Educational Psychology Review, Vol. 11, No. 4, 1999

A Neo-Kohlbergian Approach: The DIT and Schema Theory

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"Macromorality" concerns the formal structure of society, as defined by institutions, rules, and roles. "Micromorality" concerns the particular face-to-face relations that people have in everyday life. Kohlbergian theories are most useful for issues of macromorality. The Defining Issues Test (DIT) derives from Kohlberg's approach but makes several departures, including defining cognitive structures in terms of schemas instead of stages, reformulating the definition of postconventional moral thinking, and using different research strategies. The validity of the DIT is based on seven criteria (briefly discussed), and hundreds of studies have produced significant trends. Recent research derived from schema theory produces novel phenomena that link our theory of moral schemas more closely with information processing and decision making.

KEY WORDS: moral judgment; moral schema; Defining Issues Test; Kohlberg; political attitude and choice.

INTRODUCTION

Lawrence Kohlberg had many ideas for the field of morality, some of which have turned out to be fruitful, and some not-so-fruitful. In this article we attempt to distinguish between them. Our intention is not to describe a personal odyssey through theory and methodology—discussing his ideas and ours, historically—but to propose a new synthesis of ideas we believe is

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1040-726X/99/1200-0291$16.00/0

valid and useful in the field of morality. After considering many theoretical arguments and much empirical evidence, we find that Kohlberg had some very wise and useful things to say about the nature of morality. To Kohlberg's original ideas we add some new twists, calling our approach, *neo*-Kohlbergian. The present article is an overview of a recent book, *Postconventional Moral Thinking: A Neo-Kohlbergian Approach* (Rest *et al.*, 1999b), as well as a number of recent articles.

MACRO- AND MICROMORALITY

Macromorality concerns the formal structure of society as defined by institutions, rules, and roles. Micromorality concerns the particular face-to-face relations that people have in everyday life. Examples of macromoral judgments include the anticommunist McCarthyism of the 1950s, the hippie rejection of the 1960s of American society as morally bankrupt, George Wallace's law-and-order movement, Richard Nixon's silent majority, the "political correctness" of the 1980s, Martin Luther King, Jr.'s "I have a dream" speech, the U.S. Constitution's Bill of Rights, and the "culture wars" between orthodoxy and progressivism (Hunter, 1991). Examples of micromorality include courtesy and helpfulness to those with whom one personally interacts, caring in intimate relationships, remembering birthdays and other personal events of friends and family, being punctual for appointments, and generally acting in a decent, responsible, empathic way in one's daily dealings with others (in contrast to being cantankerous, displaying road rage, shirking your share of the load, being unreliable, or being a "jerk"). Kohlberg's theory became popular at the time of major movements for social justice in American society (e.g., civil rights, free speech, the Vietnam war, the women's movement); his theory is more useful for macromorality issues. In contrast, some current morality researchers (e.g., Killen and Hart, 1995) address primarily micromorality. Of course, on both levels, people are interrelated to each other. There are webs of relationship through institutional roles, laws, and rules and also through personal relationships. For instance, two people are related as role occupants (e.g., teacher–student) and also as individuals (say, as George and Mary). No doubt the two levels have important interconnections and interactions (e.g., how George and Mary interact affects and is affected by their respective roles; macromoral structures partly determine what kind of personal relationship George and Mary will have). Nevertheless, macromorality is manifested mostly in the behavior of the individual as it affects the structure of society and public policy. Macromoral issues are most salient in a democracy in elections, referendums, polls, and public-service/

political activities. On the other hand, micromorality concerns individual behavior as it is manifested in everyday, personal interactions in face-to-face relations. In micromorality, what is praiseworthy is characterized in terms of unswerving loyalty, dedication, and partisan caring to special others. On the other hand, in macromorality, what is praiseworthy is characterized in terms of impartiality and acting on principle, not partisanship, favoritism, or tribalism. Micromoral issues are more likely to be uppermost in our regard of someone's personal virtue, in establishing an individual's reputation as a moral person, or in nominating someone as a moral leader. Much of the current dissatisfaction with Kohlberg's theory is that it does not deal with many micromorality issues. It remains to be seen how well current counter-Kohlbergian researchers (e.g., Killen and Hart, 1995) do turn out to illuminate micromorality issues, and if they illuminate the macromorality issues at all.

Why study macromoral issues? What is the significance of research on Kohlbergian moral judgment in the big picture? One answer to this question involves considering Marty and Appleby's books (1991)[4] on the world's major ideological disputes since the cessation of the Cold War. Whereas, formerly, the Soviet Union and Marxism/Communism seemed to pose the greatest ideological challenge to democracies, the major ideological clash today is between religious fundamentalism and secular modernism. This clash leads "to sectarian strife and violent ethnic particularisms, to skirmishes spilling over into border disputes, civil wars, and battles of secession" (Marty and Appleby, 1993, p. 1). Marty and Appleby are not saying that the major ideological clashes in the world today are along the lines of some of the favorite current debates in moral philosophy. The front lines of trench warfare in the culture wars are not over virtue-based morality versus rights-based morality, over Postmodernism versus Liberal-Enlightenment, or over case morality versus principle-based morality. Rather, the front lines are along fundamentalism/modernism, orthodoxy/progressivism, and conventional/postconventional. Given the reality, the urgency, and the importance of these phenomena—plus the power that a neo-Kohlbergian approach gives to the study of these phenomena—extending Kohlberg seems like a good place for morality researchers to be.

Nevertheless, over the past 40 years, many challenges to Kohlberg's approach to morality have been made, raising many philosophical and psychological objections. These include the arguments that (a) Kohlberg's theory is sexist (e.g., Gilligan, 1982); (b) it confuses the moral domain with the social-conventional domain (e.g., Turiel, 1983, 1997); (c) it is culturally biased (e.g., Shweder, 1982; Vine, 1986); (d) it is really political ideology

[4]See "The Fundamentalism Project: A User's Guide" (Marty and Appleby, 1991, pp. vii–xiii).

masquerading as cognitive development (e.g., Emler *et al.,* 1983); (e) it is philosophically naive (e.g., Locke, 1986); and (f) it is out of touch with everyday, actually experienced morality (e.g., Killen and Hart, 1995). In a recent book (Rest *et al.,* 1999b), the criticisms and challenges to Kohlberg's theory are reviewed and discussed. However, in contrast to those who conclude that Kohlberg's theory is so fault-filled that they discard it, we take the view that Kohlberg's theory can be modified to meet the challenges. His basic ideas continue to be useful in explaining phenomena, especially those of macromorality.

We follow Kohlberg's approach to conceptualizing moral judgment [see Rest *et al.* (1999b) for fuller discussion]. First, like Kohlberg, our starting point emphasizes **cognition.** Kohlberg realized that there were many starting points for morality research (for instance, one might start out emphasizing an evolutionary biosocial perspective, and investigate certain emotions like empathy, altruism, guilt and shame, or one might focus on the young infant's acquisition of prosocial behavior.) Everyone must start out someplace, making assumptions and emphasizing some things over other things. Despite the limitations of any starting point, the crucial question is, "Having started there, where did it lead? What important phenomena have been illuminated?" Second, like Kohlberg, we highlight the **personal construction** of basic epistemological categories (e.g., "rights," "duty," "justice," "social order," "reciprocity"). This is not to deny the contribution that cultural ideologies make. Ideologies are group-derived tools and practices of a culture. We, however, focus on the individual's attempt to make sense of his/her own social experience. Third, we portray change over time in terms of **development** (i.e., it is possible to talk not only of differences in moral orientation, but also of cognitive "advance," in which "higher is better" in a philosophical, normative-ethical sense). Fourth, we characterize the developmental change of adolescents and adults in terms of a shift from **conventional to postconventional** moral thinking [we think there is a sequence rather than Turiel's notion (e.g., 1983) of these being separate domains and not sequenced]. We think these four ideas are the core assumptions of Kohlberg's "cognitive-developmental" approach. This is the *Kohlbergian* part of our neo-*Kohlbergian* approach.

DIFFERENCES WITH KOHLBERG

Interviewing and Multiple-Choice Tests

We differ with Kohlberg in our approach to assessment. Instead of using an interview that asks participants to solve dilemmas and explain

their choices, the Defining Issues Test (DIT) employs a multiple-choice, recognition task asking participants to rate and rank a set of items. A major question about the DIT is whether this database is sufficiently nuanced to address the subtleties of morality research. Furthermore, a common assumption in the field of morality, and one with which we disagree, is that reliable information about the inner processes that underlie moral behavior is obtained only by asking people to explain their moral judgments. Research with the DIT has taken a different approach.

The DIT started out in the 1970s as an alternative method for obtaining moral judgment data. In the 1970s, Kohlberg was beginning to revise his scoring system for interviews, and was mindful of the arduous task of analyzing free-response protocols. The DIT followed from some earlier work on the processes of comprehension and preference of prototypic stage statements (Rest, 1973; for a history see Lapsley, 1996). Kohlberg teased researchers using the DIT, saying it reminded him of alchemy (the medieval attempt to change lead into gold). To Kohlberg, assessment by simply getting ratings and rankings from participants without analyzing their responses was too good to be true; it was a "quick and dirty" method. Until his death in 1987, Kohlberg had reservations about how mere rating and ranking data of the DIT could contribute to important theoretical issues, although the ease of data collection was obvious (Kohlberg, 1979).

Interviewing has been assumed to provide a clear window into the moral mind. The interview method presumes that a person both is aware of his/her own inner processes and can verbally explain them. In his scoring system, Kohlberg accorded privileged status to interview data. At one point, he referred to scoring interviews as "relatively error-free" and "theoretically the most valid method of scoring" (Kohlberg, 1976, p. 47). In this view, the psychologist's job is to create the conditions in which the participant can be candid, to ask relevant and clarifying questions, and then to classify and report what participants say. Then in the psychologist's reports, participants' theories about their own inner processes are quoted to support the psychologist's theories of how the mind works. But note some of the strange outcomes of this procedure: When Kohlberg reported interviews, the participants sounded like the philosopher, John Rawls (e.g., Kohlberg *et al.*, 1990; Rawls, 1971); when Gilligan reported interviews, the participants sounded like gender feminists (e.g., Gilligan, 1982); when Youniss and Yates (e.g., this issue) report interviews, the participants say that they do not engage in deliberative reasoning at all about their moral actions. Using interview data assumes that participants can verbally explain the workings of their minds. In recent years, this assumption has been questioned, more and more.

Contrary to assuming the face validity of interviews, researchers in

cognitive science and social cognition contend that self-reported explanations of one's own cognitive processes have severe limitations (e.g., Nisbett and Wilson, 1977; Uleman and Bargh, 1989). People can report on the *products* of cognition but not so well on the mental *operations* they used to arrive at the product. There is now a greater regard for the importance of implicit processes and tacit knowledge on human decision making, outside the awareness of the cognizer (e.g., Bargh, 1989; Holyoak, 1994). Implicit processes might be beyond the participant's ability to articulate or explain verbally (Kihlstrom *et al.*, 1996; Kunst-Wilson and Zajonc, 1980).

Many studies from many fields of psychology attest to *implicit* processes that produce the products of cognition. We might mention a few. (a) One of the most famous examples is a study of the "mere exposure effect" (Zajonc, 1968). For instance, Kunst-Wilson and Zajonc (1980) presented participants with drawings of irregular polygons at such a speed that participants were not consciously aware that they had seen them (they could not recognize them later). Nevertheless, when shown new polygons along with the ones already seen, the participants liked the old ones better, but they could not explain why. (b) Dorfman *et al.* (1996) discuss implicit thought by citing a study in which participants were able to choose which of two problems could be solved despite the fact that they did not know the correct solution. (c) Similarly, a lack of introspective access has been documented in a wide range of phenomena including attribution studies in which participants cannot identify the source of their judgments of others (manipulated by the researcher) (Lewicki, 1986). (d) Also in research on expertise, experts are frequently unable to explain the processes used to solve a problem in their domain (Ericsson and Smith, 1991). This body of research calls into question the privileged place of interview data—dependent on *conscious understanding*—over recognition data, dependent on *implicit* understanding.

Furthermore, explaining one's judgments entails that the person produce de novo ("from scratch") a line of reasoning. In contrast, recognition tasks are simpler, requiring only that the participant recognize and discriminate lines of reasoning that are provided. In general, recognition tasks are easier than production tasks (for instance, people find it difficult to produce their telephone number from 10 years ago; it is easier to pick one's telephone number of 10 years ago from a list of five numbers). One of the most serious problems with Kohlberg's research has been how rarely postconventional thinking is scored in this country or any country (see Snarey, 1985). The lack of Stage 5 or 6 scores is recurrently cited in a book of essays devoted to Kohlberg's work (Modgil and Modgil, 1986). The rarity of postconventional moral reasoning is an especially serious problem because Kohlberg (1984) defined his developmental sequence from the perspective of the highest

stages, Stages 5 and 6. One advantage of the recognition task of the DIT is that postconventional thinking is not so rarely scored as in the Kohlberg interview.

Stages and Schemas

In the 1950s, Kohlberg was one of the first American psychologists to advocate the cognitive developmental approach of Piaget. As time has moved on, different theories have evolved about human cognition. We have found schema theory especially useful in recent DIT research (e.g., Rest *et al.*, 1999e). Following classic discussions by schema theorists (e.g., Rummelhart, 1980; Taylor and Crocker, 1981), schemas are understood to be general knowledge structures residing in long term memory. Schemas (i.e., expectations, hypotheses, concepts, regularities) are formed as people notice similarities and recurrences in experiences. Schemas are evoked (or "activated") by current stimulus configurations that resemble previous stimuli. A schema consists of a representation of some prior stimulus phenomenon, applying organized prior knowledge to the understanding of new information (sometimes referred to as "top-down" processing). The functions of schemas are essential to human understanding: schemas guide attention to new information and provide guidance for obtaining further information, give structure or meaning to experience by logically interrelating the parts, enable the perceiver to "chunk" an appropriate unit, and to fill in information where information is scarce or ambiguous, and provide guidance for evaluating and for problem-solving. In short, schemas facilitate information processing.

Much of the research in social cognition has studied three types of schemas: (a) *person* schemas (e.g., this person is extraverted or introverted), (b) *event* schemas (e.g., what you do when going to a restaurant or to a wedding), and (c) *role* schemas (e.g., firefighters, professors, cowboys). Favorite dependent variables in schema research include the variables of memory and reaction time. Both these variables are used in studies to argue that schemas facilitate information processing. The article by Narvaez in this issue of *Educational Psychology Review* reviews research using these variables (reaction time and memory) in moral judgment research.

Essentially, schema theory and stage theory are more similar than dissimilar. Both theories focus on general knowledge structures that are used to assimilate and structure new information. In social cognition research, the emphasis is on how general knowledge structures facilitate information processing, but the *development* of schemas is not especially emphasized. In contrast, stage theory emphasizes development. Our moral

schemas are somewhere in between the theories of Piaget and social cognition's schemas. But we use the term, moral *schemas,* to signal differences with Kohlberg's moral *stages.* We list the following differences of our moral schemas from Kohlberg's stages as if they were discrete points, but they are all interconnected. (a) We differ with Kohlberg on the concept of "*stage,*" envisioning development as shifting distributions rather than using the staircase metaphor. (b) Our schema are *more concrete* than Kohlberg's stages (but are more abstract than the typical schemas of social cognition). (c) We do not claim that assessment is of cognitive *operations;* rather, assessment is of concepts of social institutions and role systems. (d) Kohlberg postulated *universality* as a characteristic of stages whereas we regard cross-cultural similarity as an empirical question. (e) Kohlberg emphasized verbal articulation, whereas we emphasize *tacit recognition.* In the paragraphs that follow, we address each of these differences.

(a) "Hard" Stages Versus "Soft" Stages. Kohlberg's notion of "hard" stages presupposes the metaphor of the staircase. According to Kohlberg, development is conceptualized in terms of moving up a staircase one step at a time, without skipping any steps and without reversals. Colby *et al.* (1983) provide longitudinal evidence for the "hard stage" view. However, Siegler (1997, p. 95) argued for a different view of development.

1. In all areas of cognitive development, children typically have multiple ways of thinking about most phenomena.
2. Cognitive-developmental change involves shifts in the frequency with which children rely on these ways of thinking, as well as the introduction of novel ways of thinking; change is better depicted as a series of overlapping waves than as a staircase progression.

Siegler argues for conceptualizing development as shifting distributions, whereby the more primitive ways of thinking are gradually replaced by more advanced ways of thinking. We favor a "soft stage" concept (in contrast to the "hard stage"), for the reasons given by Rest (1979, pp. 48–74).

(b) More Specific and Concrete. Schemas, as studied in social cognition, are at a more concrete level of abstraction than Kohlberg's stages. Person, role, or event schemas are schemas frequently studied in social cognition. And the conception of the role schema, "cowboy," for instance, is still general; it allows both Roy Rogers and Hop-along Cassidy to be instantiations of the schema. There are many specific instances that activate the cowboy schema: one instance might be a particular film with Roy Rogers in it or, even more specifically, Roy Rogers in a particular film sequence singing cowboy songs or riding his horse, Trigger. In short, the schema of a cowboy is more general than each of these particular instances. However a cowboy schema is more concrete than a Kohlbergian stage (e.g., the Law

and Order Stage) or than a moral schema (e.g., the Maintaining Norms schema). We would say that our moral schema are more concrete than Kohlberg's stages; our schemas are conceptions of the moral basis of social institutions in society, whereas Kohlberg regards social institutions as "content." Our basic point here is that, in terms of abstraction/specificity, we are placing our moral schema in between Kohlbergian stages and the schemas typically studied in social cognition research.

(c) Assessing Operations. A bit of background might be useful on this point. Kohlberg was impressed by Piaget's analysis of how reasoning advanced. Piaget claimed that more advanced reasoning used cognitive *operations* that lower-stage thinking did not have. Piaget modeled the advance of thinking in terms of the logicomathematical structures depicted by logicians. For instance, one of these structures used by Piaget is called the "INRC four-group." [INRC stands for the four logical transformations of identity, negation, reciprocal, and correlative (see Flavell, 1963, pp. 215ff).] We need not go into detail about these logical models here, except to say that Piaget attempted to depict the developing capabilities of people's thinking in terms of the acquisition of these abstract, logical operations (i.e., higher stages performed cognitive operations that the lower stages did not). Kohlberg sought to explain the development of moral stages in terms of "justice operations"—suggesting similarities to Piaget's use of INRC operations (cf. Kohlberg, 1984, pp. 245, 246, 271, 304ff). Kohlberg proposed that moral Stage 6 (the highest stage in Kohlberg's theory) was the culmination of the justice operations, characterized in terms of the operations of "ideal reversibility" (1984, pp. 484ff). He used the notion of cognitive operations to distinguish *form* (true structure) from *content* (surface appearance). That is, the development that defines moral stages is to be characterized in terms of new cognitive operations (higher stages juggle more things in the mind in more precise ways than the mind at lower stages). Kohlberg defined each stage in terms of its "justice operations" (Kohlberg, 1984, pp. 621-639).

The Colby–Kohlberg scoring system (Colby *et al.*, 1987) explains how one must radically purges content from structure in order to assess the fundamental operations of moral thinking. Kohlberg thought that the shortcomings of his previous scoring systems were due to confounds of content with structure. Kohlberg spent the last decade of his life working on the 1987 scoring system to purge radically all content from structure. The 1987 scoring system employs a four-tier procedure for unraveling content from structure, each layer holding some aspect of content constant, then preceding to the next layer of distinction. By the time the scorer gets to the fourth tier, there are very abstract descriptions of stage structure. For instance, the idea of law and order is viewed in the Colby–Kohlberg system as

confounding a "norm" content, "value element," and stage structure (an impure mix of content and structure). The DIT does not make these distinctions, and Kohlberg thought (1984, pp. 194-195) that DIT research hopelessly mixed up content and structure, thus muddling the assessment of cognitive operations. He seems to have assumed that the more abstract the analysis, the better one can assess moral thinking.

In contrast, American cognitive science has not been so eager to purge all content from structure. Gazzaniga *et al.* (1998, p. 532) stated that mental operations are the most elusive aspect of cognition:

> A vast amount of research in cognitive science clearly shows we are conscious only of the content of our mental life, not what generates the content. It is the products of mnemonic processing, of perceptual processing of imaging, that we are aware of—not what produced the products. Sometimes people report on what they think were the processes, but they are reporting after the fact on what they thought they did to produce the content of their consciousness.

How does one decide at what level of abstraction to distinguish structure from content? We don't believe that the important question is how abstractly one can define structure (or that the more rarified one makes a scoring system, the more likely one is to measure operations). The questions should be (1) What definition of structure can be operationalized? (That is, can assessment be done that produces the theoretically expected range of scores—in Kohlberg's case, Stage 1 to Stage 6?) and (2) Can the structures described by a stage scheme be validated? (That is, do the scores produce information that illuminates phenomena of interest?) Regarding validity, we argue that the content–structure distinction embodied in a measure of moral judgment ought to maximize multiple validity criteria, not just maximize stepwise progression in longitudinal studies.

(d) Universality. Kohlberg (1971, p. 176) stated, "Almost all individual's in all cultures go through the same order or sequence of gross stages of moral development, though varying in rate and terminal point of development." The issue of universality was important to Kohlberg because he saw a universalistic morality as the bulwark against moral relativism. Kohlberg caricatured relativism as maintaining that cannibalism is right for cannibalistic societies, that human sacrifice was right for the Aztecs, and so on (1984, pp. 105ff). And Kohlberg saw the fight against wishy-washy moral relativism of social scientists as helping to prevent such abominations as the Nazi Holocaust (see Reed, 1997)—with moral relativism, the Nazi officer could defend his role in the Holocaust as simply following the relativist norms of his group.

In contrast, the view of some recent moral philosophers (e.g., Beauchamp and Childress, 1994; Walzer, 1983) sees morality as a community enterprise, relative to situation and circumstance (akin to the development

of common law). According to this view, morality is a social construction, evolving from the community's experiences, particular institutional arrangements, deliberations, and the aspirations that are voiced at the time and which win the support of the community. Being a *social* construction implies that morality is not constructed in the mind of any one *individual*—as individual cognitive operations—but is negotiated among individuals, deliberated, and arrived at through agreement. And as much as Kohlberg feared relativism, morality that is relative to group deliberation is not tantamount to the mindless moral relativism or moral skepticism, nor need it pave the way to Nazi-like atrocities. There are more possibilities than merely the two possibilities that Kohlberg envisioned: either relativism or universalism. Common morality might be different for different communities (and therefore relative), but the common morality can be debated and scrutinized by members of the community to reflect an equilibrium between the ideals of a community and moral intuitions about specific cases.

(e) Articulation Versus Tacit Knowledge. We have already discussed this difference with Kohlberg in the section about the difference between production tasks and recognition tasks.

A Schema View of How the DIT Works

This is our current view—informed by schema theory—of how the DIT works: The DIT is a device for activating moral schemas. We presume that reading moral dilemmas and the DIT issue statements activates moral schemas (to the extent that a person has developed them). As the participant encounters an item that both makes sense and also activates a *preferred* schema, that item is given a high rating and ranked of high importance. Alternatively, when the participant encounters an item that either does not make sense or seems simplistic and unconvincing (is not activating a preferred schema), the item receives a low rating.

The items of the DIT are fragments of lines of reasoning; the items are not complete orations arguing for one course of action or another. The items are in the form of questions, so as not explicitly to advocate one course of action or another. The items balance "bottom-up" processing (stating just enough of a line of argument to activate a schema) with "top-down" processing (stating not too much of a line of argument so that the participant has to "fill in" the meaning from schemas already in long term memory). In a sense, the DIT is a "projective test" in that the fragmented nature of the items require the participant to supply meaning to the items that they are rating.

We are interested in knowing which schemas the participant brings

to the task (are already in the person's head or in long-term memory). Presumably it is those schemas that structure and guide people's moral thinking. By the patterns of ratings and rankings, we arrive at estimates of the relative strength of the preferred schema. Using ratings and rankings in a multiple-choice task allows tacit reasoning and unarticulated processes to determine the ratings and rankings. The participant is not required to verbally explain and explicitly argue for a line of reasoning. We assume therefore that people are clearer in identifying what seems to be an important moral issue to them rather than in articulating a moral justification for one course of action or another (the usual data collected in Kohlbergian interviews).

The Reconceptualization of Postconventional Morality

Kohlberg used the philosophy of John Rawls (1971) to define Stage 6. John Rawls' book, *A Theory of Justice,* was well received in 1971. Kohlberg was ingenious in incorporating Rawls' moral philosophy into a Piagetian psychological theory of Six Stages of moral development. Rawls' philosophy was in the tradition of Liberal 18th Century European Enlightenment, emphasizing human rationality, the scientific approach, and individualism. Rawls followed Kant in proposing a deontological moral theory, incorporating notions about the justice conditions of the social contract as a basis for conceptualizing cooperation in society. Kohlberg merged the Piagetian model of stage development ("hard" Piagetian stages defined by justice operations) with a Rawlsian moral philosophy.

Rawls' philosophy (1971) invited psychologizing. In order to explain his philosophical concept of justice, Rawls proposed that his reader conduct a thought experiment: Rawls asked the reader to understand his meaning of justice by imaginatively constructing a hypothetical social contract in which the participants meet together to decide the organizing principles for society. The participants enter these negotiations under special conditions. Each person is ignorant of his/her special interests in society. Not knowing whether any particular arrangement would benefit or penalize his/her particular interests, the person must therefore be impartial or fair. Rawls (1971) contended that the outcome of such a social contract in "the original position under a veil of ignorance" would be an agreement on the principles of justice. Kohlberg substituted the features of Rawls' thought experiment with the psychological notion of justice operations. Kohlberg's Stage 6—and the notions of "ideal reversibility" or "moral musical chairs"—became the imaginative construction of a moral point of view described in terms of "justice operations," thus accomplishing the same end as Rawls' thought

experiment. Kohlberg's conception of Stage 6, and the five stages leading to it, became simultaneously a developmental stage theory (a psychological theory of change over time) and also a normative theory of ethics [a philosophical theory, arguing why higher is better (see Kohlberg, 1981, pp. 190-226)].

Twenty-five years later, Kohlberg's linking of Stage Theory with Rawls' moral philosophy has become a source of criticism. Moral philosophers have raised many objections to Kohlberg's interpretation of Rawls' theory and regard Kohlbergian theory as too partisan toward Rawls' position to be credible (e.g., see chapters in Modgil and Modgil, 1986; Wren, 1990).

Rather than attempting to resolve the debates in moral philosophy, we step back and characterize the developmentally advanced structures of moral judgment in more general terms (looser, less daring, more tepid) than Kohlberg did. In our reformulation, postconventional moral thinking is not linked to any one moral philosophy; our definition of postconventional derives rights and responsibilities by appealing to shared ideals for organizing cooperation, ideals that are open to scrutiny (more detail, later). By our definition of postconventionality, nearly all modern philosophers would be classified as postconventional, both conservative and liberal, left-wing and right-wing, including liberal (Rawls, 1971); conservative (e.g., Sandel, 1982), communitarian (Walzer, 1983), and libertarian (Nozick, 1974). Moral theories that do not fit our criteria of Postconventional schema include emotivist theories of morality [which say that morality is nothing but the personal expression of approval or disapproval (e.g., Stevenson, 1937)]; Nietzsche [(e.g., 1886/1968) who regards cooperation as a bad idea and a ploy of the weak to hold down the strong]; and ethical theories based on Fundamentalist/Orthodox religious views (that base moral obligation on claiming to know God's Will). [See Beauchamp and Childress (1994) for a discussion of the relative adequacy of moral theories.]

Conceptually, the distinctions among the developmental schemas are not the same thing as the distinction in political theory between right-wing and left-wing orientations. The right-wing/left-wing distinction in political theory has a long historical tradition and is roughly equivalent to the distinction between conservative and liberal. For instance, in 18th century France, those representatives sat on the right-hand side of the assembly who sided with the king and his ministers, who claimed that only the king could make laws, and who generally favored established authorities and tradition. In contrast, those representatives sat on the left-hand side of the assembly who favored the French courts and who claimed that the courts had the right to examine laws and reject any they did not like. Philosophical arguments and theories were elaborated for both sides (Gay, 1966).

Both right-wing and left-wing political theories have had a course of

development, each starting from simplistic assumptions and evolving to more sophisticated positions (e.g., see Holmes, 1993). Both orientations (e.g., right-wing McCarthyism in America in the 1950s or the left-wing "political correctness" of the 1980s) can be criticized for injustices [e.g., the moral critique of left-wing political correctness by D'Souza (1991), the critique of Postmodernism by Gross and Levitt, (1994)]. Both right-wing and left-wing political views have both less advanced and more advanced forms.

We describe the development in moral judgment of adolescents and adults in terms of acquiring schemas; the Maintaining Norms schema and the Postconventional schema are two solutions for creating a societywide system of cooperation (the schemas are described below). The DIT is especially sensitive to the shift from Maintaining Norms to the Postconventional schema. This shift in moral schemas is accompanied by a shift in attitude toward authority (i.e., shifting from unquestioning support to holding authorities accountable). Further, attitudes about the importance of maintaining established social norms (i.e., shifting from supporting all established practices to supporting only those practices that serve the community's shared moral ideals). Therefore development in moral judgment is accompanied by shifts in political attitude. Often, people who hold conservative positions are more supportive of strong authorities and having clear social norms (and prefer the Maintaining Norms schema), and usually, Postconventional thinkers find liberal political positions more congenial. However, the association between political attitude and moral judgment does not mean that they are identical. (For instance, in a completely different realm, human height and weight are correlated variables but are different dimensions both conceptually and operationally. In the same way, moral judgment is different from the right-wing/left-wing distinction.)

THE MORAL SCHEMAS[5]

In adolescence, typically there is the "discovery of society." This is the realization that people are related through institutions, role systems, and rules; this is the realization that, in addition to micromorality, there is macromorality; there is "The System." The central problem of macromorality is how to conceptualize a system of cooperation on a societywide basis (i.e., in a nation state). The DIT presumes that people make sense of moral situations in terms of three schemas: Personal Interests, Maintaining Norms, and Postconventional thinking. The three schemas are presumed to be ordered developmentally. Typically, the development of the schema, Per-

[5]Parts of the description of the schemas are adapted from Rest *et al.* (1999b, Chap. 3). See that reference for further detail.

sonal Interests, takes place in childhood, whereas the Maintaining Norms and Postconventional schema are typically developed in adolescence and adulthood.

The Personal Interests Schema

The DIT does not track the beginnings of moral judgment development in childhood. The DIT requires that people have at least a 12-year-old reading level. Much development has already taken place even with the youngest users of the test, including the ability to identify the interests of actors in story dilemmas and to empathize with various story characters. Because DIT research begins with adolescence, we cannot say much about the moral development in earlier childhood and will not have much to say about the "Personal Interests" schema. This schema is "presociocentric" (i.e., it does not presume a concept of organized society); it justifies a decision by appealing to the personal stake that an actor has in the consequences of an action, including prudential concerns and also concerns for those with whom the actor has a personal affectionate relationship (e.g., Heinz's bond of affection for his wife). The Personal Interests Schema has elements described by Kohlberg as Stage 2 and Stage 3 (hereafter we use the label, "S23," for the Personal Interests schema). Almost all participants in DIT research—being beyond early childhood—regard the Personal Interests schema as "past history" (i.e., as an earlier form of thinking that they have surpassed). There is an unresolved question of whether S23 is really two separate schemas in childhood (in childhood, separating Stage 2 from Stage 3). But in DIT research with older participants, the two elements fuse together as a single factor; both the stage 2 and the stage 3 elements are regarded as earlier, more primitive forms of thinking [see factor analysis results, discussed by Rest *et al.* (1999b, Chap. 4)].

The Maintaining Norms Schema

The schema, "Maintaining Norms" (derived from Kohlberg's Stage 4, hereafter designated "S4"), is the first solution that typically occurs to adolescents for the problem of conceptualizing cooperation on a societywide basis. S4 has the following elements: (a) need for norms; (b) societywide scope; (c) uniform, categorical application; (d) partial reciprocity; and (e) duty orientation. The following paragraphs discuss each of these elements.

(a) Need for Norms. If a societywide system of cooperation is to be

established, then some normative rules and rolesystems are necessary (whatever they may be—the schema itself does not specify which particular rules or roles to have; rather the schema points to the moral necessity to maintain the norms). Some standards or stable norms are needed so that everyone need not debate every act every time somebody is to act. Coordination is necessary (for example, if a water irrigation system is to be built, some central plan is necessary). By having some set of norms and rules, people avoid continuous conflict, disagreement, and working at cross purposes. Norms provide stability, predictability, safety, and coordination.

(b) Societywide Scope. A person realizes that he/she not only has to get along with kin and friends and well-known acquaintances. People also have to get along with strangers, competitors, and little-known acquaintances. Therefore a societywide system of cooperation needs to be established involving large numbers of people who do not know each other in a personal, face-to-face way. Formal law is particularly useful for stabilizing expectations among people who are not familiar intimates.

(c) Uniform, Categorical Application. Furthermore, laws are social norms that are publicly set, are knowable to everyone, and apply to everyone. "Law" is usually understood in the sense of civil, municipal law (in the sense described by Hart, 1961, pp. 77ff). But law can also be understood in terms of religious codes [see especially the discussion of "Orthodoxy/Progressivism," by Narvaez *et al.* (1999) and Rest *et al.* (1999b)]. Regardless of whether the Law is civil or religious, everyone is "under the law" (the law applies equally to all citizens), and everyone is protected by the law (all citizens can invoke the protection of the law).

(d) Partial Reciprocity. Laws establish a reciprocity (or reversibility) among participants in society. A person obeys the law and does his/her duty, expecting that other people are doing their duties. Society in general benefits from this division of labor and mutual exchange. The Maintaining Norms orientation emphasizes the importance of doing one's duty according to one's station and role position in society. (We call this "Partial" reciprocity, not "Full" reciprocity, because under the Maintaining Norms schema, obeying the law might not benefit all the participants in an equitable way, as is required in the Postconventional schema.)

(e) Duty Orientation. Maintaining Norms is "duty-oriented" and authoritarian (in the sense of affording unchallenged powers to authorities and in deferring to authorities). In an organized society, there are chains of command (i.e., there are hierarchical role structures, teacher–pupil, parent–child, general–soldier, doctor–patient, etc.). One must obey authorities, not necessarily out of respect for the personal qualities of the authority, but out of respect for the social system.

For this schema, maintaining the established social order defines moral-

ity. In the Maintaining Norms schema, "law" is connected to "order" in a moral sense. The schema leads to the expectation that without law (and duty to one's roles), there would be no order; people would act instead on their own special interests, leading to anarchy, a situation that responsible people want to prevent. For this schema, no further rationale for defining morality is necessary beyond simply asserting that an act is prescribed by the law or is the established way of doing things (or is known to be the Will of God). The schema commits what moral philosophers call the "naturalistic fallacy" in inferring that what "is" (the de facto norms) also "ought" to be (is ethically required). Acquisition of this schema is what gives conventional thinkers their sense of moral necessity for the maintenance of social order. In other words, the schema provides a sense of moral certainty ("I know I'm right for the sake of our entire society") and, therefore, fuels the special zeal of some conventional thinkers.

So far, we have emphasized the positive aspects of the Maintaining Norms schema, and the sense in which it is a developmental accomplishment. But the Maintaining Norms schema can become exaggerated and harmful as well, as, for instance, in the United States with McCarthyism or in Alabama with governor George Wallace's law-and-order orientation. McClosky and Brill (1983, p. 14)—from a very different database than the DIT—comment on what they call the "conventionally minded" and, thus, characterize the negative side of this orientation:

> Because the established standards tend to be accepted as correct standards, those who flout them are often seen as thoughtless, ignorant, or wicked. To choose to be different in one's attitude towards venerated objects and symbols—religion, the nation, the flag, the family, the Deity—is seen as a sign of depravity. Why should one permit, much less safeguard or encourage, recalcitrance, error, malicious scorn for objects and values that right-minded people know to be correct or even sacred?

McClosky and Brill view the particular danger of exaggerated "conventional mindedness" in terms of being so protective of the social order that basic human rights and civil liberties are curtailed. In other words, the Maintaining Norms orientation endorses a social order that can become overly authoritarian and oppressive.

The Postconventional Schema

Essential to postconventional thinking is that moral obligations are to be based on shared ideals, which are reciprocal and are open to debate and tests of logical consistency, and on the experience of the community. Over the centuries, philosophers have proposed many visions for a society based on moral ideals (e.g., utilitarian, social contract, virtue-based, femi-

nist, casuist, religious ideals). We propose four elements in the postconventional schema: (a) primacy of moral criteria, (b) appeal to an ideal, (c) sharable ideals, and full reciprocity.

(a) Primacy of Moral Criteria. The person realizes that laws, roles, codes, and contracts are all social arrangements that can be set up in a variety of ways. Tradition, law, religious codes, or existing social practice prescribe certain behaviors. But solely the fact that these are the de facto arrangements does not entail that a person *ought* to behave in those ways. (In other words, postconventional morality does not commit the philosopher's "naturalistic fallacy.")

At the Maintaining Norms level, conventions are inviolate and are seen as the last stand against anarchy; upholding convention defines the moral for conventional morality. In contrast, at the Postconventional level, the person views conventions as alterable and nonuniversal insofar as they are instruments of *moral* purposes. Agreements can be renegotiated. At the Postconventional level, duties and rights follow from the moral purpose behind the conventions; not as they do at the conventional level, from de facto norms.

(b) Appeal to an Ideal. Postconventional thinking is not merely a negative attitude toward the "Establishment" or the "System." The hippie rejection of society (or Far Left ideology) does not in the rejection propose a constructive ideal by which to transform and restructure society. The positive and constructive aspect of postconventional thinking is in proposing some idealized way that humans can interrelate or some ideals for organizing society. Examples of ideals for society that have been proposed include creating the greatest good for all, guaranteeing minimal rights and protection for everyone, engendering caring and intimacy among people, guaranteeing fair treatment, providing for the needy, furthering the common good, enhancing people's self-actualization as ideal persons, and so on.

(c) Sharable Ideals. To be Postconventional, the ideal must be *sharable,* not be based on an idiosyncratic preference or personal intuition or private revelation. Sharability is tested by the ability to justify an act or practice to those whose participation is anticipated. When one justifies an act, one gives more than an appeal to one's private intuition (i.e., it involves more than saying, "My conscience told me it was right"). By a justification, one is arguing that an act is not self-serving at the expense of others; that the act respects others, serves group goals, furthers cooperation and the common good, or is consistent with acceptable policy and previously agreed-upon principles and ideals.

Furthermore, one's justifications are open to rational critique and can be challenged by new experience, logical analysis, and evidence. Postconventional thinking is not shielded by a privileged source of authority. Norms

that are claimed to be God's Will, that are in principle beyond human comprehension and are not subject to scrutiny, are not Postconventional. (This does not mean that any insight from religion is automatically defined as not Postconventional; rather, it entails that all insights, whatever their source, are subject to scrutiny by the participants who are affected, to tests of logical consistency, and to consistency with human experience.)

Guttmann and Thompson (1996, pp. 56-57) are helpful in what they say on this issue:

> An appeal to divine authority per se is thus not what creates the problem. . . . The problem lies in the appeal to *any* authority whose conclusions are impervious . . . to the standards of logical consistency or to reliable methods of inquiry that themselves should be mutually acceptable. . . . [We do] not exclude religious appeals per se, . . . [but] any claim fails to respect reciprocity if it imposes a requirement on other citizens to adopt one's sectarian way of life as a condition of gaining access to the moral understanding that is essential to judging the validity of one's moral claims.

(d) Full Reciprocity. Whereas *partial* reciprocity was envisioned by the Maintaining Norms schema (i.e., that everyone alike is "under the law" and protected by the law) at the Postconventional level, one realizes that the law itself may be biased; lawful acts may nevertheless favor some over others. For example, such was the point of Martin Luther King, Jr.'s, civic disobedience. "Full" reciprocity entails not only uniform application of social norms, but also that the social norms themselves not be biased in favor of some at the expense of others.

There has been—and still is—much dispute among moral philosophers about what ideals should govern society, how to optimize all the participants' welfare, who is a participant, what "fair-minded" and "impartiality" mean, what "rational" and "equal" mean, what constitutes "logical coherence," and the relative importance of principles and paradigm cases. Nevertheless, we believe that the schema of Postconventional morality (as defined by the four elements) is presupposed in most modern moral philosophies. A major difference between the Maintaining Norms schema and the Postconventional schema is how each attempts to establish consensus: the strategy of the Maintaining Norms schema is to gain consensus by appealing to established practice and existing authority; in contrast, the strategy of the Postconventional schema is to gain consensus by appealing to ideals and logical coherence.

VALIDITY OF THE DIT

We have now gone a considerable distance down a theoretical road. What is the *empirical* support for such speculation? For over 25 years, we and others have conducted hundreds of studies. In the book, *Postconven-*

tional Moral Thinking (Rest *et al.,* 1999b) extensive coverage is devoted to citing the literature, consisting of over 400 published articles and a considerable number of studies that are not published. Here, we do not attempt to duplicate that documentation, but only highlight our general strategy and give brief conclusions.

We summarize the validity literature in terms of seven validity and reliability criteria. The seven criteria operationalize what we mean by "construct validity" for a test of moral judgment. The operalization specifies what studies are done and what results are found in order to claim validity. An operalization tells us how to judge whether one test of moral judgment is better than another. The seven criteria are as follows: (1) differentiation of various age/education groups, (2) longitudinal gains, (3) correlation with cognitive capacity measures, (4) sensitivity to moral education interventions, (5) links to prosocial behavior and preferred professional decision-making, (6) predicting political choice and attitude, and (7) reliability.

Briefly, here are the conclusions from Rest *et al.* (1999b, Chap. 4). (1) *Differentiation of various age/education groups.* Studies of large composite samples (thousands of subjects) show that 30 to 50% of the variance of DIT scores is attributable to level of education in samples ranging from junior-high education to Ph.D's. (2) *Longitudinal gains.* A 10-year longitudinal study shows significant gains of men and women, of college-attenders and people not attending college, from diverse walks of life. A review of a dozen studies of freshman to senior college students (n = 755) shows effect sizes of .80 ("large" gains). DIT gains are one of the most dramatic longitudinal gains in college of any variable studied in college students. (3) DIT scores are significantly *related to cognitive capacity measures* of moral comprehension (r = .60s), to recall and reconstruction of postconventional moral argument, to Kohlberg's measure, and (to a lesser degree) to other cognitive developmental measures. (4) DIT scores are *sensitive to moral education interventions.* One review of over 50 intervention studies reports an effect size for dilemma discussion interventions to be .41 ("moderate" gains), whereas the effect size for comparison groups was only .09 ("small" gains). (5) DIT scores are significantly *linked to many "prosocial" behaviors and to desired professional decision making.* One review reports that 32 of 47 measures were statistically significant. See also Rest and Narvaez (1994) for more recent discussions of professional decision-making. (6) DIT scores are significantly *correlated with political attitudes and political choices.* In a review of several dozen correlates with political attitude, DIT scores typically correlate in the range of r = .40 to .65. When combined in multiple regression with measures of cultural ideology, the combination predicts up to two-thirds of the variance in opinions about controversial public-policy issues (such as abortion, religion in the public school, women's roles, rights

of the accused, rights of homosexuals, free-speech issues). Because such issues are among the most hotly debated issues of our time, the DIT's predictability to these issues is important. (7) *Reliability.* Cronbach's α is in the upper .70s/low .80s. The test–retest reliability is about the same.

Furthermore, DIT scores show discriminant validity from verbal ability/general intelligence and from conservative/liberal political attitudes (see the review of more than 20 studies by Thoma *et al.* in this issue). That is, the information in DIT scores predicts the seven validity criteria above and beyond that accounted for by scores of verbal ability/general intelligence or political attitude. Moreover, the DIT is equally valid for males and females; sex (gender) accounts for less than 0.5% of the variance of the DIT, whereas education is 250 times more powerful in predicting DIT variance (Thoma, 1986).

Moreover, several developments have been made recently that increase the power of trends. We have devised a new developmental index for the DIT [N2 to replace the P index (Rest *et al.,* 1997b, 1999a)]. We have devised a new way to check for participant reliability [i.e., whether or not participants are giving bogus data (Rest *et al.,* 1999c)]. We have completed preliminary testing of a new version of the DIT with new dilemmas and new items that is more updated, is shorter, has clearer instructions, purges fewer subjects for bogus data, and is slightly more powerful on validity criteria (Rest *et al.,* 1999c). The new test (DIT2) indicates that new stories and items can be devised in place of the old DIT1. In sum, on the basis of the recent book and new studies, we know of no other construct that accounts as well for the combination of findings of hundreds of published studies than moral judgment; and the DIT does a good job of measuring moral judgment.

DO MORAL SCHEMAS GUIDE MORAL THINKING?[6]

Schema theory is particular useful in providing evidence that our particular definitions of moral cognitive structures (e.g., S23, S4, and S56) are involved in people's moral thinking on macroissues. In other words, schema theory has suggested leads for dealing with the question, "What makes us believe that people's concepts about organizing cooperation on a societywide basis—the specific moral schemas we've proposed, above—comprise the critical knowledge structures that influence how people think about macromorality issues?"

[6]Parts of this section are adapted from Rest *et al.* (1999e). See that reference for further detail.

The problem of tracing specific effects to specific schemas arises in our model of development, which stresses the "shifting distributions" idea instead of Kohlberg's "staircase" metaphor. Classic Kohlbergians with the "hard stage" model of development do not have this problem. Kohlberg's model of development characterized development in terms of people moving up the staircase one step at a time. Accordingly it is possible for Kohlbergians to talk of, say, "the Stage 3" person or "the Stage 4" person. Hence by studying the behavior of such "pure" stage people, it is possible to link Kohlberg's specific stages with differences in behavior (or other effects). However, with our model of development (in terms of shifting distributions of schemas), there are no "pure" type people; rather, people are mixes of schemas. So if each individual is a mix of schemas, how does one isolate the specific effects of a schema (or link the specific features of our schemas with specific effects)? Furthermore, our new index of development, the N2 index [a hybrid index using both rating and ranking data (Rest *et al.*, 1997b)], is a combination of various elements; hence it is difficult to isolate selectively the impact of any one element. It is possible for two participants to have the same N2 score with very different mixes of schemas. How, then, can we ever know that the particular way we have defined schemas really represents the cognitive structures operating in moral thinking? In our zeal to depict the complexity of cognition, have we frustrated the ability to link specific schemas with specific effects?

Our general strategy in response to this problem involves two steps. (a) We define "types" and assign people to them. The business of classifying participants in terms of types is different than calculating the N2 index. Types are groups of people classified in terms of two features: (i) which schemas are predominant (S23, S4, or S56) and (ii) the extent of schema mix (i.e., people with high ratings of one schema are termed "consolidated," and people with more equal ratings of the three schemas are termed "transitional"). (b) We cite three novel phenomena about types that can be explained by our schema theory, but accounting for them poses difficulties for rival theories. Hence, on the basis of these three phenomena about types, we build the case that our moral schemas are critical in accounting for how people go about making moral decisions.

The three novel phenomena that we report are (a) that the types are developmentally ordered (thus providing evidence that the schemas are not equally sophisticated alternatives, but that one schema is developmentally more advanced than another), (b) that consolidation (low mix) facilitates information processing, (whereas transition hinders information processing), and (c) that the schemas guide different decisions (i.e., consolidation on S4 leads to different decision-making on public policy issues than does consolidation on S56). Schema theory is especially useful

in accounting for the second phenomenon (dealing with ease or difficulty in information processing).

Defining the Types

The types are different from Kohlberg's six stages and different from what the N2 index measures. The N2 index is designed to represent developmental level; the story of the N2 index is that it optimizes trends on seven validity criteria (Rest *et al.*, 1997b). But the N2 index does not convey information about the extent of schema mixture (i.e., whether one schema predominates over the others to a great degree or whether the three schemas are rated more equally). Types are defined as groups of participants who have two characteristics in common: (a) each person is grouped according to which schema has the highest average rating (one of three: S23, S4, or S56) and also grouped according to the extent of schema mix (one of two: either "consolidated" or "transitional"). The double classification (predominance and mix) creates a 3 × 2 grid, producing six types as shown in Table I. Thus types 1, 4, and 6 are consolidated types, whereas types 2, 3, and 5 are transitional types.

Figure 1 shows each of the six types; for each type the average rank of each schema (e.g., S23, S4, S56) is shown [ranking data are shown here; average ratings are shown by Rest *et al.* (1999e)]. Data in Fig. 1 are from the Mega Sample, consisting of over 40,000 DITs (see Evens, 1995). Note that Type 1 has a predominance of S23 but has some S4 and S56 in lesser amounts. In contrast, Type 6 has a predominance of S56, with lesser amounts of S4 and S23. Type 4 has a predominance of S4, with lesser amounts of S23 and S56. The other types (2, 3, and 5) have flatter profiles, with more

Table I. The Six Types Representing Predominant Schema and Schema Mix

Type	Predominant Schema[a]	Schema Mix[b]
1	S23	Consolidated
2	S23	Transitional
3	S4	Transitional
4	S4	Consolidated
5	S56	Transitional
6	S56	Consolidated

[a]That schema (S23, S4, or S56) whose average of item ratings is highest.

[b]A questionnaire is consolidated if the CDIT score is above 15.705; it is transitional if the CDIT score is 15.705 or below. See Rest *et al.* (1997a) for calculation of the CDIT score.

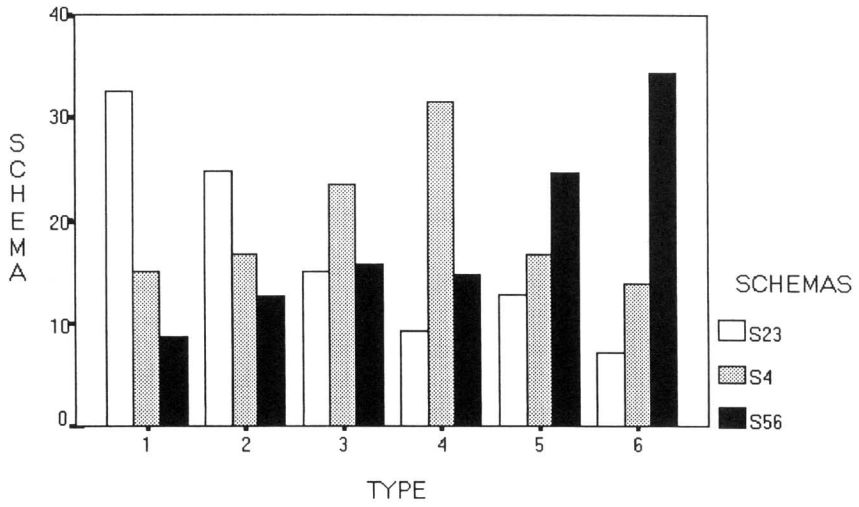

Fig. 1. Averages for each of three schemas (ranks) for each of six types.

equal use of the three schemas. (This is true of both ranking data and rating data.) Although every type is a mix of three schemas, types 1, 4, and 6 are more peaked than types 2, 3, and 5.

The measure of defining consolidation uses a method originally suggested by Lind (1995), and modified for use with DIT data by Rest *et al.* (1997a) as the "CDIT" score. The central idea for the CDIT score is to appraise each participant's ratings of the 72 DIT items in terms of the ratio of variance *within* schemas to the variance *between* schemas. For example, a participant who rates all S23 items as "1," all S4 items as "3," and all S56 items as "5" will have a high ratio of *between*-schema variance to *within*-schema variance (and therefore will have a high CDIT score). [Specific operational details for calculating CDIT are given by Rest *et al.* (1997a).] Although Lind (1995) regards this kind of score (the CDIT) as representing cognitive advance in moral competence, in contrast, we regard the CDIT as measuring degree of consolidation.

Figure 2 shows the average CDIT score for each of the six types. [Data are from the Mega Sample, $n > 40{,}000$ (Evens, 1995).] Note that types 1, 4, and 6 (the "consolidated" types) show high averages, whereas types 2, 3, and 5 show low averages of the CDIT score (the "transitional" types).

Phenomenon 1: The Types Are Developmentally Ordered

The first phenomenon to note about the types is that they, 1 to 6, are developmentally ordered (for details of data analyses, see Rest *et al.*, 1999e).

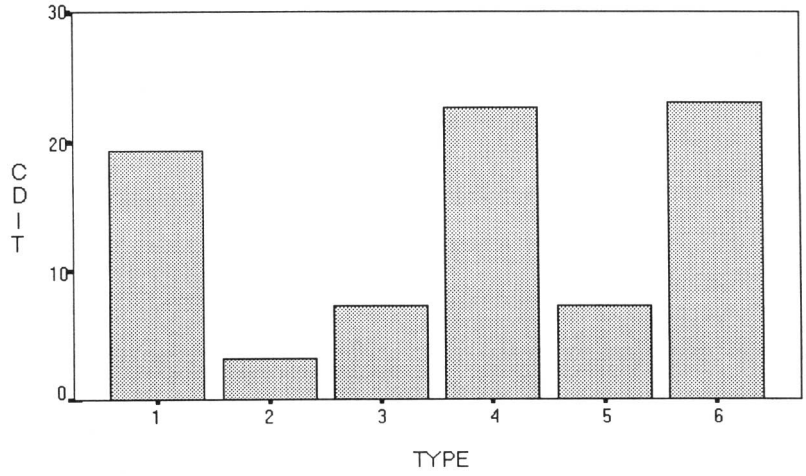

Fig. 2. Average CDIT (consolidation) by type.

Evidence that the types are developmentally ordered comes from the fact that educational level is significantly correlated with type [r = .50s (see Rest *et al.*, 1999e)] and with age (r = .40s). Note that we are not saying that type is a better *developmental* index than N2; rather we are simply claiming that the types are developmentally ordered, as are also the P score and N2 index. Type correlates with the DIT developmental index, N2, in the .70s.

Phenomenon 2: Consolidation Facilitates Information Processing

We propose several new measures of the ease or difficulty in information processing. The short variable label is indicated in all-capitals. All measures are derived from DIT data. We describe the new measures of information processing and discuss why we think the information processing variables are related to type (i.e., why consolidation in one schema facilitates information processing).

(1) Number of Can't Decides (NUMCD). This variable is a simple count of the number of times a participant reports he/she can't decide on which action choice to take. (For instance, in the Heinz dilemma, if a participant reports that he/she can't decide whether or not Heinz should steal the drug, then that adds 1 to NUMCD.) Because there are six stories on which a participant is asked to decide, the variable can range from 0 to 6. We presume that people with a high number of "can't decides" are

having a more difficult time in information processing than are people with few. We assume that a person whose point of view is structured with one predominant schema (i.e., the person who is "consolidated") will find it easier to come to a decision about action choice than will a person with bits and pieces of various views (i.e., the person who is in "transition").

(2) Inconsistency in N2 Scores Across Stories (VARN2). Operationally, this variable is calculated as the variance in N2 scores for each of the six stories. We presume that a person with a predominant, coherent point of view will show greater consistency (less variance) in developmental scores (N2) across the six dilemmas of the DIT. The person in schema consolidation has a consistent standard to bring to the dilemmas. In contrast, we suppose that people with weak and inconsistent schemas will show a lot of variation in N2 from dilemma to dilemma.

(3) Inconsistency Between the Ranking Task and the Rating Task (RkRt10). Recall that on the DIT, participants are first asked to rate items in terms of their moral importance, then to rank the top four most important items. And so two tasks are involved. The RkRt10 variable is high for participants whose performance on the ranking task is inconsistent with their performance on the rating task. If a participant *ranks* an occasional S56 item as most important but does not *rate* the whole set of S56 items in that dilemma as of high importance, then this is a type of inconsistency, and the RkRT10 score will be high. Participants who are more consistent in both tasks have lower scores. (The "10" on the back of the variable name simply signifies the fact that the constant, "10," was added to the score so as to convert negative numbers to positive numbers and, thus, simplify the presentation of results.) In effect, this variable uses the two components of the N2 index, but instead of adding them together (as in the N2 index; N2-Part 1, based on ranks, plus N2-Part 2, based on differentiating ratings), the RkRt10 variable subtracts Part 2 from Part 1.

(4) UTILIZER Score (or U Score). This score is a measure of the degree of fit between the importance ratings of items and advocacy of action (see Thoma, 1994; Thoma *et al.*, 1991). It is another variable based on consistency across tasks (in this case consistency between the rating task and the task of choosing an action). In order to illustrate the U score, consider, for instance, the Heinz dilemma: a person might rate highly the item, "whether a community's laws are going to be upheld." Logically we expect this person who focuses on maintaining the law to advocate "not steal" as the action choice. In contrast, a person might rate highly the item, "Isn't it only natural for a loving husband to care so much for his wife that he'd steal?" Logically we expect such a person to advocate "steal" as the action choice. The U score measures the degree of fit between item ratings and action choice. Thoma and Rest

(1999) found that the U score was significantly related to consolidation. Theoretically, people with a predominant, coherent schema are presumed to show greater integrity between evaluations in item ratings and their choice of action. Presumably, weak schemas cause flip-flopping from the item rating task to the action choice task.

In sum, we expect the consolidated types (1, 4, and 6) to show ease and consistency on NUMCD, VARN2, RkRt10, and UTILIZER and the transitional types (2, 3, and 5) to show difficulty and inconsistency on the information processing variables. In other words, the pattern of the information processing variables is expected to be like that in Fig. 2—dips and blips across the six types not in a simple monotonic pattern but according to consolidation (ease and consistency for types 1, 4, and 6, less ease and consistency for types 2, 3, and 5). This is in fact what was found in the Mega Sample ($n > 40{,}000$) and in a second sample (Rest *et al.*, 1999e).

Especially interesting was the information processing averages for type 5. Type 5 is developmentally more advanced than type 4 (by Phenomenon 1); that is, on average, the participants grouped in type 5 are older and more educated than the participants grouped in type 4. However—in spite of this developmental advantage—type 5 shows less ease and consistency on the information processing variables than does either type 4 or type 6. Because type 5 is in transition (too much of a mix of S4 and S56 for either schema to predominate), type 5 is lower on the information processing variables than on the consolidated types. And so, as anticipated, we find the pattern of averages "dips" at type 5. It turns out that this is a consistent feature of the four information processing variables over samples (Rest *et al.*, 1999e). The characteristic dip at type 5 is predicted by schema theory; predicting and finding this "dip" (that is, the irregularities in the patterns of the information processing variables at certain types) link our specific schemas to specific effects.

The statistical significance of the effects of consolidation/transition has been tested by ANACOVA: the dependent variable was the information processing variable (NUMCD, VARN2, RkRt10, and UTILIZER), the independent variable (or the main effect) was consolidation and transition, and the N2 index was used as the covariate to control for developmental effects. Rest *et al.* (1999e) show that in every analysis of four information processing variables on two samples, consolidation facilitated information processing at a statistically significant level.

Phenomenon 3: Different Schemas Guide Decision-Making Differently

Types 4 and 6 are similar on the information processing variables (Phenomenon 2). Both type 4 and type 6 facilitate information processing.

However, type 4 (in which the Maintaining Norms schema predominates) leads to different opinions on controversial public policy issues than type 6 (in which the Postconventional schema predominates). The difference in evaluation and decision-making is suggested in our theoretical discussion above of the two schemas. That is, the logic of the schemas is such that the Maintaining Norms schema is apt to give unlimited power to authorities (at the expense of individual rights) and to favor clear (even simplistic) social norms for the collective, whereas the opposite is true of the Postconventional schema. Therefore, even though both schemas facilitate information processing, the schemas guide decision-making differently. Our distinctions between S4 and S56 are reminiscent of Kohlberg's description of the different social perspectives between a "Law-and-Order" orientation and a "Postconventional" orientation (Colby *et al.,* 1987). There are parallels to Adelson's (1971) description of the "authoritarianism" of young adolescents and the ebbing of authoritarianism in later adolescence and to McClosky and Brill's (1983) description of the "conventionally minded" as a distinct attitude toward human rights.

That S4 leads to a different decision outcome than S56 is shown by comparing type 4 with type 6 on a measure of opinions about public-policy issues (e.g., abortion, religion in public schools, rights of homosexuals, euthanasia, due process rights of the accused, women's roles, etc.). On this measure of political issues, type 4 is significantly different from type 6 (Rest *et al.,* 1999e). Also, type 4 is significantly different from type 6 on a number of other measures of political and religious ideology. Phenomenon 3 in effect supports the tie-in of our descriptions of *distinctively moral cognitive structures* with the formation of moral thinking on macroissues.

In order to appreciate the theoretical significance of these three phenomena, imagine two counterfactual possibilities. (1) Entertain the possibility that we are not grouping the items on the DIT in the correct way; that the groupings of items do not follow along our characterization of moral schemas; that moral thinking is structured quite differently than our interpretation of conceptions for how to organize cooperation in society (as postulated in S23, S4, and S56). This is more than a logical possibility: we have been warned by reviewers for journals that some of the DIT items were misclassified; Richards and Davison (1992) argue that we have misclassified dozens of items for conservative religious participants.

In support of our position, note, however, that our original grouping of items into S23, S4, and S56 followed factor analysis of the Mega Sample [$n > 44{,}000$ (Rest *et al.,* 1999b, Chap. 4)]. More importantly, if the misclassification of items were true (and the structures of moral thinking are very different from those we claim), then the schema averages (used in defining types and in calculating the CDIT scores) would be a meaningless jumble

of numbers. Contrary to this, the fact is that grouping items in terms of S23, S4, and S56 does produce meaningful and significant trends. If moral judgment is not structured in terms of S23, S4, and S56, then how does one explain our findings based on these groupings?

(2) Consider the counterfactual possibility that the schemas (S23, S4, S56) might be true for phenomena studied in the DIT itself (for the six hypothetical dilemmas) but have nothing to do with how people actually make moral decisions in real life beyond the DIT. In other words, one could concede the internal validity of DIT results, but deny their external validity.

If this were true, then how would one explain Phenomenon 3, which relates DIT data to real-life public policy issues and to measures outside the test? In addition to the findings of this study, there is a review of about 30 findings by Rest *et al.* (1999b, Chap. 4), relating DIT scores to political choice and attitude, beyond the confines of the DIT itself. As already mentioned, typically the magnitude of this relation is in the range of r = .40 to .65. Moral judgment as measured by the DIT seems to be a construct not confined to a few hypothetical dilemmas but that predicts to important phenomena beyond the test.

Rival Theories and the Three Phenomena

The three phenomena can be explained by our theory of moral schemas (namely, that the types are developmental, that consolidation facilitates information processing, that the schemas lead to different decision making). Rival theories may have difficulty in explaining the simultaneous occurrence of all three phenomena. Consider the rival theory of Sanders *et al.* (1995, p. 502), who stated, "The DIT is simply another way of measuring verbal ability." This view would be consistent with Phenomenon 1 (that the types are developmental). It could be contended that moral judgment is developmental because it piggybacks on other aspects of verbal ability (or general cognitive development). However, Sanders *et al.* would have difficulty explaining Phenomenon 2 (How would differences in verbal ability explain the peculiar dips and blips of the types on information processing?) and Phenomenon 3 (Why should differences in verbal ability lead to differences on public policy issues?). The verbal-ability explanation treats Phenomenon 1 as if it were the only fact, disregarding the other facts.

Consider next the rival theory of Emler *et al.* (1983), who stated, "[M]oral reasoning and political attitude are by and large one and the same thing . . ." (p. 1073). "Kohlberg's conventional-principled distinction as applied to the moral reasoning of adults is one of ideological content rather than structural complexity. The difference between Stages 4 and 5 appears

to correspond to the conservative-radical distinction in political attitudes" (p. 1079).[7]

It is true that Phenomenon 3 is consistent with the view that the DIT is measuring liberal/conservative political attitudes. However, if the DIT is reduced to the right-wing/left-wing dimension, Phenomenon 1 (types are developmental) is puzzling. If Phenomenon 1 is true, our critics imply that we are arguing that conservatives are retarded liberals; they imply that we think that given enough time, conservatives become liberals. But we don't hold these views. We think that moral judgment development is different from the distinction in political theory between right-wing and left-wing political attitudes (as argued previously). Furthermore, Phenomenon 2 (the peculiar blips and dips in the information processing variables) is incompatible with a political-attitude interpretation. The reduction of moral judgment to political attitude is consistent with Phenomenon 3, but it treats Phenomenon 3 as if it were the only fact.

Nevertheless, the most exciting implications of the present study are not to furnish further debating points with Emler *et al.* or Sanders *et al.* Much attention has already been paid to issues regarding the discriminant validity of the DIT (Rest *et al.*, 1999c; Thoma *et al.*, 1999, this issue). More exciting are the implications that the confluence of schema theory and moral judgment research have for both areas. From schema theory come greater clarification of how the DIT works and suggestions for many new avenues of research, including using the favorite variables of schema research: recall and reaction time (see Narvaez, this issue). From DIT research come new variables for assessing schemas (ratings of moral importance) and new variables for information processing (indecision about dilemmas, and consistency across stories and across tasks). Merging ideas about cognitive development with ideas about what facilitates information processing may enrich both research traditions.

CONCLUSIONS

Notwithstanding Kohlberg's doubts about rating and ranking data, the DIT has provided many findings that have theoretical significance to the moral judgment construct. Hundreds of published studies (reviewed by Rest *et al.*, 1999b) show that the DIT produces consistent findings relevant to seven criteria of validity and reliability. Furthermore, the novel findings

[7]Recently, Emler *et al.* (1999) modified the 1983 view to reaffirm that Stage 4 DIT items reflect left-wing/right-wing political attitudes but that DIT Stage 5 items reflect something else. However the 1983 view is well known and represents the point of view that moral judgment reduces to political attitude.

of the types (Rest *et al.,* Narvaez, 1999e) illustrate how theoretical arguments can be advanced from DIT variables. The DIT questionnaire provides several families of variables: (a) the *developmental* indexes [e.g., P (Postconventional); N2 (New Index); Stage scores, s2, s3, etc.; and Schema scores, S23, S4, S56]; (b) *consolidation*/transition indexes (e.g., type, CDIT, Consolidation/Transition); (c) ease/difficulty and consistency of *information processing* [e.g., NUMCD (Can't Decide), RkRt10 (rate–rank inconsistency), VARN2 (N2 variance), U (Utilizer)]; and (d) political attitudes and *cultural ideology* (see Rest *et al.,* 1999d). Although by far most research has focused on the developmental index, P, now all DIT studies can be analyzed for all these variables, making many kinds of research possible.[8] We have modified Kohlberg's original theory in several ways (e.g., emphasizing schema theory, changing the concept of development, reconceptualizing postconventionality, changing research strategy in several ways), yet the basic direction of our endeavor is the one originally set by Lawrence Kohlberg.

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[8]The Scoring Service of the Minnesota Center for the Study of Ethical Development calculates all these variables (now about 50 variables per questionnaire) for the DIT. Previous users of the Scoring Service can get their DIT data rescored for these additional variables free of charge. Call 612-624-0876 (24-hr phone) for the free Information Pack (20+ pages). An in-house booklet, *Exploring Moral Judgment* (Rest *et al.,* 1998) illustrates the procedures for using the scored data and provides a tutorial on floppy disk. An Annual Summer Institute at Minnesota (usually at the end of June) provides training sessions and consultation on individual projects.

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