egel, K. F. The influence of economic and political ideologies on the development of developmental psychology. *Psychological Bulletin,* 1972, 78, 129–141.
egel, K. F. Developmental psychology and society: Some historical and ethical considerations. In J. R. Nesselroade & H. W. Reese (Eds.), *Life-span developmental psychology: Methodological issues.* New York: Academic Press, 1973.
egel, K. F. (Ed.). The development of dialectical operations. *Human Development,* 1975, *18*(1–3).
egel, K. F. From traits and equilibrium toward developmental dialectics. In W. Arnold (Ed.), *Nebraska Symposium on Motivation.* Lincoln: University of Nebraska Press, 1976.
egel, K. F., & Rosenwald, G. C. (Eds.). *Structure and transformation: Developmental and historical aspects.* New York: Wiley, 1975.
yce, J. R. The present situation in theoretical psychology. In J. R. Royce (Ed.), *Toward unification in psychology.* Toronto: University of Toronto Press, 1970.
chlak, J. F. (Ed.). *Dialectic: Humanistic rationale for behavior and development.* New York: Karger, 1976. (a)
chlak, J. F. The multiple meanings of dialectic. In J. F. Rychlak (Ed.), *Dialectic: Humanistic rationale for behavior and development.* New York: Karger, 1976. (b)
haie, K. W. A reinterpretation of age related changes in cognitive structure and functioning. In L. R. Goulet & P. B. Baltes (Eds.), *Life-span developmental psychology: Research and theory.* New York: Academic Press, 1970.
hmidt, H. D. *Allgemeine Entwicklungspsychologie.* Berlin: Deutscher Verlag der Wissenschaften, 1970.
hwartzman, D. W. Althusser, dialectical materialism and the philosophy of science. *Science and Society,* 1975, 39, 318–330.
ffler, A. *Future shock.* New York: Bantam, 1970.
lems, E. P. Behavioral ecology and experimental analysis: Courtship is not enough. In J. R. Nesselroade & H. W. Reese (Eds.), *Life-span developmental psychology: Methodological issues.* New York: Academic Press, 1973.
lson, E. O. *Sociobiology: The new synthesis.* Cambridge, Mass.: Belknap Press of the Harvard University Press, 1975.
ozniak, R. H. A dialectical paradigm for psychological research: Implications drawn from the history of psychology in the Soviet Union. *Human Development,* 1975, 18, 18–34.

CHAPTER 7

Stability, Change, and Chance in Understanding Human Development

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As a social psychologist my contribution to understanding life-span development is open to reasonable suspicion. Social-psychological research over the past three decades has been peculiarly divorced from developmental considerations of any kind. Research on attitude change, social perception, attraction, prejudice, aggression, altruism, group behavior, and so on has proceeded under the assumption that if the emerging theories manifest predictive validity, proper developmental theory must eventually prove corroborative. The task of social understanding, it is felt, can scarcely await a fully elaborated theory of human development. This self-satisfied separatism is perhaps characteristic of any paradigmatic discipline (Kuhn, 1962). Provided there are a set of credible assumptions concerning the task of the scientist and these assumptions are welded to the power and prestige structures of the field, simultaneous developments in fields not sharing in the agreement pool can be disregarded. And if such developments are antithetical to the dominant paradigm, as in the case of dialecticism, exposure may even pose an undesirable threat. In any case, the possibility of shared dilemmas within developmental and social psychology has been little explored. It is my present contention that traditional pursuits in both social and developmental psychology are in similar peril and that mutual deliberation is essential.

It is said that present-day social psychology is in a state of crisis (Elms, 1975). Serious doubts concerning the efficacy of the traditional paradigms are emerging on every side (cf. Armistead, 1974; Harré & Secord, 1972; McGuire, 1973). My own

Finally, over and above the question of prediction, theory is vital as a means of *decomposing common understanding.* All theories must be viewed as artificial templates of experienced reality. Regardless of sophistication, theories are fundamentally incapable of describing the essence of their subject matter. Concepts treat as equivalent that which is essentially distinct; they call attention to similarities among stimuli while disregarding the multifarious differences. Analytic concepts are also ill equipped to deal with a qualitative difference among entities and with events in flux. And yet, with all their imperfections, theories are both useful and inevitable. Thus, a premium is to be placed on theories counterposed to what passes for theoretical knowledge at any given point. Theories that unsettle common conceptions of "what" and "why" provide an invaluable service in preventing an unmerited commitment to any single, but flawed, conception. Theories that challenge our common understandings enable us to maintain a healthy state of scepticism and to remain open to change and sensitive to the relativity of conception.

Virtually all of these important functions may be served by theory without reference to their predictive validity. In fact, it may be said that over the past century the most significant theories of human behavior have prevailed without benefit of predictive validation. The theories of Darwin, Marx, Freud, and Skinner, for example, have immense intellectual challenge, and have proved useful as well on all the above grounds. Yet, systematic empirical validation is lacking in every case.

B. The Need for Prediction

As suggested, the task of prediction can proceed quite effectively apart from the development of formal theory. We must daily make thousands of predictions, and generally do so with a moderate degree of success. Each time we speak, we engage in a silent wager that others will comprehend the meaning of our communications. We make such predictions with little in the way of formal communications theory. Many auto and life insurance actuarials are outstanding in their role as prognosticators of the future, and their predictions are seldom articulated with major theoretical premises. However, even though prediction may proceed quite adequately without theory, we need not conclude that understanding should always be irrelevant to the process of prediction. We may continue to apply the traditional criterion of predictive validity, realizing full well that valuable theoretical contributions may be made independent of prediction and that theories poor in their provision for general understanding may contribute to excellence in prediction. In the application of the predictive criterion, a further distinction must be made between extrapolation-based prediction and emergent prediction.

1. Extrapolation-Based Prediction

On the most primitive level, predictions can be made on the basis of past observations. In this case we simply assume a redundancy of pattern: that which happened in the past will be replicated in the future. In this case, the better theory is one that most accurately describes events of the past. The greater the number of events "post-dicted" by the theory, the greater its potential utility in extrapolation to the future.

2. Emergent Prediction

Most traditional theories within the sociobehavioral sciences are designed for extrapolation-based prediction; that is, most assume that future conditions will remain sufficiently stable such that the past is a reasonable forecaster of future events. However, if there is reason to believe that the future will provide a novel configuration of conditions, a more sophisticated variety of theory is required, one that allows for logical derivations to novel conditions. Such emergent prediction is possible within certain branches of the physical sciences. For example, given the current state of chemistry, it is possible to make accurate predictions about the character of a wholly novel compound. A special premium may thus be placed on theories with emergent predictive value.

C. Prescriptive Valuation

Max Weber (1949) once maintained that in social science theories without prescriptive value were an impossibility. Even in the simple selection of phenomena for study, we invest them with value and reduce the unselected to obscurity. Weber's arguments have been subject to periodic debate (cf. Runcinan, 1972), but his essential message was largely shunted aside in the wave of positivist enthusiasm. From the positivist perspective, it seemed possible to separate out the descriptive and prescriptive aspects of theoretical understanding. Theories could describe and explain, it was held, without advocating. The prime exemplar of theory without prescriptive implication was mathematics, and since translation into mathematical notation was viewed as the desirable end state of all theorizing, prescriptive problems seemed remote. Yet, with the rebellious fervor of the 1960s, the linkage of the social sciences with prevailing institutions and ideologies came under renewed critical scrutiny. The results of such scrutiny (cf. Gouldner, 1969; Myrdal, 1969; Poole, 1972) have become increasingly and compellingly clear and provide striking vindication of Weber's initial line of argument. No investigation is without implicit valuational implication. What the theorist singles out for study, the terms in which it is described, the commitment of causal analysis, the employment of abstraction, the objectification of subject matter, the attempt at dispassionate observation, the obviation of some theories in the elaboration of others, the implications for social change, and the very attempt to avoid value statements may all have significant effects on one's conception of the good, the moral, or the desirable.

At this juncture it may be argued that as scientists we can no longer afford to treat the problem of value loading as a minor irritant. Theories of human behavior have the potential to unleash untold brutality and to foster a common bond among

people. In light of earlier arguments advocating a relativistic orientation to theoretical "truth," the criterion of valuational implication must be considered on an equal footing with its aforementioned competitors. What a theory implicitly advocates is as important as its contribution to understanding and its predictive capability.

D. Scientific Promise

Most of us do not wish to jettison the scientific orientation to human behavior. We retain an investment in rational understanding and in discovering systematic means of improving our condition. Yet, there are also intimate connections between theoretical understanding and metatheoretical commitments; that is, depending on our metatheoretical understanding of what we are about, certain theoretical orientations are prescribed and others obviated; in turn, our theoretical conceptions have vital implications for metatheoretical outlook. Thus, for example, if we accept the metatheoretical premise that all events may be understood in terms of their antecedents, we can scarcely embrace a theory proposing that people are the origins of their own actions. And investment in a theory of psychological dynamics is inconsistent with a metatheoretic assumption that science must concern itself solely with observables.

Our final criterion, then, concerns the implications of theory for conducting the scientific enterprise. In what degree are the major theoretical views supportive of, or consistent with, the traditional positivist conception of science? To what extent do they suggest modifications of the tradition or its abandonment? These are significant questions that must be asked of the available theoretical forms.

II. Theoretical Forms for Understanding Human Development

The primary task is at hand. Given these four criteria of evaluation, what may be said of the major theoretical forms presently existing within the developmental domain? Although no compelling nosology of theoretical form is at hand, we may consider three major orientations, each of which encompasses a variety of more specific models of development. Each demands attention in terms of the four evaluative criteria just described.

A. The Stability Template

For many years the dominant theoretical form within developmental psychology placed greatest emphasis on the stability of behavior patterns over time. In this case the overarching analytic template has essentially registered stability and eschewed the transitory. The Freudian theory of character formation provides the classic exemplar of the stability orientation. As Freud maintained, the first 6 years of life are critical in determining adult personality. As a result of early psychosexual history, and particularly the configuration of repression, the foundation for adult

psychodynamics is firmly established. Without massive intervention (ideally through psychoanalysis) the same psychobehavioral patterns will relentlessly repeat themselves throughout the life cycle. Much the same view was adopted by early learning theorists. Here it was maintained that the effects of early learning experiences are of greater strength than later experiences. Early learning thus provides the basic orientation toward later experience. Whatever exists tends to endure. A similar orientation is nicely represented in the Sterns and Alexander contribution to the present proceedings. As they argue, living systems appear to be designed to resist or minimize change. However, alterations in the environment do cause organismic change, but such change is always "intended to provide *higher order* stability for the organism."

Given this brief description of the stability orientation, we may turn to the problem of evaluation.

1. Understanding through the Stability Template

In spite of the general antagonism toward the stability orientation represented in much of the life-span literature, I believe the orientation can be well defended on the basis of its contribution to general understanding. As the psychoanalytic profession continues to demonstrate, the stability orientation is highly effective in organizing one's experience. There are virtually no life history data, however inchoate, that cannot be organized within this framework. The orientation is also highly sensitizing. The assumption that present behavior patterns can always be traced to early antecedents sensitizes one to the potential effects of early socialization. Observational strategies are thus sharpened, and countless hypotheses can be mounted regarding the long-term influence of various parental, sibling, sociocultural, or environmental factors. The stability orientation also furnishes an excellent sense of coherence. In reviewing one's life history, one can discern the morphological similarities among highly disparate behaviors and come to believe in the continuity of his or her identity over time. In light of Erik Erikson's (1950) argument that one's feelings of well-being are vitally dependent on his or her sense of personal continuity, it might be said that the stability orientation has played a powerful therapeutic role. Further, the orientation may also be viewed as highly catalytic in its effects on common understanding. Its special drama lies in its capacity to transform what appears to be novel or newly formed behavior into yet another instance of a long-standing pattern. We often believe ourselves to be confronting an ever-emerging pattern of events. Yet, if we reconsider reality through the conceptual lens of the stability theorist, we find that "the more things change, the more they remain the same."

2. The Predictive Capacity of Stability Theory

A brief assessment of the predictive capacity of stability theory is impossible. Over the years an immense wealth of data has been amassed favoring the orienta-

tion. Case studies number in the thousands; longitudinal research is typically dedicated to the discovery of continuity; animal experimentation has often demonstrated the long-term effects of early learning experiences; studies of adult psychopathology often reveal systematic differences in early experience between hospitalized and normal populations; and so on. Yet, so immense is the volume of supportive data that in spite of the current hegemony of the ordered-change orientation (to be discussed shortly), the stability orientation has remained relatively free of direct assault. It may fairly be said that contemporary culture has almost fully accepted the assumption that early experience is vital in shaping adult behavior. The immense concern with child-rearing practices, early education, enriched environments for the young, and so on, indicates a deep-seated belief in the stability orientation.

Yet, a challenge to the stability assumption must be mounted. The data base upon which it rests is far less substantial than it might appear. The case analyses garnered from the therapeutic and analytic journals are largely worthless as "proofs." The events of most people's lives are sufficiently variegated and multifarious that virtually any theoretical template can be validated. The case study simply allows the investigator freedom to locate the facts lending support to his or her preformulated convictions. Longitudinal support is also less convincing than it might initially appear. Perhaps the most significant of these investigations has been undertaken by Kagan and Moss (1962) in their analysis of the Fels Institute data. This study followed a sample of some 80 men and women from early infancy to a period some 30 years later. Over 100 objective assessments were made of various behavior tendencies at 4 separate intervals over the 20-year period. Correlations were then carried out to detect continuity across the various periods. The investigators asked, for example, whether individuals tended to retain roughly the same ranking in the sample with respect to achievement motivation, aggression, dependence, passivity, heterosexuality, and so on. Although continuities in such areas as aggressiveness and dependency were demonstrated, it is noteworthy that careful screening of the data was required in order to mount such demonstrations; that is, nonsignificant results abound within the data matrix, and the case for continuity is made by selecting out those particular findings providing confirmation. Careful inspection of the data further reveals that virtually no relationships beyond chance exist between behavior patterns in the first 6 years of life and the same or related patterns during adulthood. In effect, the study provides no support whatever for the assumption that the first 6 years of life are crystallizing in their effects on individual character.

Results from infrahuman research are equally questionable. Perhaps the most frequently cited evidence supporting the stability assumption is that of Harlow and Harlow (1965) on maternal deprivation in the infant monkey. As the Harlows so dramatically demonstrated, when a rhesus monkey is deprived of all social contact during the first 6 weeks of life, and then reintroduced into the monkey colony, the deprived animal is permanently debilitated. The animal continues indefinitely to

display aggressive, antisocial, and otherwise aberrant characteristics. Of course, it is unclear whether results of infrahuman research can ever be applied on the human level. However, even if we do accept the implications of this work for human functioning, more recent research by Suomi and Harlow (1972) indicates that these effects need not be permanent and are easily reversed. A 6 week retraining program in which the deprived monkey continuously associates with a somewhat younger animal is sufficient to reverse all the ill effects of early deprivation.

Additional research within social psychology strongly indicates that whatever habits are acquired during development do not generally seem to persist across diverse circumstances. For example, because of our extensive training, most of us do not believe that we could be induced to torture another human being to the point of death; we loathe the thought and believe that our socialization has insulated us against such heinous behavior. Yet, as Stanley Milgram (1974) has demonstrated, adults of all ages and from diverse backgrounds can rather easily be coerced into delivering the most painful shocks to an innocent victim of circumstance.

In a related vein, at Swarthmore my colleagues and I were curious about what kind of relations would develop among total strangers placed in an altogether anonymous circumstance for a single hour (Gergen, Gergen, & Barton, 1973). Volunteers for research on environmental psychology were thus invited to the campus from diverse locales. Each arrived separately at the laboratory, and each was told that he or she would be spending approximately an hour in an unlighted room with "some other people." There were no instructions as to how the hour was to be spent; however, all subjects were required to remove their shoes and deposit their valuables before entering the darkened chamber. They were told that they would never have the opportunity to meet the persons in the chamber after the hour was over. I suspect most of us generally feel that we would not engage in physical intimacies with total strangers; such reluctance seems fundamental to the manner in which we have been socialized. Yet, as we learned from biographies and ratings completed after the experience, over 90% of the participants engaged in purposeful touching; only 20% indicated that they ever prevented anyone from touching them. Over 50% engaged in hugging, and 80% said that they were sexually aroused during the experience. As one participant wrote:

> As I was sitting, Beth came up and we started to play touchy face and touchy body and started to neck. We expressed it as "love to each other." Shortly before I was taken out, we decided to pass our "love" on, to share it with other people. So we split up, and Laurie took her place. We had just started touchy body and kissed a few times before I was tapped to leave [p. 130].

Behavior in the control condition, in which the chamber was illuminated, was in sharp contrast; under these circumstances participants sat at a safe distance and talked quietly for the entire hour. Clearly, whatever lessons have been acquired from early socialization are limited to very specific situations.

Such studies as these are only illustrative of a massive volume of research in social psychology and cast additional doubt on the predictive validity of stability theory.

3. The Ethics of Stability

Although psychoanalytic theory is possibly an exception, it may be ventured that the stability framework generally prescribes stable behavior. The normal, and thus desirable, person is one who remains roughly the same from one day to the next. We are typically disturbed when someone behaves inconsistently and equate maturity with coherent patterning in behavior (see Gergen, 1968). More general rationalizations are used to buttress the stability ethic. Stable behavior is necessary, it is argued, because without it society would be chaotic. People would be unable to place themselves within the social system, unable to predict others' actions, and unable to act functionally. Stability is thus essential to the viability of the society. Although this line of thinking seems eminently reasonable, it may be challenged on the grounds of the mediocre predictive capability of various forms of stability theory. If people do not generally display stability, can the ethic remain unchallenged?

4. Science and Stability

The construction of scientific principles in the positivistic mode ultimately depends on the stability of events in nature. If the facts of nature are not recurring, science must be replaced by history. Thus, the success of the physical sciences depends in large measure on the selection of subject matter. Selected are phenomena that demonstrate reliable "behavior" regardless of the period of history in which they are examined. In similar manner, if the patterns of human behavior demonstrate marked stability over time, we may anticipate construction of knowledge according to the positivist program. The stability orientation is highly compatible with traditional views of scientific conduct.

B. The Template of Ordered Change

The second major orientation to human development centers on change as opposed to stability. In particular it is assumed that development is constituted by patterned or orderly change across time.. Typically such change is said to be invariant both across the human species and throughout history; exceptions to the basic sequence may be accounted for in terms of extrinsic factors impinging on the human organism. Again, Freud provides the initial exemplar of this orientation; the theory of psychosexual development elaborates a natural history of libidinal development. Although Freud's theory is limited primarily to the first 6 years of life, revisionists have fruitfully extended the theory to account for later developmental crises. Erik Erikson (1950, 1968) has of course been seminal in this respect. With

the possible exceptions of Loevinger's (1966) work on ego development, such psychodynamic interests have largely been shunted aside in recent years as concern with cognitive development has taken center stage. The impact of Piaget's (cf. 1926, 1930, 1955, 1970) theory of cognitive growth cannot be underestimated, and most major theoretical contributions since Piaget's hegemony have adopted some form of stage theory consistent with Piagetian theory. It may fairly be said that the ordered-change orientation in general, and Piagetian theory in particular, has become the guiding paradigm within contemporary developmental psychology. For the present it is not important to distinguish among contributions emphasizing quantitative as opposed to qualitative change, or change through accretion as opposed to change through crisis. It is sufficient for now to recognize a class of theories similar in respect to their focus on orderly, replicable change in human development. What may be said for such theories in terms of the present criteria?

1. Understanding through Ordered Change

Earlier stability theories were defended with respect to their contribution to comprehensive understanding. However, this defense is in no way to denigrate the ordered-change orientation. The latter template enables one to organize wide-ranging experiences into a coherent whole. It is perhaps more convenient in application than the stability orientation in that differences are recognized among distinct classes of behaviors, and such differences roughly correspond to chronological age. Thus, childhood behavior may be dealt with separately from adult behavior and the difficult search for underlying similarity obviated. The orientation has also proved valuable as a sensitizing agent. It focuses one's observations on differences in behavior over the life span and, in its most catalytic form, demands that we attend to underlying (structural) differences among behaviors that are ostensibly similar. Although ordered-change theories do not provide a special sense of coherence, they do engender the experience of growth. Change can often be singled out as an indication of enhanced maturity. Finally, the ordered-change approach can effectively unsettle common understanding. It is perhaps less successful in this endeavor than stability theory inasmuch as it accepts the possibility that what we perceive to be dissimilar is so in fact. In contrast, stability theory constantly challenges us to reconceptualize as different that which is perceptually similar.

2. Prediction and Ordered Change

In the case of the stability orientation, distinguishing among particular theories according to predictive capability was not essential. Theories emphasizing stability all tend to make similar predictions; the major differences lie in the manner of explanation. However, in the case of the ordered-change orientation, the assessment of predictive validity is far more complex. Theories focus on different types of change and make differential predictions regarding developmental sequence and the

relationship of chronological age to such sequence. Space limitations fortunately prevent a complete review of predictive studies falling within each theoretical domain. It is thus necessary to rely on a limited number of summary remarks regarding the major theoretical domains.

With respect to classic psychoanalytic theory, continued study has done little to increase one's confidence in Freud's particular characterization of the stages of psychosexual development. Innumerable disconfirmations have emerged over the years. Although defenders of the tradition have often argued that such disconfirmations were either ill conceived or irrelevant to the central tenets of the theory, this line of defense has implied that the theory is sufficiently rich, complex, qualified, murky, and abstract such that it is not open to empirical validation. In any case, the once zealous attempts to validate psychoanalytic theory (cf. summaries by Barnes, 1952; Blum, 1953; Sears, 1944) are no longer in evidence, and little confidence in its description of early development seems warranted. In the case of neoanalytic revisions, few have received systematic study. Loevinger's (1966) theory of ego-development is rapidly proving an exception, but in this case it is too early to draw confident conclusions.

Piagetian theory has generated an immense welter of research (cf. summaries by Brown, 1970; Inhelder & Matalon, 1960; Kohlberg, 1969b), and much of this work has been very promising. However, such work may also be considered exploratory, in the sense that investigators have largely searched for relevant contexts in which support may be maximized rather than pursuing broad-scale assessment of behavior patterns. Further, the Piagetian stages have not been subjected to systematic cross-cultural study; existing cross-cultural research yields ambiguous results; and many studies indicate that cognitive capabilities may be subject to a host of environmental influences (see summary in Dasen, 1972). Attempts to link the stage theory to chronological age have proved less than promising, as great variability is evidenced in the cognitive capabilities manifested within any given age group. Many of these same remarks apply as well to the Kohlberg extension of Piagetian theory to the realm of moral development (cf. Kohlberg, 1969a, 1969b, 1973). Kohlberg's work has also been seriously criticized on methodological grounds (cf. Kurtines & Grief, 1974).

In the case of both cognitive and moral development, ample evidence for "regression" or reversal in sequence has been discovered, and such evidence raises serious questions concerning the predictive capability of the basic theoretical structures. The most prevalent defense against reversals in what should otherwise be fixed sequences is that they reflect only superficial behavioral changes. They are not indicative of alterations in basic cognitive structure or stage of moral thought. One form of this argument is contained in the familiar competence versus performance distinction. Rapid alterations in performance may be evidenced without necessary implications for basic competence. Although such defenses may be quite reasonable, they do raise the same problems concerning cognitive development that investigators of psychosexual sequence encountered during the preceding era; that

is, if all behavioral disconfirmations are dismissed on the grounds that they do not capture the relevant psychological processes and no firm definitions linking psychological process with externally observed behavior can be provided, then the theory essentially remains untestable. The defense of inadequate realization of psychological constructs may be considered a hazardous resort, as it ultimately discourages systematic investigation.

In sum, none of the major theories within the ordered-change orientation have proved exceptional with respect to predictive validity. Much research is suggestive, much is promising. However, in the applied arena, only the grossest predictions are permissable, much variability prevails, and strong confidence is not yet warranted.

3. The Prescription of Ordered Change

Within the ordered-change orientation, three prominent evaluative biases are evident. The first is that change *should* occur. The individual who is stabilized at a given stage is typically viewed as a deviant, subject to special attention, if not contempt. The Freudian concept of "fixation" provides the boldest statement of the bias. Fixation, in Freudian terms, is a serious form of neurosis, subject to cure through analysis. However, being arrested in a Piagetian preoperational state or the second stage of moral development in the Kohlbergian framework would carry with it the same pejorative implications. The second prominent bias is that the individual should not return to previous behavior patterns. Change should be unidirectional. The Freudian concept of regression serves as the evaluative cornerstone for subsequent theorizing. Regression in psychoanalytic terms is a defensive maneuver through which the individual avoids realistic confrontation with his or her problems. Regression within the schemes of Piaget and Kohlberg is viewed as a special anomaly and requires extensive theoretical defense. When one has transcended an inferior status, how is return to be justified?

Both of these prescriptive biases must be qualified by a third, the "middle adulthood prejudice." Although forward change is generally viewed as positive, this demand is attenuated once the individual has reached "maturity." Generally speaking, within Western culture middle adulthood provides the model for optimal comportment, and the more remote one's behavior from the optimum, the more questionable. Thus, if an adult regresses to teen-age behavior, he or she may be tolerated (if such behavior is limited to specific periods set aside for "immaturity"); however, to behave like an early adolescent is more deplorable, and to act childishly is wholly culpable. Such approbation cannot be accounted for in terms of simple age grading (i.e., everyone should act their age). If a child begins to demonstrate adult characteristics, the parents are typically congratulated for either the rich environment they have provided or their genetic constitution. The preference for middle-adult behavior patterns is again manifest when we consider models of aging. Generally, the more removed one's behavior from the middle-adult norm, the more inferior its evaluative status. For example, a negative value is thus built into the

process of disengaging from society (Cumming & Henry, 1961; Neugarten, 1968). Indeed, the very concept of development, with its intimations of "forward" movement, is applied with hesitancy to the later years.

It should finally be noted that stability and change ethics coexist within society and typically within the same person. The coexistence is not always a happy one, and much strife within relationships may be traced to such conflict. On the one hand, most of us strive for some degree of stability within our lives and within those about us. We feel that the mature individual is one who displays consistency, coherence, and an enduring identity. Yet, we also value growth, as we call it, and chastise ourselves and those to whom we are attached if change is not apparent. Discerning the difference between stability and stasis, and between growth and impulsivity is often tortuous. Given the arbitrary character of such constructions, one might view the entire value conflict as dispensable.

4. Science and Ordered Change

Frameworks centering on ordered change lend themselves very well to the construction of knowledge in the positivist mold. As we have seen, theories within this domain assume that patterns of development are reliable and replicable; they may be found throughout the species and may be duplicated in virtually any historical era. To the extent that such assumptions are valid, it should be possible to accumulate knowledge about such patterns and to improve this knowledge through continued research.

C. The Aleatory Change Template

A third orientation to human development demands attention. It is an orientation that has been less fully elaborated than either the stability or the ordered-change template, but is one that lies implicit in much life-span literature in general, and within the dialectical domain in particular. Central to this orientation is the assumption that there is little about human development that is "preprogrammed;" that is, we enter the world with a biological system that establishes the limits or range of our activities but not the precise character of the activities themselves. Like computer hardware, the biological system informs us as to what operations are possible but does not determine the nature of processing at any given moment. For such determination to be made one must examine the character of the inputs to the system. In the case of human development, the system inputs may be viewed as a confluence of potentially interacting factors or processes, a confluence that is in a state of continuous change. In effect, the confluence may be viewed as a cross-time emergent. Thus, just as we cannot derive psychological principles from physiological knowledge, or one phase of development from a preexisting phase, we cannot be certain of the nature of the confluence at time_2 from our knowledge at time_1. In other words, the relationship between any x factor and y response is potentially unreliable; all relationships between antecedent factors and responses are fashioned

in part by historically specific conditions. In the broadest sense it may be said that the determining confluence is subject to chance, and thus aleatory in nature.

D. Aleatory Thinking in Life-Span Developmental Psychology

This conception of human behavior obviously requires amplification and support. Let us first trace its existence within the life-span developmental movement. Substantial support for the aleatory orientation is derived from the movement's concern with development during adulthood. In this instance, ontogenetic sequences are difficult to discern, and primary attention has been paid to environmental influences. The latter are widely evident and much explored. To the extent that such influences predominate, the aleatory position gains strength. Environmental factors are subject to gross modification over time; they do not evolve on a constitutionally based schedule. In this vein, Neugarten (1968) has discussed the alterations in life-cycle patterns for females as they depend on labor needs. For example, the proportions of women in the labor force at various stages of adulthood have undergone dramatic differences between 1870 and 1966, with consequent alteration of the adult female life pattern. As Neugarten and Datan (1973) conclude, "Changes in the life cycle [such as these] have their effects upon personality, and it is likely that the personalities of successive age cohorts will, therefore, be different in measurable ways [p. 68]."

This emphasis on shifting sociohistorical circumstances is amplified by Lieberman (1975) in his discussion of the effects of environmental stressors in adult life, and by explorations of Pearlin (1975) and Schlegel (1975) into the environmental sources of the oft-observed differences in depression between males and females. A similar orientation has been adopted by investigators into adult sex role development. David Gutmann (1975), for example, has expressed deep concern over the effects of new life styles on sex role differentiation in parenting; Meda Rebecca (1975) has developed a model of sex role development that specifically singles out the current sociohistorical context for its importance in shaping contemporary sex role patterns.

Equally as important as the emphasis on environmental circumstance has been the extensive empirical and conceptual exploration of cohort effects in the development of human abilities (Baltes & Reinert, 1969; Nesselroade & Baltes, 1974; Schaie & Strother, 1968) and personality characteristics (Baltes & Nesselroade, 1973; Woodruff & Birren, 1972). As these explorations have demonstrated, different developmental trajectories are found among cohorts born in different eras within the same culture. As Buss (1974) has concluded from his review of this literature, "Each new generation interprets reality without the years of commitment of a previous ideology and thereby transforms that reality [p. 66]." The practical implications of such findings have been of major concern to Birren and Woodruff (1973) and to Baltes and Schaie (1973), as they have noted the difficulties in predicting the effects of educational intervention. Such effects may vary depending on the particular cohort selected for attention. As Baltes and Schaie

(1973) suggest, "it is questionable whether behavioral scientists will ever be able to demonstrate the type of treatment and prevention effects that characterize much of the classical biological and medical sciences [p. 380]."

On a broader theoretical level, Amhammer's (1973) application of social-learning theory to life-span development makes an important contribution to the aleatory approach. As she demonstrates, patterns of adult change can be explained in terms of differential learning experiences embedded within varying environmental circumstances. Looft's (1973) relational orientation to development is also consistent with this orientation. His concern with sociological and demographic inputs to development within their historical context leads him to conclude: "No longer should developmental psychologists focus so exclusively on ontogenetic age functions; each new generation will manifest age trends that are different from those that preceded it, and thus, previous empirical endeavors are reduced to exercises in futility [p. 51]." Such sentiments gain additional support from Stein and Baltes's (1975) "multidirectionality" theory of development. As they argue, developmental change is subject to a host of varied and changing factors, and the particular set of factors to which the individual is exposed may change from one historical period to another. Thus, developmental sequences may take many different forms; universality and unidirectional sequences are outmoded concepts.

Finally, dialectical theory makes a vital contribution to the aleatory framework. The impact of Riegel's (1972, 1973, 1975) contributions in this area cannot be underestimated. His elaboration of the four planes of development—the inner-biological, individual-psychological, cultural-sociological, and outer-physical—along with their dynamic of continuous conflict, can usefully integrate much of the work just described. Kvale's explorations (Chapter 9, this volume) cast additional doubt on the classic assumptions of development, particularly regarding the innate character of human memory. As he shows, human memory processing is vitally dependent on the social institutions in which one is enmeshed. As he concludes, "the meaning of the past is continually understood through new retrospectives, which involves a principal undeterminedness of the context for understanding." Much the same emphasis is found in Reese's probing (Chapter 11, this volume) of the dialectical development of discriminative learning and transfer. The character of various cognitive operations importantly depends on individual incentives, which, in turn, depends on the event structure in contemporary society. Rebecca's (1975) dialectical analysis of sex-role socialization has already been alluded to.

III. Constitutional and Cultural Contributions to an Aleatory Orientation

Support for the aleatory orientation is hardly limited to the life-span literature. If we consider the biological nature of the human organism and persistent valuational investments within the culture, the strength of the position becomes further apparent. In the case of biological makeup, comparative study first makes it clear

that as the physiological system gains in complexity, behavioral dependency on specific stimuli is progressively reduced (Ford & Beach, 1951). Thus, in simple organisms (e.g., flatworms, mollusks, and anthropods) behavior is reliably related to surrounding conditions. The presence of a specific environmental condition (heat, light, sound, etc.) will consistently elicit a specific behavior from the organism. Depending on the simplicity of the mechanism involved, we speak in such cases of taxes, tropisms, reflexes, and instincts. However, as organisms gain in physiological complexity, and particularly with the development of the cerebral cortex, such dependable reactions are progressively diminished. Thus, in primate colonies, certain mating and power relations seem to be under instinctual control, but the major share of primate behavior cannot be accounted for on this basis. In the case of human behavior, "automatic" reactions of the instinctual or reflex variety are scarcely in evidence. In almost no way is the human being "stimulus bound."

This argument may be coupled with a second. In large measure human behavior seems dependent on internal, symbolic capabilities. Further, such capabilities essentially cut us away from the stimulus as given. A given environmental condition thus has the capacity to stimulate virtually any symbolization, and such symbolizations may be rapidly altered over time. Thus, at any point we may symbolically reconstruct our past, present, or future—with resounding consequences for our social conduct. In the case of symbolic transformations of the past, both Kvale's and Riegel's contributions to the present volume provide ample documentation. With respect to the reconstruction of the present, my colleagues and I have been especially concerned with the ways in which people come to reconceptualize their own being within various social settings (see Gergen, in press, for a summary). We have found, for example, that the mere presence of someone with socially desirable features is sufficient to cause a debilitating devaluation of self; the presence of a seeming inferior may have exactly the opposite consequences (Morse & Gergen, 1970). Enhancement of self-conception may also be achieved through egotistical role playing (Gergen & Taylor, 1966) or through another's positive regard (Gergen, 1965). In effect, self-conception is constantly being reshaped as the individual engages in relations with others. Views of the future may be similarly altered. How much of the future one takes into account, one's articulation of specific future events, and the affective associations to one's symbolization of the future may be altered over time and sometimes very rapidly so (see reviews by Cottle & Klineberg, 1974; Doob, 1971).

We must add to this case for constitutional flexibility, with its supportive implications for an aleatory orientation to human development, a consideration of recurring values within society. In particular we may consider a cluster of values that mitigate against the formation of stable patterns of human behavior. For one, strong investments in freedom are found in many cultures of the world. People often value the capacity for unrestrained action and strongly resent restrictions placed on their behavior (cf. Brehm, 1966; Wicklund, 1974). At times, such valuational investments are sufficient such that large numbers of people will give up their lives in their defense. When we consider the relationship between scientific

theory and such investments, it is clear that the quest for freedom may often be at odds with science. In their prescriptive capacity, scientific descriptions often sanction certain forms of behavior and relegate other behavior patterns to a deviant class. In effect, scientific description may itself serve to rigidify certain patterns of conduct and in this way poses a threat to the individual's sense of freedom. A case in point is the resentment of many women at the implications of research and theory on the women's movement. Such investigation has a strong liberal to radical bias, and women (e.g., mothers, housewives) who are denigrated by such investigations often react with an increased affirmation of their own life-styles.

A similar argument can be made with respect to the value of uniqueness. As Fromkin (1970, 1972) has shown, within Western culture people often desire to see themselves as unique. The experience of reward is greater when received by the individual him or herself than when diffused among a group; further, the likelihood of being replaced is greater when one is a replica of others. Scientific activity essentially aims at destroying such uniqueness. Professional rewards are garnered by the investigator who can account for the conduct of the greatest number with the fewest abstractions. In this sense, traditional science may be viewed as dehumanizing, and the quest for uniqueness at loggerheads with its goals. In the same way that black Americans have often resented the stereotypes emerging from research of black family life, psychodynamics, self-esteem, and intelligence, so one may challenge encapsulation by developmental stage designations.

In sum, we find that both biology and recurring social values lend strong support to an aleatory view of human development. They suggest that behavior patterns may undergo constant modification over time and counsel against the likelihood of discovering principles or laws of transhistorical significance. They indicate that at any point in time individual behavior may be subject to multiple influences, both internally and externally engendered. Various determining confluences may be operative for various segments of the culture and for differing segments at different points in history. Given highly stabilized social conditions, any particular confluence may remain relatively unchanged for long periods of time; in other eras, the confluence may alter with wrenching rapidity.

We are now in a position to examine the aleatory orientation in the light of our critical criteria.

A. Aleatory Understanding

In terms of comprehensive understanding, the aleatory orientation proves unique. The orientation itself does not favor a single domain or class of relevant theories. Rather, it prompts a strong theoretical relativism. From the aleatory viewpoint, virtually any theory may be applicable to some segment of the population at some point in history. Thus, a multiplicity of theories is invited by the orientation, while commitment to any single account is discouraged. The orientation has excellent sensitizing potential, inasmuch as it encourages the individual to maintain constant surveillance over a wide range of potentials. Dialectical operations are particularly useful in this respect, as they prompt investigation of opposing factors or processes. From the dialectical standpoint, the isolation of any potential determinant is sufficient to posit the existence of a counterforce. Existence demands consideration of negation.

Depending on one's viewpoint, it may be said that the aleatory orientation provides either the maximum or the minimum sense of coherent understanding. Understanding behavior in terms of evolving confluences invites a wholistic perspective, in which events possess an ever-emerging interrelatedness. The experiential world is one, wholly coherent. Yet, because this relatedness can never be encompassed in a single analytic framework, one is bereft of explanatory certainty. Analytic coherence is unavailable. Finally, the aleatory orientation fully lends itself to the unsettling of common understanding. In its emphasis on theoretical relativity, it invites a sceptical reaction to all theoretical formations. At its most dramatic, is suggests that any theoretical statement may be countered with its opposite, and with equal claims to validity. Statements such as "behavior is a function of available reinforcement contingencies," "behavior is determined by the state of the phenomenological field at the moment of its inception," or "development takes place in a series of recognizable and discriminable stages" may all be countered with a negation of equal validity.

B. Prediction in the Aleatory Mold

From the aleatory viewpoint, there is little merit in attempting to prove competing theoretical formulations. Findings may be generated to suit any reasonable theory (see Gergen, 1975). In this sense, the aleatory orientation lends itself to the earlier argument for independent evaluation of theory and prediction. At the same time, the aleatory orientation does not rule out the task of prediction. Behavioral phenomena are under the influence of antecedent conditions at any given point in history; however, the relationship between observable antecedents and resulting consequences may not remain stable. Although there may be no fundamental ordering of behavior patterns over time, at any given point ordered patterns may be discerned. Thus, from the aleatory position, prediction is optimally viewed as a continuous process in which the predictive formula are constantly monitored for waxing and waning efficacy. We may find, for example, that enriched environments, early educational intervention, early speech acquisition, and so on all have effects on later cognitive skills. However, such findings may be vitally dependent on historical circumstancess, and the predictive validity of such statements must be monitored across time.

Special note must be made of the relationship between dialectical theory and the problem of prediction. Until now the dialectical perspective has largely played a catalytic role within the behavioral sciences. It has described fundamental shortcomings or biases in the prevailing paradigms and argued for an alteration in thinking about behavior. However, in many such writings one discerns a tendency to codify the dialectical perspective, that is, to transform it to a set of principles

that might function in a predictive role. Statements to the effect that all change depends on conflict, that conflict inevitably leads to progress or enhanced consciousness, or that all elements are in conflict with their contradictions are examplary. Each suggests an underlying order, which order may be more fully elaborated and empirically tested over time. This attempt at codification is inconsistent with the aleatory orientation. In this mold, dialectics becomes simply another form of ordered-change theory.

C. Aleatory Prescription

Within the aleatory domain, dialectical theory has clearly had the strongest valuational impact. As dialecticians maintain, positive change depends on confrontation of thesis and antithesis; progress thus depends on crisis. This descriptive analysis has lent powerful support to revolutionary forces throughout the world. However, as we have seen, dialectical theory in rigidified form is not fully aleatory. From the aleatory perspective, conflict is not a necessary harbinger of positive change. Even the concept of positive change or progress is open to question, as the validity of such a concept depends on a theoretical framework, and all frameworks are defective. More consistent with the aleatory position is an ethical relativity. Differing ethical systems may be functional within various sociohistorical contexts. The solidification of any ethical system may have deletorious consequences over time. Continuous reassessment of prescription must be undertaken, and avenues established for "unfreezing" institutional safeguards of tradition. Further, the aleatory orientation invites creative consideration of change. Given the maleability of the human organism and the emerging confluence of circumstance, one is encouraged to inquire into the adequacy of present circumstances and means for their alteration. Since past solutions are not necessarily applicable to the ever-emerging character of the existing problems, a special premium is placed on the novel solution.

D. Toward an Aleatory Science

Clearly the aleatory orientation to human development does not lend itself to the accumulation of knowledge in the positivist mold. Human behavior will not generally display the same type of stability characteristic as phenomena within the physical sciences. To be sure, certain ontogenetic patterns of development may occur in virtual disregard of the particular sociocultural context. Such processes may be "wired in" and thus more successfully treated within the traditional scientific framework. Required by the aleatory orientation, however, is a revision of the traditional scientific program. The essential elements of this revision are implicated within the preceding discussion. At a minimum, an aleatory science would entail the following:

1. *Theory Construction.* Such theory would primarily be dedicated to historically sensitive description and explanation, sensitization, and the disruption of common understanding. Since all reasonable theories may be valid for some portion of the people at some period, research stemming from such theory would primarily be used for illustrative purposes.

2. *Prediction.* In a world of changing behavior patterns, the task of prediction becomes frought with difficulty. In this respect we are in a position similar to that of the weather forecaster. Broad physical principles allow for a *posthoc* understanding of all weather conditions but do not enable us to make definitive predictions on any given day. The task of the behavioral scientist is far more perplexing, however, inasmuch as the number of variables and the relationship among them may be continuously evolving. Although immensely complex, the task of prediction is still an important one. A premium is to be placed on predictive formulae with built-in feedback devices for theoretical revision and correction. Such prediction would ideally be concerned with problems of pressing importance within the society.

3. *Advocacy.* Rather than adopting the traditional pretense of nonprescription, an aleatory science would ideally be one continuously exploring the value implications of any theoretical or empirical endeavor. The relativity of understanding implied by the aleatory program suggests that our adaptive potential is maximized when conflict of interest prevails. Danger lies in unanimity concerning what is known and what it implies for human comportment. Thus, a premium is to be placed on advocacy, for in the bold elaboration of investment, conflict among assumptions is made manifest.

REFERENCES

Amhammer, I. M. Social-learning theory as a framework for the study of adult personality development. In P. B. Baltes & K. W. Schaie (Eds.), *Lifespan developmental psychology: Personality & socialization.* New York: Academic Press, 1973.

Armistead, N. (Ed.). *Reconstructing social psychology.* Middlesex, Eng.: Penguin Books, 1974.

Baltes, P. B., & Nesselroade, J. R. The developmental analysis of individual differences on multiple measures. In G. R. Nesselroade & H. W. Reese (Eds.), *Life-span developmental psychology: Methodological issues.* New York: Academic Press, 1973.

Baltes, P. B., & Reinert, G. Cohort effects in cognitive development of children as revealed by cross-sectional sequences. *Developmental Psychology,* 1969, **1**, 169–177.

Baltes, P. B., & Schaie, K. W. On life-span developmental research paradigms, retrospects and prospects. In P. B. Baltes & K. W. Schaie (Eds.), *Life-span developmental psychology: Personality and socialization.* New York: Academic Press, 1973.

Barnes, C. A. A statistical study of Freudian theory of levels of psychosexual development. *Genetic Psychology Monographs,* 1952, **45**, 105–175.

Birren, J. E., & Woodruff, D. S. Human development over the life span through education. In P. B. Baltes & K. W. Schaie (Eds.), *Life-span developmental psychology: Personality and socialization.* New York: Academic Press, 1973.

Blum, G. S. *Psychoanalytic theories of personality.* New York: McGraw-Hill, 1953.

Brehm, J. W. *A theory of psychological reactance.* New York: Academic Press, 1966.

Brown, R. *Cognitive development in children.* Chicago: University of Chicago Press, 1970.

Buss, A. R. Generational analysis: description, explanation, and theory. *Journal of Social Issues,* 1974, **30**, 55–71.

Cottle, T. J., & Klineberg, S. L. *The present of things future.* New York: Free Press, 1974.

Cumming, M. E., & Henry, W. E. (Eds.). *Growing old: The process of disengagement.* New York: Basic Books, 1961.

Dasen, P. R. Cross-cultural Piagetian research: A summary. *Journal of Cross-Cultural Psychology,* 1972, **3,** 23–40.

Doob, L. W. *Patterning of time.* New Haven: Yale University Press, 1971.

Elms, A. C. The crisis in confidence in social psychology. *American Psychologist,* 1975, **30,** 967–976.

Erikson, E. *Childhood and society.* New York: Norton, 1950.

Erikson, E. Identity and identity diffusion. In C. Gordon & K. J. Gergen (Eds.), *The self in social interaction* (Vol. 1). New York: Wiley, 1968.

Ford, C. S., & Beach, F. A. *Patterns of sexual behavior.* New York: Josiah Macy, Jr. Foundation, 1951.

Fromkin, H. L. Effects of experimentally arousned feelings of undistinctiveness upon valuation of scare and novel experiences. *Journal of Personality and Social Psychology,* 1970, **16,** 521–529.

Fromkin, H. L. Feelings of interpersonal undistinctiveness: an unpleasant affective state. *Journal of Experimental Research in Personality,* 1972, **6,** 178–185.

Gergen, K. J. Interaction goals and personalistic feedback as factors affecting the presentation of self. *Journal of Personality and Social Psychology,* 1965, **1,** 413–424.

Gergen, K. J. Personal consistency and the presentation of self. In C. Gordon & K. J. Gergen (Eds.), *The self in social interaction* (Vol. 1). New York: Wiley, 1968.

Gergen, K. J. Social psychology as history. *Journal of Personality and Social Psychology,* 1973, **26,** 309–320.

Gergen, K. J. *Experimentation in social psychology: Death & transfiguration.* Invited address, Division 9, American Psychological Association, Chicago, September, 1975.

Gergen, K. J. Social psychology, science and history. *Personality and Social Psychology Bulletin,* 1976, **2,** 373–383.

Gergen, K. J. Social exchange theory in a world of transient fact. In R. L. Hamblin (Ed.), *Behavioral theory in sociology.* Edison, N.J.: Transaction Books, 1977.

Gergen, K. J. The social construction of the self. In T. Mischel (Ed.), *The self in psychology.* Oxford: Blackwell, in press.

Gergen, K. J., Gergen, M. M., & Barton, W. Deviance in the dark. *Psychology Today,* October 1973, **7,** 129–130.

Gergen, K. J., & Taylor, M. G. *Role-playing and modifying the self concept.* Paper presented at the meeting of the Eastern Psychological Association, New York, March 1966.

Gouldner, A. *The coming crisis in western sociology.* Glencoe, Ill.: Free Press, 1969.

Gutmann, D. Parenthood: A key to the comparative study of the life cycle. In N. Datan & L. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises.* New York: Academic Press, 1975.

Harlow, H. F., & Harlow, M. K. The affectional systems. In A. M. Schrier, H. F. Harlow, & F. Stollnitz (Eds.), *Behavior of nonhuman primates.* New York: Academic Press, 1965.

Harré, R., & Secord, P. F. *The explanation of social behavior.* Oxford: Blackwell, 1972.

Inhelder, B., & Matalon, B. The study of problem solving and thinking. In P. H. Mussen (Ed.), *Handbook of research methods in child development.* New York: Wiley, 1960.

Kagan, J., & Moss, H. A. *Birth to maturity: A study in psychological development.* New York: Wiley, 1962.

Kohlberg, L. Continuities and discontinuities in childhood and adult moral development. *Human Development,* 1969, **12,** 93–120. (a)

Kohlberg, L. *Stages in the development of moral thought and action.* New York: Holt, 1969. (b)

Kohlberg, L. Continuities in childhood and adult moral development revisited. In P. B. Baltes & K. W. Schaie (Eds.), *Life-span developmental psychology: Personality and socialization.* New York: Academic Press, 1973.

Kuhn, I. S. *The structure of scientific revolutions.* Chicago: University of Chicago Press, 1962.

Kurtines, W., & Grief, E. The development of moral thought: Review and evaluation of Kohlberg's approach. *Psychological Bulletin,* 1974, **81,** 691–704.

Lieberman, M. A. Adaptive processes in late life. In N. Datan & L. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises.* New York: Academic Press, 1975.

Loevinger, J. A. Models and measures of developmental variation. *Annals of the New York Academy of Sciences,* 1966, **134,** 585–590.

Looft, W. R. Socialization and personality throughout the life span: An examination of contemporary psychological approaches. In P. B. Baltes & K. W. Schaie (Eds.), *Life span developmental psychology: Personality and socialization.* New York: Academic Press, 1973.

McGuire, W. J. The yin and yang of progress in social psychology. *Journal of Personality and Social Psychology,* 1973, **26,** 446–456.

Milgram, S. *Obedience to authority.* New York: Harper, 1974.

Morse, S., & Gergen, K. J. Social comparison, self-consistency and the concept of self. *Journal of Personality and Social Psychology,* 1970, **16**(1), 148–156.

Myrdal, G. *Objectivity in social research.* New York: Pantheon, 1969.

Nesselroade, J. R., & Baltes, P. B. Adolescent personality development and historical change: 1970–1972. *Monographs of the Society for Research in Child Development,* 1974, **39**(1, Serial Number 154).

Neugarten, B. L. *Adaptation and the life cycle.* Paper presented at the meeting of the Foundations Fund for Research in Psychiatry, Puerto Rico, June 1968.

Neugarten, B. L. (Ed.), *Middle age and aging: A reader in social psychology.* Chicago: University of Chicago Press, 1968.

Neugarten, B. L., & Datan, N. Sociological perspectives on the life cycle. In P. B. Baltes & K. W. Schaie (Eds.), *Life span developmental psychology: Personality and socialization.* New York: Academic Press, 1973.

Pearlin, L. I. Sex roles and depression. In N. Datan & L. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises.* New York: Academic Press, 1975.

Piaget, J. *The language and thought of the child* (M. Warden, trans.), New York: Harcourt, 1926.

Piaget, J. *The child's conception of physical causality.* New York: Harcourt, 1930.

Piaget, J. The development of time concepts in the child. In R. H. Hock & J. Zublin (Eds.), *Psychopathology of childhood.* New York: Grune & Stratton, 1955.

Piaget, J. *Genetic epistemology.* New York: Columbia University Press, 1970.

Poole, R. *Towards deep subjectivity.* New York: Harper, 1972.

Rebecca, M. *A dialectical approach to sex-role socialization.* Unpublished paper, University of Michigan, 1975.

Riegel, K. F. Time and change in the development of the individual and society. In H. W. Reese (Ed.), *Advances in child development and behavior* (Vol. 7). New York: Academic Press, 1972.

Riegel, K. F. Dialectic operations: The final period of cognitive development. *Human Development,* 1973, **16,** 346–370.

Riegel, K. F. From traits and equilibrium toward developmental dialectics. In W. Arnold (Ed.), *Nebraska Symposium on Motivation.* Lincoln: University of Nebraska Press, 1975.

Runcinan, W. G. *A critique of Max Weber's philosophy of social science.* London & New York: Cambridge University Press, 1972.

Schaie, K. W., & Strother, C. R. The effects of time and cohort differences on the interpretation of age changes in cognitive behavior. *Multivariate Behavioral Research,* 1968, **3,** 259–294.

Schlegel, A. Situational stress: A Hopi example. In N. Datan & L. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises.* New York: Academic Press, 1975.
Sears, R. R. Experimental analyses of psychoanalytic phenomenon. In J. McV. Hunt (Ed.), *Personality and the behavior disorders* (Vol. 1). New York: Ronald Press, 1944.
Stein, A. H., & Baltes, P. B. Theory and method in life-span developmental psychology. *Society for Research in Child Development,* 1975.
Suomi, S. S., & Harlow, H. F. Social rehabilitation of isolate-reared monkeys. *Developmental Psychology,* 1972, 6, 487–496.
Weber, M. *The methodology of the social sciences.* Glencoe, Ill.: Free Press, 1949.
Wicklund, R. A. *Freedom and reactance.* New York: Halsted Press, 1974.
Woodruff, D. S., & Birren, J. E. Age changes and cohort differences in personality. *Developmental Psychology,* 1972, 6, 252–259.

CHAPTER **8**

Another Look at the Issue of Continuity versus Change in Models of Human Development

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Professor Gergen (Chapter 7, this volume) has called on us to reexamine two major, current models of development—that of stability or continuity and that of ordered change—and to replace them with his proposed dialectical aleatory model. His call to battle is indeed a Kuhnian revolution of the first order! While I recognize the limitations of these two suspect models, I shall argue the position that we need to extend these models further, not relegate them to ancient history.

The critical test for the stability model is the continuity of development as the individual organism ages. Individual differences are assumed to exist, but these differences should be maintained over the lifespan. Hence, the correlation between a given behavior at $time_1$ and at $time_2$ should be large, if not approaching 1.00 in magnitude. Many major and carefully undertaken longitudinal studies report mixed results. Time-lag correlations vary from 0 to .5 and are occasionally negative.

One is tempted to dismiss the stability model in light of this prima facie evidence. However, this would ignore many inherent problems in measuring behavior over the life span and, more importantly, fail to take into account the interaction between the organism and its environment. In his monumental work, Bloom (1964) found consistent support for a stability model from dozens of longitudinal and cross-sectional studies. In fact, one is amazed at the convergence of the findings, after problems such as measurement unreliability and restriction of range in the sample are adjusted for. Other researchers (cf. Nesselroade, 1970) have