and consumed more than I should have; consequently I gained weight. After realizing what was happening, I noticed some of the idealized women depicted on television. They were extremely thin and outwardly beautiful (or so I thought at the time); after seeing them and looking at myself, I became frustrated and at the same time motivated. I challenged myself to attain that sense of ideal beauty, and that very challenge marked the initial stage of my eating disorder. Over the next few years, I experimented with such things as dieting and laxatives. Later, I began purging my food and exercising more intensively than I had in previous years. Soon after, I created restrictive eating patterns and followed them meticulously. Now after ten years, I have a fully developed eating disorder. After a decade of thought, practice, modification and observation, the disorder has become extremely advanced in qualitative depth and intensity.

Like Piaget, I feel that traditional questions of epistemology may be answered by investigating developmental changes in the process of knowing and in the organization of knowledge. In Piaget's specific context of interest, the word "genetic" in *genetic epistemology* refers not to what is inherent, but to "development" or "emergence". The solution to the problem of epistemology is that rather than a state, knowledge is a process; people construct their own knowledge – they are an active participant in the process of knowing (Miller, 2002). This productive theory provides a framework for viewing the depth and complexity of cognitive developmental occurrences in my eating disorder experience. For the current purposes, the most reasonable way to apply Piaget's

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idea of stages was to look for stagelike changes limited to a particular content area. The main focus here is on the *sequence* (rather than age) in which behaviors are acquired.

The sensorimotor period provides a detailed illustration of general characteristics in the development of an eating disorder. During this period, a person's cognitive structures become more controlled as she/he is able to organize schemes and apply them as solutions to new situations. Behavior becomes intentional over time, as a person distinguishes between 'means' and 'ends', discovers new 'means', and applies them to new situations. As depicted by Miller (2002), this period is characterized by primary circular reactions, which are behaviors that are repeated over and over again. By chance, a person discovers an interesting result from some behavior and attempts to recapture this result. As the behavior and its results are successfully repeated, a "habit" (or systematic, coordinated behavior) forms. The execution of the circular reactions seems to be associated with/supplemented by feelings of pleasure. My first purging experience was attention-grabbing, as I realized (to some extent) that by inducing vomiting, I might be able to lose weight. I attempted to recapture the result of this primary incidence by performing the behavior again. As I was able to successfully replicate the behavior and its results, purging became automatic and habitual. The systematic, coordinated action formed as the result of self-organizing processes and emerging skills that were attained through the course of development. This case of 'circular reactions' was indeed associated with feelings of pleasure and satisfaction. Also characteristic of this period is the occurrence of planning/intentionality in behavior. This new behavior sequence consists of an instrumental behavior ('means' scheme) and a goal behavior (another scheme). I knew what I wanted – which was to lose weight – and was able to combine

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schemes (derivates of previous purging experiences) to achieve this goal. Tertiary circular reactions are described by Miller (2002) as a vision of 'scientists at work'. The environment/context is one's laboratory where miniature experiments are carried out; 'testing' through deliberate varying of actions allows the person to distinguish *how* this variation affects the result. Through active experimentation and trial-and-error exploration, I expanded the means-end behavior of the earlier purging experiences to develop new means. About this point in development, I began using what Piaget called "internal mental exploration" that led to new ways of 'problem-solving'. When I encountered a problem in the purging experience, I was able to solve the problem by "thinking". I reached a point when the past methods of inducing vomiting were not as effective in producing desired results; so, I cognitively thought through the problem which invoked modification to the skill. I learned that when the gag reflex and muscle contractions would not work, I could drink Ipecac syrup and attain desired results. One achievement of this mental modification process is that a skill that has been utilized in the past can be reproduced at a later time. For example, following an episode in which Ipecac was used, induced vomiting is still possible by singularly triggering the gag reflex.

The preoperational period is characterized by a restructuring of ideas about skills, relations among skills, causality/emergence of skills, and instances of skill employment via mental representation and more highly organized cognitive structures. Representational thought allows a person to deal with past, present, and future concurrently and recombine skills for more efficient use in particular contexts. Three achievements of this period are function, regulation, and identity (Miller, 2002). A function is described as the relation between skills. For example, I was beginning to

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realize that there was in fact a positive relationship between multiple skills in my disorder. I found that if I could not empty my body completely through one skill (induced vomiting), then I could invoke another skill (laxative use) to remove any remaining sustenance. A regulation is a mental act that is partially decentered. I frequently switched back and forth between the skills in order to make judgments about their effectiveness. I would think that one skill (induced vomiting) 'worked better' than another skill (laxative use) because the former produced immediate gratification. Regarding identity, it is the notion that a skill can modify itself in ways without changing its original meaning. Through experimentation, each skill in my eating disorder was altered; however, even though adapted, each skill still represented its original meaning in the eating disorder. Alterations do not change the skills implicit value; the skills can be maintained to fulfill their original purposes, despite methodological adjustment.

In the concrete operational period, regulations, functions, and identities become more inclusive, differentiated, quantitative, and constant; this leads to Piaget's concept of 'operation' which he describes as an internalized mental action. My experiences involved operations that were constantly being used in mathematical functions of multiplying, dividing, ordering (greater than, less than) and substituting (one thing equals another thing). Operations are related to and obtain their meaning from the whole structure of which it is an element (Miller, 2002). For example, the addition involved in calorie counting is coordinated with multiplication involved in monitoring calorie expenditure (i.e. "I ate two slices of bread [45 calories each for a total of 90 calories] and 2 cups of brown rice [150 calories/cup for a total of 300 calories], which is 390 calories consumed today. So, I must burn 780 calories – because my regimen is to burn double

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what I take in). Concrete operational acquisition develops over a period of time. At first, the mathematics involved in my eating disorder were demonstrated only part of the time (when I was cooking), but it gradually strengthened and generalized to a variety of situations (when I was cooking, snacking, grocery shopping, exercising).

Formal operational thought, which resembles the scientific method, allows a person to formulate and test hypotheses about a current/possible event. One is capable of considering all potential determinants in a situation beforehand, systematically varying the factors one by one, examining the results directly, monitoring the results, and coming to suitable conclusions (Miller, 2002). In this problem-solving process, the modification of the factors serves to determine their influence and the results are used to test the person's hypotheses. For instance, I hypothesized that by altering each skill in specific ways, they would co-operate to fulfill their individual purposes and thus contribute collectively to satisfy the meaning of the eating disorder. At a certain point in development, the interactions among the skills in my eating disorder were not as effective as they previously had been; modifications of the skills allowed me to directly compare former results to current results and closely monitor the progress of the adapted skills. Therefore, I was able to conclude that successful alterations of each skill led to improved individual functioning which better satisfied the meaning of my disorder.

I would like to briefly note that in addition to the aforementioned, I found Case's use of an information-processing framework was also useful for representing the structures in the mind. As described by Miller (2002), Case's modifications to Piaget's theory include a focus on rich networks of concepts and their relation to one another, and on executive control structures (which are strategies for dealing with specific problems

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situations). "These structures use processes such as setting goals, activating procedures (sequences of schemes) in novel ways for reaching these goals, and evaluating the results of these procedures. Other processes include restructuring successful procedures so that they later can be produced intentionally and practicing and integrating successful procedures until they are consolidated" (Miller, 92). For example, with regards to the skills involved in my eating disorder, I set a goal (to be more efficient in 'induced vomiting'), generated procedures for attaining it (experimented with different activators like the gag reflex and stomach muscle contraction), evaluated my success (compared this purging experience to one prior), noted the successful sequence (recognized the adaptations that rendered the skill more successful), and integrated the advanced skill procedures. Upon acquisition of the essential processing capacity, I was able to take advantage of these experiences to construct more enhanced executive control structures.

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