

that it explains the remarkable linear dose-response association apparent in this figure.

The second cluster of criticisms by Ernhart boils down to the complaint that Needleman et al. (1979) used the wrong statistics. Independent univariate statistical tests were used instead of the multivariate procedures preferred by Ernhart. This is a common practice in nonspecialist journals with wide readership and in no way detracts from the central conclusions of the study. Needleman et al. reported a total of 29 independent analyses of covariance on outcome measures. On 28 of these analyses, the performance of the elevated lead group was inferior, and on one test the two groups were equal. Two-tailed statistical significance at $p \leq .05$ was obtained on 14 of the 29 variables, a number far in excess of the one or two variables that would be spuriously significant by chance. A statistical purist can always argue for alternative analyses, but this is an irrelevant diversion when the differences between groups are pervasive and significant.

Ernhart cites Ernhart, Landa, and Schell (1981) in support of the conclusion that "if there are intellectual and behavioral effects of low-level lead exposure, they are minimal." Yet, their study reports semipartial correlations between lead level and the McCarthy Scales approaching .3. Ernhart et al.'s interpretations of their own data have been challenged (Landrigan, 1982; Needleman, Bellinger, & Leviton, 1981; Spector & Brown, 1982).

Lead is a neurotoxin. It kills brain cells. It can have devastating effects on children's brains when sustained exposure exceeds the minuscule amount of 60-80 millionths of a gram per tenth liter of blood. The implication that sustained low-level lead exposure in the 30-40 millionths of a gram range will have no significant effect on brain and behavior is not only *prima facie* absurd, it is also contradicted by a growing body of research (Needleman et al., 1979; Rutter, 1980; Yule, Lansdown, Millar, & Urbanowicz, 1981; Winneke et al., Note 1).

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Reference Note

1. Winneke, G. et al. *Neuropsychological comparison of children with different tooth-lead levels: Preliminary report*. Paper presented at the International Conference on Heavy Metals in the Environment, Amsterdam, September 1981.

References

- Ernhart, C., Landa, B., & Schell, N. Subclinical levels of lead and developmental deficit—A multivariate follow-up reassessment. *Pediatrics*, 1981, 67, 911-919.
- Landrigan, P. Lead study results questioned. *Pediatrics*, 1982, 69, 248.
- Needleman, H., Bellinger, D., & Leviton, A. Does lead at low dose affect intelligence in children? A reply to Ernhart et al. *Pediatrics*, 1981, 68, 894-896.
- Needleman, H. et al. Deficits in psychologic and classroom performance of children with elevated dentine lead levels. *New England Journal of Medicine*, 1979, 300, 689-695.
- Rutter, M. Raised lead levels and impaired cognitive/behavioral functioning: A review of the evidence. *Developmental Medicine and Child Neurology*, Supplement No. 42, 1980, 22, 1-26.
- Spector, S., & Brown, K. Lead study questioned. *Pediatrics*, 1982, 69, 134-135.
- Yule, W., Lansdown, R., Millar, I., & Urbanowicz, M. The relationship between blood lead concentrations, intelligence and attainment in a school population: A pilot study. *Developmental Medicine and Child Neurology*, 1981, 23, 567-576.

Moral development does not mean liberalism as destiny: A reply to Rick Shweder

Rick Shweder's recent review of my book, *Essays on Moral Development* (CP, 1982, 27, 421-424), consists of two parts, an exposition of the argument of the book and a critical reply to the argument. As an anthropologist, Shweder wishes to uphold cultural, historical, and ethical relativism and relies on Alasdair MacIntyre's historically relativistic critique of modern moral philosophy to do so. My major purpose in writing this reply is not to deal with this complex issue but to point out that (a) Shweder's statement of the theory expounded in the book is an inaccurate caricature of its thesis, (b) his claims that I contradict myself in various parts of the book are usually incorrect, and (c) the statement that I have no data base for my basic stage claim is inaccurate. Shweder uses the paraphernalia of scholarship—reference to specific pages in his exposition—but the reader who actually refers to the pages cited will usually not find what Shweder claims I say. Shweder's title, "Liberalism as Destiny," as the supposed theme of the book is stated in the opening of his review. He says,

Kohlberg believes that reason is on the side of those who oppose capital punishment, hierarchy, tribalism, and divine authority (pp. 21, 30, 176, 289). Moved by the spirit of devel-

opmentalism (pp. 87, 134, 136, 137), he holds out secular humanism, egalitarianism, and the Bill of Rights as rational ideals or objective end points for the evolution of moral ideas (pp. 164, 165, 215). For Kohlberg, the history of the world (p. 227) and the history of childhood (in all societies) (p. 25) is the story of the progressive discovery of the principles of the American Revolution (pp. 8, 38, 154, 237). Hegel's Prussian state has been replaced by Western liberal democracy. Liberalism has become destiny (pp. 227, 253). (p. 421)

If one turns to page 227, one finds instead a statement that liberalism as an ideology that has dominated the West is in trouble and, to be viable, requires some reconstruction or further development. My book, however, is not about the history of ideologies but about the ontogenesis of forms of reasoning about justice in various cultures based on longitudinal studies done in Turkey (Nisan & Kohlberg, 1982), Israel (Snarey, 1982), and the United States (Colby, Kohlberg et al., in press). In these longitudinal studies we find universal stages defined by forms of reasoning. As Chapter 7 elaborates, sometimes the form of Stage 5 or 6 moral reasoning is associated with the content of a moral or political view like "liberal" opposition to capital punishment. Although moral-political liberal ideological content is sometimes found to be associated with a stage or form of moral reasoning, the book presents a theory about the ontogenetic growth of form of moral reasoning, not a theory about the growth of societies toward an ideology of liberalism. In the sections listed by Shweder, I do point out a generational advance in our longitudinal sample, now adults, compared with their parents in usage of principled or Stage 5 reasoning. I note that in constitutional democracies like the United States there is a trend toward a growing extension of rights to disenfranchised persons and groups if one takes the 200-year perspective. Finally, I note that in 1906 Hobhouse's *Morals in Evolution* reported studies using cross-cultural and historical data and found a correlation between technological and sociopolitical complexity and "stages" of juridical practices, laws, and moral customs from society to society, describing his "stages" in ways that are greatly similar to my own. The burden of my point in the section beginning on page 227 is that increased sociopolitical complexity poses new problems for members of a society, giving an impetus to growth of a new stage to cope with these problems. But

of the order it defines. Like the "Enlightenment project" itself, a psychology of moral development based on it should be an open and growing enterprise. It thrives on disagreement, including some of Shweder's disagreements, but it does require a fair exposition of what it tries to say.

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References

- Colby, A., Kohlberg, L. et al. A longitudinal study of moral judgment. *Monographs of the Society for Research in Child Development*, in press.
- Frankena, W. K. *Ethics* (2nd ed.). Englewood Cliffs, N.J.: Prentice-Hall, 1973.
- Habermas, J. Hermeneutic inquiry in moral theory. In N. Haan, R. Bellah, P. Rabinow, & W. Sullivan (Eds.), *Social science as moral inquiry*. New York: Columbia University Press, in press.
- MacIntyre, A. *After virtue*. Notre Dame, Ind.: University of Notre Dame Press, 1981.
- Nisan, M., & Kohlberg, L. Universality and variation in moral judgment: A longitudinal and cross-cultural study in Turkey. *Child Development*, 1982, 53, 865-876.
- Rawls, J. *A theory of justice*. Cambridge, Mass.: Harvard University Press, 1971.
- Snarey, J. *The moral and social development of kibbutz founders and sabras*. Unpublished doctoral dissertation, Harvard University, 1982.

Giving up on destiny? A reply to Kohlberg

Below I reiterate two of the points in my review and offer two other brief observations on Kohlberg's reply to that review.

1. Clearly, something is destiny for Kohlberg. In *The Philosophy of Moral Development* he argues that "the progression toward higher stages is a 'natural' one, for societies as well as individuals" (p. 253). He suggests that "there are long-range sociocultural trends of evolution towards Stage 5 and 6 principles" (p. 227), and (despite his invocation and use of Socrates in the reply to my review) he holds that "it is easier to develop to Stage 6 in modern America than in fifth-century Athens or first-century Jerusalem" (p. 129). Kohlberg believes in destiny.

2. Kohlberg believes that what he calls "principled" or "postconventional" thinking (Stages 5 and 6) are rational forms or abstract structures of thought and that the "natural" evolution of moral thinking is in the direction of what is

most rational. He does not believe that the ideas, concepts, and principles associated with his Stages 5 and 6 are substantive faiths or nonrational assumptions. Kohlberg believes that to be a rational moral thinker is to be a "liberal" (do read page 227). But, for Kohlberg, "liberalism" is not an ideology; it is the realization or expression of reason in the moral and political domain.

One point of my review is to suggest that form and substance, structure and content, reason and faith, are not clearly distinguished in Kohlberg's work and that Stages 5 and 6 are a heterogeneous amalgam of formal-rational ideas and substantive nonrational creeds. I argued that the *formal-rational* components of Stage 5 and 6 thinking (the abstract idea of justice and the idea of natural law or impersonal obligations standing above social consensus or positive law) are available even to young children and easily elicited using proper methods [see the chapter by Shweder, Turiel, and Much in J. H. Flavell and L. Ross's, *Social Cognitive Development* (Cambridge University Press, 1981)]. I argued that the *substantive* components of Stage 5 and 6 thinking (e.g., the idea that society emerges out of a social contract; the idea that, regardless of their differences, all human beings are entitled to equal rights) are nonrational ideas definitive of a particular Western faith, not a dictate of reason; and that nothing in logic or experience requires someone to accept, for example, the idea that individuals have natural rights prior to or outside of society or to reject a religious conception that life is sacred. Very few people in the non-Western world have joined Kohlberg's "church." There is no evidence that suggests otherwise.

The structure/content issue is a tough one for Kohlberg, and he wavers a great deal. In his reply he states that it is only "sometimes [that] the form of Stage 5 or 6 reasoning is associated with the content of a moral or political view like "liberal" opposition to capital punishment," whereas in his book he claims that "the inadequacy of Stage 4 resides in the fact that at this stage a single mode of moral reasoning can generate contradictory conclusions about the morality of specific actions and institutions" (p. 274) and that the higher stages are more adequate because of "the greater likelihood that individuals at that stage will agree not only in the structure of their reasoning but in the content of their judgments as well"

(p. 272). (For a critique of Piaget's structural stage concept see Shweder's "On Savages and Other Children," *American Anthropologist*, 1982, 84, 354-366.)

3. I believe it is a nonsequitur to assert that "As an anthropologist, Shweder wishes to uphold cultural, historical, and ethical relativism." It is a minor point, but not all anthropologists are relativists, and I, for one, am a pluralist, not a relativist. My goal is to discover what is universal, what is relative, and what develops in moral codes. In some ways things are alike. In some ways they are different. Sometimes those differences are matters of progress or advance. Often they are not.

4. Finally, what Kohlberg refers to as the "paraphernalia of scholarship" is my use of page references to document for readers my account of Kohlberg's claims. I leave it to the reader to decide whether most, or any, of my account is inaccurate. I think I was fair. I continue to find Kohlberg's work provocative and stimulating.

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