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## Rethinking the Origin of Morality and Moral Development

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This article discusses moral development in light of recent advances in biofunctional cognition. We begin by discussing moral development from three contemporary approaches, namely, the cognitive-developmental, narrative, and educational perspectives. Clearly, these perspectives have changed substantially our understanding of moral development. However, they also share the limitation that they have each focused on some aspect of moral development in isolation. To try to unify what is already known without losing sight of the holistic essence of morality, one must address moral development through the lens of a perspective that can integrate cognitive, social, educational, and other aspects of morality. This paper argues that the biofunctional approach offers such a perspective. This means that we must let go of our focus on the abstract puzzle of the structural organization of moral knowledge and reasoning in favor of an emphasis toward the ultimate goal of understanding how the biofunctional system is also inherently a moral system. Through further understanding of the functioning of the biofunctional system, researchers and practitioners may be in a better position to ensure continued consideration of the complex and holistic nature of moral development.

Although morality has been a subject of discussion for centuries, as reflected in the works of early Greek and Jewish writers (see Frost, 1962), the psychological and educational study of moral development has only recently begun (Kavathatzopoulos, 1991). Interest in moral development can be readily seen in the amount of research that has been conducted in this century in fields as diverse as philosophy, psychology, and education (Killen and Hart,

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1995; Lickona, 1976; Rest, 1986; Rest, Narvaez, Bebeau, and Thoma, 1999). Much of the psychological research can be traced to the developmental works of Piaget (1932) and Kohlberg (1969, 1981, 1984). For example, developmental theorists have studied a number of phenomena including stages of development, causes of stage transition, and some of the relationships between moral thought and action (Blasi, 1984; Boss, 1994; Colby and Kohlberg, 1987; Miranda, 1994; Saltzstein, 1994; Thoma and Rest, 1999; Thoma, Rest, and Davison, 1991; Walker and Taylor, 1991a). Much effort has been directed at the study of qualitative differences in the *abstract structure* of moral thought and action, leading to improvements in our understanding of the structural organization of moral reasoning at one stage or another.

The narrative perspective has also been used to explore how verbal discourse changes the structure of people's moral reasoning (Buzzelli, 1997; Day, 1991; Kochanska, 1991; Rethorst, 1991; Tappan, 1991, 1997). Generally, narrative theorists have concerned themselves with how social moral codes, as well as other kinds of preexisting moral knowledge, are transmitted through verbal interaction from one generation to the next. The sociohistorical research of Vygotsky (e.g., 1978) has been particularly instrumental in stimulating this type of research.

Finally, educational researchers have also explored, by and large, the structure of environmental factors that impact internalization of moral knowledge. Naturally environmental influences that define the role of the educational system are a special set. As a result, many investigators have focused on the nature of their influence in imparting, if not imposing, the values of the society (Belanger, 1993; Chang, 1994; Hansen, 1993; Kochanska, 1991; Rest and Thoma, 1986; Walker, 1983).

Whereas the focus on the structure and internalization of social values has been illuminating, questions about other important aspects of moral functioning have been difficult to address. If we merely refine the structure of social values and mores, internalize them, and apply them as prescribed, then how do moral perspectives change? Does moral reasoning simply reflect a process of active internalization of external knowledge by means of constructive elaboration or adaptation? Can we learn tacitly without active focus and effort? If our moral knowledge is confined to the structural analysis of preexisting, culturally-transmitted knowledge, then how do we adapt so easily from one moral circumstance to another? To shift the focus to these hitherto unaddressed types of questions, this article argues that moral development, like other aspects of development, must be understood in the context of the functioning of the nervous system (Iran-Nejad, Hidi, and Wittrock, 1992; Iran-Nejad, Marsh, and Clements, 1992). Therefore, a biofunctional approach to moral development promises to cast a different light on the internal processes that underlie moral development.

*Cognitive-Developmental Theories*

The cognitive-developmental theories of Piaget (1932), Kohlberg (1969, 1981, 1984), and neo-Kohlbergians (Rest, 1979, 1986; Rest, Narvaez, Bebeau, and Thoma, 1999) have laid the groundwork for our understanding of how moral reasoning changes by explicating the series of stages that represent an individual's moral growth over time. To be sure, an individual's moral thinking at a given stage is supported by a foundation of knowledge more integrated than previous stages. However, every new stage means that the person is capable of a qualitatively different way of thinking that permits solving very different kinds of problems, taking diverse viewpoints on moral dilemmas, or manifesting a new appreciation of the relevant factors involved in moral situations (Day, 1991).

A fundamental assumption of cognitive-developmental theories is that individuals initially cooperate based on heteronomous morality, or a "morality of obedience" (DeVries, 1997, p. 5). Reasons for this level of morality, however, vary from one theorist to another based on the perspective taken. According to Lickona (1976), Piaget asserted that heteronomous morality is the result of cognitive immaturity and unilateral emotional respect for adults. Kohlberg (1969, 1976, 1981, 1984), on the other hand, offered that heteronomous morality stems not only from cognitive immaturity (as illustrated by Walker, 1980), but also from social factors such as fear of punishment and acceptance of others.

There are fundamental differences among cognitive-developmental perspectives. The manner in which researchers explain the presence of heteronomous thought varies, as do explanations for how development proceeds from heteronomous to autonomous thought. For Piaget, the evolution from heteronomous to autonomous moral thought follows two relatively independent lines: morality of constraint and moral realism. As such, Piaget indicated that the progression of thought can best be regarded in terms of "relatively distinct developmental dimensions, showing steady age increases under most circumstances, rather than as closely knit stages of moral thought" (Lickona, 1976, p. 229). Kohlberg described moral judgment development in terms of a series of three levels with six stages subsumed under them (two for each level), thus representing an in-depth progression of moral thought as various individual-cognitive and social-cognitive structures interact (Walker, 1980). Additionally, Kohlberg maintained that these levels and stages are consistent and sequential for all individuals as has been regularly illustrated in research (see Walker, 1983). Although the neo-Kohlbergians advocate Kohlberg's notion of an invariant-sequential progression toward autonomous postconventional thought as the result of a variety of factors, they offer significant amendments. First, neo-Kohlbergians maintain that moral thought at all

developmental levels is considered to be a product of a variety of moral orientations, components, and factors (Rest, Thoma, and Narvaez, 1999). Second, rather than viewing development in terms of a series of developmental "hard-stages," the neo-Kohlbergian movement suggests a progression of more flexible moral schemas. As such, they prefer to talk about "soft" developmental stages rather than the rigid structure imposed by the "hard" developmental stages endorsed by Kohlberg. This is highly reminiscent of the assumption in biofunctional cognition that knowledge structures are transient dynamic patterns rather than static long-term memory structures (Iran-Nejad, 1980, 1987). Finally, the neo-Kohlbergian researchers seek to further clarify and redefine the Kohlbergian conception of autonomous postconventional thought so as not to "presume a deontological, Kantian/Rawlsian, deductivistic moral philosophy" (Rest, Narvaez, Bebeau, and Thoma, 1999, p. 99).

Piaget, Kohlberg, and the neo-Kohlbergians have a great deal in common. Kohlberg's theory is an extension of, and remains firmly rooted in, Piaget's constructivist tradition (Colby and Kohlberg, 1987; Kavathatzopoulos, 1991; Kohlberg, 1969; Lickona, 1976). Similarly, the neo-Kohlbergian research has emerged within the cognitive-developmental paradigm, and remains deeply entrenched in Kohlbergian theory. Thus, although time and new understandings have introduced subtle but fundamental advancements, the developmental umbrella has grown and evolved as a special consideration. Therefore, it is important to look at both consistencies and advancements in addition to differences in research or contributions to the moral domain.

All cognitive-developmental approaches to moral development are Piagetian "in spirit." Consequently, the developmental progression of moral thought in Kohlberg and neo-Kohlbergians is the result of an equilibrium–disequilibrium–equilibrium cycle that Piaget acknowledged as he advanced his theory into the moral domain (Lickona, 1976; Piaget, 1932). For example, Kohlberg (Colby and Kohlberg, 1987) incorporated Piaget's equilibrium–disequilibrium–equilibrium cycle into his approach with his notion of A and B substages. In so doing, Kohlberg represents this internal shift by arguing that individuals move to a new structure first in a transitional mode (substage A) and then consolidate that structure in the next phase (substage B) as they operate on the external world and co-operate with those that comprise it. Walker and Taylor (1991a) further capitalize on disequilibrium as an essential factor underlying structural reorganization by incorporating the fundamental concepts of mixture and bias as illustrated in the consolidation/transition model of Snyder and Feldman (1984). From their findings, Walker and Taylor (1991a) propose that transitional periods that evince shifts toward high positive-and-total-mixture among positive-bias subjects are predictive of stage shifts within the Kohlbergian account of the development of moral reasoning.

Thoma and Rest (1999) further extend Snyder and Feldman's model (1984) within a moral development framework. They provide additional validation for the consolidation-transition stage shifts characterized previously in the research of Walker and Taylor (1991a) and Kohlberg (Colby and Kohlberg, 1987), maintaining that consolidation-transition periods affect the degree to which individuals refer to and rely upon moral stages. Additionally, Thoma and Rest (1999) contend that periods of consolidation positively affect the utility of moral stage information for the individual.

Within the contributions of Kohlberg (Colby and Kohlberg, 1987), Walker and Taylor (1991a), and Thoma and Rest (1999), the role of internal equilibrium and disequilibrium as moderators of growth of moral reasoning is certainly evident. Additionally, however, this progression of research provides a response to those such as Blasi (1980) and Kurtines and Greif (1974) who argue that moral action cannot solely be addressed through the consideration of moral thought alone. Certainly, this progression represents an effort on the part of developmental theory to reconsider the role of moral reasoning and thought in the domain of moral psychology (Rest, Thoma, and Narvaez, 1999).

Developmental perspectives have provided a wealth of information regarding qualitative changes in moral thought over time. However, the processes by which qualitative change occurs remain poorly understood. For example, movement from equilibrium to disequilibrium and back to equilibrium generally requires active attention and resolution on the part of the learner. As an individual is exposed to situations that create disequilibrium, the discomfort that is felt leads to an active search for ways of eliminating the discomfort. To illustrate, children functioning at the punishment/reward level of moral reasoning may find themselves isolated from peers if their thoughts and actions continue to revolve around notions of "what's in it for me?" as they move to the level of social desirability. That isolation would likely create discomfort within a person, thereby leading to an active search in order to become accepted. This may then result in the development of more "other-focused" thinking. As noted above, although an active attempt to adapt does appear to play a significant role in moral development, it fails to address the possibility that learning may occur through more tacit means. For instance, it is unlikely that the children just described are going to spend a great deal of time actively analyzing every aspect of the behavior of others, or their own thoughts and actions. According to Piaget's (1932) scheme, accommodation of mental structures without an individual's active analysis and search cannot occur. Therefore, the following questions emerge: Is it possible for learning to take place without necessarily requiring actively directed focal attention (Iran-Nejad and Chisson, 1992)? If this is not the case, then how is it possible to explain some of the seemingly tacit effects of modeling? Furthermore, how would we explain that people come

up with insights, oftentimes, without the benefit of reflective thought (e.g., waking up from a dream and having an insight) [Iran-Nejad, 1990; Iran-Nejad and Chissom, 1992]? In our example, it seems plausible to assume that children may not learn to adapt their thought and behavior to fit the social environment in the seclusion of active accommodation. Their thinking may also change spontaneously through a qualitatively different type of constructive activity — one that is more directly brain-based and tacit in nature than solely possible in the active realm of mind (Iran-Nejad, 1990; Iran-Nejad, Marsh, and Clements, 1992).

### *The Narrative Approach*

Several researchers who challenge the cognitive-developmental perspective use a narrative approach to answer the question of the social origin of moral development (Buzzelli, 1997; Day, 1991; Kochanska, 1991; Rethorst, 1991; Tappan, 1991, 1997). Kochanska (1991) conducted a study on the effects of socialization and temperament on moral development and self-regulation of toddlers, assessing moral development with narratives containing dilemmas and moral discomfort. He found that toddlers exhibiting compliance in temperament and socialization are more likely to have an early emerging self-regulation and a strong moral orientation. It is noteworthy that one cannot rule out other equally compelling explanations of the findings. The nature of the role that narrative plays in such studies needs to be clarified. Moreover, particularly significant here are other questions that Kochanska did not address: What is the nature of the processes that underlie how socialization and temperament exert their influences? Are these processes confined to the work of external antecedents of a social conscience shaped under the control of other regulations? Or, are they mediated by the early manifestations of a developing, internal conscience governed by the laws of internal self-regulation? It seems that the findings can hardly discriminate between social and alternative explanations.

Tappan (1991, 1997) claims that the narrative represents the inner dialogue: the setting of an external social dialog is internalized and installed within the individual. Once inside, the inner dialogue becomes the primary social scheme that gives meaning to moral decisions and actions. Tappan has further stated that “because moral action is necessarily mediated action, genuine moral functioning/activity cannot occur until a child has access to the words-as-tools that she can use to interpret her actions, and the actions of others as ‘good’ or ‘bad,’ right or wrong . . . . Thus, moral development and language go hand-in-hand” (1997, p. 17). The term *social dialog* limits the process that mediates socialization to mere verbal interaction. According to Rethorst (1991), narrative provides a basis for moral judgment that dismisses

the analytical basis of formal principles. He elaborated that "morality requires the completeness of characterization of action in narrative to be coherent and a meaningful guide to action" (p. 333). Buzzelli (1997) has offered a framework designed to illustrate how the narrative approach — or the theory of socialization by means of verbal interaction — can be used to analyze moral development through the evaluation of language patterns (i.e., speech registers and genres) in interactional contexts.

The principal distinction between the cognitive and narrative approaches lies on the degree of stress placed on the role of language. Day (1991) described the contrast between the narrative and cognitive approaches. Based on self-told stories (daily journal narratives) of subjects involved in a course of study, Day concluded that people react within the context of the moral dilemmas they face, both shaping and being shaped by the words of the language of their social environment, rather than by tuning abstract moral standards from less to more accurate representations of external reality. It is "with the words of others that students can come to trust the power and authority of their own voices and, as a result, to assume moral responsibility for their thoughts, feelings, and actions in the world" (Tappan, 1991, p. 253). Consider the following excerpt from Lauren's story, a subject reported in Day (1991):

I felt good about my participation in this course until the midpoint, when other people pointed out what I was doing with Loretta (the African American student) and international students (especially the Third World students) in our group. I was coping with the issues of differences, I thought, in a perfectly reasonable way, but then was confronted with evidence to the contrary. The fact of the difference between what I had thought I was doing, and what people said I was doing, and the discrepancy between the two, in moral terms, meant that I had to do a whole reworking of myself as a person. I think the thing that will remain with me forever from this course will be the look in Loretta's eyes, during that exchange in the group. (p. 311)

Clearly, the social environment and language play a crucial role in moral development. In this quotation, sentences such as ". . . people pointed out to me what I was doing with Lorreta . . ." and ". . . what people said I was doing" clearly illustrate the influence that others around her were having. However, does this quotation offer more support for the narrative approach over the cognitive-developmental approach? Is it the internalized combination of words of the language and the external social environment that shaped, or rather, reshaped Lauren's moral thinking? According to the narrative approach, experiences such as the one described by Lauren exist only in the material of signs such that outside the material of signs there can be no experience. The self-told stories of the subjects in the studies of the narrative approach hardly justify such a conclusion. On the other hand, Piaget's equilibrium-disequilibrium-equilibrium cycle of adaptation seems to describe

equally well the processes suggested by Lauren's statements about the discrepancy between "what I had thought I was doing" and "what people said I was doing?" Consider the way Lauren described the situation: "I was coping with the issues of differences, I thought, in a perfectly reasonable way [equilibrium in belief], but then was confronted with evidence to the contrary [disequilibrium] . . . and the discrepancy between the two, in moral terms, meant that I had to do a whole reworking of myself as a person [to reach new equilibrium]." This quotation appears to be more explanatory of Piaget's equilibrium-disequilibrium-equilibrium hypothesis than internalization of external signs. Besides, much more than verbal interaction is at work here. For example, what is likely to stay with Lauren forever is, not language signs, but the look in Loretta's eyes — a clear illustration of the dictum that a picture is worth a thousand words.

Much of what children experience in schools is narrative. For the majority of learners exposed to external knowledge packaged in language symbols, even internalization of simple facts, let alone character-shaping moral issues, is an insurmountable challenge. For the minority few, who recognize the necessity of pushing beyond internalization of book symbols, symbol grounding presents itself as a monumental ordeal (Harnad, 1990). This problem comes into play when symbol processing becomes the means and ends of the educational process (Iran-Nejad and Ortony, 1984; Neisser, 1976). Harnad (1990) used what he called "the Chinese/Chinese dictionary-go-round" to illustrate the severity of the symbol grounding problem. He stated, for someone who knows little or no Chinese, "the trip through the dictionary would amount to a merry-go-round, passing endlessly from one meaningless symbol or symbol-string (the definiens) to another (the definiendum), never coming to a halt on what anything meant" (p. 339). Educating learners by requiring them to internalize symbolic knowledge for symbolic grades by means of constructive elaboration on external symbols amounts to forcing them to suffer through a Chinese/Chinese dictionary-go-round (see Iran-Nejad, 2000, this issue).

The narrative approach to moral development draws heavily on the theory of Vygotsky (1978), in that morality is seen to be external in origin, packaged in language symbols, and internalized through transmission from the social arena to the learner by the vehicle of language. The underlying assumptions are that (a) language and discourse are exclusively social in nature and (b) they are the principle shapers of moral conscience. On the other hand, many investigators assume that there is an important nonsocial side to narrative and language. For example, narrative can be analyzed in terms of settings and events (e.g., Rumelhart, 1975). Similarly, language is not the only tool for shaping thought, moral or otherwise. In fact, psychological evidence points to enactive, iconic, and spatial codes in addition to symbolic and verbal codes (Bruner, 1966; Paivio, 1986). Nor can the multiple



aspects of narrative itself be all understood within the realm of a social perspective. For example, Kochanska found a positive correlation between self-regulation and conscience, a finding that might be explained from either perspective that the origin of morality is internal or external. Lamb (1993) described research with toddlers in which a burst of morally related behaviors occurs at 17–18 months, independently of language acquisition, pointing to what she calls a maturational view of moral development.

### *Moral Development in Schools*

The relationship of schooling and moral development has been a source of controversy for many years. Educators have sought to answer the dilemma in terms of the relationship between a child's school and a child's behavior, and possible solutions have ranged from a complete moral curriculum to its complete avoidance. As early as 1896, the Minister of Education in Ontario, Canada, issued an interesting statement (see Lanning, 1992) claiming that "the forces which lie at the foundation of the best and strongest character are moral and religious. Whether these forces are growing stronger and more effective in the formation of better manhood and womanhood should be known to the teachers and inspectors of the province" (p. 5). The minister initiated a provincial survey to assess the moral nature of the educational system, and so began the debate about the role of the school in moral reasoning.

It has regularly been postulated that teaching style has a great effect on the morality of the students (Hansen, 1993). Piaget and Kohlberg, for example, both saw the teacher as an advocate of mature moral reasoning in a learning community of equals (Chang, 1994; Harding and Snyder, 1991; Power, Higgins, and Kohlberg, 1989). In general, the teacher's role in moral education seems to be more as a model and advocate rather than a formal instructor (Pascarella and Terenzini, 1991; Power, Higgins, and Kohlberg, 1989; Rest and Narvaez, 1994). This fits nicely not only with the constructivist movement in education but also with the concept of reflective practice (Schön, 1987).

Research has also been done on the social aspects of moral development in schools. Belanger (1993) has offered a multidimensional perspective of teaching values. He concludes that the primary origin of morality is social in nature and that moral growth must be externally motivated. Santilli and Hudson (1992) came to the same conclusion in studying the role of communication in the developmental process. Bear and Rys (1994) studied relations between moral reasoning and classroom behavior in second and third grade classrooms, and found both a social and a cognitive side to moral action. They concluded that, although environment and learning are correlated, they are not necessarily one and the same, suggesting that internal moral

growth occurs in the context of an external learning environment that helps to shape that development. Deemer (1986) and Pascarella and Terenzini (1991) addressed the issue similarly in considering the impact of higher education on the development of college students' moral reasoning. These authors asserted that the social experiences offered by institutions of higher learning are not enough by themselves to stimulate moral growth. Therefore, those who advance most in moral judgment are those who are most prepared to do so.

In a similar dissection on the effects of educational process, DeVries, Reese-Learned, and Morgan (1991) compared direct instruction, constructivist, and eclectic kindergarten classrooms in terms of children's understanding of interpersonal relations, including peer sharing and negotiations. They used Selman's levels of Negotiation Strategies (NS) and Shared Experiences (SE) to code children's enacted interpersonal understandings (Selman and Byrne, 1974). The children in the constructivist classroom scored significantly higher than those in the other two, demonstrating significantly higher levels of moral reasoning. In their discussion, DeVries et al. provided the following description of the general atmosphere within the constructivist class:

The data suggest the experience of children . . . was largely one of reciprocity with the teacher. Children experienced their teacher as one who offered choices, and stimulated interest, experimentation and reasoning rather than recitation . . . . [The teacher] encouraged peer interaction and solutions to interpersonal problems. (p. 477)

Hemming (1991) theorized that moral growth is an outcome of a biological process, citing that ". . . all education is education of the brain. Moral education is no exception" (p. 136). He also admits that moral growth best occurs in the context of a benign social community. Speicher (1994) found evidence that, although parental moral judgement relates directly to offspring moral judgement, greater educational achievement by children allows them to mature significantly beyond the moral levels of their parents. Moral education in essence is evolutionary in nature, but best occurs in a productive, educational, learning environment.

Although narrative as a source of moral development was discussed earlier, it needs to be mentioned again as a possible environmental source that enhances moral development. Rethorst (1991) noted that myth, a special kind of narrative, has been the primary means of passing morals from generation to generation because the genre communicates unexamined messages from a culture's unconscious. Rethorst suggests that moral education has no basis in direct instruction, but is inherently grounded in culture, story, and art, which should be part of the learning environment. Others have hypothesized that film and video may also play a similar role in moral education (Harding and Snyder, 1991).

*Separating Developmental Phenomena and Particular Developmental Theories*

The history of research on moral development has been a tacit battleground between theories focusing on individual and social factors. The controversy is often due to the difficulty of separating the phenomena (e.g., social and cognitive factors) that must be explained from the theories (e.g., sociohistorical and cognitive accounts of moral development) that provide the explanations. Developmental phenomena require explanations. Developmental theories provide the explanations. Comparing one sociohistorical theory of moral development with another sociohistorical theory of moral development is an example of genuine controversy, because contrasting explanations for the same phenomena are likely to lead to progress. Comparing the sociohistorical theory of moral development with a cognitive theory of moral development is likely to misplace, often unnoticeably, the locus of controversy from the realm of comparable theoretical explanations (e.g., sociohistorical versus cognitive theories) to the realm of incomparable phenomena (e.g., social versus cognitive phenomena), neither of which must be excluded as important aspects of moral development. This latter kind of controversy, although much more common, is much less likely to lead to progress.

It is useful for theories to be controversial in that they must be the target of critical scrutiny for the kind of explanation they provide. However, there should be nothing controversial about phenomena that require explanation (e.g., that moral development has an important social aspect). The distinction between theories that provide explanation and phenomena requiring explanation (in any theory and not necessarily in any one theory) is as critical as it is subtle. Without this distinction, researchers holding that both social and individual factors contribute to moral development may easily find themselves in one or the other theoretical camp, depending on the research they are conducting at a given time. Or, they may find themselves in an eclectic compromise involving both camps and ignoring the fundamental incompatibilities that exist between the particular theoretical perspectives (i.e., ignoring the mutually incompatible tenets of Piaget's and Vygotsky's theories). For instance, in Piaget's theory, children learn a great deal in the realm of nonverbal (or nonsymbolic) thought before they can make systematic use of the symbolic code. This is because (a) nonsymbolic enactive, iconic, and spatial codes must be already in place to give meaning to verbal (or symbolic) codes and (b) nonverbal thought is available to the child earlier and more directly (Iran-Nejad and Choron, 1996). This means that the verbal code must find meaning in the nonverbal codes that are directly meaningful to the individual. Vygotsky's theory, on the other hand, suggests the opposite. It is the symbolic code that is the immediate, direct, and often

the only source of meaning. The opposition between the social and individual theories, however, does not mean that symbolic and nonsymbolic codes are mutually exclusive in their contribution to development. What is needed is a more elaborate perspective than existing individual and social theories can offer to spell out the nature of the contribution of the symbolic and nonsymbolic factors as well as their relation to individual and social phenomena.

Understanding what role language plays in development, in general, and moral development, in particular, is likely to require understanding the social as well as the psychological nature of language. For instance, what is it that makes the narrative generally more interesting to individuals than other genres? Clearly, the research reviewed in this paper points to an important role in moral development for the narrative as well as other forms of language. It is possible that the difference between genres has to do with the degree to which they also incorporate the nonsymbolic codes or other intra-individual — as opposed to inter-individual — factors (Iran-Nejad, 2000, this issue; and Choron, 1996).

Another reason to strive beyond existing individual and social theories is that these theories often shed insufficient light on the observed dichotomy between thought and action (Blasi, 1980; Kurtines and Greif, 1974). In fact, by viewing abstract standards as the ultimate in moral development, both social and individual theories tend to widen the thought-action gap and delay our understanding of the true nature of moral development.

### *The Thought–Action Dichotomy*

For both Piaget and Kohlberg, abstract thought is the ultimate form of thinking: moral thought and action are the byproduct of abstract structures representing standards, rules, principles, or laws. However, the abstract moral standards particular individuals hold do not always translate in behavior, creating the ubiquitous dichotomy between moral thought and moral action. Therefore, factors other than abstract thought structures must be at work behind moral behavior.

Of course, the nature of the thought–action dichotomy has long been the subject of debate. Miranda (1994) describes the dichotomy in terms of the inability of moral abstracts to “capture” particular moral dilemmas. Miranda sees abstract moral standards as objective (impersonal) tools, socially maintained, and internalized. As such, they are stable ideals of perfection, at best, and rigid tools of control, at worst. Because they are everyone’s standards, they can be no one’s (uniquely) personal principles. Therefore, abstract standards cannot be a necessary and/or sufficient condition for solving particular moral problems, which are, by definition, personal and individual. Actions, on the other hand, are personal and individual at least insofar as they are

mediated by the individual's willful decision to act. The decision, in turn, is based on an active interpretation of what the existing social standards prescribe to be the right thing to do as one faces an actual situation (Winch, 1972). An important component of this prescription is the (impersonal) position the individual agent is directed to take. As a result, what is left out of the formula of the social theory of morality is the host of individual factors that must be ignored or actively suppressed in moral decision making, in the interest of (theoretical) objectivity.

This analysis of the objective-subjective dimension can explain the observed dichotomy between thought and action. To resolve this dichotomy, Miranda (1994) points to Nisan's (1990) principle of moral balance, in which the two different sets of subjective (or personal) and objective (or social) rules are weighed together to reach a balance from which individual moral decisions and, consequently, actual moral actions emerge. One's moral balance, or one's moral identity, would be "a mixture of some accepted abstract moral standard and some subjective non-moral interests" (Miranda, 1994, p. 110). This supposition is supported by Langford (1991). The emphasis here must be placed on the term *mixture*, as opposed to integration or reorganization because the latter would amount to an individual construction. Another implication of social theory is that personal factors other than those comprising subjective rules of interpretation and decision are to be ignored or must even be actively suppressed.

Saltzstein (1994) elaborates on the thought-action dichotomy in terms of the perspective taken as one of the several factors contributing to the dichotomy. Abstract moral thought is analogous to the hypothetical perspective of an observer judging someone else's moral action as the moral action of oneself. The difference between the two is vast indeed. Observed moral action is the tip of the giant iceberg of situational and personal constraints; the hypothetical perspective is void of both situational and individual factors.

Kohlberg (1981) also considers role-taking to be fundamental to moral development. Role-taking is seen as a means of enabling the individual taking the role of someone else to adopt that person's perspective. The idea is that role-taking is a significant step in the direction of reducing the thought-action gap through becoming aware of the other person's thoughts and feelings in a less subjective manner. Thus, role-taking is that which gives experience its reciprocal social meaning, as compared to mere interaction. This idea was subjected to research in a study that looked at perspective differences in moral judgement and moral action (Krebs, Vermeulen, Denton, and Carpendale, 1994). Forty subjects were asked to solve moral dilemmas from both first and third-person perspectives. No differences were found in the quality of judgements, or reasoning behind the judgements, when comparing the two perspectives. One explanation for the null results is that sub-

jects in both conditions took similar (actor or observer) perspectives. An alternative explanation is that role-taking does indeed give the individual a different perspective, even in very similar situations; but the second person perspective that role-taking provided may have been as powerless as the first-person perspective in mobilizing the relevant underlying forces behind situated behavior. After all, a reciprocal social interaction in thought is nonetheless an interaction in thought. It would not be expected to go a long way in eliminating the thought–action gap.

Is the social-or-individual origin of morality a good place to search for a better understanding of the nature of the thought–action dichotomy? It may be that the thought–action dichotomy and the social-or-individual comparison are orthogonal. Both Piaget and Kohlberg maintain that the most advanced form of moral thought is formal moral thought. If the goal of moral research is to make formal thought as the privileged goal for understanding the relationship between moral thought and action, as seems to have been in both types of stage theories, then the fertile areas of personal relevance and context are highly likely to be overlooked (Saltzstein, 1994). Given the crucial role of personal relevance and context in moral decision making, the drive toward abstract moral standards is actually contrary to what really takes place in human development. The assumption of internalized external morality robs the learner of the personal origins of moral decision-making, undermining the fact that moral behaviors are performed by real individuals.

### *A Biofunctional Perspective on Moral Development*

By this time, the reader may be inclined to ask: How does dichotomizing social and psychological influences benefit the construction of a practical theory of moral development? Indeed, the either–or arguments concerning where the genesis of moral thought and behavior lies appear to limit our understanding of how individuals operate as functional wholes, thus relegating the issue of moral development to the centuries-old dichotomy of mind from inside versus experience from outside (Reynolds, Sinatra, and Jetton, 1996). Furthermore, this distinction between mind and experience calls into question how, and whether or not, bridging the gap between moral thought and behavior is possible at all. If cognition operates on a fundamentally different (abstract) level from behavior (concrete), then how is thought translated into action? As with any attempt to explain psychological phenomena, there are no easy answers to these questions. Even so, we may be able to develop a more comprehensive understanding of moral development if we consider how individuals develop from the perspective of how the nervous system and other subsystems of the body function in the environment. Thus, to the extent that the motor subsystem is disabled, the remaining subsystems

must learn to regulate their contributions to make up for the disability (Iran-Nejad and Homaifar, 2000, this issue). What this means is that no normally functioning subsystem of the body must be taken for granted in explaining the process of development. The idea is that the brain and other subsystems contribute to behavior much more than the narrow realms of (conscious) mind and the immediate environments can possibly represent. For it is the brain (and the body), and not the capacity for formal mental analysis, that has evolved in the environment to support the behavior that has ensured survival — it is the brain's solutions that are directly evolution-tested (Iran-Nejad, Marsh, and Clements, 1992).

How can development be explained in terms of brain functioning? To put it succinctly, within the biofunctional model, human behavior is, like learning, a multisource phenomenon, and it is the ongoing activity of the physical nervous system that regulates the simultaneous influences of these multiple sources (see Iran-Nejad, McKeachie, and Berliner, 1990). Thus, the functioning of the brain allows multiple sources of behavior to become integrated in such a way as to incorporate both internal and external factors in the course of (moral) development. We must note, however, that this perspective — as discussed here — is not designed to uncover innate maturational processes or to discuss, at any great length, issues related to brain structure. For some, this may appear to be a limitation. However, the intention is not to ignore brain structure or maturation but to guard against overelaboration in these and other domain-specific aspects of development. It is domain-specificity, when coupled with overelaboration or overabstraction (see Iran-Nejad, 2000, this issue) that continues to relegate psychological theory and research to the historical division between the mind and the experience. Our alternative is to view (moral) development as a “total process,” incorporating the entirety of brain and mental functioning, which is why biology has received as much attention as it has in the exploration of biofunctional theory (for a thorough review, see Iran-Nejad, Clore, and Vondruska, 1984; Iran-Nejad and Homaifar, 2000, this issue; Iran-Nejad and Ortony, 1984).

In the remaining limited space of this article, we explore two “big ideas” associated with the biofunctional model in order to draw tentative conclusions regarding the underlying processes — rather than the mental structures — of (moral) development: (a) the nervous system functions to integrate multiple sources of contribution in an ongoing basis; and (b) two internal sources of self-regulation underlie the process of integration. Further, we will briefly discuss the division between thought and behavior, as noted above, and how it may be reconciled within the biofunctional approach.

To begin, we believe that the phenomena investigated by Piaget and Kohlberg provide, if suitably integrated, a solid foundation for further exploration of (moral) development from the perspective of biofunctional cogni-

tion (Iran-Nejad, 1995). We also maintain that appropriate integration of developmental phenomena requires that (a) we let go of the Piagetian, as well as Kohlbergian, epistemological assumption of the long-term and privileged status of abstract knowledge structures and (b) assume that knowledge is transient intuitive self-awareness that evolves through soft developmental stages (Iran-Nejad, 1980, 1987; Iran-Nejad and Ortony, 1984). Moreover, we assume that neither is learning direct internalization and application of abstract social standards nor is education conduit transmission (Reddy, 1979) of such standards from teachers to learners; rather, learning is wholetheme reorganization of the learner's own intuitive knowledge base and education is facilitation of such reorganization (Iran-Nejad, 1990, 1994).

According to the biofunctional model, learning is more likely the result of internal changes within the learner often in the absence of any direct external input. To be sure, external sources of learning are no less critical than internal sources. However, the hub of learning, where the contributions of multiple sources come together, is the brain-mind cycle of reflection inside the learner (Iran-Nejad, 2000, this issue). Thus, the learner reorganizes his/her thinking by integrating it under the influence of multiple contributing sources (internal and external). As mentioned above (in Day's, 1991, example of Lauren), if direct internalizations of external knowledge were to be the only kind of process underlying development, then we would have very little room to develop our moral thinking beyond external standards. One's moral standards would remain quite static and would be interpreted in the same way by everyone. Disavowing the internalization hypothesis does not mean that social influences have no place in moral development. Even for Piaget (1932) cognition serves as an adaptive mechanism so that people may function within their respective environments. Accordingly, in the biofunctional approach, the social environment in which people find themselves makes its contributions in concert with multiple other sources.

The capacity to regulate a wide range of internal and external sources demonstrates the brain's remarkable ability to support cross-domain behavioral flexibility. In terms of external sources, these could be social and environmental factors influencing the functioning of the system either tacitly and/or explicitly. For example, a parent might try to change a child's naughty behavior by communicating explicitly in the form of a verbal reprimand and/or tacitly in the form of a dissatisfied look. In either sense, the child is likely to understand the parent's unhappiness with the behavior. How the child ends up responding, however, is unlikely to be determined by the immediate external sources. In addition, other social or environmental cues may demonstrate what is acceptable or not acceptable to the child. The main point, here, is that many external and internal sources come into play when individuals are faced with moral dilemmas or when they must evaluate their



behavior. These sources may create disequilibrium within the individual or present incompatibility with intuitively entrenched levels of understanding. This may result in effortful attempts to resolve the discrepancy (i.e., a teenager may choose to go with what "feels" right or with the peer "flow" with regard to moral behavior, rather than simply doing what the parent expects or wants). Furthermore, external information may have an implicit effect on the learner, and the consequences of this may not become evident until much later, if ever. In this sense, however, the individual may not be aware of all those additional factors contributing to moral decisions.

Knowledge from within originates in the individual's own intuitive knowledge base (Iran-Nejad, Marsh, Ellis, Rountree, Casareno, Gregg, Schlichter, Larkin, and Colvert, 1995). According to Iran-Nejad, Marsh, and Clements (1992), ongoing brain activity serves as the internal ground from which ideas arise as figures. It is this ground from which transient schemata emerge. This means that the figures of moral thought and behavior emerge, not from static cognitive structures, but from the dynamic, or ever-changing, activity of the brain itself. The ground, therefore, continually changes as figures are "recycled" back into it. This is somewhat similar to Piaget's notion of accommodation whereby changes occur within the long-term architecture of the mind to support new levels of functioning. There is, however, a fundamental difference. In biofunctional cognition, rather than postulating changes in structure, changes in the intuitive knowledge base occur as a result of qualitative reorganizations in brain functioning. As a result, a new level of functioning emerges, and provides qualitatively different ways of thinking in the course of moral development.

The sources of learning described above could not become integrated without two different types of self-regulation acting within individuals: active and dynamic (Iran-Nejad, 1990). According to Iran-Nejad (1990), dynamic self-regulation is the product of the brain's own natural constructive processes. In other words, in order to work, the nervous system does not require active and selective attention. From an evolutionary perspective, this type of self-regulation has been incredibly functional because it serves to capture and integrate sources of learning and behavior in a much more comprehensive fashion than active, or effortful, processing. Indeed, if we did not have this form of self-regulation, we might not run when we "felt" a presence behind us at night walking down the street; we would not be able to "intuit" (or tacitly understand) someone else's needs or intentions (such as in a parent-child relationship) when explicit words are not used; and so forth. Interestingly, this type of self-regulation is generally not addressed in cognitive psychology. The nearest cousin is that of implicit processing (Schacter, 1990), whereby perception of information has been demonstrated to not necessarily require active, or selective, attention. Schacter's form of processing,

however, is quite different in that it postulates information processing modules stored inside the brain in the form of some kind of mental architecture without addressing how the brain creates those modules through integration of the contribution of multiple sources. Active self-regulation, on the other hand, corresponds to the information processing notion of the central executive. Essentially, this source of self-regulation is mindful and effortful in nature. Furthermore, since this form of regulation represents the effort behind selective attention, it necessarily fails to encompass the wide range of relevant sources that dynamic self-regulation orchestrates.

In terms of moral development, both active and dynamic self-regulation operate to pull many contributing sources together, thus facilitating reorganization of the intuitive knowledge base. For example, dynamic self-regulation may serve to bring together various types of implicit cues (such as those found in social settings for social norms and expectancies for behavior, internal affective and physiological states, intuitions, etc.) when an individual is faced with a moral dilemma. Active self-regulation, on the other hand, involves the intentional focus on specific aspects of situations and thoughts during the presentation of moral dilemmas. This focus, therefore, might be on social reprimands for behavior, effortful attempts at maintaining social expectations, strategic attempts to manipulate a situation, and so forth. Interestingly, active self-regulation appears to be easily engaged when decontextualized moral dilemmas are given (e.g., as when an interviewer gives a child a dilemma). In this case, the child may actively give the "right" answer in order to achieve some type of payoff, praise, or reward.

Finally, we briefly discuss the gap that exists between moral thought and action as addressed earlier in this article. As mentioned, both Kohlberg and Piaget viewed abstract thought as the pinnacle of moral development. As such, over the course of development individuals create progressively more abstract mental structures incorporating a host of rules, standards, and principles that are designed to guide moral action. However, even when present, such so-called high level rules do not necessarily determine behavior (Blasi, 1980; Kurtines and Greif, 1974). This means that the gulf between thought and action may be explained as resulting from incongruous structural positioning of different kinds of mental architecture — essentially, structures governing thought and action fall within two different kinds (or levels) of a hierarchically-fixed cognitive architecture (Miranda, 1994; Nisan, 1990; Saltzstein, 1994).

Despite the plausibility of the structural interpretation, we feel that there is another possible interpretation that may explain the discrepancy between moral thought and action — one that does not rely on explications of rules and rule structures. After all, how can we assume that a biological system functions according to a specific set of rules? Furthermore, if such rules did

exist, how would we ever know what an individual's rules for moral thought and action were — especially if we wanted to change them? To provide an example, let us say that a child in a classroom has begun acting out through fighting and stealing. Based on the perspective of Piaget and Kohlberg, the teacher might try to determine what types of abstract (moral) rules are operative and seek to change them through simple, oftentimes decontextualized interviews, or counseling-type sessions. In these circumstances, the child may be quite adept at providing “on-the-spot” answers that would lead the teacher to “discover” the child's rule set. From this, the teacher might actually persuade the child to change his “rule” structure in order to encourage more appropriate behavior. Unfortunately, the teacher in the example would be missing out on the fact that cognition and action are influenced by multiple sources in conjunction with the sources of self-regulation described above. This means that despite the child's agreement to change, true integration of knowledge may never occur, resulting in residual discrepancy between thought and action. The child's thinking may never become integrated in the absence of multiple prerequisite sources (reactions from others than the teacher, self-reflection on consequences of behavior, reflective thought about behavioral impacts on others, affective considerations, and so on).

Despite the brief overview of biofunctional cognition provided here, we believe that this perspective comes closest to integrating many of the competing perspectives described above while also incorporating the more dynamic aspects of learning. Indeed, this perspective takes the brain as the ultimate problem-solver through its integrative powers. Moral development, therefore, occurs through the brain's dynamic capacity to reorganize itself spontaneously in light of internal (some of which are suggested by Piaget and Kohlberg) and external informational sources (as maintained by Tappan). This means that in terms of moral education attempting to have students simply learn “rules” for behavior or procedures for appropriate action is tantamount to giving a dehydrated person salt water. Rather than allowing students to develop free-flowing insights into the nature of their own moral thought and behavior, procedures and rules become crystallized, thus preventing true construction and integration of moral knowledge.

The focus on intuitive knowledge as the source of intuitively entrenched forces behind behavior finds some support in the literature. For example, Boss (1994) noted that intuitions are the basis for moral reasoning. If the sources of moral conscience are internal, as both Piaget and Kohlberg suppose, it would seem that internal intuitions would have to be relied upon more heavily than abstract principles. Intuition must be the foundation of a theory of morality. Intuition, then, may be equated to the ground from which the figures of action rise. Such figures of action are grounded in that they are reliable and true within the context of one's intuitions. One of the major failings of the

present educational system is that intuitions are rarely explored and often ignored and are even suppressed (Iran-Nejad, 1994). A proper understanding of an internal, dynamic morality must include an assumption that the intuitions of the learner provide the basis for moral growth.

### Discussion and Conclusions

Biofunctional cognition offers a more firmly integrated approach from that of more mainstream approaches to moral development. Indeed, it implies that theory, research, and practice must involve an integration of perspectives that may dramatically change the face of moral education. First, a morally rich learning environment must be conducive to self-exploration of moral dilemmas. If the origin of morality is intuitive, then our role as facilitators of learning is to allow learners to individually explore and reorganize their conceptions of morality and conscience. It is through such explorations that the social meaning and relevance of moral judgment and action must be discovered. We suggest that rather than providing a formal moral curriculum, the learning environment should be an avenue for learners to reorganize their moral thought (Walker and Taylor, 1991b). One possible way of providing such a facilitative environment is to allow students to generate their own solutions (with guidance) to moral problems — both contrived and real. Secondly, providing the opportunity for students to engage in perspective-taking activities may facilitate fundamental reorganizations of their thinking. Finally, drawing from our understanding of the benefits of social narratives, it may be that students could learn through exposure to literature and songs that encourage perspective-taking and reflective judgment. Indeed, these types of educative tools may serve not only as models, but additional ground for learner reorganization of the intuitively entrenched forces behind individual thought and behavior.

Future theory and research in biofunctional cognition may seek to answer the following questions: What kinds of developmental changes in moral dispositions follow the aforementioned approaches to moral education? What types of educational interventions have the greatest impact on encouraging changes in moral dispositions? How can we facilitate more reflective judgment among individuals who are limited by their biology, prior experience, or present attitudes? How might addressing moral development in terms of active and dynamic self-regulation affect our current conceptions of qualitative changes in development over time? To what extent are evolutionary biology and biofunctional cognition consistent in how they view moral development?

To conclude, we believe that the biofunctional view of moral development provides a mechanism for integrating both internal and external sources that

contribute to an individual's moral knowledge and development. We hope that the consideration of the biofunctional perspective in this domain may serve as an effective means of unifying disparate, and oftentimes competing, perspectives within moral theory and research. In addition, we hope that future inquiry into moral development begins to address the relevance of biological factors.

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