Microenvironmental Impact Upon Personality Development During the Adult Life Span

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INTRODUCTION

It is often taken for granted that personality patterns are established early in life by an interaction of genetic factors and early socialization experiences. Whatever adult changes in personality occur are then thought to be largely attributable to decremental changes in the individuals physiological or intellectual response capability or the decreasing extent of his life space (see for example Schaie, 1962). Professionals and scientists working with the mature adult and the elderly, nevertheless, would on the basis of their personal observations, at least, make a strong case that there are personality changes in adults which can not be accounted for either by childhood experience or by biological decline. Such changes then must be related either to systematic developmental changes occurring in adult personality structure or to non-developmental individual changes occurring as a function of environmental impact. It is the purpose of this chapter to sort out these issues in some detail, even though the relevant research literature as yet is most sparse (Schaie & Marquette, 1972).

Some Theoretical Issues

Although an age decrement model has long been assumed to be appropriate for learning, the intellectual functions and psychomotor speed, personality traits and attitudes are assumed to remain stable. The dominance of psychoanalytic thought among child psychologists has led to the community-held belief that personality traits are established very early in life and that only minor modifications of such traits occur in adulthood. Most researchers interested in personality have therefore virtually ignored personality development in adults and the aged. Those ascribing to a life-span model involving growth, maturity, and decline see adulthood as a period where earlier achieved behavior change becomes stabilized rather than involving further significant modification (Kuhlen, 1959; Kohlberg, 1969). Others view early life experiences as important in developing traits which may be significant in later life. Nevertheless, even when a continuity model of personality is proposed it is still possible to view adult personality change to be individually programmed and thus consider

Research designed to examine the validity of alternate models of personality development is scant. Evidence from cross-sectional studies shows that adult age differences can be observed on many personality variables (Chown, 1968; Neugarten and Datan, 1973; Schaie & Marquette, 1972), but longitudinal studies would seem to offer greater support for a continuity model (Livson, 1973). Such findings, however, may be a function of a number of different combinations of developmental events.

Over 30 years ago, Kuhlen (1940) pointed out that cultures age just as people do and that what appears as age differences may actually reflect the effect of socio-cultural change. Acknowledgement of such an assumption suggests that most of our present research on personality in adults, which is based primarily on cross-sectional studies, is uninterpretable with regard to development because age and cohort are invariably confounded.

Aware of such confounds, Schaie (1965, 1967) has shown that both cross-sectional and longitudinal methods are special cases deductible from a general development model, which also yields another approach, the time-lag method, in which samples of the same age are compared at different points in time. Although all three methods necessarily represent confoundings, two at a time, of the three components, age, time of measurement, and cohort (time of birth), comparison of results obtained from replications of these methods permits the segregation of variance due to chronological age from that attributable to cohort differences in cross-sectional studies and from non-age related environmental effects in longitudinal studies. In this content, significant specific time of measurement effects are attributable to current environmental impact, while cohort differences refer to generational differences

in genetic structure and/or prior experience. (See Schaie, 1975 for future exposition of the nature/nurture relatiohship in developing analysis).

Developmental Changes in Intelligence as a Model for Personality Study

The implications of such an approach with regard to development on a life-span basis can probably best be explained by using a developmental model of intelligence as an example. Cattell, (1963) and Horn (1970) have suggested that two broad classes of abilities, i.e., fluid and crystallized, become distinguishable as development processes from childhood into adulthood. Fluid abilities depend upon neurological-physiological functioning, the determinants of which are based in a genetic code set forth at conception, while crystallized abilities are determined by formal education and general experience.

Since crystallized abilities are determined by the life experience of an individual, performance differences between cohorts may be due to the "enriched" environments younger generations have enjoyed. Improved teaching methods, opportunities for more years of education, mass media communication developments, etc. are probably contributors to this "enriched" environment. Furthermore, age differences in abilities within the same cohort should reflect the extent to which an individual has experiences which enable him/her to continue to appropriate relatively large sections of the intelligence of the culture.

Fluid abilities, on the other hand, should show relatively little difference among cohorts because input is not due to environmental impact, but can proceed only thorugh the process of genetic selection. With age, however, these abilities are expected to decline.

Such an approach to the development of intelligence is far different from the traditional decremental model because it allows for differential prior experience as well as physiological functioning to play a part in determining intellectual performance throughout the life span. Recent cross-sectional research evidence supports the expectations of the model in that the acculturated crystallized intelligence factors do not decline with age but, in fact, may even increase, while fluid abilities tend to decline from teen-age onward (Cunningham & Clayton, 1973; Horn, 1970; Schaie, 1970). Furthermore, general intelligence, taken as an average of these two components, neither rises nor declines (Horn, 1970). Sequential strategies are required, or course, for more definitive support. Such studies have led Schaie and his associates (1973, 1974 and 1975) to conclude that much of the apparent age decrement in intellectual abilities is an artifact of data collected from cross-sectional studies which compare cohorts of differing base levels of ability.

The question must now be raised as to whether or not research in personality development has been beset by the same methodological problems as has, until recently, plagued the study of intellectual development. Schaie and Parham (1974b) have suggested that the assumed stability of adult personality might also be artifactual, involving fortuitous combinations of generational differences in the expression of personality traits and attitudes, with secular trends and ontogenetic trends operating in opposing directions. Further, similar to the different age trends for crystallized and fluid abilities, there may well be personality and attitudinal constructs which are over-determined by species-specific ontogenetic transformations which therefore should show true age patterns, while culturally determined traits would be subject to secular change but

not be affected by ontogenetic events as such. This interpretation allows for the occur

age. They then compared these findings with a
also tested in 1970 and found substantial genera
Their results suggest personality characteristic
cohort remaind stable over the 26-year period mo
observed age differences were attributable to di
cohorts.

Sequential methods have also been applied to
of the trait of social responsibility (Schai

84 years suggest that most personality factors remain stable within generations, although there were many differences between successive cohorts. Certain factors were influenced by secular trends although individuals of all ages were affected. Those variables over-determined by biological constraints or early socialization appear to have life-long stability which may be modified by transient cultural change. It is interesting to note that two factors were exceptions to the general finding of stability. Both Excitability and Universal Political Concern were observed to increase with age. These findings support the hypothesis of differentiated trends for personality factors in that most factors remained stable with observed age differences in personality attributable to cohort-specific early environmental influences, although a few may follow ontogenetic trends.

Environmental impact upon cognitive style

We have thus far considered studies addressed directly to the development of personality traits during adulthood. Another relevant area of inquiry, dealing with environmental impact during adulthood, may be found in the literature offered under the heading of cognitive style or complexity. Renewed interest has recently been shown in the formal investigation of individual differences in performance styles (e.g., Cronbach, 1975; Kagan & Kogan, 1970; Underwood, 1975). Although such interest has not been developmental in specific intent, the implications to be drawn from such reports are indeed suggestive.

Let us first consider research in the area of cognitive style which has been defined as "individual variations in modes of perceiving, remembering, and thinking or as distinctive ways of apprehending, storing, transforming, and utilizing information"

(Kogan, 1971). Although many different concepts are termed aspects of cognitive style, in general, a threefold classification has been utilized: 1) styles based on accuracy versus inaccuracy of performance, e.g., field independence-dependence; 2) styles involving assessment procedures not characterized in terms of accuracy of performance but in which value distinctions are imposed such that performance at one extreme is superior to that at the other, e.g., analytic and non-analytic categorizations; and 3) styles which are most purely stylistic where neither accuracy nor value dimensions are relevant, e.g., breadth of categorization. (See Kogan, 1973).

Most developmentally-oriented research in this area has been devoted to children. We shall here mention only those studies which present data for more extended portions of life-span and some interpretations of research findings which support environmental effects on behavior. None of the studies cited (also see Kogan, 1973) employ sequential designs; consequently it is not possible to confirm the existence of possible ontogenetic trends.

Cognitive complexity, the development of which owes much to the work of Kurt Lewin, has been defined in terms of how many different dimensions an individual employs in constructing similarities and differences between familiar people in his social environment. A greater level of cognitive complexity implies a more multidimensional cognitive structure involved in the perception of other people. Later (Bieri et al, 1966) this thought was extended to include the ecological characteristics of the social environment. For example, using a cross-sectional design, Signell (1966) concluded that in the age range 9-16, children develop greater cognitive complexity with regard to significant peoply by finer differentiation of concepts already in their repertoire,

while with regard to objects more remote from the child's experience, such as nations, development progresses through the acquisition of new concepts for the differentiation.

In an environmental-developmental sense, perhaps greater attention has been given to a related construct - "conceptual systems." These are broadly defined as "a scheme that provides the basis by which the individual relates to the environmental events he experiences (Harvey, et al, 1961, pp 244-245)". Development is proposed to proceed from minimal to maximal differentiation and subsequently to hierarchic integration. Variations in individuals "conceptual systems" are determined along a dimension of "abstractness-concreteness". Of particular interest to our topic is a statement by Harvey (1966) that "exposure to diversity is probably the most central prerequisite to differentiation and integration, and hence of greater abstractness" (p. 63). The level of differentiation and integration is postulated to be a function of the interaction between the child and parents' child rearing patterns. As such, it fits a stability model in that the abstractness-concreteness of the adult is fixed depending upon the experiences of training received in childhood.

Cross (1966) undertook an empirical test of the developmental postulates of the theory. Parents of 33 boys scoring at the extremes on a sentence completion measure of conceptual level were interviewed regarding parent-child relations. Their results support the developmental postulates in that parents who grant greater autonomy and encourage diversity produce sons who have high scores for conceptual level.

Since cross-sectional research normally shows that older people are more "concrete" than the younger (e.g. Arenberg, 1968; Thaler,

1956), it would be reasonable to predict cohort differences in early experience to account for the differences between age groups. Yet most of the gerontological literature, although based on cross-sectional research, implicates an ontogenetic trend (cf. Botwinick, 1973). Needless to say, we do not as yet have the data to support or refute such interpretations.

Our last example is concerned with field independence-dependence which is currently considered the perceptual component of the more inclusive cognitive style of analytic-global functioning. This concept is concerned with the capacity to overcome an embedding content. The three basic measures used to define this concept include: 1) the Embedded Figures Test (EFT), which requires rapidly locating an element embedded in a geometrically complex figure; 2) the Rod and Frame Test (RFT), which requires adjusting to true vertical a luminous rod which is suspended within a tilted frame in a dark room; and 3) the Body Adjustment Test (BAT) which requires adjustment of the body to true vertical after the chamber in which the subject has been seated is rotated to a non-upright position. Field independence implies superior performance on the tests.

A longitudinal study of field independence-dependence shows that independence rises from age ten on, reaches a peak at age 17 and changes little through 24 (Witkin, et al, 1967). This finding seemed to hold true for all subject's as the individual's relative standing within the group did not change much over the time period monitored. Cross-sectional data, on the other hand, demonstrate a consistent decline on the three measures for subjects aged 17 and 21. The longitudinal data implies a strong ontogenetic trend of increasing field independence, while the cross-sectional data suggests cohort differences which may be modified by secular trends.

Data from older samples (Comalli, 1970) suggest the elderly are more field dependent but whether this results from an ontogenetic decline leading to performance decrements or environmental effects which resulted in poor performance or a combination of both has yet to be established. Other cross-sectional investigations which observed age differences on this concept found that the age groups also differed in educational level, occupation and years of birth (Schwartz & Karp, 1967). Comparison of retired versus employed individuals of the same age showed that the employed were more field independent (Karp, 1967); however, they were not matched for educational level and it may be that the employed had more years of education. This explanation seems all the more reasonable since Comalli, et al, (1965) when comparing institutionalized elderly with a same aged sample reasonably matched for educational level found no significant differences on perception of verticality. Since such variables as occupation and years of education have often been found to contribute to performance differences between age groups (e.g., Birren & Morrison, 1961; Granick & Friedman, 1967; Gribbin, Parham & Schaie, 1974; Owens, 1953), such an explanation cannot be ruled out.

Examples from the cognitive style literature provide strong support for early environmental experiences producing great individual variation. The theoretical formulations of these constructs have, for the most part, been based on the assumed stability of personality in adults. Since as one journeys through adulthood one enjoys increasing diversity of experiences, many of which may affect the expression of such cognitive styles, it would seem that evidence for such an assumption has yet to be established.

Environmental impact on personality style

Although many factors may be considered measures of personality style, there are few for which life-span data are a

the oldest cohorts who continued to decline.

Personality-perceptual rigidity provides a measure of the individual's ability to adjust to new surroundings and changes in cognitive and environmental patterns. Again, significant cohort differences were found as well as evidence for slight ontogenetic change.

Findings such as the above demonstrate that cultural change contributes to cohort differences but tell us little about the factors which determine these differences. What we need to know then are the specific factors influencing such change. Recently our laboratory has taken steps in attempting to determine some of the gross demographic variables which may of interest. Although we are only in the initial stage of analysis, some interesting findings have been observed. Results suggest that such variables as years of education, life satisfaction and professional level affected change in Motor-cognitive Rigidity, particularly in the time interval from 1963-1970, while years of education, income, life satisfaction and age at first marriage were important in predicting change in psychomotor speed. Personality-perceptual rigidity seemed most affected by years of education and the number of times the individual changed jobs, although professional level, life satisfaction and the number of times the individual moved households also seemed to have an impact.

Some Conclusions

The analysis of the literature on environmental impact upon personality development in adulthood leads to some apparently paradoxical, but upon closer analysis, quite straightforward conclusions. First, it appears that very few personality traits or

styles show ontogenetic changes in adulthood. That is, most such traits appear to be determined by experiences occurring early in life, the consequences of which are maintained into old age. Second, there is substantial personality change in adulthood, but such change is non-developmental in nature. Third, the environmental impacts which effect personality formation in the early years are subject to rapid change, leading to succinct differences in personality pattern between successive generations. It appears futile therefore to direct our search towards the discovery of age-related personality trends in the adult. Rather we need to examine in greater detail the specific determinors of the adult's micro-environment as they affect his personality. Because of the marked changes of such impact across times of assessment and subject generations, we will be able to discover at any point in time age differences in personality between members of different cohorts, but changes in personality within members of the same cohort are likely to be strictly individual phenomena, not linked to any developmental paradigm.

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