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TWO VISIONS OF THE RELATIONSHIP BETWEEN INDIVIDUAL AND SOCIETY: "THE BELL CURVE" VERSUS SOCIAL STRUCTURE AND PERSONALITY

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INTRODUCTION

In October, 1994, the American Enterprise Institute, with great fanfare and not a little expense held a well-orchestrated conference of social scientists and journalists whom they deemed sympathetic to their decidedly conservative political philosophy, to herald the publication of a new book by Richard Herrnstein and Charles Murray, The Bell Curve (Herrnstein and Murray 1994). All the conferees had been given advance copies of the book, while others--including book-review editors--found it difficult to obtain a copy until after the first wave of largely favorable reviews had been widely disseminated in the mass media (Clawson 1995). In due time--which is to say, a year or two later--the book was reviewed in many scholarly journals, almost all of these reviews critical of the book's poor scholarship and shoddy methodology. Although it is doubtful that most of the public ever learned of the negative evaluation of the book by social scientists, with the passage of time interest in the book died down.

One could dismiss the book and the hoopla attending its publication as a historical oddity, a political phenomenon of only passing interest. And, yet, I think it would be foolhardy to do so. The immediate furor over the scientific merits and political purposes of The Bell Curve may have died down, but the thesis embodied in that book has not died and will not do so in the

foreseeable future. On the contrary, it is a thesis that has come to prominent attention every quarter-century or so, and undoubtedly will come to prominent attention again. Every time it does come to public attention, many people (journalists and Congressmen included) think its arguments plausible. The point of view that The Bell Curve represents is an important perspective in political discourse in this society, and The Bell Curve appears to offer scientific buttressing to this point of view.

My principal objective in this essay is to juxtapose the perspective enunciated by Herrnstein and Murray to alternative perspectives provided by sociology. Although several reviews of The Bell Curve take issue with the evidence that Herrnstein and Murray put forth to buttress their vision (see, in particular, Fischer et al. 1996; Goldberger and Manski 1995; Hauser 1995; Heckman 1995; Kohn 1996; and Taylor 1995), and some (in particular, Fischer et al. 1996; Hauser 1995; and Kohn 1996) take them to task for ignoring the evidence derived from perspectives other than their own, there has been little discussion of whether social science has provided alternative visions of the relationship of individual and society. I argue that social science has, indeed, provided alternative visions of this relationship, and that we even have a specialized field of sociology, the field of social structure and personality, devoted to explicating and testing one of these visions. It is not that social science has had nothing to say, but that Herrnstein and Murray have chosen to ignore what we have said.

THE PERSPECTIVE ON INDIVIDUAL AND SOCIETY EMBODIED IN "THE BELL CURVE"

The Bell Curve embodies a vision of a "meritocratic," albeit increasingly stratified, society in which a largely genetically determined "intelligence" is coming more and more to determine the attainment of occupational and social position. More than that, it argues that low intelligence accounts for many of the society's most distressing social problems. In making these arguments, The Bell Curve reinterprets all manner of complex social phenomena--stratification and mobility; race, class, and ethnicity; social problems; the family; you name it--in a consistently reductionist way. In fact, it is doubly reductionist, for it not only sees all these social phenomena

as psychologically determined, it sees the central psychological variable--intellectual functioning--as biologically determined. In my appraisal of the book (Kohn 1996), I appraised the underlying assumptions that underlie Herrnstein and Murray's perspective, severely criticizing their methodological and conceptual failings. In particular, I criticized them for assuming that factor analyses depict the structure of reality, rather than the structure of a set of items that one uses to index a concept, which leads to their naive conclusion that "intelligence" is a "thing" rather than a concept. I also criticized them for treating tests of intellectual performance as if they somehow measured innate ability; and for attempting to assess the proportion of variance in intellectual functioning that can be attributed to heredity, rather than recognizing that genetics plays its role as a determinant of intellectual functioning in interaction with the environment. And I took them to task for what I consider to be the most fundamental, and fundamentally flawed, assumption of all, that intellectual functioning is not responsive to social conditions. Perhaps paradoxically, I not only do not dispute the fact on which this assumption rests--namely, that measures of intellectual functioning are remarkably stable over time--I even claim that my own research provides more powerful evidence in support of that fact than anything they offer. My dispute with Herrnstein and Murray is over the interpretation of that fact, a difference of interpretation that gets to the heart of everything they do.

To Herrnstein and Murray, stability of intellectual functioning necessarily means that intellectual functioning is not responsive to social conditions, certainly not after early childhood. On that basis, Herrnstein and Murray, in all their analyses, treat intellectual functioning (which they erroneously call cognitive ability) as an independent variable in their analyses--the key explanatory variable for all sorts of social and social-psychological phenomena, never itself to be explained by any other social or psychological phenomena. To me, the stability of intellectual functioning is a profoundly important fact, but one whose implications cannot be simply assumed but must be investigated. I defer further consideration of the evidence until I present the perspective offered by my own specialized field of sociology, social structure and personality.

Intelligence and Class Structure.

The Herrnstein-Murray approach to the relationship between individual and society is perhaps best exemplified in the book's subtitle, "Intelligence and Class Structure in American Life." Take note, though, that the book does not deal with class structure, but with educational and occupational attainment. The distinction is essential. Herrnstein and Murray make no attempt to explain social structure, only to explain who ends up where in the social structure. Explanation is entirely at the level of individuals. I would have no objection to this--indeed, I will do the very same thing later in this essay--if only Herrnstein and Murray tailored their interpretations to the level of their analyses.

I can convey the flavor of their view of "class structure" by quoting some of what they say. In the second paragraph of Part I (on p. 25): "Social class remains the vehicle of social life, but intelligence now pulls the train." Not all sociologists would agree with the first part of that sentence, but I certainly would defend that proposition; the second part, though--that intelligence now pulls the train--is astonishing. My sense of astonishment grows as I read, 66 pages later, "The irony is that as America equalizes the circumstances of people's lives, the remaining differences in intelligence are increasingly determined by differences in people's genes." What can this possibly mean? How can anyone talk of America equalizing the circumstances of people's lives when every serious study shows ever-increasing disparities between the rich and the poor?

The most coherent statement of their position is given, not in the book itself, but in a syllogism with which Herrnstein (1971) began a much earlier article in The Atlantic Monthly. The syllogism is printed in bold type at the very beginning of his article:

- "1. If differences in mental abilities are inherited, and**
 - "2. if success requires those abilities, and**
 - "3. if earnings and prestige depend on success,**
 - "4. then social standing will be based to some extent on inherited differences**
- among people."**

Hedged as it is with "if" statements, and further protected by the innocent-sounding term, "to some extent," the syllogism--aside from the misleading term, ability--is incontrovertible. The real question is, to what extent is social standing the result of inherited differences in intelligence? Herrnstein and Murray would have us believe that inherited differences in intellectual performance are of very great importance for "social standing." They reach this conclusion by transforming the "if" statements into probability statements, and then vastly overestimating all of the probabilities. But, such a four-step process represents the product of four probabilities. All four probabilities have to be very strong if the net result of the entire process is to be of more than trivial magnitude. If even a single one of these probabilities is low, or if two or three of them are only moderate, then the four-step process results in very little effect at all. It's not that the syllogism is wrong, but that the probabilities are much lower than Herrnstein and Murray would admit--except in their Appendices. The whole process doesn't amount to very much. There are other determinants of socio-economic achievement that are far more important than I.Q.

Herrnstein and Murray are so fixated on the importance of I.Q. for attained class position that they ignore virtually everything else that is known about social class in the contemporary United States. Their view does not admit of racial discrimination, of unemployment, of jobs migrating to the Third World, of tax reductions for the rich and the dismantling of our never very advanced welfare state. Theirs is a far rosier view of a society that has nearly achieved equal opportunity for all, a meritocracy of ability, as they term it--as if there were something meritorious in having inherited a high I.Q.. In such a society, economic success is determined by intellectual ability--not even by motivation, hard work, "personality" in the common meaning of that term, but solely by cognitive ability, which in their view is largely inherited.

And what evidence do they offer to support this view of the world? They offer table after table, graph after graph--and virtually none of it is directly pertinent to the issues. They offer anecdotal evidence, for example, about admissions to Harvard University. They offer all sorts of evidence about correlations between I.Q. and social class, which proves nothing. In all their

discussion of educational and occupational attainment, they never face up to the reality that there are structural constraints on such attainment. And, of course, they never entertain the possibility that I.Q. may not always be the independent variable in their implicit causal models, that people's I.Q.'s may be positively or negatively affected by their educational and occupational experiences. It's all very logical, given their assumptions and the blinders that they wear.

Social Problems.

Another major part of The Bell Curve (Part II) discusses the relationship between I.Q. and several social phenomena, most of them social problems--poverty; dropping out of school; unemployment, idleness and injury; family and parent-child-relations; welfare dependency; crime; and a lack of what they call civility and citizenship. As in their treatment of class structure, the focus of analysis is never the extent or the causes of the social phenomenon; they are not concerned, for example, about why the United States has as much poverty or crime as we do, but only about who is poor or is convicted of a serious crime. Their theme is that people of low I.Q. account for the lion's share of the problems. In evidence thereof, they attempt to show that I.Q. dwarfs socio-economic status as a determinant of who manifests each of the problematic behaviors.

As Herrnstein and Murray explain, their procedure for the study of the role of I.Q. in the production of social problems is to use the National Longitudinal Survey of the Labor Market Experience of Youth (the NLSY) as their source of data, and to use the Armed Forces Qualification test (the AFQT), which is included in the NLSY, as their measure of I.Q. I have no quarrel with either choice (but see Fischer et al. 1996, who question their use of the AFQT as a measure of IQ). I am astonished, though, at their decision to limit their analyses to non-Latino whites, arguing (p. 125) that doing so enables them to make "yet another central point: Cognitive ability affects social behavior without regard to race or ethnicity." They apparently do not realize that all that they have accomplished has been to make it impossible to generalize any of their findings to Latinos or blacks, as they most certainly do in their policy recommendations.

The crux of the analysis is to use multiple-regression analysis, with one or another type of problematic behavior as the dependent variable, I.Q. as one of the independent variables, and other possibly confounding variables--notably and centrally, socio-economic status--as other independent variables in the equation. The question is always whether I.Q. continues to have a statistically significant effect on the particular dependent variable when socio-economic status (and a very few other variables) are in this way statistically controlled. They only mention in passing, as if it were the only possible thing to do, that the socio-economic status they measure is parental socio-economic status, not achieved socio-economic status--which is, of course, entirely consonant with their assumption that the social environment could affect individual psychological functioning, if at all, only during early childhood.

Since Herrnstein and Murray seem to know nothing of the research literature on social structure and personality, it never occurs to them to consider any more complex causal models--to consider, for example, the possibilities that I.Q. might not only affect, but also be affected by, social conditions; that the behaviors in question might be affected by other aspects of personality--motivation, for example; or, for that matter, that I.Q. might itself be affected by other aspects of personality; or, finally but to my mind crucially, that the parental socio-economic status of late adolescents and adults might not be as pertinent for their analyses as people's own achieved status. Given their premises, their methodology makes sense. Once one questions their premises, it becomes clear that their mode of analysis loads the dice in favor of their hypothesis. The surprising thing about their analyses is not that their hypotheses are confirmed, but that they are so weakly confirmed. This is evident in table after table, but especially in their long Appendices, to which they relegate many of their most important findings.

I should add that their analyses are based on unspeakably crude indices of all the social variables they consider--apparently, only I.Q. is important enough to be worth measuring well.

Race and Ethnicity.

Although much of the public discussion of The Bell Curve has focused on its treatment of race, the book is really about class, not race. As I have already noted, the central empirical analyses are limited to non-Hispanic whites; and the pervasive implication that there might be genetic limitations to the intelligence of non-whites is said by innuendo and is carefully hedged. There are only two chapters in this massive book that deal directly with race. One (Chapter 13) equivocates at length about whether "ethnic" differences (here treated as meaning black-white, Latino-white, Jewish-Gentile, and Oriental-Occidental differences) might be genetic in origin. The other (Chapter 14) is a rather pathetic discussion of whether "ethnic differences" (now defined as black-white-Latino differences) in educational and occupational attainment, marriage rates, unemployment, being on welfare, and all sorts of other things might be due to differences in I.Q.. And that's about all. Still, race pervades the book, and especially its policy pronouncements. The book talks about class, but implies race.

SOCIOLOGICAL ALTERNATIVES

And what does sociology have to offer as an alternative to Herrnstein and Murray's simplistic conception of the relationship between individual and society? The accumulated knowledge of at least three specialized fields of sociology stands in juxtaposition, even opposition, to Herrnstein and Murray's thesis.

One pivotal body of knowledge is the corpus of research on social problems, which belies Herrnstein and Murray's narrow formulation of what needs to be considered in any realistic appraisal of the social factors conducive to poverty, crime, welfare dependency, or any of the other social problems that are discussed in The Bell Curve. Parental socio-economic status, even if it were well measured, is so small a part of what needs to be taken into account as to be a ludicrous over-simplification of the part played by the social environment in the production of social problems.

Second, and even more telling--think again of the subtitle of the book, Intelligence and Class Structure in American Life--there is an immense research literature on social stratification

and mobility that stands in opposition to the Herrnstein-Murray thesis of an increasingly meritocratic society in which "intelligence" is the key to occupational attainment. Several of the reviews of The Bell Curve (in particular, Fischer et al. 1996; Goldberger and Manski 1995; Hauser 1995; Heckman 1995; Korenman and Winship 1995; and Taylor 1995) discuss this research literature, some of them noting that a few key studies (notably Jencks et al. 1972, 1979) have included measures of intellectual functioning in their assessments of social mobility and found it to be much less important than Herrnstein and Murray would have us believe. The main thrust of the reviews by sociologists and economists is that Herrnstein and Murray seriously underestimated the effects of parental socio-economic status by sloppy measurement and failure to take unreliability of measurement into account. They even more seriously underestimated the broader effects of the social environment by not looking at many other pertinent factors, even those available in the data-set with which they worked--deliberately not examining education (on the dubious rationale that educational attainment is largely a consequence of I.Q.) and not even considering such obvious candidates for inclusion in their analyses as gender. All this would have been known to anyone familiar with the research literature on stratification and mobility.

Two major reassessments--those by Korenman and Winship (1995) and by Fischer and his colleagues at Berkeley (1996, Chapter 4 and Appendix 2)--not only criticize what Herrnstein and Murray have done, but reanalyze the very data that Herrnstein and Murray used. Their analyses are much more sophisticated methodologically than are Herrnstein and Murray's, particularly in taking account of unreliability of the measurement of socio-economic status and in correcting Herrnstein and Murray's failure to make use of even the limited range of social variables included in the data-set with which they worked. Both re-analyses confirm that Herrnstein and Murray have seriously underestimated the importance of parental socio-economic status, and have drastically underestimated the importance of social factors generally, in their conclusion that intelligence is more important than socio-environmental factors in accounting for socio-economic achievement and the types of failure studied by Herrnstein and Murray. Moreover, as both Korenman and Winship, and Fischer and his colleagues, acknowledge, even

their reassessments treat I.Q. (as measured at ages 15-23) as if it had not been affected by social experience, even by educational experience. Assuming uni-directionality of effect exaggerates the magnitude of that effect. Herrnstein and Murray do not acknowledge this issue to be problematic, for they cannot conceive of reciprocal effects; but the issue is very real indeed.

The foregoing domains of sociological research contest the Herrnstein and Murray thesis, but they do not confront Herrnstein and Murray with a systematic alternative conceptualization of the relationship between individual and society. The third pertinent body of sociological research, that offered by the field of social structure and personality, attempts to do precisely that. In presenting this perspective, I take the liberty of using my own work as illustrative, supplementing the discussion of my own work with references to other pertinent research.

THE PERSPECTIVE OFFERED BY THE FIELD OF SOCIAL STRUCTURE AND PERSONALITY

Social Structure.

Our basic premise is that any serious effort to deal with social structure must try to conceptualize social structure and its several dimensions rigorously, must try to index these dimensions precisely, and must make every effort to differentiate between the social-structural conditions people experienced as children and those they experience as adults. We attempt, with varying degrees of success, not to reify social structure or any of its components. Just as intelligence is a concept and not a "thing," so too is social structure. But concepts are to be taken seriously, for they are our way of depicting reality.

The definition of "social structure" that I employ comes from that font of sociological wisdom, Robin Williams's (1951, pp. 20-21) American Society: "Human beings in society do exhibit complexes of action, thought, and emotion (1) shared by many individuals, (2) repeated in many successive situations, and (3) definitely related to other patterns in the same social

aggregate. This is essentially all that is here meant by 'structure': an appreciable degree of regularity and relationship. There is thus nothing obscure or mystical about the concept, and the question of how definite and enduring the structure is in any particular case is left open for empirical study."

My primary interest is the structure of the society as a whole, particularly the fundamental lines of organization and cleavage characteristic of that society. Like Herrnstein and Murray, I shall focus my discussion on class and stratification. Where I part company with Herrnstein and Murray is with their sloppy conceptualization of what they call class structure, their primitive indices, and their facile assumption that only the class position of one's parental family matters for personality and behavior in later years.

I would differentiate between social class and social stratification. Even Robin Williams did not make such a distinction when he published American Society in 1951, nor did I for many years thereafter. But, as we have learned from the sociologists of Eastern Europe when those countries were socialist (for example, Wesolowski 1979), and from the keen analytic work of Erik Wright (1978), it is conceptually useful to make such a distinction. Social classes are groups defined in terms of their relationship to ownership and control over the means of production, and of their control over the labor power of others. Social classes are distinct groups ("nominal" categories), not a continuum, nor even a set of categories that can be ranked as higher or lower along some single underlying dimension. Social stratification, by contrast, is conceived as a single continuum, an ordinal ranking of stratification positions. Admittedly, the empirical overlap between class and stratification is considerable, yet there is analytic utility in making the distinction. When Herrnstein and Murray talk about "class" structure, they really mean social stratification.

Indices of class structure and class position must be based on some conceptualization of relationships to ownership and control of the means of production and control over the labor power of others. My own preferred conceptualization is a variant of Erik Wright's original (1978) schema, in which--for American society at the present time--I distinguish six social classes,

differentiated on the basis of ownership, supervisory position, and, among nonsupervisory employees, the distinction between manual and nonmanual work (Kohn and Schoenbach 1983). Our research has shown that class position, thus indexed, is significantly and meaningfully related to intellectual flexibility, to values for oneself and one's children, and to one's orientations to self and society (Kohn and Schoenbach 1983). Using indices tailored to the particular times and circumstances of other countries, we have also shown significant and meaningful relationships of social class with intellectual flexibility, values, and orientations for Japan (Kohn et al. 1990), a non-Western capitalist society, and for Poland when it was socialist (Kohn et al. 1990; Kohn and Slomczynski 1990).

Whether or not social stratification is as fundamental a dimension of social structure as is social class, it is even more powerful than class in its effects on individual personality and behavior. Just how powerful we find its effects to be depends, in part, on how well we measure social stratification. Herrnstein and Murray simply average mother's education, father's education, family income, and the occupational status of that member of the household who has the highest such status. This is surely one of the least thoughtful procedures one could use and one that is almost designed to underestimate the full effects of social stratification. Certainly, so important a concept deserves more sophisticated treatment.

The fundamental premise of the concept, social stratification, well expressed by Robin Williams in American Society in 1951 (pp. 78-90), is that we should think of social stratification as a single hierarchical ranking of individuals. Alternatively, one can think of social stratification as a single hierarchical ranking of families (Kohn and Slomczynski 1990, Chap. 7). Following Williams, we ordinarily think of such a ranking in terms of power, privilege, and prestige. Lacking direct indices of power, privilege, and prestige, we use occupational status, educational attainment, and income as our indicators of social stratification. The crucial point is not the particular indicators, important though they be, but Williams's insight that, whatever indicators we use, we are attempting to index a single dimension. Nowadays, we can do this with ease, using

factor analysis, or--better yet--confirmatory factor analysis, which attempts to infer the underlying dimension from the covariance of the indicators.

Using such an index of social stratification, we consistently find that stratification, like class but even more powerfully than class, has profound effects on intellectual functioning, values, and orientations to self and society (Kohn and Schoenbach 1983; Kohn et al. 1990; Kohn and Slomczynski 1990). I would add that one's achieved stratification position is much more pertinent than the stratification position of the family in which one was raised (Kohn 1969). The latter is important, as a huge corpus of work in status attainment demonstrates, mainly because socio-economic origins greatly affect socio-economic attainment (see Blau and Duncan 1967 and innumerable subsequent studies in many countries).

The Processes by which Social Structure Affects Personality and Behavior.

Herrnstein and Murray think of social-structural position mainly as something to be statistically controlled, so that they can demonstrate that intelligence still has a potent effect on individual behavior. Those of us who are engaged in research on social structure and personality think of social structure, not as something to be statistically controlled, but as something whose effects on personality are to be explicated.

The central interpretive task in understanding the relationships between social structure and personality is to systematically link two levels of analytic discourse--the large-scale social and the individual. Our way of drawing these linkages is to ask how position in the larger social structure affects the immediately impinging conditions of people's lives, and how people's conditions of life affect, and are affected by, their values, their orientations, and their thinking processes (Kohn 1963, 1969, 1989; House 1981). In my collaborators' and my analyses of the psychological effects of class and stratification, the immediately impinging conditions of life that prove to be most important are mainly job conditions, particularly those job conditions that facilitate, or limit, the exercise of self-direction in one's work--namely, the substantive complexity of that work, how closely it is supervised, and how routinized it is. To have a more advantaged

class position or a higher stratification position means having much more opportunity to be self-directed in one's work, which in turn has major consequences for intellectual flexibility, values, and orientations to self and society.

Reciprocity of Effects.

My formulation assumes something that Herrnstein and Murray deny at every juncture: that social conditions can affect intellectual functioning. I not only claim that my assumption is more tenable than theirs, but also that the empirical evidence supports mine and refutes theirs. The most directly pertinent evidence comes from Carmi Schooler's and my analysis of the reciprocal effects of the substantive complexity of men's work and their intellectual functioning (Kohn and Schooler 1978; 1983, Chapter 5).

The analysis is based on interviews with a representative sample of U.S. men employed in civilian occupations in 1964, a representative subsample of whom were re-interviewed ten years later. The 687 men who were interviewed both times provide the data for the analysis.

We defined the substantive complexity of work as the degree to which the work, in its very substance, requires thought and independent judgement. As indicators of substantive complexity of work we used our evaluations of the complexity of the work the respondent does in dealing with things, with data or ideas, and with people (based on his description of the work he performs in each of these three realms); our evaluation of the highest level of complexity at which he ordinarily works, regardless of the realm in which he does this work; and the amount of time he spends working in each of the three realms--seven indicators in all.

In measuring intellectual flexibility, we deliberately did not employ I.Q. tests, for the simple reason that in studies of adults, we saw no reason to use measures that are especially attuned to scholastic performance. Instead, we inferred intellectual flexibility from the respondents' actual intellectual performance in the course of a long and demanding interview. We sampled a variety of indicators--including the men's answers to seemingly simple but highly revealing cognitive problems, their handling of projective tests designed to assess their competence at seeing the relationships between the whole and its constituent parts, their

propensity to "agree" when asked agree-disagree questions, and the assessment of their "intelligence" made by the interviewer following a long session that required a great deal of thought and reflection. None of these indicators is assumed to be completely valid; but we do assume that all the indicators reflect, in some substantial degree, people's flexibility in attempting to cope with the intellectual demands of a complex situation. We tested this assumption with confirmatory factor analysis, relying on the fundamental premise of such analyses--that the underlying factor is inferred from the covariance of the indicators. It does not matter that one or another, or even several, of the indicators may be "biased," so long as the indicators do not all share the same bias.

Admittedly, our measure is based on only a few indicators, a mere seven. But the confirmatory factor analysis shows the measurement model to fit the covariance of the indicators very well indeed. Moreover, we have compelling evidence that intellectual flexibility, as we measure it, is far from epiphenomenal: The correlation between men's intellectual flexibility at the time of the baseline interview and ten years later is an astonishing 0.93. This accords very well with Herrnstein and Murray's assertion that measures of intellectual functioning are stable. But, where they would undoubtedly jump to the inference that a 0.93 overtime correlation means that intellectual flexibility is almost entirely the product of genetics and perhaps also of very early life experience, linear structural-equations modeling shows the relationship between the substantive complexity of work and intellectual flexibility to be decisively reciprocal: The substantive complexity of work is not only affected by intellectual flexibility but also affects intellectual flexibility. In fact, the effect of the substantive complexity of work on intellectual flexibility is fully one-fourth as great as the stability of this exceptionally stable facet of personality. Social conditions explain not only the small amount of change, but also a substantial portion of the stability, that we find in people's levels of intellectual flexibility. Intellectual flexibility is highly responsive to social conditions well into adulthood.

Broadening the analysis, we examined the relationships, not only of the substantive complexity of work and intellectual flexibility, but of the set of job conditions that are conducive

to or limit the exercise of self-direction in work, and not only with intellectual flexibility, but also with other fundamental dimensions of personality as well. Our longitudinal analyses of employed U.S. men consistently show that the job conditions determinative of occupational self-direction affect, and in many instances are also affected by, intellectual flexibility, values, and orientations to self and society (Kohn and Schooler 1983, Chapter 6). Moreover, simulated longitudinal analysis of cross-sectional data show consistent patterns of reciprocal effects for employed U.S. women (J. Miller et al. 1979; Kohn and Schooler 1983, Chapter 9), for Polish men and women (Kohn and Slomczynski 1990), and for Japanese men (Naoi and Schooler 1985; Kohn et al. 1990). These analyses do not always show an effect of personality on occupational self-direction, but--contrary to Herrnstein's and Murray's underlying premise--they invariably show an effect of job conditions on personality.

Herrnstein and Murray treat "intelligence" or "cognitive ability" as the independent variable in nearly all their analyses, always allowing I.Q. to affect other variables, rarely if ever allowing I.Q. to be affected by any other variable. But, if there is one general conclusion that I would draw from the study of social structure and personality, it is that the relationships between social structure and personality are quintessentially reciprocal. It neither makes sense to treat social structure as having uni-directional effects on personality (as some sociologists still do) nor to treat intellectual functioning or any other dimensions of personality as having unidirectional effects on people's positions in the social structure--as Herrnstein and Murray consistently do.

Cognitive Functioning as One--Not the Only--Facet of Personality.

Herrnstein and Murray are so enthralled with "intelligence" as to be oblivious to other facets of personality. From the perspective of research on social structure and personality, intellectual functioning must be viewed, not as uniquely important, but as one facet, not the whole, of personality. Although this may seem self-evident, its implications are not self-evident.

One implication is that we should never look at intellectual functioning--or any other major facet of personality--in isolation, failing to notice that social-structural conditions have

decidedly similar relationships with cognitive functioning as they do with many other facets of psychological functioning as well. To be valid, interpretations of what is known about any one of these psychological phenomena must apply as well to all the other psychological phenomena.

If, to take my favorite example, substantively complex work increases intellectual flexibility, and also increases one's valuation of self-direction for oneself and one's children, and is also conducive to holding an orientation that sees the world as meaningful and predictable, then any valid explanation of these phenomena must be general. It is not sufficient to explain the relationship between work complexity and intellectual flexibility, or between work complexity and parental valuation of self-direction, as if either of these were the only phenomenon to be explained. Moreover, and even more important, a full explanation of these relationships cannot just take the substantive complexity of work as a given. Complexity of work is itself a function of one's location in the class and stratification systems of the society.

A second implication of the recognition that intellectual functioning must be seen, not as standing alone, but as a component part of personality, is that it leads us to question whether intelligence has quite the "driving" role that Herrnstein and Murray ascribe to it. I sympathize with their holding this view, for in a paper I published many years ago, I hypothesized (Kohn 1980, p. 205): "It is ... entirely possible that the process by which substantive complexity [of work] affects values and orientations may be mediated, at least in part, through intellectual flexibility. Increased intellectual flexibility may increase one's valuation of self-direction and one's tolerance of different beliefs; decreased intellectual flexibility may result in greater valuation of conformity to external authority and increased authoritarian conservatism." It's a lovely hypothesis, one in which I still take a rather perverse sort of pride. Its only fault is that it fails the crucial empirical test.

This empirical test, which uses the data of Schooler's and my longitudinal study of U.S. men, is a linear structural-equations model in which we attempted to assess the reciprocal effects of job conditions and three facets of personality--intellectual flexibility, self-directedness of orientation, and a sense of well-being or of distress (Kohn and Schooler 1983, Chapter 6). The

model (p. 149, Table 6.4) depicts a dynamic system in which job conditions affect all three dimensions of personality, all three dimensions of personality affect job conditions, and the three dimensions of personality affect one another. Of central importance to our present concerns, we do not find that intellectual flexibility plays an intervening role in the effect of job conditions on either self-directedness of orientation (as hypothesized) or distress. On the contrary, substantively complex work stimulates a more self-directed orientation, which in turn is conducive to greater intellectual flexibility. It's a matter of motivation. Intellectual flexibility is increased when people's conditions of life motivate them to think for themselves.

The Life Course.

To this point, I have focused entirely on employed adults, mainly adults in mid-career, leaving aside the question of whether my conclusions apply more generally. I believe that they do, and I would like to cite several important nuggets of evidence.

First, and particularly relevant to issues regarding cognitive functioning, Joanne Miller, Kazimierz Slomczynski, and I (J. Miller et al. 1985), did separate analyses for the youngest, intermediate, and oldest cohorts of employed men of the effects of the substantive complexity of work, closeness of supervision, and routinization on "intellective process," by which we meant intellectual flexibility and open-mindedness, the opposite pole of authoritarian conservatism. Our analyses unequivocally show as great an effect of these job conditions, particularly of the substantive complexity of work, on intellectual flexibility and on open-mindedness for the oldest cohorts of both the U.S. and Polish employed men as for the youngest and middle cohorts. These findings argue strongly for the continuing effects of job conditions on intellective process, regardless of the age of the worker and--by extrapolation--regardless of stage of career and stage of life-course.

Even these analyses start with men already into their careers. Jeylan Mortimer and her collaborators have confirmed our essential findings for men at the very beginning of their careers (Mortimer, Lorence, and Kumka 1986). And, in their most recent work, Mortimer and her

colleagues have confirmed such processes even for high school students in their part-time employment (Mortimer et al. 1996).

Second, Karen Miller, Carmi Schooler, and I (1985, 1986) have extended the concept of "occupational self-direction" to schoolwork. We hypothesized that students' exercise of self-direction in schoolwork would have psychological consequences quite similar to those of adults' exercise of self-direction in paid employment. To test this hypothesis, we included a battery of questions about schoolwork in interviews of the offspring of the men in the 1974 U.S. follow-up study, most of these offspring being high-school or college students at that time. With these data, we developed a measurement model of educational self-direction, a direct analogy to the models of occupational self-direction we had earlier developed for employed men and women.

Our findings about the reciprocal effects of students' educational self-direction and personality were remarkably consonant with our findings about employed adults' occupational self-direction and personality. Educational self-direction substantially affects both cognitive and non-cognitive aspects of students' personalities--even with the pertinent dimension of both parents' personalities statistically controlled (Herrnstein and Murray, take note). We even found--just as Schooler and I had found for employed adults--that the effect of educational self-direction on intellectual flexibility is only partially direct; fully half of the effect is indirect through self-directedness of orientation. Greater educational self-direction increases students' self-directedness of orientation, and greater self-directedness of orientation increases intellectual flexibility. It's again a matter of motivation.

Social Change.

Our studies of the United States, Poland, and Japan, and the many replications that buttress their conclusions (see the review in Kohn and Slomczynski 1990, chap. 9) had all been done under conditions of apparent social stability. Even the Polish survey of 1978 had been conducted two years before the advent of Solidarnosc and before there were any decided signs of impending change. The massive changes that began in Eastern Europe and the former Soviet

Union in the late 1980's inevitably raised the important theoretical question of whether our interpretation of the relationship between social structure and personality applies also during times of radical social change.

I follow Williams (1970) in conceiving social change as change in the structure of the society, not merely as an eventful or dramatic period in the life of that society: "Change occurs when there is a shift in pattern, when new relationships emerge..." (pp. 620-21). By radical social change, I refer not to the pace of change but to the nature of the change--the transformation of one political and economic system into a quite different system.

The very idea of there being a relationship between social structure and personality implies a dynamic interchange. What we learn about this interchange at times of social stability is a static slice of a dynamic process. Whether what we thereby learn is typical of the more general process or is specific to times of social stability is questionable. Every link in the causal chain from social-structural position to job conditions to personality might well be weakened or even broken by the process of radical social change.

To test this possibility, my collaborators and I carried out surveys in 1992-1993 with representative samples of adult men and women living in the urban areas of Poland and Ukraine (Kohn et al. 1997). We found that, insofar as the relationships between social structure and personality had been similar in socialist Poland to what they were in the capitalist United States and Japan, nothing had changed in the transition to post-socialist society. For Poland and for Ukraine under conditions of radical social change, men and women of more advantaged social position are more self-directed in their orientations, and more intellectually flexible, than are men and women of less advantaged position, and for the same reason as in all our studies done under conditions of apparent social stability: because people of more advantaged social position have greater opportunity to be self-directed in their work, and occupational self-direction is conducive to a more self-directed orientation and to greater intellectual flexibility.

There had, however, been one major difference in our findings for socialist Poland and the capitalist countries--namely, in the relationship between social structure and a sense of well-

being or distress. For the United States, managers were likely to have a strong sense of well-being and manual workers were likely to be distressed. For Poland, nearly the opposite. Here, radical social change has resulted in nearly a complete reversal from what the pattern had been under socialism: Manual workers are now the most distressed social class and managers the least distressed. For the manual workers of a country to be transformed in just a few years from the least distressed to the most distressed social class, and for managers to move from being decidedly distressed to having a strong sense of well-being, means that the psychological effects of the transformation have been not only dramatic, but astonishingly rapid.

Radical social change has thus affected the relationships of social structure and personality primarily in that social structures in process of transformation come to exhibit the patterns characteristic of the type of society they are in process of becoming. By late 1992, Poland already exhibited the capitalist pattern. As of late 1992 and early 1993, Ukraine seemed to be following a similar trajectory, although at a slower pace and perhaps from a further-back starting point. Note, though, that radical social change has resulted, not in the weakening of the relationships between social structure and personality, but in making for even greater cross-national consistency in these relationships.

CONCLUSION

There is an alternative perspective to Herrnstein and Murray's, one much better established by the weight of evidence, but also--perhaps unfortunately--one that is harder to communicate to policy makers and the public. Herrnstein and Murray have a simple story to tell; we who work in the field of social structure and personality have a much more complex story to tell. And that is the heart of the difference, and perhaps the message that is most important to communicate. There is no single facet of personality, not intelligence nor any other, that "drives" the relationship between individual and society. On the contrary, people's social-structural positions both affect and are affected by many aspects of personality, intellectual flexibility among them. But--contrary to Herrnstein and Murray--cognitive functioning, important though it

is, is not the centerpiece of the edifice. We look for linkages between social-structural position and personality in the experiences directly attendant on social-structural position, principal among them, the conditions of work that people experience, whether that "work" be in paid employment, in schoolwork, or in any other realm of activity. Social structure continues to affect personality throughout the life course, from childhood, through first job, and on through one's entire career--and, presumably, into retirement. The effects of social structure on personality (and, presumably also, of personality on position in the social structure) obtain not only during times of apparent social stability, but even during times of radical social change.

It is a complex process, which should not be surprising, given that "complexity" lies at the very heart of our explanation of how and why social-structural position affects and is affected by personality. Reductionism does a great injustice to the complexity of life and to our understanding of that complexity.

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