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Disentangling Related Domains of Moral, Cognitive, and Ego Development

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INTRODUCTION

Theories of human development of adult capacities that are rooted in developmental psychology have an array of stances that overlap and differ in a variety of ways (Alexander & Langer, 1990). At a very broad level, a common overlap is their inclusion of a constructivist stance, whereby they explain and observe structural development in terms of the individual's active meaning-making. Differences arise in how domains such as cognitive development, epistemological development of self, moral development, and ego development are defined and how they are thought to be related to one another (Westenberg, Blasi, & Cohn, 1998). For example, Kegan (1982, 1994) argues for a single deep overarching developmental process underlying cognitive, interpersonal, and intrapersonal growth, while Loevinger (1976, 1986) and Kohlberg (1984a, 1986) have held that cognitive and ego development are related but distinct processes. Articulating the relationship between ego and moral development has been a particular source of contention between Loevinger's and Kohlberg's theories (Lee & Snarey, 1988; Loevinger, 1986; Kohlberg, 1984a, 1986).

Relationships Among Ego, Moral, and Cognitive Development

Loevinger (1976, 1986) has consistently maintained that moral development is an inseparable facet of a single coherent process of ego development, the overall transformation of the organizing structure of meaning-making. The course of ego development entangles change in impulse control/character development, interpersonal relations, conscious preoccupations, and cognitive complexity. In

contrast, Kohlberg (1976, 1986) consistently maintained that moral judgment is a distinct domain with its own structural logic and transformation. Kohlberg's description of the relationship between ego and moral development evolved over time, and his position came to resemble Loevinger's stance that the ego subsumes or is more general than the moral (cf. Lee & Snarey, 1988).¹

The strong stage by stage parallel between Loevinger's description of ego development and Kohlberg's description of moral development (Loevinger, 1976; Kohlberg, 1984a; Lee and Snarey, 1988; Snarey, Kohlberg, & Noam, 1983) reflects not only common moral content, but also some common structural assumptions about "(a) an invariant sequence of (b) hierarchical transformations, which are (c) structured wholes" (Noam, Kohlberg, & Snarey, 1983, p. 111). Even so, Kohlberg (1986) leaned toward Kegan's theory of ego development rather than Loevinger's. In collaboration with Gil Noam and John Snarey, he noted that "in contrast to Loevinger, who has not spelled out the theoretical inner structural logic of each stage or the logic of the sequence from one stage to the next, Piaget, Kegan, Kohlberg, and other structuralists have defined stages solely in terms of cognitive structures or ways of thinking" (Noam, Kohlberg, & Snarey, 1983, p. 112).²

Loevinger, Kohlberg, and Kegan disagreed with each other about the relationship of cognitive and ego development. Kegan's (1982, 1994) subject/object theory of development has held that Piagetian-like cognitive development and the development of the meaning-making capacities of the self are aspects of a single unified

developmental process (also see Souvaine, Lahey, & Kegan, 1990). Loevinger (1976) held that although ego development overlaps with some aspects of cognitive development, the overall process of ego development is distinct from intelligence. At the same time, she speculated that some particular kinds of cognitive development might be required for progression to particular stages of ego development (pp. 175-181). Kohlberg's (1976, 1984a, 1986) description of the relation between cognitive and ego development continued to evolve, and was strongly conditioned by his concerns about the relation between cognitive and moral development.

Kohlberg's rational reconstruction of the course of the "logic" of the individual's moral development in terms of "justice operations" gives his theory a distinctive cognitive-developmental stance. The idea of justice operations parallels Piaget's structural description of the course of cognitive development in terms of increasingly complex and equilibrated logical operations. Such operations are conceptualized as generalized and interiorized forms of actions and are distinguished from second order reflection where the actions themselves are the focus on conscious attention and awareness. Reversibility, which is a key justice operation, reaches full maturity in an impartial perspective taking action of "moral musical chairs," which calls for equal respect for all persons.³ Kohlberg (1981) also specifically located the philosophy of his moral theory in the social contract theory of John Rawls (1971) where an individual who presumes an original position of not knowing his own position in society would have rational reasons for preferring distribution of goods according to principles of justice.⁴

Kohlberg rejected the idea that moral development was the *application* of cognitive development to the moral domain. He held that "the higher moral stages by definition require a high level of logical and social-cognitive sophistication, but advanced logical thinking and social cognition can be expressed within the moral domain without constituting thinking that is *morally* advanced" (Colby & Kohlberg, 1987, p. 12). This is how the relation between cognition and moral domains is expressed when it is stipulated to be analytically true, which means that it would not be subject to empirical test. However, Kohlberg and others have also commonly held what they feel is an empirically testable conceptualization of a relationship between distinct moral and cognitive domains. In particular Kohlberg (1976, 1986) has consistently argued that particular stages of cognitive development are necessary but not sufficient conditions for more specifically defined (partially isomorphic) stages of moral development. The consistency of this particular argument for cognitive development as a precursor for moral development suggests its importance to Kohlberg, and this is all the more so given his relatively less stable description of the structural relations among moral, cognitive, and ego constructs (Kohlberg, 1976, 1986; Loevinger, 1986).

Although Kohlberg (1986) saw it as more speculative and outside of his main concern of articulating the course of moral development, he collaborated with John Snarey and Gil Noam to articulate a distinct theoretical expression of the structural relation of moral development with other distinct strands of development. In particular, Snarey, Kohlberg, and Noam (1983) postulated three separate structural subdomains within a unified ego that

stand in cognitive relation to each other. The three subdomains are epistemological (e.g., Piaget, 1972), ethical (e.g., Kohlberg, 1986), and metaphysical (e.g., Fowler, 1981). Each is considered a subdomain of “reasoning” in a broad meaning-making sense that “reunites what a person thinks, feels and does” (p. 309). In turn, each implies a particular reference point: “the natural environment,” “the social environment,” and “the ultimate environment.” At the same time, a subdomain might in some way operate on an environment that is not its implied reference point. For example, the epistemological meaning-making stance of William Perry (1970) was seen as focusing on the social and ultimate environments rather than the natural environment, even though the latter is the implied reference point of the epistemological. Loevinger (1986) characterized Kohlberg’s matrix of structural subdomains and environmental reference points as creating a theory where “not only is moral development governed by rigid structure, all of ego development is rigidly, though differently structured” (p. 185).

Loevinger held that the logical operations of cognitive development were ill-suited to defining the structural development of the ego (Blasi, 1976). In particular, the synthetic process of meaning-making that was the structural core of ego development called for a recognition of content in particular meanings not captured by the generalized structural forms of Piagetian cognitive development. Individual purposes and values arising in the context of culturally developed forms of life cannot be reduced to forms of reasoning, except by losing their concrete meaning, which play a central role in the structure of ego development.⁵ Loevinger (1976) included

structural transformations of the individual’s motives as reflected, for example, in the stage names “impulsive” and “self-protective.” Kohlberg (1986, p. 498) in contrast disavowed this stance:

Many readers of my earlier writings (Kohlberg, 1969, 1984, Ch. 1) were left with the belief that my moral stages were eventually expressions of a developmentally hierarchy of motives. In this interpretation, preconventional judgments were motivated by, or expressed motives of, concern for extrinsic punishment and reward, conventional reasoning by affiliation, approval and respect-seeking, and postconventional judgments by motivations of conscience or moral self-judgment. In fact, however, I have avoided this emotivist view....I have claimed that in some sense there is a primary motivation ‘to do the right thing’ in the sociomoral world as Piaget assumed a primary adaptation a ‘truth’ motivation for the infant and child’s actions toward the physical world.

The transformation of motive structure that Kohlberg disavows, Loevinger sees as central (cf. Kohlberg, 1984c, p.243). For Kohlberg, such transformation could not be formalized or universalized, and this was essential to his cognitivist philosophy of moral development and all that it entailed, which included a philosophical characterization of distinctly normative demands and his rational reconstruction of the development of moral judgment (cf. Kohlberg 1984c, p. 246). Among Kohlberg’s criticisms of Loevinger’s theory was its lack of philosophically grounded normative claims for higher stages being better.

Much of the power of the ideas of Kohlberg and Loevinger comes from the development of strong measures of their constructs and the resulting program-

matic research they have sustained. Following Kohlberg, James Rest developed another measure of the development of moral reasoning that he linked to an influential revision of Kohlberg's theory. Rest (1979a) significantly departed from Kohlberg's stage model by arguing that individuals might use moral reasoning that reflected several stages of moral judgments. In this view, an earlier and less complex form of justice reasoning might be elicited by a situation and still be a useful part of the individual's moral judgment repertoire. Thus, Rest significantly relaxed the structural holism requirements of Kohlberg's theory. He made other concomitant relaxations. Notably, he argued that the content of concerns that individuals focus on (e.g., friendships, law) are entangled with the structure of their moral reasoning (pp. 41–47) and that measurement of reasoning about justice was better viewed as probabilistic. Here, he took metatheoretical positions that resembled Loevinger more than Kohlberg.

Rest's most distinctive contribution was to develop a measure of moral reasoning that used an innovative selection/rating format rather than a production one. The instrument measures the participant's preferences for statements that reflect particular types of moral rationales for an action choice rather than spontaneous demonstration of the capacity and proclivity toward producing a moral rationale. Rest, Narvaez, Bebeau & Thoma (1999) have offered a vigorous argument for their instrumentation. Crucially, they have summarized evidence that individuals who prefer statements linked to lower stages of moral judgment are unable to comprehend the arguments for higher stages, while those who prefer statements linked to higher

stages comprehend the arguments for both lower and higher stages.

Rest et al. (1999) clarified a divergence from Kohlberg in terms of their substitution of the concept of *moral schemas for moral stages*. These moral schemas are content representations that structure top-down processing of information as opposed to Kohlberg's process-oriented justice operations. Despite these and other differences, Rest et al. (1999) have good reasons to submit their theory as neo-Kohlbergian. Their rational reconstruction of moral schemas strongly resembles Kohlberg's (1986) rational reconstruction of moral stages. Both broadly track adolescent and adult development from a maintaining society way of thinking (a social systems form of conventional moral reasoning) to a creating society way of thinking (postconventional moral judgments of human rights or general ethical principles). Although Rest distanced himself from the concept of justice operations, he broadly retained Kohlberg's ordered description of socio-moral perspectives, which Kohlberg considered key to structurally defining moral development. Like Kohlberg, he argued that cognitive development was a key component to the development of moral judgment, but also that moral judgment was distinct. As evidence, Rest and his colleagues have cited patterns of correlations, unique prediction of variance in regression analyses, and discriminant validity in at least one intervention study (Rest, 1979a; Rest et al., 1999). Unlike Kohlberg, Rest did not develop a theoretical or empirical stance toward the development of a unifying or synthetic ego. But, like Kohlberg, he focused on developing an account of how moral judgment processes related to moral

behavior. Rest (1986a) and Rest et al. (1999) articulated a four component model of moral processes for predicting moral behavior: (1) moral sensitivity to the presence of moral issue, (2) moral judgment about what action is most justified, (3) moral motivation to commit to moral action and place moral values ahead of other values (4) and moral character, which includes having courage and overcoming fatigue or temptation. Rest (1986a, p. 5) described these as processes in the production of a moral act and did not conceptualize them as general traits of people. Moreover, they were not held to be an overall unity of processes.

Development of Self and Ethical Commitment

Perry's (1970, 1981) theory of intellectual and ethical development focuses on the epistemological development of both the individual's way of understanding knowledge and making personal commitments in a pluralistic and contextually relativized world. Perry preferred to assess growth through the Perry Interview (Perry, 1970), but also acknowledged the usefulness of the Measure of Intellectual Development, which used a short essay format (Knefelkamp, 1974; Knefelkamp & Slepitz, 1976; Widick, 1975). Perry characterized the individual's growth as moving from belief in absolutism (in truth and morality) through positions that first recognized and then increasingly grappled with the epistemological and personal implications of multiplicity unbounded by absolutes. Perry recognized each position as a coherent whole and then observed an ordered progression in them related to internal conflicts they had left unresolved. Each position

“both includes and transcends the earlier ones, as the earlier ones cannot do with the later” (Perry, 1981, p. 78). In earlier positions (2 to 3) the existence of pluralism is accommodated by seeing it as either illegitimate or a limited and temporary area of uncertainty. The linchpin position of relativism (position 5) heralds metathought or the coordinated capacity to think about thinking. Relativistic thought is better equilibrated, Perry suggests. Epistemological understanding of the capacity for metathought yields not only legitimacy to pluralistic positions, but also the legitimacy of their mutual relevance and transformative interchange. The implications of this new capacity for metathought across perspectives and systems then yield. In the higher positions (6 to 9), transformation in the subjective meaning of commitment and identity. Commitment is now understood as a contextualized capacity and responsibility to think for oneself, to intellectually engage others, and to reflect on the choices one makes in all areas of life. Such a commitment embraces contextual relativism by acknowledging that it will not be possible to rely on any form of absolute knowledge and values. Not only are authorities relativized, but so are one's own committed stances and now internalized standards for self-evaluation. The relativistically committed individual is open to the capacity of external positions to critically inform and even (when personally thought through) to potentially transform his or her commitments. Thus, taking full responsibility for oneself ironically means relativizing oneself and one's chosen standards. Positive development embraces this flux with existential commitment, rather than escaping into cynicism or nihilism.

Loevinger (1976) saw Perry's theory as broadly congruent with her own, describing potential stage by stage comparisons between the two. She appreciatively observes that "of all the theories of ego development, the one with greatest poignancy for most college students is that of Perry (1970)" (p. 126). Both theories include a focus on the structural transformation of motives and, more broadly, of the self as a meaning-making process. This meaning-making self develops toward increasing complexity, integration, and autonomy, which is marked by individuation, but also by increasing respect for and awareness of interdependence and contextual relativism.

The kind of ethical development Perry articulated in his theory is different from that articulated in Kohlberg's stage theory of moral judgment. A clear difference lies in the locus of concern toward social cooperation (Kohlberg) versus individual development (Perry). A related difference is Kohlberg's deontological emphasis on justice or respect for persons and Perry's existential emphasis on self-definition of the good life.⁶ Whereas Kohlberg described increasingly equilibrated perspectives on moral norms, obligations to others, and the general welfare of all, Perry's theory describes the ethical dimensions of choosing to accept the difficult personal consequences that are inherent in personal growth. Perry describes some of the competing personal interests in terms of an "urge to conserve" that can overwhelm a call to growth. One's emerging understanding of new perspectives that offer potential for growth might be evaded because they endanger "the wish to maintain community in family and hometown values and ways of thinking, the reluctance to admit one has been in

error, the doubt of one's competence to take on new uncertainties and responsibilities, and, most importantly, the wish to maintain a self one has felt oneself to be" (Perry 1970, p. 52). Perry (1970, 1981) very eloquently empathized with the validity of these concerns. But, his existentialist stance grounded his description of growth and his commitment to describing the higher positions as better.

Kohlberg (1984a) saw Perry's theory as metaethical (e.g., "what is morality?") rather than normative (e.g., "what is the right thing to do?"). Kohlberg saw this as part and parcel with Perry's existential stance. Like Gibbs (1979), he saw all theories built on developmental growth in existential meaning-making or second order reflection as necessarily involving "soft stages." Kohlberg & Ryncarz (1990) specify five criteria that distinguish hard stages from soft stages. Briefly these are (1) universality of stages and sequence, (2) equilibrated interiorized forms of action, (3) strict separation of content from structure, (4) amenability to rational reconstruction, and (5) "the absence of the ego or a self in the construction of the stages" (p. 205). Perry's (1970) description of existential development acknowledges potential regressions in development (failing the first criterion for hard stages), embraced content cues in describing development (failing the third criterion), and centered on the development of the self as a center of totality in meaning making (failing the fifth criterion).

Kohlberg and Ryncarz (1990) speculated on a seventh stage of moral development that broaches the existential question of "why be moral?" but held that it was necessarily a soft stage, like all of Perry's

positions of development. Kohlberg (1984b) acknowledged some particular connections between his theory and Perry's. Notably, he held that the individual's confrontation with subjectivism and relativism (what Perry's called multiplicity) provides the essential service of disequilibrating conventional moral reasoning.⁷ Kohlberg saw this phenomenon as being so powerful that it temporarily confused the transparency of developmental growth on his scheme. For a while Kohlberg characterized extreme relativism as Stage 4½, but Kohlberg abandoned this position when he observed that a relativistic stance occurred at other stages as well (Kohlberg, 1984b). Kohlberg (1984d, p. 364) acknowledged findings that post-adolescent growth pushed into Perry's contextual relativism and that this growth "may occur after the attainment of principled stages of justice reasoning," but disputed Gilligan and Murphy's conclusion that this also entailed the erosion of principled moral judgment in favor of a concern for responsibility and care (cf. Habermas, 1996; Gilligan & Murphy, 1979; Murphy & Gilligan, 1980). Instead, he argued that such growth after post-conventional justice reasoning represented increased awareness of factual ambiguities and thereby appropriately contextualized the search for the application of principled morality.

Kohlberg also augmented his structural stage theory of moral development with a theory of ideal types conceptualized in terms of both structure and content. Following Piaget, Baldwin, and Kant, he distinguished moral autonomy (Type A) from heteronomy (Type B). His description of the relation between his moral stage theory and the development of moral autonomy evolved considerably

over time (Tappan et al., 1987). He abandoned the position that Type A and Type B moral judgments represented structural substages within each stage of moral development, because the sequence was only predominantly from Type A to Type B. Instead, he settled on the position that autonomy was defined by both structure and content and speculated that the developmental path into autonomous moral judgment would tend to occur as a one-time shift, a shift that might happen at any of several stages of moral development.

There are some potential convergences of Kohlberg's conception of autonomous moral judgment and Perry's theory. For example, Kohlberg says autonomous moral judgments "reflect more freedom from fixed norms, external authority figures, and pragmatic considerations" than heteronomous judgments "even from within the same sociomoral perspective" (Tappan et al., 1987, p. 378). Perry's theory is perhaps broadly congruent with three criteria that Tappan, Kohlberg and their colleagues say distinguish autonomous moral judgment from heteronomous moral judgment (*freedom* from external parameters, *reversibility* via full consideration of others perspectives, *constructivism* as understanding that rules are developed by people). Kohlberg speculates on a macro one-time shift to autonomous judgment, while Perry articulates a developmental logic for a sequence of positions that reflect a gradual epistemological emergence from a dualistic reliance on external authority and rules. There are other divergences between the theories.

Tappan et al. (1987) distinguished a range of other criteria for autonomous

moral judgment, and these can be contrasted to how Perry took up the ethical self. These criteria extend a Kantian perspective on autonomous morality and justice. They include: *hierarchy* as placing moral values over nonmoral ones, *intrinsicness* as valuing persons as ends, *prescriptivity* as experiencing moral obligations as a moral necessity of inner compulsion regardless of the individual's inclinations to do otherwise, and *universality* as a willingness to generalize moral judgments so that they apply to everyone. Of these, Perry's claim to include the ethical domain most clearly relies on the criterion of compellingly felt obligation or *prescriptiveness*.

Perry (1970) observed that those individuals who felt they could not follow the call to increased integrity that they heard "revealed in their accounts the special kinds of stress, and of distress, associated with internal denial and disassociation." They "seemed to be actively denying or fighting off within themselves awareness of their urge to progress." When they made these denials explicit, it was "always with acknowledgment of some dis-ease or even shame" (p. 53). Shame as an emotion is definitively a moral one and theorists besides Perry have also tended to relate it to one's sense of self.⁸ For example, Tugendhat (1993) has argued that the experience of shame is linked to moral identity and the desire to be a member of the moral community.

The role of personal identity in explaining moral commitment has led a number of theorists to articulate the concept of moral self (see Noam & Wren, 1993). Personal ideals, which may include moral ones, define the experienced self in important ways. Frankfurt (1993, p.

25) holds that what the person experiences as unthinkable—the ideals that are not allowed to be forsaken—constitutes the kind of identity required by genuine integrity:

If someone has no ideals, there is nothing he cannot bring himself to do. Moreover, since nothing is necessary to him, there is nothing that he can be said to essentially be. To be sure, he may have a number of persistent psychological dispositions or traits; he may exhibit various consistent patterns of inclination and choice. But any stable volitional characteristics he may have are products of impersonal influences. They are not consequences of his wanting to be a person of certain sort or to devote himself to a certain kind of life; they are not fixed by his will itself but by contingencies external to it.

This kind of commitment to self-defining ideals echoes Perry's theory of intellectual and ethical development. But, as Frankfurt observes, commitment to ideals need not be to moral ideals (where moral is now limited to concern for others, such as justice or care). Perry (1981) likewise observes that a student who has embraced contextual relativism might commit to a set of values, a particular career, or a relationship with another. Thus, it is important to distinguish two different senses of the moral in relation to Perry's theory. On the one hand, the theory includes a focus on the individual's sense of moral obligation to their own growth. On the other hand, the theory does not privilege, or even focus on, moral ideals in the interpersonal realm (e.g., justice or care) relative to personal ideals. This contrasts with Kohlberg's general conception of the moral domain and his conception of autonomous morality. These differences in metaethical assumptions extend into instrumen-

tation. For example, Kohlberg's Moral Judgment Interview elicits verbal reflections on moral dilemmas while the Measure of Intellectual Development elicits short essays on a best class, a recent decision, or career choice. Although the Perry essays do not generally elicit interpersonal moral concerns, personal growth in the epistemological understanding of commitment has metaethical implications for the capacity and proclivity to reflectively commit to moral ideals.

One question, then, that arises from Perry's description of sequenced growth in the epistemological basis of commitment is "how do the range of positions relate to moral development?" This could be asked in a stage by position way or more stochastically across a range of positions and stages. Theoretically, there seems to be some agreement that at the upper reaches of moral development the distinction between personal concerns and interpersonal moral concerns may collapse. This may be expressed as the self becoming a legitimate moral concern alongside moral concern for others (Gilligan, 1982), as a perceived unity between self and others (Staub, 1993), as a perceived unity between the self and morality (Colby & Damon, 1993), or as a Kantian autonomous willing of the moral in principled moral judgment that unites moral judgment and personal interest (Armon, 1989; Kohlberg, 1984a).⁹ Wren (1993) notes that the impersonal demands of justice are paradoxically deeply part of the self and its need to step outside itself. Perry's description of existential commitment in contextual relativism would likewise collapse the distinction between personal and interpersonal moral concerns both by emphasizing that the individual is

responsible for creating values (cf. Abelson & Nielson, 1967, p. 107) and by emphasizing the capacity for meta-thought to reach across value systems to engage others in authentic and dynamic interchanges (cf. Armon, 1989).

As our above description of the contested relationship between ego and moral development attests, this loose agreement on the integration of morality and self-interest (where the moral is now variously understood to include, subsume, or be enlightened self-interest) does not extend to less advanced stages of moral and ego development. Even at the upper reaches of theories of development, the loose agreement on integration of personal and moral interest is largely hypothetical due to the dearth of empirical observations of this level of development in the population. At lower stages of development, Nisan (1990, 1993, 2000) describes evidence for a kind of "limited morality" or "moral satisficing" whereby individuals allow personal interests to override what they accept as the priority of a moral obligations as long as such an indiscretion does not upset their sense of moral balance, which requires they not allow their perceived morality go below a certain level.¹⁰ Colby and Damon (1993) report that the integration of moral and self interests begins toward the end of childhood and that the degree of integration varies on into adulthood. Evidence that it is not predominantly a post-conventional phenomena includes Colby and Damon's (1992) finding that 23 exemplars of morally committed lives had MJI scores well distributed across stages 3 to 5, though also, only two were scored stage 3.

In general, it seems that most investigators, including Kohlberg, believe that the development of moral *motivation* to do

what is right is at least partly linked to the development of the self or ego. Kohlberg (1984a) articulated this motivation as a function of the development of autonomy and responsibility.¹¹ At the same time, there is general disagreement on how to conceptualize the relationship between ego, moral, and cognitive development. Kohlberg has strongly argued for the distinct developmental structure of moral judgment, as a separate component and strand of development within a unifying ego. But, as we have seen, developmental psychologists hold a range of positions on how to identify and define domains of development and their relationships with one another.

Empirical Limitations to Disentangling Related Developmental Domains

One barrier to making sustained theoretical progress in understanding domains of development is insufficient empirical study of how measures derived from different theories relate to one another. Empirical studies have generally related discrete pairs of developmental measures (e.g., Lee & Snarey, 1988; Loevinger, 1979; Rest, 1979a) or used small samples (e.g., Commons et al., 1989; King, Kitchener, Wood, & Davison 1989; King & Kitchener, 1994).¹² However, Mentkowski and Associates (2000) recently reported findings from a battery of longitudinally administered human potential measures for a large sample. They found two broad factors that replicated across the four occasions of measurement from college entrance to five years after graduation.¹³ One factor was Critical Thinking and the other was Integration of Self in Context. Although external critics of developmental theory have suggested that all developmental

differences might be reduced to general intelligence (e.g., Sanders, Lubinski, & Persson Benbow, 1995), these findings support the distinction between cognitive development and development of meaning-making or self-processes.

The Critical Thinking factor included the Test of Cognitive Development (Renner et al., 1976) and three subscales from Watson and Glaser (1964) Critical Thinking Appraisal (inference, recognition of assumptions, and deduction). The Test of Cognitive Development (TCD) is based on Piaget's theory of formal operations. The Integration of Self in Context factor included the Measure of Intellectual Development and Loevinger's Sentence Completion Test. The Measure of Intellectual Development (MID) was constructed in the context of Perry's (1970) theory of intellectual and ethical development, and the Sentence Completion Test (SCT) was constructed in the context of Loevinger's theory of ego development.

Appendix A shows the factor loadings for two of the four times of assessment reported in Mentkowski and Associates (2000).¹⁴ Moreover, Mentkowski and Associates found that Kohlberg's Moral Judgment Interview (Colby et al., 1987)¹⁵ also loaded on the Integration of Self in Context factor, reinforcing the interpretation that this factor reflected development of the deep moral self. Appendix B displays the factor loadings for the analysis that included the MJJ.¹⁶

These findings are important to developmental theory because they help define two distinct domains of development in relation to a range of measurements with differing origins and formats. In particular, the empirical overlap of measures

derived from diverse developmental theories of moral judgment (Kohlberg), synthetic ego functioning (Loevinger), and epistemological schemes of commitment in a relativistic world (Perry) supports arguing for a core commonality among the theories that empirically rides above the differing theoretical stances and expressions. In part, this may more narrowly reflect general agreement on broad hierarchical distinctions in adult developmental for the levels in which they are typically achieved in society, as the highest stages of these developmental schemes were not scored. At the same time, the replication of two factors in the context of such a restriction of range of scores even more strongly supports the distinction between structural development of the self and structural development of cognition, a distinction that has been held more firmly by some developmental psychologists (e.g., Loevinger) than others (e.g., Kegan).

A further finding reported by Mentkowski and Associates (2000) suggests that the widely used Defining Issues Test (Rest, 1979a) may be “somewhere intermediate between critical thinking and moral development” (p. 115), as the P% index from this six story measure consistently loaded ambiguously on the two factors across time. This finding illustrates the need to use multiple measures of latent constructs in the process of clarifying developmental theory.

Although the factor analyses replicated the same two-factor solution across occasions of assessment, it is possible to question the robustness of the ability to generalize from these replications. The four occasions of assessment spanned ten years, but each of the four factor analyses substantially overlapped

because the individuals were part of the same longitudinal sample. The present paper empirically focuses on the replication of the two factor solution in a distinct sample of Alverno College students

METHOD

Instruments

Sentence Completion Test

The SCT is based on Loevinger's (1976) theory of ego development. This theory comprehensively subsumes moral development, cognitive development, interpersonal relations, character development, and personality development under the construct of ego development, specifying nine stages. The Sentence Completion Test consists of 36 sentence stems, such as “My mother and I...” or “Education...” which participants are asked to complete (Hy & Loevinger, 1996; Loevinger & Wessler, 1970; Loevinger, Wessler, & Redmore, 1970). Response to each stem is independently rated as manifesting one of the nine levels. Estimates of inter-rater reliability (pearson r) summarized across the three times of assessment in the Alverno longitudinal study was .94 ($n=75$). Internal consistency estimates averaged .89.

Measure of Intellectual Development

The MID is intended to assess epistemological development as described by Perry (1970). Participants write three short essays describing (a) a best class, (b) a recent decision, and (c) their career choice (Knefelkamp, 1974; Knefelkamp & Slepitz, 1976; Widick, 1975). The rating procedures and criteria, initially developed by Knefelkamp (1978), were extensively modified during use at

Alverno College (Mentkowski, Moeser, & Strait, 1983; Reisetter Hart, Rickards, & Mentkowski, 1995). Most refinements have focused on the nature of knowledge and learning (Mines, 1982; Moore, 1983), but we have found that the role of the self and the decision-making process have also emerged as important (Reisetter Hart, et al., 1995). Inter-rater reliability in the Alverno Longitudinal Study was .82 for essay A, .78 for essay B, and .75 for essay C.

The Defining Issues Test

The DIT is intended to be a measure of moral reasoning (Rest, 1979a, 1979b, 1986a); it is based on Kohlberg's (1969) theory of moral development. Rest departs from Kohlberg's "hard stage" model, arguing for a more complex model that presumes "stage mixture." Participants are presented with six moral dilemmas; for each, they are asked to choose among alternative considerations for making a moral judgment. The resulting "P percent" score, which we used in our analyses, denotes the relative importance a person gives to principled moral considerations. Rest's criteria for consistency and meaningfulness were not used to exclude data from the replication sample. Rest (1979a; 1979b) estimates both inter-item consistency (.77) and test-retest reliability (.82).

Critical Thinking Appraisal

The CTA (Watson & Glaser, 1964) is a measure of critical thinking abilities that has been widely used to measure college outcomes. With a recognition format, the instrument tests for several components of critical thinking skills through a series of multiple choice exercises. We administered three of five subscales

Inference, Recognition of Assumptions, and Deduction. They report low alpha reliability estimates for the subscales (.55, .54, .41) respectively.

Test of Cognitive Development

The TCD developed by Renner et al. (1976) focuses on Piaget's most complex stage of cognitive development, formal operations (Inhelder & Piaget, 1958). Participants completed five paper-and-pencil tasks two tasks in proportionality, two in conservation, and one on separation of variables—which elicit written justifications for answers. The scoring key was provided by McBer and Company (Klemp, circa 1977), and was revised for rescoring at Alverno College (Schwan Minik, Rogers, & Ben-Ur, 1994). In the Alverno Longitudinal Study, estimates of alpha reliability for the TCD ranged between .62 and .68. Inter-rater reliability for the total score was estimated at .84.

Sample

The present report draws from data collected in the Alverno College Longitudinal Study (Mentkowski & Doherty, 1983), but not reported on by Mentkowski & Associates (2000). The included participants in the present analyses were not eligible for longitudinal analyses either because they only completed the battery of assessments at entrance to the college ($n=114$, listwise deletion) or else because they completed the battery as part of a cross-sectional comparison group of graduates ($n=54$, listwise deletion). Because the structure of the factors had not varied across time in the prior analyses, these two samples were combined for the purposes of maximizing the sample for confirmatory factor analyses. PRELIS

FIGURE 1: CONFIRMATORY FACTOR ANALYSIS BASE MODEL

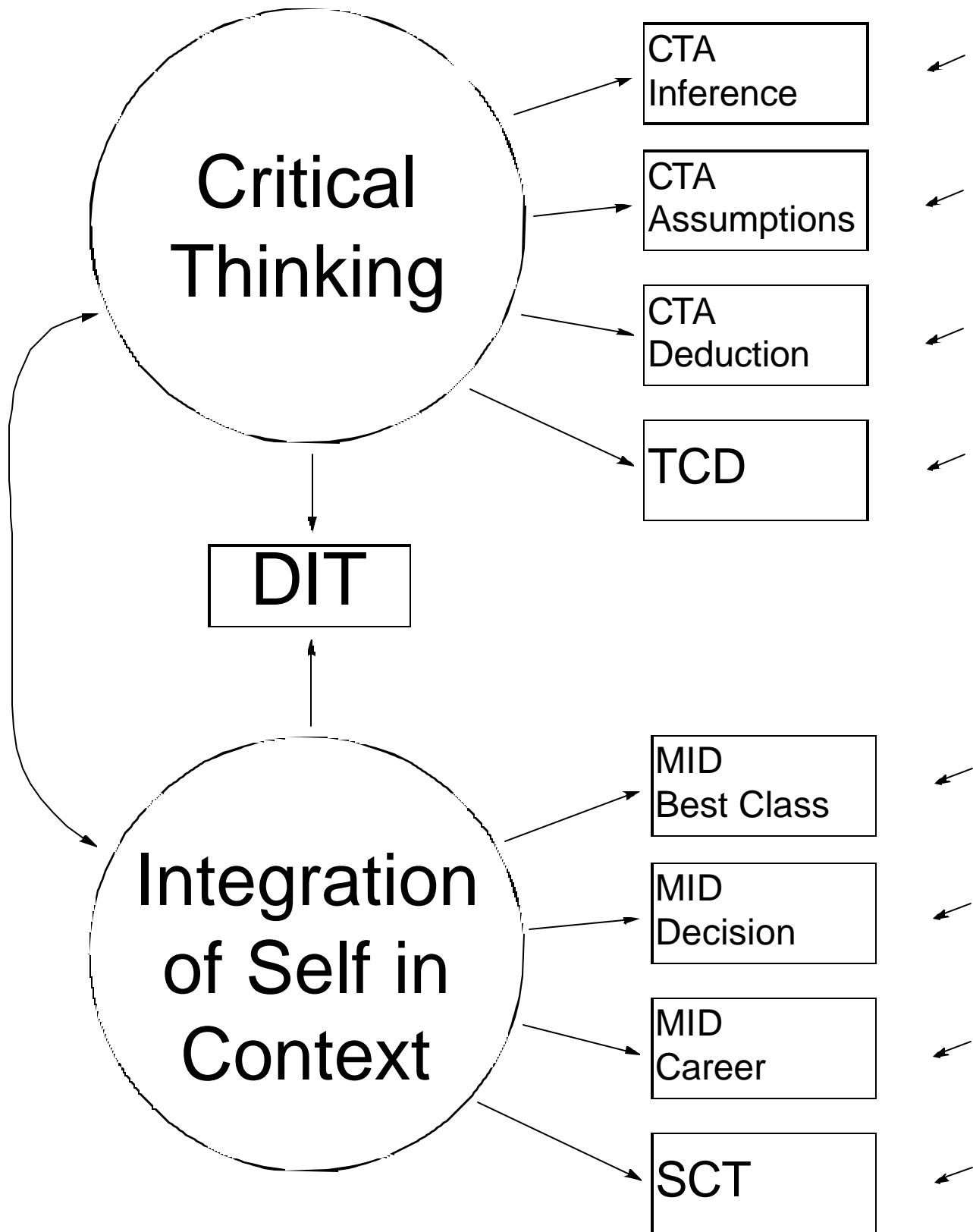


Table 1. Coefficients for Indicators and t-values in the Confirmatory Factor Analysis

Indicators	Latent Factor Indicators			
	Critical Thinking Path-Coefficients	t-values	Integration of Self in Context Path-Coefficients	t-values
CTA-Inference	.77	7.15		
CTA-Assumptions	.43	4.72		
CTA-Deduction	.57	5.93		
TCD	.63	Referent		
MID-best class			.53	4.17
MID-decision			.66	4.55
MID-career			.54	4.22
SCT			.44	Referent
DIT-P%	.38	2.04	.26	1.33 _{ns}

Note. The analysis reported in this replication sample uses data that did not meet criteria for inclusion in sample frames used by Mentkowski and Associates (2000). The replication sample includes those who only completed assessments at Time 1 in the Alverno College Longitudinal Study (who took the inventories as freshman) and those from a cross-sectional comparison sample (who took the inventories as graduating seniors). After listwise deletion, the sample size is 168. The MJJ was not included in the factor analysis due to limited sample sizes for the MJJ.

inputted raw data into LISREL, with missing data treated pairwise (n ranging from 174 to 378). Approximately 25% of the sample was missing the CTA and 50% the MID, which accounts for the differences between the listwise and pairwise sample sizes. The mean age at time of assessment was 23 with a standard deviation of 7.7. All were women who entered or graduated from Alverno College in the late 1970s.

Confirmatory Factor Analysis Model

The results of four exploratory factor analyses reported by Mentkowski and Associates (2000) were used to specify a confirmatory factor analysis. The exploratory factor analyses they reported consistently supported a two factor solu-

tion (both scree plots and eigen values greater than 1). Figure 1 displays the confirmatory factor analysis model tested. Specified indicators of Critical Thinking were the TCD and three CTA subscales. Indicators of the Integration of Self in Context latent factor were the SCT and three MID essays. In addition, the base model included the Defining Issues Test (DIT) as an indicator of both factors, which directly tests whether it is an indicator of either or *both* correlated latent constructs.¹⁷ As Figure 1 shows, LISREL also estimated error for the multiple indicators including the DIT.¹⁸

RESULTS

Age at the time of assessment tended to have a small correlation with the human

Table 2. Factor Loadings for Human Potential Measures for Replication Sample: Exploratory Factor Analysis

Human Potential Measures	Factor	
	Critical Thinking	Integration of Self in Context
Critical Thinking Appraisal, Inference	.75	.33
Critical Thinking Appraisal, Recognition	.44	.10
Critical Thinking Appraisal, Deduction	.56	.26
Test of Cognitive Development	.52	.43
Defining Issues Test ^a	.45	.45
Sentence Completion Test ^b	.19	.36
Measure of Intellectual Development, Essay A	.30	.36
Measure of Intellectual Development, Essay B	.16	.70
Measure of Intellectual Development, Essay C	.17	.46

Note. The analysis reported in this replication sample uses data that did not meet criteria for inclusion in sample frames used by Mentkowski and Associates (2000). After listwise deletion, the sample size is 168. Orthogonal factors were extracted using principal axis factoring and rotated through varimax. The two-factor solution explains 36 percent of the variance in the battery of measures. The MJJ was not included in the factor analysis due to limited sample sizes for the MJJ.

^a P percent score.

^b Total protocol rating.

potential measures. Pearson correlations of age with the indicators of Critical Thinking—CTA Inference (.23), CTA Recognition of Assumptions (.19), CTA Deduction (.20) and TCD (−.02)—were similar to those for the indicators of Integration of Self in Context—MID-A (.19), MID-B (.23), MID-C (.14), and SCT (.22). The DIT had a similar low association with age (.20).

The overall fit of the base model was good: GFI=.97 and Chi-Square (25df)=27.6, $p=.33$. Table 1 displays the completely standardized path coefficients from the latent construct to each of the indicators and the test of their statis-

tical significance. In this base model, the DIT is a weak indicator for both latent constructs, but only a statistically significant indicator of Critical Thinking. Appendix C presents the completely standardized solution for all components of the specified model. To better understand this finding, it is useful to compare it to alternative models that do not as directly test the hypothesis, but that limit overinterpretation, and suggest how researchers might construct future measurement models. First, if DIT is specified as an indicator of Integration of Self in Context (but not Critical Thinking), then the overall model fits about the same (GFI=.96, Chi-Square 26 df=30.8, $p=.24$)

and the path for the DIT as its indicator is .62 rather than the meager .26 shown in Table 1. However, similar results also occur if DIT is specified conversely as an indicator of Critical Thinking (but not Integration of Self in Context). The overall model fits about the same (GFI=.96) and now the path from Critical Thinking to the DIT indicator is .60. This is consistent with the findings from the direct test of whether the DIT is an indicator of both latent factors, and affirms the prior conclusion of an ambiguous relationship.

Table 2 presents a follow-up exploratory factor analysis on this replication sample. This analysis used principal axis factoring and Varimax rotation. The follow-up exploratory factor analysis is not independent of the confirmatory analysis and is presented in order to explore the stability of the solution and to facilitate a visual comparison with the factor analyses Mentkowski and Associates presented for each of the four times of assessment in the longitudinal study (Appendix A shows two of these four factor analyses). The factor analysis in Table 2 generally replicates the four prior exploratory factor analyses, with the two factor solution again supported (eigen's values 3.45, 1.03, .83, .64, .41). Although the Test of Cognitive Development was an effective indicator of Critical Thinking in the confirmatory analysis, it did not load as cleanly on this factor in this exploratory analysis (which in this case was post-confirmatory) as it had previously done for Mentkowski and Associates. The Best Class essay (Essay A) from the MID also did not as cleanly load on Integration of Self in Context. Nonetheless the overall factor structure was similar to that found by Mentkowski and Associates.¹⁹ The DIT again loaded ambiguously on the two factors, .45 on

each factor. Thus, both the confirmatory and exploratory factor analyses continued to indicate that the DIT is statistically adding little clarity to the measurement of these two latent developmental constructs.

Two measurement models now present themselves as ways to fit the data, and as a guide to future research. One model would pursue parsimony and eliminate the DIT as a measure of either construct. Such a model fits the data well, Chi-Square, 19df= 21.1, $p = .33$). It is preferable to the prior models both in terms of parsimony and its lower Chi-Square value, even though it is not directly comparable (see Hayduk, 1987, p. 172). But, another model that represents the DIT as an indicator of a third intermediate latent construct might be warranted as an interim solution to representing the range of empirical data. Here, *moral reasoning* is represented as distinct not only from critical thinking but also from a more deeply structural *moral development* inherent in the construct of Integration of Self in Context. This is the strategy used by Mentkowski and Associates (2000), and it fits the present data just as well as the other models that included the DIT. Whether the parsimonious two-factor or speculative three-factor model is used, there is a strong correlation among the constructs.

If the parsimonious two factor model is used, then correlation between Critical Thinking and Integration of Self in Context is estimated to be .80. Unlike ordinary correlations between observed variables (in any linear combination), which underestimate true correlations, this is an "estimated correlation between two latent unobservable variables" (Joreskog & Sorbom, 1989, p. 90). If the

Table 3. Correlations Among Three Latent Developmental Constructs with DIT as Indicator of Moral Reasoning

	Critical Thinking	Integration of Self in Context	Moral Reasoning
Critical Thinking	1.00		
Integration of Self in Context	.79	1.00	
Moral Reasoning	.64	.61	1.00

still unsupported three factor model is used and DIT is estimated to have a reliability of approximately .80, this yields an almost identical correlation among the two clearly identified factors, and a somewhat smaller estimate for their relationship to moral reasoning (see Table 3).

DISCUSSION

The present paper crossvalidates a two factor model of Critical Thinking and Integration of Self in Context, and explores alternative measurement models, acknowledging that the data can be accounted for by more than one theory. Mentkowski and Associates (2000) finding of a distinct developmental factor marked by ego, epistemological/ethical commitment received crucial support. The present study's estimation of the correlation between the two latent constructs (.79) is even higher than that reported by Mentkowski & Associates (.37 and .42), who also found some evidence for a divergence among the domains after college. By modeling these constructs with multiple indicators it was possible to statistically disentangle their distinctiveness and relatedness. The value of disentangling these constructs is that one is not reduced to the other. This has great educational implications, as different factors appear to support the development of Critical Thinking and

Integration of Self in Context (see Mentkowski & Associates, 2000). For example, Mentkowski and Associates (2000) observed that in Perspectives Interviews participants attributed their personal growth to engaging multiple approaches to learning and the perspectives of others. Likewise statistical causal modeling indicated that breadth of preparation in college was an indirect cause of after college growth for Integration of Self in Context.

Critical Thinking and Integration of Self in Context

The confirmatory factor analyses replicated the two developmental factors identified by Mentkowski and Associates (2000). The exploratory factor analysis of the replication sample also recovered the two factor structure. The exploratory factor analysis of the replication sample provided only ambiguous support for the stability of the TCD as an indicator of Critical Thinking. One interpretation might focus on the theoretical distinctions between formal operations and a broad domain of critical thinking tasks, that might, for example, be solved using broad knowledge content in the concrete operational domain. This interpretation might link the more ambiguous loading to the role of formal operations as a presumptive precursor to the devel-

opment of Integration of Self in Context. However, the TCD consistently loaded on the Critical Thinking factor in the longitudinal sample reported by Mentkowski and Associates (2000) and it is a strong indicator of the Critical Thinking in the confirmatory factor analyses. Thus, the lack of stability in the exploratory analyses (which invite nonsensical factorial solutions) may simply reflect unreliability of measurement and the high correlation between the two latent constructs. In the longitudinal study, estimates alpha reliability for the TCD ranged between .62 and .68. Even though the inter-rater reliability for the total score was estimated at .84, the replicability of an individual's scores with a broader sample of formal operations tasks would not be high. The exploratory analyses are noteworthy as they again establish the ambiguous loading of the DIT, showing that the finding is not dependent on our specification of the confirmatory model.

The confirmatory factor analyses also supported the latent construct of Integration of Self in Context identified by Mentkowski and Associates (2000). They broadly interpreted this factor as a deep structural and developmental construct. The replication of the loadings for the Perry measure and measure of ego development was interpreted in light of the broad overlap in the theories. They observe that "both theories shed light on different aspects of the same larger process of increasing intellectual complexity and self-differentiation, which corresponds to the individual's self-defining and integrative relationship with the wider world" (p. 114). They also used the loading of the MJI on this factor as evidence that this "deep structure of the self entails a particular kind of moral self" (p. 115).

Ethical Aspect of Integration of Self

The present replication of the Integration of Self in Context factor did not test whether the MJI again loaded on this factor. Thus, it is useful to see whether we can infer an ethical dimension of personal growth from the present findings. This means articulating some kind strand of normative structure in the measured constructs. On the one hand, the ethical dimension of the Integration of Self in Context is suggested by both Loevinger's and Perry's theories. Loevinger's measure, in particular, includes prompts that elicit moral concerns scores for a dimension of impulse control and character development as an aspect of overall personal growth. Most of the women in the replication sample were scored at I-3/4 (*self-aware*) or I-4 (*conscientiousness*), 39 percent and 35 percent, respectively. The *self-aware* level is the adult norm transition from a much less frequently scored (5 percent) position of I-3 (*conformist*), which implies orienting oneself in relation to conformity to external rules sanctioned by social groups. The *self-aware* individual recognizes a greater multiplicity and differentiation of standards, while the *conscientious* individual has internalized or self-chosen standards that focus on consequences and long-term goals and ideals (Loevinger, 1986). A substantial minority (11 percent) were scored for I-4/5 (*individualistic*), which includes a greater respect for individuality. This path of development into self-awareness (and beyond) seems to imply a developmental change in orientation to norms, a change that leads toward the emergence of ideals that have motivational force in the person.

On the other hand, this moral dimension of growth in relation to the orientation to

group norms is not separated out from a broader development of the self. Moreover, the measure derived from Perry's theory does not generally elicit orientations to ethical/norm content or explicitly score for moral development, in particular, at the ranges of adult development generally scored in this study. In general, the essays were scored as already reflecting some degree of transition from position 2 (46 percent) or already in position 3 (36 percent). This suggests that they were either in the process of abandoning the idea that a multiplicity implied error or had embraced the legitimacy of multiplicity of viewpoints in some areas as the best that can be done for now. Such growth implies a kind of moral courage in restructuring one's meaning-making stance, but does not particularly focus on orientations to group norms. This contrasts with the kind and level of meaning-making process implied by Loevinger's measure. The characterization of development from the Loevinger measure includes changes in normative orientations, as well as achievement of postconventional levels not generally observed in these Perry essays.

In this context, the replication of a partial overlap of Integration of Self in Context with Rest's measure of post-conventional moral judgment can be interpreted as evidence for a moral aspect to the deep structure of the development of the self. By itself, however, this replicated finding leaves ambiguous the construct of moral self as an aspect of a unitary process of ego development. First, as a recognition measure, post-conventional moral reasoning on the DIT does not imply the same kind of commitment to moral principles as normative ideals. Second, the partial loading of Rest's

measure on the Critical Thinking factor might be interpreted as suggesting that moral reasoning, as a developmental domain, falls intermediate between Integration of Self in Context and Critical Thinking.

If the DIT is seen as intermediate between ego and cognitive development, this could suggest that the development of moral judgment is separate from and partially isomorphic with cognitive development and ego development, which would be in proximity to Kohlberg's position. This interpretation, however, runs against Mentkowski and Associates (2000) finding that the Kohlbergian MJI loaded cleanly on Integration of Self in Context rather than with the DIT. If the development of moral judgment entailed a separate and distinct structure (as Kohlberg suggested), then the DIT and MJI would presumably load together, even if they were partially isomorphic with other domains.

We interpret the full set of indicators (MJI, SCT, MID) reported by Mentkowski and Associates (2000) as disconfirming Kohlberg's insistence on the "absence of an ego or self in the construction of the stages" (Kohlberg & Ryncarz, 1990, p. 205). Although Kohlberg conceptually abstracts the "epistemic subject" from the "functioning ego of the self," the findings cast doubt on the presumption that the "logical" progression of moral judgment is unentangled with existing motive structures and other content. The subjective experience of the search for commitments, meaning, and moral stance appear to be empirically intertwined, as Loevinger suggests. Indeed, the structural transformation of motives in relation to normative constructions that

Kohlberg disavowed may be key to reconstructing his theory (cf. Noam, 1990) and to accommodating these findings. The loading of the MJI on Integration of Self in Context provides essential support to a developmental construct of a moral self. As Blasi (1976, p. 44) noted:

Kohlberg recognizes that one can ask: Why should I be moral? But he considers facing and answering this question as another stage.... This question, however, needs to be answered in some way at each stage to translate to moral action. The criteria that an individual resorts to in his search for an answer (not necessarily explicitly and consciously) cannot be strictly formal but must refer to the content of his personality.

In such a reinterpretation, Kohlberg's distinction between hard stages and soft stages and concomitantly between structure and content would not fully hold. Kohlberg's epistemic subject behind the cognitive construction of moral structures does not remain distinct from the functional ego and its subjective motives and commitments (cf. Noam, 1990). Instead of Kohlberg's distinct moral operational structures, the unity of meaning-making as a developmental structure seems to empirically entangle moral and personal development in adulthood. This apparent unity of these structural aspects of moral and ego development generally occurs without the benefit of having generally achieved the upper reaches of development on any of the measures.

Granting that the evidence supports Loevinger's position that moral development is an inseparable strand of the development of the ego, does not, however, mean that Kohlberg's position is

without merit. For example, Kohlberg's distinction between structure and content may remain useful as a normative ideal in idiographical assessment of moral competence (Lind, 1985). Our nomothetic analyses do not challenge such a position. Lind (1985) has made the related argument that the normative ideal for moral structure exists as a theoretical requirement rather than being subject to an empirical conclusion. There are also compelling philosophical reasons for keeping a normative meaning for "ought" where it necessarily remains as an opening to the possibility of critiquing any existing state of affairs (e.g., Boyd, 1986).

With that said, the nomothetic data generally supports Loevinger's empirical claims: namely, the distinction of a cognitive developmental domain from a broad and synthetic meaning-making domain of ego functioning that includes moral development as an inseparable strand (cf. Mentkowski & Associates, 2000). The cognitive developmental domain is distinct from this broad developmental domain of meaning-making, but also highly related as indicated by the even higher correlation between the latent constructs in the present replication. This may account for how the Text of Cognitive Development in the one analysis did not load as cleanly on the Critical Thinking factor. This perhaps anomalous result and the high correlation between the latent factors support the idea of a partial isomorphism or overlap of this broad *ego* domain with the *cognitive* domain. This interpretation would not go as far as asserting a single underlying developmental process, but would be more compatible with Kegan's position.

Moral Reasoning and the Consolidation of Moral Development

The task of disentangling such highly related developmental domains is greatly facilitated by a large sample, multi-trait, multimethod approach. In this context, the findings for the MJI reported by Mentkowski and Associates (2000) are both enlightening and somewhat ironic. They found that key features of *structural moral development* appear to be an aspect of the broader structural domain of the self, which is distinct from but highly related to a domain of cognitive competence. This means that Kohlberg's rigorous and sustained distinction between structural operations and content in cognitively defining moral structure appears to have created a measure that is a useful indicator of a latent construct of the self that intertwines structure and content. But, the irony is even greater. Rest (1979, 1986b) abandoned a strong distinction between moral structure and content, but the structurally "purer" MJI loaded more clearly on a developmental factor laden with content scoring cues.

It is conceivable that if additional instruments were included, the DIT might load on a third intermediate factor, separate from the MJI. Rest (1979a) maintained that the DIT and MJI are measuring different constructs, but what is the difference? The structure versus content distinction confronts the empirical irony noted above. Rest et al. (1999) have recently argued that the DIT has some potential to measure a broader frame of postconventional thinking than the MJI, but how does this account for the DIT not loading with MJI on an even broader construct of self? Rest (1979a) has also

concluded that the "the DIT can be regarded as tapping the earlier and more tacit moral understanding of a subject while the Kohlberg test taps the more consolidated understanding and that which the subject can put into words" (p. 158). Is it possible that such a consolidated understanding in the domain of moral justice is why the MJI appears to measure the development of a self system?

Before we explore the idea of consolidated understanding as a developmental indicator of growth of a moral self, we must ask, does the DIT systematically confound the identified latent constructs of Critical Thinking and Integration of Self In Context? In other words, does the DIT measure a mixture of the two factors, rather than something distinct? There is some evidence in the Alverno Longitudinal Study that the DIT might be distinct from the cognitive and ego domains. Growth on the DIT leveled off after graduation (or more positively was maintained), while the indicators of Integration of Self in Context (SCT, MJI, and MID) and the indicators of Critical Thinking (TCD and CTA) showed upward growth five years after college (see Mentkowski and Associates, 2000). Still, the argument that the DIT measures something distinct needs to explain why the MJI loaded on the Integration of Self in Context construct, while the DIT has consistently only partially done so.

Mentkowski and Associates (2000) suggested that the MJI taps into the "moral aspect" of the "deep structuring of the self, an individual's way of morally constructing and being in the world. This *moral development* construct contrasts with a more narrow *moral reasoning* construct, which we locate in the DIT, as somewhere intermediate between criti-

cal thinking and moral development” (p. 115). A further theoretical articulation of such an intermediate moral reasoning construct is needed. In particular, Rest’s post-conventional moral schemas somehow need to be related to but distinct from a *structural* dimension of personal and moral development. Although Rest did not articulate such a set of theoretical constructs, one of the distinctions he made between the MJI and the DIT may be useful here. He suggested that the MJI might measure the developmental structure of moral judgment through the consolidated understandings of verbal constructions, while the DIT might measure structure through the comprehension of and appreciative preference for post-conventional moral judgment arguments (cf. Rest, 1979; Rest et al., 1999). If DIT measured schemas are not broadly consolidated understandings, but only sketchy, albeit readily evoked, thought processes, they may have a looser relationship to the motivational structures of ego development. Otherwise put, Rest’s moral schemas do not seem to fully capture the construct of the individual’s emerging self-direction.²⁰ Instead moral reasoning on the DIT might be a more specific (if still macro morality) developmental construct of “social knowledge structures” refracted through post-conventional justice schemas. Such moral reasoning schemas would be a more specific (if still macro) construct relative to the moral development of the self. Depending on one’s metapsychology, these moral schemas might be seen as purer cognitive processes and capacities or, perhaps, a narrowing of the structural domain of meaning-making relative to a construct of a deep moral self. Either articulation of an intermediate position for moral reasoning, may have as yet unarticulated

implications for the four component model offered by Rest and his colleagues. Even though the component model has the more specific purpose of accounting for the relation between moral judgment and behavior, its conception of moral motivation may need to also account for the changing structure of personal and moral commitment.

Whether the DIT measures a more specific or confounded construct, or something else, it has proven itself useful. Even if it confounds cognitive development with moral dimensions of ego development, it may do so usefully. The factorially identified cognitive and ego domains are, after all, related. The DIT has proven useful as a particularly sensitive and easily administered measure of college outcomes (Mentkowski and Associates, 2000; Rest, 1986a; Rest & Narvaez, 1994). The present findings support the sustained argument by Rest and his colleagues that the DIT cannot be reduced to intelligence or cognitive functioning. At the same time, the findings may support the call for supplementing DIT studies of moral development more often with just as easily administered cognitive measures. Such measures would enable investigators to continue to investigate and potentially disentangle the relationship between moral reasoning and cognitive development. Such a disentangled relationship might be a way of indirectly and readily assessing the developmental structure of a moral self with greater precision.

Moral Self as Developmental Structure

As we more carefully disentangle the domains of development and the dimensions of the person, our language must

more sensitively track nuances of meaning. Mentkowski and Associates (2000) used the construct of the moral self to point to the developmental structure of the self apparently reflected in the MJI. Such an empirically defined moral self reflects an underlying congruence of structure that needs to be articulated. Aside from the stage by stage congruence, what seems to be the structural center of such a moral self?

At the broadest level the factorial convergence of the SCT, MID, and MJI scoring systems may imply a broadly common articulation of the individual's progress toward creating self-directed frameworks of meaning-making. Given the widely diverging instrumentation and the collection of constructed responses, the convergence must be seen as more than just broad agreement on criteria, however. Across the different formats, content domains, and diverse scoring cues, the individual's developmental construction of meaning-making also converged.

One structurally binding feature of self-direction that may unite the moral and ego domain is the developmental restructuring of commitment as articulated by Perry. The existing ego structure becomes transformed through its confrontation with multiplicity and the need to take a stance. Such a need to take a stance when living in pluralistic world confronts the demands of rationality and its limitations. Given disagreement among respected authorities and respected peers accompanied by demands for rational choices, the individual gradually delegitimizes the utility of searching for timeless external truths accessible to authorities (dualisms). At the levels of development observed

through the MID for this population of college students, standards drawn from the uncritical acceptance of external authority and absolutes still holds significant, if reduced, sway. Our impression is that the MID underestimates developmental progress, however. A substantive percentage of students probably are more fully confronting the implications of contextual relativism and its demands for self-direction and ways of thinking that are capable of coordinating interrogation of multiple systems of thought.

Perry observed that getting to this developmental threshold may be avoided through various forms of retreat to more limited ways of thinking. Development might also be arrested through escape that exploits multiplicity or the intellectual tools or contextual relativism through a cavalier "anything goes," or a disassociated value cynicism, or mere intellectual gamesmanship. Self-direction in constructivist theory confronts these various forms of relativism precisely because they are prevalent forms of constructed epistemologies in a pluralistic society. Habermas (1996) describes a similar kind of escape into rationalistic cynicism. Although Kohlberg's articulation of his stage theory has features that tend toward foundationalism, it was also contextually sensitive (Rest et al, 1999) and aware of the developmental entanglements with relativism, his stage 4½.²¹ Nonetheless, what Perry articulated more than others was the implications of the individual's growing awareness of relativism to their potential for self-direction and an examined commitment to personal and moral ideals. Kohlberg's stage theory articulation of broadening social perspectives provides another window into self-direction and examined commitments as

defining features of a moral self. Indeed, the integration of Kohlberg's stage theory with his theories of the development of autonomy and responsibility could be usefully pursued.

Alverno College Longitudinal Study observed growth on the MJI (see Mentkowski and Associates, 2000) that generally moved from a perspective on norms as coordinated expectations for the obligations of interpersonal relationships (*stage 3*) toward an emerging capacity to take the perspective of a generalized member of society, where norms are perceived to promote cooperation across members of a society and so must be maintained (*stage 4*).²² Related to Kohlberg's *stage 4*, Kegan (1982) has described the emergence of what he calls the *institutional self*. "The institutional balance wrests the self from the context of interpersonalism and brings into a being an 'I' that has, rather than is, its relationships. This evolution brings into being the self as a form or system. Its strength is its capacity for self-regulation, its capacity to sustain itself, to parent itself—its autonomy" (p. 222). The individual's construction of Kohlberg's *social systems morality (stage 4)* may tend to pull forward the features of autonomous morality that Tappan et al. (1987) describe and that overlap with Perry's existential stance. And, it may also tend to pull forward the distinctly normative criteria for autonomous morality that Perry did not articulate, such as "universality," the willingness to generalize moral rules to everyone. Such an extension into noncommon criteria is surely speculative, but also acknowledges a range of features that Integration of Self in Context might include as part of a moral self.

We suggest that increasing self-direction is a central feature to the developmental structure of a moral self. A number of theorists have used the related term "autonomy" to point toward the individual's emergence from embeddedness, whether in interpersonal relationships or external absolutes. Historically, this has been an important term.²³ Meyers (1989) argues that the capacity for autonomy involves skill in inquiring into one's wants, needs, concerns, and values through autobiographical retrospection, detection and reconciliation of internal conflicts among them, and identification with preferred components of the self. Loevinger has used the term autonomy to point toward an advanced developmental stage that features a respect for the autonomy of the person. Beauchamp and Childress (1994) give applied examples of the application of this as a moral principle in medical decision-making. But, growth toward autonomy can also be more generally defined in terms of increasing self-direction and examined commitment. Kegan emphasizes the "authorship" of the institutional self and Meyers the centrality of self-definition, which is an active construction rather than a rejection of disfavored features of one's socialization. We believe this kind of growth in self-direction is compatible with increased relatedness to others (cf. Belenky, Clinchy, Golberger, & Tarule, 1986; Perry, 1981; Josselson, 1988; Mentkowski & Associates, 2000).

Mentkowski and Associates (2000) found in Perspectives Interview data that features of independent learning developed through the Alverno curriculum consolidated into self-directed learning, where students and alumnae came to tacitly understand their own role in constructing their experience. Engaging

multiple perspectives or other forms of breadth seemed to spur this kind of growth. For example, breadth of alumna activities (linked to breadth of preparation in the curriculum) was found to be a cause of alumna growth in *Integration of Self in Context*. Thus, we suggest that the development of a moral self may include not only self-direction, but also a concomitantly broadened perspective. This conclusion is bolstered not only by the observed growth in the MJI toward a social systems perspective, but also by alumna growth on the SCT into the stage of *conscientiousness*. Conscientiousness includes both an orientation toward self-evaluated standards and also long term goals and ideals.

Moral Self, Moral Ideals, and Moral Identity

The capacity to organize one's life around commitments to abstract ideals seems to be a structural feature of the growth of self-direction (Blasi, 1993; Frankfurt, 1993; Loevinger, 1976; Perry, 1970). Frankfurt's (1993) articulation of the "unthinkable" is particularly useful because it links the sense of self to the necessary limits of autonomous volition. "A person's ideals are the concerns that he cannot bring himself to betray." They are, he pointed out, similar to the force of love. Like ideals, "the importance of loving to us would be lost if we could love something or cease to love it merely by deciding to do so" (p. 24). The "unthinkable" includes constraints in the self that correspond to an incapacity to allow oneself to even try to not will the ideal. Such ideals are part of a person's self-definition, without which the person would not be who he or she is. Such ideals may focus on self-perfection or other personal concerns and still be

moral because they are felt to be obligatory. They may also be moral ideals that are defined interpersonally or in relation to society. For example, Noddings (1984) observed that "an ethic of caring, then, seeks something; it seeks to maintain caring itself" (p. 107). She observed:

The ethical ideal as I have described it springs from two sentiments; the natural sympathy human beings feel for each other and the longing to maintain, recapture, or enhance our most caring and tender moments. Both sentiments may be denied, and so commitment is required to establish the ethical ideal. We must recognize our longing for relatedness and accept it, and we must commit ourselves to the openness that permits us to receive the other. (p. 104)

Obligatory ideals defined interpersonally or in relation to societal norms, or supererogatory ones defined in relation to improving society, are what laypersons are usually concerned with when they, as civic minded members of society, become concerned with "morals". Colby and Damon (1992, 1993) studied the lives of 23 exemplary moral leaders, individuals who had dedicated their lives to making the world a better place. Colby and Damon (1992) observed that these moral exemplars maintained a dynamic relationship between openness to continued growth and sustained moral commitments. Because the exemplars had organized their lives around these moral commitments, self and morality were united in them, such that they did not feel conflict between their personal interests and their moral commitments. Or, rather, moral interests were their interests. Colby and Damon called this uniting of the moral and personal the "moral self." Whereas Colby and Damon described the moral self as the develop-

mental *achievement* of commitment to moral ideals, we use the term to refer to a *dimension* of adult growth that reflects the structural entanglement of moral and personal development. For us, the moral self describes a development from unexamined commitments to concrete purposes to reflectively examined commitments to ideals. This acknowledges that other ideals of self-perfection are moral, as Colby and Damon (1992, pp. 297–298) agree.

Colby and Damon (1993) suggested that the degree to which the individual unifies personal interests with moral concerns about improving society “depends more on his or her sense of self than on the nature of moral beliefs” (p. 151). Here they acknowledge that what they call the achievement of a moral self may be organized around different moral contents. They also argued that “Morality and the self are separate conceptual systems that grow somewhat closer together during the course of normal development but that still tend to remain relatively uncoordinated for most (but not all) individuals” (p.151). We would agree that, for most people, personal ideals do not fully coalesce with moral ideals for improving society, but also observe that our findings suggest that moral development and development of the self are structurally unified. The capacity to commit to relatively abstract ideals does seem to be an adult developmental milestone, and the particular content of the ideals may vary from the “personal” to the moral and reflect differing kinds of unities. At the same time, various kinds of moral ideals may be fertile ground for identity. Blasi (1993) argued:

To experience something akin to the Management of Identity mode, a person must see her central concern as ideals to be pursued. For instance, one’s body or one’s sexuality, as fundamental as they are for a person’s sense of self, do not seem to provide an adequate basis for generating lifelong projects or constructing higher identity modes. By contrast, morality seems to offer an ideal ground for anchoring the successive forms of experienced identity. (p. 118)

Like Perry (1970), Blasi (1993) suggested that what changes might be more carefully described, not as now having commitment to ideals (or concerns), but, instead, as the manner of one’s relationship to the ideals that anchor one’s identity and the meaning that they have. Though individual commitment always carries moral import even when it is narrowed to concrete personal interest, the subjective process of taking personal responsibility for these is developmentally structured and is expressed in ideals that are both examined and unthinkable to violate. Cognitively and contextually constructed ideals are conjoined with volitional necessity. Understood this way, the “moral self” reflects a common developmental structuring of increasingly self-determined commitment. The total commitment of moral exemplars to ideals grounded in a concern for others might be understood as a “moral identity” that becomes possible once self-determination becomes consolidated. Our characterization of this increasing self-determination for this sample includes a broadened perspective, an enlarged self-process, and an identification with societal norms and ideals (connecting motivational transformation to Kohlberg’s stage 4). From this point of view, the power of the justice “operations” described by Kohlberg

and of the ideal norms of communicative discourse described by Habermas is reflected in a psychology of commitment. In both cases the commitment includes a cognitive basis in sustained trains of thought that when suffused with belief and existential commitment become cognitively equivalent to the volitionally unthinkable. Thus, the commonly observed moral commitments to the existing norms of society have their power because individuals have been compelled by their own reasoning (and their performative stance in dialogue) to internalize them. But, such an achievement of long-term ideals does not mean that individuals will organize their life goals around a moral identity. Other identities are possible, and indeed likely (cf. Nissan, 2000). These identities would be connected to cultural frames and social interaction as Colby and Damon suggest. Constructivism is, of course, compatible with interactive social processes where ideas and frameworks may have been first appropriated from others and where the development for this reasoning may have been scaffolded through dialogue (cf. Haste, 1993).

Development, Self-Reflection, and Identity

Mentkowski and Associates (2000) found that structural growth in Integration of Self in Context (including its moral aspect) was related to breadth of alumna activities. They also found that students and alumnae attributed their sense of personal growth as an independent learner to their experiences in engaging diverse views and diverse approaches to learning. The ability-based curriculum, its learning processes, the cultural milieu of the college, and

workplace experiences were related to the student and alumna's experience of growth into a related set of identities, such as a learner, an effective performer, a collaborator, a well-rounded person, and a professional. Growth was also tied to self-reflection. For example, students and alumnae said that a particularly powerful contributor to their personal growth was the range of experiences in the curriculum where they examined their own and others values. Although these various identities seemed linked to the structural development of the self, Mentkowski and Associates also saw them as linked to a qualitatively identified domain of *self-reflection*. Self-reflection as a domain can be understood as the products and process of a second-order reflection on who one is. In addition to the developmentally structured subjective experience of self (cf. Blasi, 1988, 1993), self-reflection takes the self as object (cf. James, 1892; Mead, 1913; Mentkowski & Associates, 2000). Self-reflection as a domain includes the narrative mode of experience that is the ground of identity. Mentkowski and Associates' description of the domain drew on social constructionist and other contextually oriented theories (e.g., Bruner, 1986; Cole, 1996), but also resembles in some ways Noam's (1990) description of themata, the biographical structures of the self. Mentkowski and Associates described the emergence of professional and collaborative identity in relation to the college's educational process and cultural milieu.²⁴ Unlike Noam, Mentkowski and Associates did not retrospectively articulate life-span continuities in identity, nor did they describe biographical constraints in development. These differences lie, in part, in the differing goals of developing educational versus therapeutic theory.

But, like Noam, they did articulate the organizing function of narratively constructed identity and broached developmental connections with structures of the person. And, like Noam, they pointed toward a larger theory of the self than can be adequately described by developmental stage theories.

An Educational Theory of the Person

Mentkowski and Associates (2000) identified four domains of growth in the person. We only briefly describe them here as the domains, the transformative learning cycles that dynamically connect them, and the in depth treatment of the empirical evidence in depth are in the book by Mentkowski and Associates.

The domains of *reasoning* and *development* were empirically distinguished by the Critical Thinking and Integration of Self in Context factors. *Performance* was empirically distinguished as a third factor. Five-year alumna performance was coded through a Behavioral Event Interview methodology originally developed by David McClelland. The four ability factors identified in workplace performance were validated in relation to faculty judgments of effectiveness (Rogers & Mentkowski, 1994) and indicators of career achievement (Mentkowski & Associates, 2000). Only one of the four ability factors correlated with the measures tapping the structural domains of reasoning and development. This performance factor, Collaborative Organizational Thinking and Action, loaded as a third factor distinct from Critical Thinking and Integration of Self in Context (see Mentkowski & Associates, 2000; Rogers, 1994). Like the qualitatively identified domain of *self-*

reflection, this performance domain involves interactions of person and context that become central to defining the domains. The four identified domains are organized according to two dimensions. The domains of reasoning and development are similar in that they reflect developmentally structured internal congruences in ways of thinking or making meaning. This contrasts with the structural interaction of person and context that constitutes the domains of self-reflection and performance. Along another dimension, the domains of reasoning and performance are similar in that they have an external focus on competence, while the domains of development and self-reflection are similar in that they have an internal focus on meaning. The four domains of growth and their interdependencies define the whole person.

This enlarged description of the whole person has implications for a theory of moral development. For example, Developing Others and Perspective Taking was one of the four factors in the performance domain. The abilities in this factor correspond to prosocial skills such as coaching, positive regard, perceptual objectivity, relational influence, accurate empathy, and sensitivity to individual differences. Rather than just capacities, these are abilities demonstrated in discretionary performance, and so, reflect underlying habit structures.²⁵ Because these dispositional abilities are empirically distinct from the structurally defined factors of Critical Thinking and Integration of Self in Context, theories of the development of care will need to be developed that dynamically relate the multidimensional and depth aspects of abilities, which include skill, knowledge, disposition,

and self-images. We believe the structure of these abilities is linked to stabilities in ongoing learning, including identities they have developed in college (Rogers, 1999). For example, the Collaborative Organizational Thinking and Action Factor seemed linked to not only breadth of preparation in the Alverno curriculum, but the development of an identity as a collaborator during college and is likely supported by the ongoing learning after college that participative leadership affords.

The educational theory of the person that we offer can serve the task of broadening and integrating a range of moral education strategies. It is useful here to reflect on some of the historical origins of developmental theory in relation to education. Loevinger, Kohlberg, Perry, and other developmental psychologists have been influenced by the shadow of World War II. While the political forces of fascism were defeated, the danger of its reemergence in our own midst were keenly felt. Loevinger and Perry developed theories that shared a developmental reinterpretation of the authoritarian personality, making it amenable to educational intervention. Kohlberg (1984a) observed that more autonomous participants in Milgram's studies were much more likely to disobey the immoral directions of an authority figure. These post-war contributions reflect an insight of its time and should be honored as such. Attention to the development of the person's capacities for self-direction, moral judgment, appreciation of individuality, and examined commitments should remain a goal of society. Although developmental sophistication may not fully protect us from evil (Noam, 1990; Staub, 1993) it is also a good beyond its political rationale.

Indeed, the political rationale was not explicitly advanced by Loevinger and Perry. At the same time, a focus on developmental structure leaves a lot out. The education of deeply dispositional prosocial abilities and identities has its own contribution to making a better and more just world.

EPILOGUE

The particular ability factors and identity themes found in Alverno College students and alumnae reflect broad congruencies that are to some extent determined by the context of the college and post-college settings, as well as by broader demands in work, personal and civic life (Mentkowski and Associates, 2000). Alverno's particular ability-based curriculum (Alverno College Faculty, 1976/1992), and its student assessment processes (Alverno College Faculty, 1979/1994) are relatively distinct in higher education. The explicit integration of content and abilities (knowing and doing) in the curriculum seems to be important to creating a transformative learning process (*metacognitive strategies as frameworks for performance*) that connects reasoning and performance (Mentkowski and Associates, 2000).

Many of the abilities that structure the curriculum, such as valuing in decision-making (Alverno College Faculty, 1992; Earley, Mentkowski, & Schafer, 1980) are of particular relevance to the broad goals of moral education. The curriculum embedded process of self assessment at Alverno (Alverno College Faculty, 2000) and the valuing ability may be of particular importance to creating a transformative learning cycle (*self assessing role performance*) that connects performance

and self-reflection. The integration of the liberal arts and professions education may be important to the third learning cycle identified (*engaging diverse approaches, views, and activities*) that connects self-reflection with development. Because the four domains of growth seem to be connected by these three transformative cycles of learning, we imagine growth of the whole person dynamically. Growth in one domain can support another. And, while the person's developmentally structured capacities as a meaning-maker may condition how they generally understand their experience, we do not have to depend on the sometimes distant hope of achieving an advanced structural integration that unites postconventional moral reasoning, deep appreciation of human relationships, individuality, and autonomy into moral commitment. Instead, we can celebrate paths to moral compassion and moral identity available at conventional stages of moral development. Here we can encourage the development of prosocial

and interceptive abilities and the formation of prosocial and broadening identities as learner, performer, collaborator, and professional. And we can celebrate and encourage the integration of these strands of growth into broader functional systems that call forth an enlivened potential for commitment to moral ideals as well as one's of self-perfection and the good life. But, we also can organize curriculum for the deep structural development of the moral self, so that these ideals can take root in a broadened socio-moral perspective on ideals for organizing society. Here, we can encourage students to engage the kind of breadth of learning that Mentkowski and Associates found does lead to developmental growth of the person's ways of making meaning. And, we can imagine and reimagine what might be transformative paths for the moral self into ever broader, more just, more sensitive, more caring, more appreciative, and more meaningful ways of being in the world.

ENDNOTES

- ¹ Kohlberg (1986) accommodatively wrote “Like Loevinger, I believe that there is a broad domain of ego development distinguishable from intelligence or cognitive development... and that moral development is one aspect or component of the ego domain” (p. 502).
- ² Loevinger (1976) held that her stage conception was “structural; that is, there is an inner logic to the stages and their progression” (p. 11).
- ³ Colby and Kohlberg (1987) dropped stage six from the revised scoring manual because of insufficient data to define it (see Colby et al., 1987). Only a few individuals have been identified as exhibiting stage six reasoning in their moral judgment. The conception of stage six continued to evolve and played a key role in Kohlberg’s thinking (Kohlberg, Boyd, & Levine, 1990). In its final articulation, respect for persons integrated principles of benevolence (e.g. care) and justice, enlarging Kohlberg’s articulation of the moral domain. Both the existence and theoretical construction of stage six remains contested (e.g., Puka, 1990; Rest et al., 1999). Puka (1990) argued that stage five, which focuses on utilitarian principles of the greatest good, is highly equilibrated and more theoretically apt. Stage five reasoning is itself relatively rare in the Kohlbergian interviews, and this itself has theoretical implications.
- ⁴ Kohlberg (1984a; 1986) broadened his rational reconstruction of the course of the individual’s moral development beyond a Rawlsian perspective and embraced Jurgen Habermas’ dialogical or discourse ethics (see Habermas, 1990; 1996). The revision of the scoring manual noted the concomitant hermeneutical task of grasping the first-person perspective of the research participants (Colby & Kohlberg, 1987), but was not fundamentally grounded in the logic of discourse ethics (Habermas, 1996).
- ⁵ Kohlberg did emphasize the relation between moral judgment and concrete moral decisions and actions, holding that moral judgment and action were more related at the upper levels. Here, the structure of moral judgment affects the person (his or her action) rather than the concrete characteristics of the person affecting the structure of moral judgment, as Loevinger would have it.
- ⁶ Wren’s (1993) characterization of differences between deontological and ethical theorists is useful here. “The deontic group, which includes not only the juridical conceptions of morality but also the proceduralist and intuitionist conceptions...is so called because its central features are keyed to the *right action* (relatively impersonal features such as justice, criteria of fairness, duties, rights claims, and so on). The ethical group, which includes not only the teleological conception but also the various self actualizing and romantic ones, is so called because its central features are keyed to various notions of *the good* (more personally nuanced features such as happiness, self-actualization, personal excellence, and other forms of human flourishing), notions that constitute the ethos or character of one’s culture as well as of one’s self” (p. 81).
- ⁷ Kohlberg was greatly concerned about those forms of relativism that denied principled morality. Kohlberg (1981) observed that “purely conventional people can accept the relativity of the rules of their group because they seek nothing more. Intense awareness of relativity, however, implies a search for, or a dim awareness of, universal principles in terms of which conventional morality seems arbitrary” (p. 130).
- ⁸ In a more limited sense, all theoretical or experienced conceptions of the self are prescriptive or normative. As Wren (1993) observes, “they provide us with ways of discriminating between successful and unsuccessful attempts by an individual to live as a human person” (p. 87).
- ⁹ Nisan (1990) noted that judgment overlaps from the personal and moral point of view at Kohlberg’s stage 6.
- ¹⁰ “The principle of balanced identity thus allows for preference of nonmoral considerations over moral ones, where under given conditions such a choice will cause less harm to one’s identity balance than will the preference from the moral considerations. This kind of choice cannot be viewed as ‘alienated,’ since it is the individual’s choice between components of his or her own identity” (Nisan, 1993, p. 264).

- ¹¹ Noam (1990) observes that Kohlberg's study of moral conduct led him to recognize the need to develop a theory of moral responsibility as well as moral judgment. "This interest in moral responsibility, sensibility, and action led him to develop ideas of the moral self....Kohlberg stated that the subjective experience of moral commitments forms a unity with moral behaviors. He defined this unity as the moral self." (p.364)
- ¹² The factor analyses by Commons et al. (1989) must be considered unstable because of the low sample size ($n = 34$) and large number of variables ($n = 9$). In some ways they differ from Mentkowski and Associates (2000). In particular they found that the SCT loaded on a separate factor from the MJI, the Good-Life Interview (which is a moral developmental measure outside the deontic realm), and Commons and Richards Multisystems Task. The Wechsler Adult Intelligence Scale loaded on a separate factor. In comparison, the sample sizes for the factor analyses of each of the four times of assessments in Mentkowski and Associates was 237, 258, 127, and 208, respectively, for eight variables.
- ¹³ Developmental domains reflect coherences of the person across contexts that need to be scaled to scaled to reflect qualitatively change in the overall structure. It is precisely because the factor structure was stable across observed adult growth over a ten year period, that we have confidence in the models of structural change articulated in the hierarchical coherences scaled in the alternative measures. In other words, if developmental change is adequately scaled in the measures, factor analysis across measures should show stability across structural growth of the person.
- ¹⁴ The analyses reported in Appendix A corrects a data management error that crept into the analyses of the first two times of assessment. This error led those who had an exact raw value of 1 for meaningless responses to be excluded, rather than those with 8 or more meaningless responses. The reanalysis yields a somewhat cleaner factor structure.
- ¹⁵ When the fourth wave of longitudinal data was collected, an expert scored all of the data interleaved from all four waves of assessment using the updated Colby et al. (1987) scoring manual. The factor analyses used the weighted average score. Time of assessment was ignored for the purpose of creating a large enough virtual sample to create potentially stable results.
- ¹⁶ Appendix B expands on the presentation by Mentkowski and Associates (2000) by reporting the loadings for all the variables in the analysis.
- ¹⁷ All completed DIT protocols were included. In order to maximize the sample size, we did not apply criteria for consistency or meaningfulness. The general desirability of excluding these protocols is debatable.
- ¹⁸ Because Mentkowski and Associates treated the DIT as a single indicator of a distinct construct of moral reasoning, they specified its error as a measure of moral reasoning.
- ¹⁹ The preferred analysis for comparing factor solutions would be a multi-sample analysis (see Joreskog & Sorbom, 1989). Such an analysis would directly test the equivalency of the factor structures. This has not been conducted at this point because of mundane problems of getting a "stacked" data set read by the SPSS-VAX program.
- ²⁰ Our use of the term "moral reasoning" reflects not only historical descriptions of the DIT, but also mutually supporting causal paths between growth on the DIT and the latent construct of Critical Thinking. In contrast to the positive effect of breadth of alumna activities on alumna growth in Integration of Self, the achieved growth on the DIT at graduation had, if anything, a negative affect on the breadth of alumna activities (see Mentkowski and Associates, 2000).
- ²¹ Kohlberg's argument against relativism was focused on its skeptical or nihilistic forms (Carter, 1986).
- ²² This path of growth started in the student years continued into the assessment five years after college, where stage 5 was still very rarely observed (less than 2 percent). Stage 5 thinking is rarely scored in an undergraduate population, and the use of the written interview makes it even less likely to be scored.

- ²³ Kant's use of the term is distinctive and involves commitment to universals (Armon, 1989). Kant's use is embedded in a transcendental philosophical system, which can create interpretative discontinuities when it is appropriated to the discourse of psychologists (Petrovich, 1986).
- ²⁴ Colby and Damon (1993) theorized that a gradual, interactional, and often scaffolded process of socialization caused the transformation of the exemplar's personal goals into moral commitments.
- ²⁵ Davidson and Youniss (1991) propose that there is a form of autonomous identity distinct from stages of moral development and the

reflective "me" that can be the basis for generating impartial moral judgments. Such an identity is not the focus of awareness. Rather in the subjective awareness of the performer (see Duval & Wicklund, 1972), such a prosocial identity would be reflected in habit structure. Hoffman (1991) suggests potential interactions between empathy and the internalization of moral principles (as normative ideals). Gibbs (1991) proposes an integration of Kohlberg's cognitive developmental theory with Hoffman's moral socialization theory. In the integration, the theories have distinct roles but are also related.

- ²⁶ See Mentkowski and Associates (2000) for factor analyses using Assessments at Times 3 and 4.

Appendix A: Factor Loadings for Human Potential Measures for Assessments at Times 1 and 2 Previously Reported in Mentkowski and Associates: Exploratory Factor Analysis

Human Potential Measure	Time of Assessment			
	Time 1		Time 2	
	Critical Thinking	Integration of Self in Context	Critical Thinking	Integration of Self in Context
Critical Thinking Appraisal, Inference	.53	.11	.55	.18
Critical Thinking Appraisal, Recognition	.55	-.01	.60	.18
Critical Thinking Appraisal, Deduction	.67	.18	.66	.04
Test of Cognitive Development	.53	.32	.55	.13
Defining Issues Test ^a	.38	.38	.52	.37
Sentence Completion Test ^b	.08	.41	.20	.28
Measure of Intellectual Development, Essay A	.03	.46	.24	.56
Measure of Intellectual Development, Essay B	.22	.51	.05	.59
Measure of Intellectual Development, Essay C	.11	.64	.11	.63

Note. The analysis reported in this table varies slightly from Mentkowski & Associates (2000). For the prior analysis, a data management error led to excluding those with an exact raw value of 1 on the meaningless index.

This analysis excluded DIT protocols that exceeded the standard criteria for “meaningless” and “inconsistent.” Thus, “meaningless” raw scores with a value of 8 or above are excluded. Orthogonal factors were extracted using principal axis factoring and rotated through varimax. The two-factor solution explains between 32 and 35 percent of the variance in the battery of measures.

^a P percent score.

^b Total protocol rating.

Appendix B: Factor Loadings for Human Potential Measures Including the Moral Judgment Interview: Exploratory Factor Analysis Ignoring Time of Assessment

Human Potential Measure	Factor	
	Critical Thinking	Integration of Self in Context
Critical Thinking Appraisal, Inference	.51	.21
Critical Thinking Appraisal, Recognition	.49	.08
Critical Thinking Appraisal, Deduction	.69	.09
Test of Cognitive Development	.56	.07
Defining Issues Test ^a	.44	.49
Sentence Completion Test ^b	.01	.45
Measure of Intellectual Development, Essay A	.18	.65
Measure of Intellectual Development, Essay B	.14	.71
Measure of Intellectual Development, Essay C	.11	.61
Moral Judgment Interview ^c	.20	.61

Note. This table expands the presentation of this factor analysis, which was reported originally in Mentkowski and Associates (2000). Orthogonal factors were extracted using principal axis factoring and rotated through varimax. The two-factor solution was supported (eigen values = 3.4, 1.6, .88, .76, .55, .47, .32) and explains 38 percent of the variance in the battery of measures.

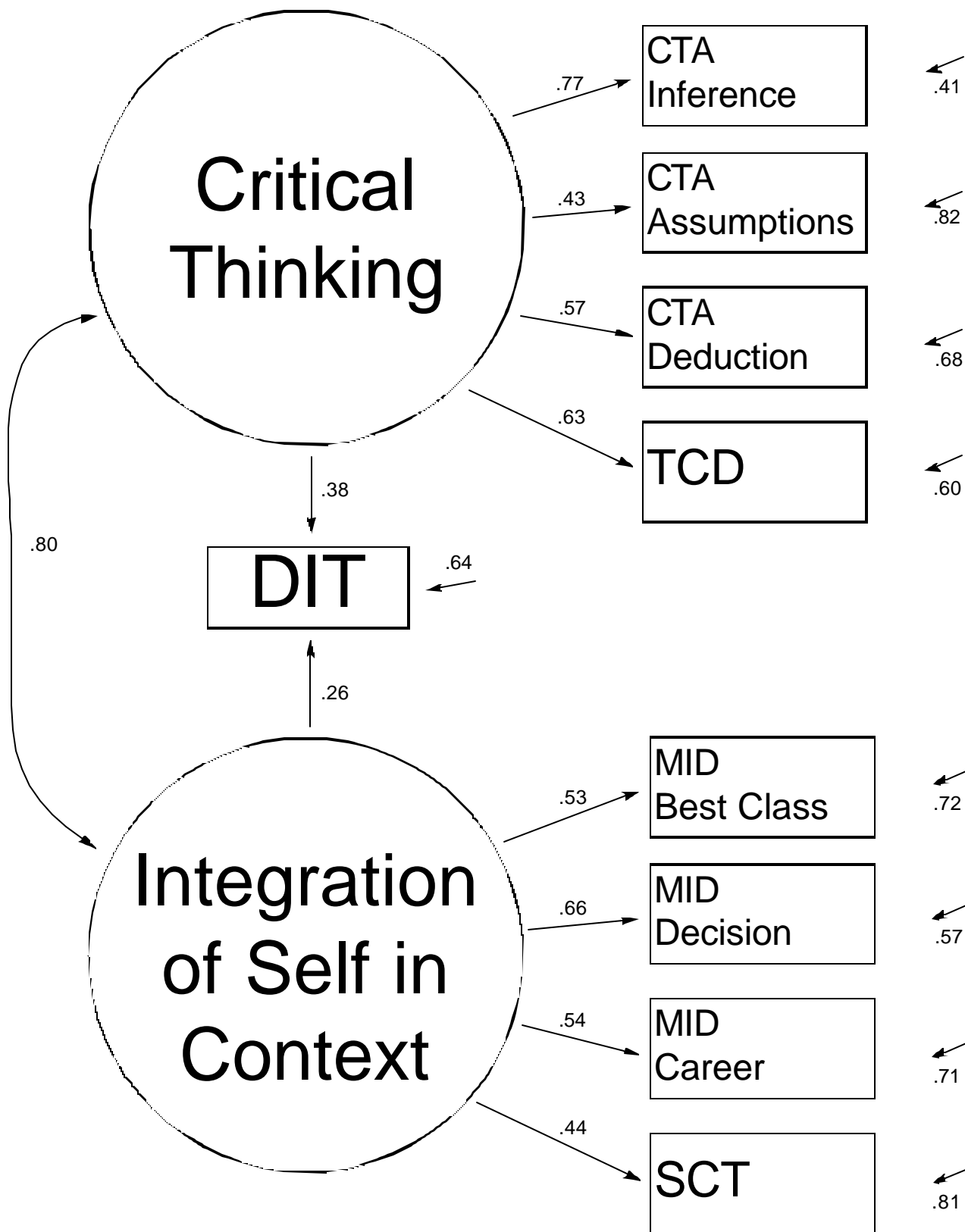
The analysis excluded DIT protocols that exceeded traditional standards for “meaningless” and “inconsistent” values. The MJI was not included in the primary factor analyses due to limited sample size. For this subanalysis, we ignored time of assessment in order to create a virtual sample of 175.

^a P percent score.

^b Total protocol rating.

^c Written form of interview. Participants write answers to a structured set of questions that probe their reasoning in relation to moral dilemmas. This analysis uses data scored using the revised scoring manual for the MJI (Colby et al., 1987).

Appendix C: Fitted Coefficients for Base Confirmatory Factor Analysis



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