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Ego Identity Status, Formal Operations, and Moral Development.

by

Ian S. Rowe

B.A. (Honours), Simon Fraser University, 1973

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in the Department

of

Psychology.

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Ego Identity Status, Formal Operations
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ABSTRACT

Twenty-six subjects (20 males and 6 females) were administered measures assessing ego identity status, level of moral reasoning, and stage of cognitive development. Expectations that formal operations would be a necessary but not a sufficient condition for the development of post-conventional moral thoughts and for Identity Achievement status were supported. Level of moral thought was also found to be positively related to achievement of identity. Individual descriptions of subjects with noteworthy patterns of three variables under study were presented. Suggestions for future research include a longitudinal design and the study of other aspects of specific Identity Status types. Implications of the design employed in this study are discussed.

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STRUCTURAL ANALYSIS

The cognitive-developmental approach to understanding human behavior involves the segregation of thought entities such as: purely intellectual structures, structures of social role-taking, moral reasoning structures, identity structures, etc. Loosely, these structures are separable functions within the domain of the ego.

The intent of this investigation is to observe some of the patterns of inter-relationship among three of these parameters of structural development. According to cognitive developmental assumptions, these developing structures should interrelate in a specifiable manner. The parameters of interest here are purely intellectual development (Piaget and Inhelder, 1958), moral reasoning development (Kohlberg, 1969), and ego identity development (Erikson, 1963; Marcia, 1966).

Piaget has asserted that intellectual maturation is the plant stem of development from which different psycho-social branches are thrown forth as the stem

development (cognition) allows.

"the structural transformation is like a center from which radiate the various more visible modifications which take place in adolescence" (Piaget and Inhelder, 1958, p.335)

This is an assertion about which few cognitive developmentalists will quibble. In fact, it is almost an a priori assumption of cognitive developmentalism that cognition is structurally at the centre of things. And, of course, theoretically, it is. However the problem remains of demonstrating, EMPIRICALLY, this to be the case. Piaget has not acknowledged the mootness of the issue by investigating it with any empirical data addressed to the question.

THREE THEORETICAL STRANDS

THE MEASURES: PIAGET, KOHLBERG, ERIKSON, MARCIA.

Piaget

The contemporary school of cognitive-developmentalism has its roots in the perspectives established by Piaget's writings on

cognition. Piaget describes himself as a "genetic epistemologist" and the term is a tribute to his sometimes obscure but always accurate style of explication. His province is the genesis of knowledge (epistemology) within the individual; hence, genetic epistemology. In order to study the development of understanding in the individual (which is an active, cumulative and omnipresent activity), Piaget focuses his attention on the mental activities of the child. The mental activities which have his closest attention are those processes by which knowledge of the outside world is acquired; these he terms "cognition." Cognition then includes learning, memory, perception and thought. Piaget separates cognitive processes into two broad classes; those which record reality: learning, memory and perception; and those which transform reality: thought (Niemark, 1975). The transformations or "operations" which an individual has access to are a function of his level of "thought" development. Initially, the infant is pre-thought; he merely records information from ongoing sensory experience, constructing his reality by his own activity. This is known by Piagetians as the "sensori-motor period" and is the period during which the infant develops organized behavioural patterns called "schemes"

through the complementary functions of assimilation and accomodation, and, thereby, makes some order of his ongoing acitivities. Throughout the sensori-motor period the infant is technically unable to think; he has no operative symbolic abilities by which he can transform information impinging on his senses.

Transformational ability, (thought) begins to appear with the onset of the period of "concrete operations" and the attendant cognitive operational abilities for which the period is named. These cognitive operations, which Piaget describes as "interiorized actions", are: reversible, performable on a purely mental level, applicable to an ever wider array of objects and schemes (i.e., they are generalizable), and become organized into higher-order structures. The period of concrete operations marks the child's mastery of the logic of classes and relations among things. Classification, seriation, and conservation appear and are applied to properties and relations of concrete (physical) objects. These operational abilities are a result of the child's newly acquired ability to "decenter" (i.e., to attend to particular qualities of objects such as colour and size

which are extracted from the physical event) and, also, to attend to more than one attribute of an object at a time.

The structural reintegration that emerges from concrete operations marks the transition from the realm of the actual into the realm of the possible. An array of new and powerful operational abilities are developed ("equilibrated") which Piaget describes as "formal operations." Formal operational abilities include abstract hypothetical deductive thought, the ability to generate all permutations and combinations of groups of variables, a set of logic operations known as INRC (inverse, negation, reciprocation, correlation) and a variety of other operational abilities which Piaget and Inhelder (1958) detail in their theoretical treatise: "The Growth of Logical Thinking From Childhood to Adolescence." In the "Essay on the Construction of Formal Operational Structures" Piaget and Inhelder use fourteen different physical experiments which require various operational abilities for their execution as a means of explicating their analysis of individual thought (Piaget & Inhelder, 1958). That is, by observing an individual's thought as he or she attempts to understand an experiment, Piaget and Inhelder were.

able to ascertain which operational abilities the individual had access to. For the purpose of the present investigation two of these experiments were utilized as a means of determining whether the subjects in the investigation had access to the INRC operations and whether they were able to generate full permutations and combinations (the realm of the possible). The INRC group and the combinatorial system have been postulated to be the fundamental theoretical "building blocks" of the formal stage. It is hypothesized that these operations are essential to moral reasoning and identity development respectively. Following Colby (1972), formal operations was subdivided into three substages: early formal operations, transitional to full formal operations and full formal operations.

Kohlberg

Kohlberg's (1969) analysis of moral development marks the extension of Piaget's cognitive-developmental paradigm and its various attendant assumptions into the arena of psychosocial development. Kohlberg studies

the structural aspects of moral reasoning and believes that he has isolated an invariant typology of structural stages of moral reasoning through which all maturing individuals must pass, albeit, at varying rates with the possibility of stagnation at any stage. Growth through the stages is a function of the interaction of requisite logical analytical abilities with social perception. And social perception develops through the use of higher reasoning in a rich social environment. What emerges is a model of development which consists of structural stages of operational logic (Piaget and Inhelder, 1958) allowing advances in stages of social role taking (Selman, 1971); together they permit advances in stages of moral reasoning. The same principles of structural reintegrative development apply in each area of development. That is, each new stage is the result of a reorganization of schemata from the earlier stage. The stages, therefore, are hierarchically integrative with advancement dependent upon ongoing equilibration by the maturing individual.

The stages of moral reasoning that Kohlberg delineates are basically three; pre-conventional, conventional, and post-conventional. Each of the three,

however, further subdivides into two consecutive stages which, altogether, yield a six stage continuum.

Preconventional reasoning begins with stage 1 wherein "rightness" is determined by the personal, physical consequences of actions. The outgrowth of stage 1 is stage 2 during which the individual determines rightness on the basis of personal benefit, often generalized to include actions towards others premised on the assumption of a reciprocal response.

Conventional reasoning is apparent first in stage 3 reasoning where "goodness" is what is pleasing and acceptable to important others in the individual's social environment. Stage 4 reasoning is indicated when the individual develops a belief in the maintenance of social order and a regard for the rules and laws which support it.

Post-conventional reasoning consists, at first, of the reasoned social contract agreements of stage 5 and later the principled reasoning of stage 6. Principled reasoning refers to an autonomous personal conscience wherein the individual makes decisions in accordance with abstract principles of human dignity, justice and equality.

Kohlberg has generated a substantial body of empirical support for his assertions; he has also written a wide array of theoretical treatises which often are specific to the interests of applied groups (eg., educators, social reformers) and also indicate a gradual theoretical evolution (Kohlberg 1969, 1971, 1972).

Marcia

Marcia has delineated a taxonomy of identity resolution types according to how the individual has handled (and is handling) his or her ego identity conflict. Marcia is working from Erik Erikson's analysis of identity development in adolescence. This analysis suggests that in the average individual in our culture the identity crisis will be manifested in a period of decision-making centering around beliefs (ideology) and vocational choice. In his preliminary work, Marcia noted that two binary variables kept appearing as he studied his identity-seeking youths. They tended to either report a crisis or not and they also appeared to vary in a binary manner on the matter of commitment. That is, any given youth in his late

adolescence could be categorized according to whether or not he had experienced an ideological/vocational crisis and whether or not he had made a strong ideological or vocational commitment. What Marcia ended up with in his taxonomy was four types of individuals, categorized according to whether or not they had experienced a crisis and made a commitment on issues related to ideology or vocation.

The individual who has not experienced a crisis but who has an ideological and/or vocational commitment Marcia labelled an Identity Foreclosure. Foreclosures, as their name implies have foreclosed on familial or community values, belief systems and occupational choices. Rather than experience the turmoil of an identity crisis, these individuals have simply maintained early commitments. Their choice of belief system and vocation is familiar to them, but is not something they have actively engaged in thinking critically about. In a sense, almost everyone begins as a foreclosure, but the differences appear as the individual is faced with a relativistic crisis. The foreclosure avoids crisis by making a somewhat blinkered and rigid grasp onto the system he knows best and with which parent and authority figures

concur. Foreclosure status individuals have demonstrated in interviews and on paper-and-pencil tasks that authority figures are particularly important to them (Marcia 1964, 1966, 1967, 1976a, 1976b; Marcia and Friedman, 1970).

It was one of our early hypotheses that possibly the salient ingredient that mobilized an individual to experience a relativistic crisis was the presence of hypothetical thought abilities or what Piaget would call formal operational thought. The college age foreclosure has experienced what Peter Blos (1962) calls an "abbreviated adolescence." He has made an early commitment to adult values and beliefs without utilizing the adolescent period to actively consider alternatives and according to Blos' clinical observations, these youths suffer from insufficient personality differentiation.

Identity Achievements are individuals whose ego identity resolution does involve a crisis and also includes a strong commitment. Identity Achievement individuals, like the Foreclosures, indicate commitments to the ideological and vocational choices

they have made. (Seasoned interviewers, however, often report a somewhat less attached perspective from the Identity Achievements.) The Identity Achievements differ from the Foreclosures in that they report a "crisis period." This refers to a prolonged period of decision-making concerning ideology and vocation. It may also refer to a somewhat more generalized relativistic crisis wherein the individual has agonized for months and, occasionally, years over the meaning of life generally, the meaning of his life in particular, and why he's here at all. (Individuals who are actively engaged in this process at the time of the interview are called "Moratoriums".) The Identity Achievement, however, has survived his crisis and come out with a commitment to his values and beliefs; interestingly, he is commonly characterized by a strong ethical stance (Podd, 1972). It was our hypothesis that the equilibrating these individuals had done on the matter of identity had also been effective in the resolution of more sophisticated modes of moral reasoning.

We also were interested in the question of whether or not hypothetical abstract thought was a prerequisite to the global relativistic questioning that occurs during the

time of crisis. This question becomes salient when observing individuals who are actively engaged in their crisis period--the Moratoriums.

Moratoriums have not made a commitment but are actively considering alternatives. Males classified as moratoriums have been found to be the most anxious (Marcia 1967; Podd, Marcia, and Rubin 1970). The moratorium classification is less stable than the other classifications as most individuals eventually move from being engaged in a crisis. The direction they go in, however, is not necessarily Identity Achievement. It has been Marcia's observation that many Moratoriums never actually achieve a resolution to their questioning but terminate the anxiety of their crisis by becoming very vague and diffuse. These individuals are described by both Erikson and Marcia as "Identity Diffusions."

Identity Diffusions then are the people who are not in crisis and who do not have ideological or vocational commitments. These are the hollow men whose "self" is a matter best not confronted.

Marcia's identity status types, then, include four classifications: Foreclosure (commitment, no crisis), Identity Achievement (crisis and commitment), Moratorium (no commitment, ongoing crisis), and Identity Diffusion (no commitment, no crisis).

PAST RESEARCH

A variety of studies in the past decade have examined the dyadic interrelations between formal operational structures, moral reasoning structures and/or Erikson's ego identity. One study Cauble (1975) reports on the full triadic relationship that the present investigation studies.

Morality-Logic

The relationship between moral structures and logical structures has been investigated in several studies. Krebs (1974) and Colby (1972) have studied the moral structures of children at the stage of concrete operations. Tomlinson-Keasey and Keasey (1974),

and Cauble (1975) have studied the moral reasoning of adolescents as they moved from concrete operations into formal operations. All studies have reported a strong positive co-variance between the two parameters. During concrete operations it would appear that the relationship is more isomorphic (Krebs, 1974).

As the individual acquires formal operations, it appears that operational structures become less isomorphic with moral structures, apparently because operational structures are necessary but not sufficient for moral development (Tomlinson-Keasey and Keasey, 1974; Cauble, 1975).

Several researchers have found evidence that social role-taking development is a mediating variable between cognitive development and moral development (Keasey 1971), Kohlberg, 1969; Selman, 1971; and, Tomlinson-Keasey and Keasey 1979).

Identity - Morality

Two studies have examined the relationship between identity status and level of moral reasoning.

Podd (1972) studying the identity status and level of moral development of 112 male undergraduates found significant relationships. Individuals classified as identity achievers tended to be post-conventional moral reasoners while identity foreclosure and diffusion subjects tended not to be post-conventional.

Cauble (1975), with data on 90 undergraduate males and females regarding their identity status, their level of moral development, and their stage of cognitive development found no statistically significant relationships between identity status and moral development or between identity status and cognitive stage. We note however that Cauble, was not discriminating identity statuses and, hence, all of her conclusions regarding identity statuses are inappropriate.

Logic - Identity

The relationship between identity status and cognitive development has been the focus of investigations by Berzonsky, Weiner, and Raphael (1975), Cauble (1976), and Wagner (1976). Wagner writes "the present results, together with the findings of Berzonsky

et al. (1975) and Cauble (1976), lead to the general conclusion that there is a relative independence in the development of formal operations and ego identity from early adolescence through adulthood." (Wagner, 1976, p. 12).

This conclusion, however, is not completely warranted. Wagner, in her study, used an ad hoc modification of the identity interview as well as a modified incomplete sentences form. There exist important questions about the validity of these measures. As well, Wagner looked at younger age groups for whom the identity taxonomy had not been validated. There were, however, 35 subjects approximately seventeen years of age for whom the identity measure is somewhat more applicable. For these subjects (on the combinatorial measure of operational development ONLY) there was a significant association between identity status (measured as high identity or low identity) and cognitive development. ($\chi^2 = 3.64, df=1, P < = 0.0562$). Seventy-two percent of the high identity (Achievement & Moratorium) subjects were in formal operations and only 14% of the formal operations subjects were in the low identity status; 28% of the high identity group, however, were in concrete

operations. Wagner's data, we see upon close scrutiny, are subject to other interpretations. In fact, there is statistically significant evidence for the relationship that Erikson (1958) asserts: namely, that formal operations provide the adolescent with the cognitive tools to develop a sense of identity. Wagner's conclusion of "no relationship" is not well supported by her data.

The Berzonsky study (Berzonsky, et al., 1975) which Wagner cites, studied only women to whom the proper identity status interview was not administered. As well, the measures of formal operations employed were purely inferential and, hence, the cognitive classes are not necessarily validly grouped. Hence, for one to conclude from the Berzonsky study that for men and women there is evidence that formal operational ability and identity achievement status are unrelated is quite in error.

Cauble's evidence (Cauble, 1976) is equally problematical. As a statistical convenience, Cauble pooled her Identity Achievement and Moratorium subjects into "Identity Questioners". Her data indicate that there wasn't a significant association between

Questioners/Non-Questioners and cognitive stage. Whether an analysis which discriminated the actual identity statuses would have yielded a significant pattern of relations is an unanswered question.

In view of the mootness of the evidence (Cauble and Berzonsky) which Wagner cites and especially in consideration of her own contrary evidence upon which she does not remark, we might be wise to question her "general conclusion that there is a relative independence in the development of formal operations and ego identity" (Wagner, 1976, p. 12).

Past research findings, we note, in summary, point up several patterns of interrelationships among moral reasoning, logical development and identity status.

Formal operational structures appear to be necessary but not sufficient to develop post-conventional moral reasoning structures (Cauble, 1975; Tomlinson-Keasey and Keasey, 1974; Colby, 1972; Krebs, 1974). Individuals who have achieved an identity tend to be post-conventional in moral reasoning (Podd, 1972). Individuals who have foreclosed on familial or community derived identification systems tend not to be

post-conventional (Podd, 1972).

EMPIRICISM ... A METHODOLOGICAL PREVIEW

The empirical investigation of cognitive centrality quite clearly necessitates operational measures not only of cognitive development but also of the other structural transformations which supposedly are interdependent with purely operational development. These measures are notoriously scarce; Piaget and Inhelder's (1958) work remains the touchstone for those investigating Piaget's brand of natural logical development. Kohlberg is virtually the only cognitive developmentalist with a psycho-social measure that has been well validated. The investigation of self structures necessitates leaving the school of cognitive developmentalism to utilize a structural theory of ego development (Erik Erikson) which predates the rise of cognitive structuralism. These measures are fairly empirical and they are existent. They should interrelate in a specifiable manner. Hence they do provide a test (of sorts) of the centrality of cognition assertion.

The empirical test however has a logical flaw. If it is the case that psycho-social development branches out as the central stem of purely intellectual development allows, then it follows that the central stem is necessary for the psycho-social branch to occur. Clearly in most instances of psycho-social developmental branches the intellectual change which allows or triggers the dependent psycho-social development is not sufficient to cause the full psycho-social development. Psycho-social development as the name implies depends upon a great many factors and, hence, the presence of the requisite level of purely intellectual development will only result in full development when all of the other psycho-social ingredients are actively present. Operational development is the necessary but not sufficient stuff of development.

It follows, therefore, that if we examine a population of individuals, we should find many people who are operationally advanced but relatively impoverished in psycho-social domains, or people who are psycho-socially developed to the capacity of their cognitive ability ; but what we should never find, if the

centrality of cognition assertion be true, is an individual who is well advanced psycho-socially but not well advanced operationally/cognitively. Here, a logical difficulty arises, because we are forced to go in search of something which theoretically does not exist in order to disprove the theory. That is, the only type of empirical evidence(longitudinal data aside)which would be unequivocal happens to be the exception (i.e., an individual psycho-socially advanced but cognitively immature) which would disprove the rule. Other evidence more supportive also happens to be more equivocal. Not finding this theoretically impossible event does not mean that we have proven the theory; at most, we can make an inferential claim about the likelihood of the theoretically impossible event. That is, by examining a large group and still failing to find the theoretical exception we can make an inference to all groups and suggest that the theoretically impossible does not exist and thereby achieve some support for the theory. However, the fact remains that it does not mean all that much to go in search of something which should not exist and then fail to find it. We can never prove a theory by failing to disprove it.

In addition to investigating the aforementioned tenet of cognitive developmentalism, the current study also seeks to make detailed observations using the best constructs available. What we desired to observe are some of the relationships between: (a) an individual's level of cognitive development and his/her level of identity development; (b) an individual's level of cognitive development and his/her level of moral development; and (c) an individual's level of identity development and his/her level of moral development.

PREVIEW TO METHODOLOGY

The methodology for investigating structural inter-relatedness represents a balance point of information between the enhanced statistical power of looking superficially at a large group of people and the analytical depth of examining clinically a few individuals. In this investigation, twenty-six individuals were studied in a relatively intense manner. Several hours of taped data were collected on each individual. This quasi-clinical method attempts to retain the sensitivity to the individual gestalt of each subject which is clearly a benefit to a structural analytical investigation. On the other hand,

there is a large enough group of individuals to get a range of placements on the various measures to gain some insight into what individuals "in general" are like.

INTERRELATIONSHIPS

The inter-relations that we would expect to observe between logical stages and the psycho-social parameters would depend upon the psycho-social variable involved.

Following are our expectations of results: We expect to find that individuals in the higher stages of moral development will not only be advanced logically but will also have a sense of ego identity.

Our expectations regarding individuals with small repertoires of operational ability is that they will be constrained in their psycho-social development as a result.

METHOD

Subjects

Twenty-six persons (20 males and 6 females) ranging in age from 18 - 26 were recruited from among university students and non-academic on-campus staff. Subjects were respondents to recruitment posters offering hourly pay for their time. Subject selection criteria were heterogeneity in interest patterns and vocational outlooks. For example, after several subjects from the campus radio station had been chosen, no more individuals from this source were accepted. Women did not make up fifty percent of the subject group because of difficulties in assigning identity status types to some women. After this difficulty was encountered in some pilot interviews it was decided to include a few females who were classifiable using the male interview.

Measures

Ego Identity Status

A semi-structured interview assessing presence or absence of decision making and extent of commitment in the areas of occupation and ideology was scored according to a rating manual (Marcia, 1966) in order to classify subjects into one of four identity statuses which are modes of coping with the Erikson identity crisis. The identity statuses are: Identity Achievement - has gone through a decision-making period and is occupationally and ideologically committed; Moratorium - is currently in the decision-making period and has nonspecific commitments; Foreclosure - is committed, but has undergone little decision making, usually just adopting parental dictates; Identity Diffusion - may or may not have experienced decision making, but is uncommitted. Rating of each subjects identity status was done in the months following the collection of data by the author and then 19 of the 26 interviews were rated independently by Marcia who had not had access to any other data. The percentage of agreement was 86% and differences which tended to be subtle were resolved by discussion.

Moral Reasoning

Kohlberg's Form A-1 Standard Moral Interview (Kohlberg et al., 1975) was used in this study. This measure involves the posing of moral dilemmas by an interviewer to a subject who is required to resolve the dilemmas in his/her own terms. Interview responses were scored according to Kohlberg (1975) along a 6-point scale ranging from pre-conventional moral thought (personal expedience) to conventional moral thought (socially accepted rules) to post-conventional moral thought (transcendant ethics). All protocols were rated by the author in the months following data collection. As a control against rater bias a further rating was undertaken approximately a year later. A second trained rater who had no involvement in the project rated every response to every question. The author then re-rated every protocol using the same procedure. For each subject therefore we obtained twenty-eight discrete moral level ratings by each of the two raters.

In cases where the coefficient of reliability (pearson r between ratings on each response) was less than $r=.90$ (this occurred in five instances) the two raters discussed the tape and agreed upon a rating.

Logical Development

The beam balance and the coloured liquids combinations problems were administered individually according to the procedures outlined by Piaget and Inhelder (1958). The focus for each protocol was the subject's verbal response to experimenter queries as well as his/her running commentary on why he was doing whatever he was doing. From these data as well as the actual performance on the task the operational level of the subject was assessed using a checklist worked out in pilot interviews. From the first pilot interviews a high concordance was apparent both between tasks for each subject and between the author and the experimenter (the author was observing from behind a one-way mirror). The experimenter for this task had no involvement in other aspects of the project. Each subject's symbolic logical ability was categorized by the experimenter into one of five continuum categories immediately following the protocol. The categories were: concrete operations (IIB), transition to formal operations (IIB-III A), early formal operations (III A), transition to full formal operations (III A-III B), and full formal operations (III B).

Procedure

Since administration of each measure took about one hour, most subjects were seen in three separate one-hour sessions. All measures were tape recorded and all subjects were given code letters. The first measure administered was generally the Piagetian combinations task and this aspect of the data collection was kept quite separate. Two other experimenters were employed in administering the morality and identity measures in subsequent sessions. Assurance of complete independence of these measures was achieved by the use of independent raters at the time of data evaluation.

In all, four experimenters were involved plus two independent trained outside raters.

RESULTS

The results of this investigation will be presented in two formats; first a quantitative presentation of the three dyadic relationships (logic-moral, logic-identity, identity-moral) and secondly a qualitative presentation of salient data on some noteworthy subjects.

The quantitative data will be in the form of frequency tables showing individual subjects (identified by code letters) according to their level of moral, logical and identity development.

The qualitative data will consist of a presentation of noteworthy patterns of development that occur across subjects and significant patterns that occur within particular subjects. That is, general trends or constellations will be presented as well as vignettes of theoretically interesting subjects.

Quantitative Results

(A) Logical development and moral reasoning.

It was expected that the attainment of formal operations (at least level IIIa) would be a necessary but not a sufficient condition for post-conventional moral development (See Table I for these results). The absence of individuals below the diagonal in Table I indicates that there were no instances of individuals in a stage of moral reasoning without the requisite level of logical development.

TABLE II Moral Reasoning and Logical Development (a)

| | Logical development | | | |
|----------------------------|---------------------------------|----------------------------|--------------------------------------|-------------------------------------|
| | IIb (concrete operations) | IIb-IIIa (transitional) | IIIa (early formal operations) | IIIa-IIIb (transitional) |
| Moral reasoning | | | | IIIc (full formal operations) |
| Pre-Conventional (utility) | 1 (U) | 2 (S,P) | • | 2 (M,X) |
| Conventional (approval) | • | 3 (O,C,K) | (M,F,N,U) 4 | 1 (V) |
| | 4 (convention) | • | (J,U,T,I) 4 | (N,O,Q,B) 4 |
| | 5 (social contract) | • | • | 2 (L,R) |
| Post-conventional | 6 (ethics) | • | • | • |
| | | | | 2 (D,E) |

(a) Individual subjects are represented in cells by code initials. For example, individual U is at level 2 in moral reasoning, IIb in logical development, and (see Table III) a foreclosure in identity.

It was expected that logical development alone would not be a sufficient condition for moral development. The instance of individuals above the diagonal in Table I is in accord with this expectation.

(B) Logical Development and Identity Status

It was expected that attainment of formal operations (level IIIa - or beyond) would be a necessary but not a sufficient condition for Identity Achievement. The results are presented in table II. Again as with moral development, only subjects who were in formal operations were in the Identity Achievement status; furthermore, if one includes Moratoriums (a "high", though unstable, identity status) only one disconfirming case was observed. Out of the 7 individuals who may be said to be high in ego identity, only 1 lacked formal operations.

Table II speaks unequivocally to the question of whether formal thought alone is sufficient to induce an identity crisis. Fifty-four percent of the subjects in the investigation had acquired some formal thought but had not experienced an identity crisis.

TABLE B: Ego Identity Status and Logical Development

| | Logical Development | | | |
|----------------------|---------------------------------|---------------------------|--------------------------------------|-------------------------------------|
| | IIa (concrete operations) | IIb-IIc (transitional) | IIIa (early formal operations) | IIIb (full formal operations) |
| Identity status | | | | |
| Identity Diffusion | 0 | 3 (C,K,O) | 3 (Q,F,I) | 4 (X,M,O,L) |
| Foreclosure | 1 (U) | 1 (S) | 3 (J,U,T) | 3 (H,O,B) |
| Moratorium | 0 | 1 (P) | 2 (V,M) | 1 (V) |
| Identity Achievement | 0 | 0 | 0 | 1 (M) |
| | | | | 2 (D,E) |

TABLE 3: Ego Identity Status and Moral Reasoning

| Moral Reasoning | Identity Status | | | | |
|----------------------------|---------------------|-------------|---------------|----------------------|---------|
| | Identity Diffusion | Foreclosure | Moratorium | Identity Achievement | |
| Pre-Conventional (utility) | 1 (X) | 3 (U,S,H) | 1 (P) | 0 | |
| Conventional (approval) | 3 (G,A,F,K,C) | 0 | 1 (M,V,U) | 0 | |
| Post-conventional | 4 (convention) | 3 (N,O,I) | 5 (J,U,T,O,B) | 0 | 0 |
| | 5 (social contract) | 1 (L) | 1 (Z) | 0 | 1 (R) |
| 6 (ethics) | 0 | 0 | 0 | 0 | 2 (D,E) |

(C) Identity Status and Moral Reasoning

It was expected that there would be a positive relationship between identity status and level of moral development. These data are presented in Table III. When frequencies were combined to permit calculation of a Fisher Exact Probability (two categories of moral reasoning: non-post conventional and post-conventional; two categories of identity: non-Identity Achievement and Identity Achievement), the resulting significance level was $p=.004$, indicating a significant relationship between Identity Achievement and post conventional moral reasoning.

(D) Identity, Moral Reasoning, and Logical Development

The data presented in Table IV permit one to look at patterns of all three variables for individual subjects. Logical development has been dichotomized into pre-formal operations and formal operations; moral development has been trichotomized into pre-conventional, conventional,

TABLE 4: Ego Identity Status, Moral Reasoning, and Logical Development

| Identity Status | Pre-conventional | | Conventional | | Post-conventional | |
|----------------------|------------------|--------|--------------|------------------|-------------------|--------------|
| | Pre-formal | Formal | Pre-formal | Formal | Pre-formal | Formal |
| Identity Diffusion | 0 | 1 (X) | (C,G,K) 3 | (A,F,I,N,O) 5 | 0 | 1 (L) |
| Foreclosure | (S,U) 1 | 1 (H) | 0 | (B,J,O,T,U) 5 | 0 | 1 (Z) |
| Moratorium | 1 (P) | 0 | 0 | (M,U,V) 3 | 0 | 0 |
| Identity Achievement | 0 | 0 | 0 | 0 | 0 | (D,E,R) 3 |

and post-conventional. As may be observed from this table, the two most frequent patterns are "Diffusion/conventional morality/formal operations" and "Foreclosure/conventional morality/formal operations" and "Foreclosure/conventional morality/formal operations." These two categories account for 38% of the total subjects. Two of the three next most frequent patterns are "Diffusion/conventional morality/pre-formal operations" and "Moratorium/conventional morality/formal operations." These two categories account for an additional 23% of the total. Taken together, the five groups (61% of the sample) noted above have in common two characteristics: conventional morality and non-Identity Achievement. A final cluster (12% of the sample) involves the 3 Identity Achievement subjects, all of whom have post-conventional moral reasoning and formal operational thinking.

Subjects D and E

As may be seen from tables I, II, and III subjects D and E are developed as far forward as the measures go. Of importance is that this is true for each measure. Of importance also is that D and E are the only subjects who were in stage six morally; two of only three subjects in

full formal operations; and two of the only three subjects who were identity achieved. This evidence that highly integrated development appears across parameters is presented as a major finding.

Qualitative Results

The similarity of subjects D and E despite their high individual differentiation was striking. Both presented themselves interpersonally as being reflective, composed and compassionate. Both made it clear in their identity interviews that they had not always been well integrated and that their growth had been through intense awareness and diversified experience.

They both reported prolonged periods of existential searching; they both had developed a commitment to vocational goals after making fairly pragmatic decisions integrating what they needed and what society had to offer. They both expressed a detachment from their careers and a deeper commitment to personal feelings of integrity.

Of interest also is that they both reported in their identity interviews that they were keenly interested in subjective realms of "spiritual experience" which sounded very similar to Kohlberg's Stage 7.

As was mentioned earlier in this discussion, the dearth of subjects below the diagonal in Table II supports Kohlberg's assertion that cognitive operational ability is necessary but not sufficient for moral development. Of particular interest to us were the individuals who had the necessary cognitive-operational ability but were not reasoning morally at their potential level. These are the individuals in the cells above the diagonal in Table II; the ones who were not lacking in cognitive-operational ability. According to Selman (1971) and Kohlberg (1969), these subjects are constrained in moral-reasoning development due to a lack of social role taking opportunities.

It was one of our expectations that development in ego identity resolution would lead to development in social role taking; that is, the deepening awareness of self that comes from identity searching facilitates the individual's ability to adopt other social perspectives. From this premise we had two expectations. First, that the identity achievers would be as developed morally as their operational ability would allow (They were; see Tables I and II.); and, secondly, that by questioning individuals about their awareness of self in the identity interview we would acquire knowledge relevant to their

social role taking development. The expectation, therefore, was that the identity interview material would help us to understand why some individuals would not be functioning psychologically at their full cognitive potential.

Subject H (see Table II) is illustrative of this pattern of development. Table I indicates H is at Stage II morally but has the cognitive operational ability (IIIa-IIIb) to handle a Stage 5 rationale. Subject H, we see from Table II, is a foreclosure. From the identity interview we learned that H had been raised in a single family community in a sparsely settled northern region of B.C. A situation we might note with limited role taking opportunities. H's foreclosure status was best reflected in the fact that she was at university because it was her father's wish. Interpersonally, she presented a blankness which seemed a function of expressed self-boredom and an assumption that other people were unfathomable. She made it clear that she was not orienting to other people as a potential source of social information. H had not had the opportunity to get to know herself through getting to know the subtleties of others and then feeling that part of her self experience.

It seems to this investigator that there is probably a relationship between the fact that H grew up in social isolation, that her sense of self is largely as an extension of her family, and that she uses her considerable intelligence exclusively for self-preservation (Stage 2 - utility) social reasoning. The consequence of this is that her experience of self is somewhat constrained as is her ability to relate to others. Her social world quite simply is limited. And it is this limitation which prevents her from exploring herself and allowing her uniqueness to assert itself. This social constraint also prevents her from using her cognitive capacities to explore the perspectives of others and evolve a less egocentric social-reasoning perspective.

The fact that H is now attending university and is a long way from her family suggests that her social development may soon begin to advance. When we spoke to her she expressed self-boredom and loneliness both of which would with time lead to new social exchanges, new identifications and quite probably a new search for self.

The case of W provides an interesting contrast to subject H. W as we see from the tables is in concrete

operations cognitively, Stage 2 morally, and a foreclosure. W grew up in an ethnic community in urban Vancouver, is very close to an extended family, remains living at home, is widely involved socially (preferring campus clubs and societies). On the cognitive tasks W was without cognitive stratagems. His lengthy attempts consisted solely of random manipulations and attempts to explain verbally why he couldn't resolve the problems. In the identity interview he was warm and friendly and gave us a clear picture of who he was and what his plans were. Essentially they involved living up to his father's plans for him. This was, he indicated, one of the motivating factors in his life. W greatly enjoyed his social relationships and consequently had lots of them. His academic major was physical geography and he mentioned both his and his father's desire that he continue on in the field. The personal information he divulged, while voluminous in detail, lacked any mention of confusion, questioning, or, indeed, complexity. In social reasoning, he had extended a "utilization" mode of reasoning to include his family and friends as the beneficiaries of his physical exchanges. W was in touch with his world, did not find it lacking or confusing, and was rather enjoying his lot. W was not at all an abstract person; he gave no indication of personal reflection or intellectual

questioning. And his life space appeared more organized and orderly for it.

V, we see from the tables, was a moratorium in early formal operations cognitively and was reasoning at the level of social approval (Stage III). Of salience to this discussion is the fact that V was typical of the Stage III pattern which emerged for subjects in the throes of an identity crisis.

V had long been working part-time in his father's business which he indicated was agreeable, if somewhat boring work, and his father was keen that V should become more involved and eventually assume control.

V had recently moved out of the family home to a place of his own where he could see more of his girlfriend and generally lead a more independent life. He was close to his mother and an older sister both of whom seemed outgoing and adventurous. At the time that we spoke to him, he was struggling to decide whether or not he was to continue on in the liberal arts (which his father believed to be somewhat wasteful); whether or not he was to have his girlfriend move in (of which his mother disapproved); and, principally, he was struggling to get a sense of

himself that would combat his feelings of meaninglessness. In the moral reasoning interview V consistently gave solutions to the dilemmas based upon what he knew to be mother's reasoning. It seemed that both V and the other moratoriums, perhaps as an outgrowth of their own turmoil, had suspended their own judgment in favour of the positions of important figures in their lives.

The last two subjects to be discussed are both sons of intelligent and very successful fathers. These subjects are of salience for several reasons, one of which is that they are advanced both cognitively and morally (Stage 5 social contract), while their identity statuses represent two different ways of dealing with the difficult problem of successful father identification figures. Both of them represent instances of the defensive styles typical of bright, but unachieved, people.

Subject L is Stage 5 morally, transitional to full formal operations, and an identity diffusion. Throughout his adolescence L avoided his father by keeping different hours and staying out a lot; he experimented widely with soft and hallucogenic drugs and took a minimal interest in his school career. Throughout his adolescence and continuing through to the present, L drank fairly heavily.

He is bright, advanced morally, and at ease with close social contact. Nonetheless, his intellectual life appeared to be oriented around the issue of generating a rationale for not choosing any particular vocation but just "hanging loose" and probably gravitating eventually to a modest bureaucratic post (since, as he noted, he shared some of his father's administrative talents). L appeared to be dealing with the matter of identity resolution by studiously avoiding any matters related to vocation or ideology. He said that he "just didn't care" and his life performance to date would indicate that, in fact, he didn't. One could not help entertaining the suspicion that he was intimidated by the prospect of trying to fill his father's boots and, in his intimidation, was giving matters in which his father was achieved (vocation and ideology) a wide berth. L presented an air of being bored, and turned off, and more interested in discussing just about anything rather than himself.

L's prognosis is a matter relevant to the phenomena of the achievement constellation. That is, he is in the stages adjacent to the achievement constellation: he's Stage 5 morally, and has full formal operations. However, his resistance to thinking on matters of identity

achievement will very likely preclude him from actualizing perspectives of social reasoning or fully employing his logical ability (he has an investment in fuzzy thinking). L is cited as an example of a person constrained in development due to specific difficulties in resolving an identity.

As mentioned above Z is a subject faced with a similar problem; that is, the identification figure in his life (father) is so highly developed that Z, being aware of the great distance he must go to compare with his identification figure, is avoiding the issue by remaining foreclosed and not questioning identity issues. Interestingly, he also remains at Stage 5 morality although he is in full formal operations. There seems to be evidence that an inability to become identity achieved has a limiting effect upon social development

Our finding that cognitive-operational development is necessary but not sufficient for moral reasoning development is supportive of Kohlberg's theoretical claims (1960) and concurs with experimental evidence existent (Cable, 1975; Tomlinson-Keasey and Keasey, 1974; Colby, 1972; and Krebs, 1974).

Our finding that identity achievers tended to be post-conventional moral reasoners was in accord with the findings of Podd (1972).

The finding that individuals questioning their identities tended to be formal thinkers was in accord with the portion of Wagner's data (1976) that was comparable, but in discord with her overall claim of "no relationship."

Our finding that identity resolution is facilitated by powerful thought abilities is a finding heretofore arising from theoretical analysis (Erikson, 1958). The strength of this claim is limited by the low incidence of identity achievers in our study population. Nonetheless, the three identity achievers were in the two highest stages of formal operations.

This finding, that powerful thought abilities facilitate identity resolution, is part of the more important phenomena we observe in the data; namely, that D and E are the only stage six moral reasoners, are both at the highest stage of operational ability and are both identity achieved.

The instance of these two individuals who are both "actualized" in the Maslowian sense suggest a direction implicit in cognitive developmentalism for those drawn to the notion of realizing human potentials.

DISCUSSION

This investigation has attempted to observe the relationship within the individual of three major parameters of development; cognitive operational development (Piaget and Inhelder), moral development (Kohlberg) and identity development (Erikson and Marcia). It has been working from within the perspective of cognitive developmentalism towards an exposition of the basic principle that cognitive-operational development is the nexus of development with psycho-social development being built upon the intellectual abilities which cognitive-operational advancement provides.

The evidence arising from this investigation has roundly supported this tenet of cognitive-developmentalism. As well, our findings indicate that when advanced development occurs the advancement is in the form of a "constellation" pattern.

This investigation has furthermore made some progress in analysing the process of achieving an identity, the degree to which this process is founded on more powerful thinking abilities, and the effect that identity resolution has on an individual's social reasoning (moral development). There is evidence that development progresses as cognitive operational abilities allow. If cognitive operational development is the plant stem which allows psycho-social branches to be developed as the stem development permits then we would expect subject profiles of the sort that appeared. That is, the data is consistent with the notion that cognitive operational development is necessary but not sufficient for moral and identity development. Table I best illustrates the limiting effect of cognitive development. The subjects appearing in the cells on the diagonal we infer are morally developed to their cognitive capacities while for the subjects who appear in the cells above the diagonal we infer that their moral development is lagging behind their cognitive operational development. That is, they have the necessary cognitive capacities but that alone proves to be insufficient and hence they lag morally. For these subjects information about why they are lagging morally is available from an inspection of their identity status. We note that the identity achievement subjects appear on the diagonal in Table I;

that is, they are developed to the limit of their cognitive capacities. All the subjects above the diagonal in Table I are non-identity achievers. A more detailed explanation of why they are not morally developed to their cognitive capacities is available from the material in the identity interviews. The qualitative results portray a few individuals and demonstrate the explanatory power of the clinically-oriented data which the identity interviews elicit. The fact that subjects do not appear below the diagonal in Table I is presented as a major finding in support of Kohlberg's claim that cognitive development is necessary but not sufficient for moral development.

This study, however has epistemological limitations. The sample of individuals observed is much too small to say anything about individuals in general.

The design is not an appropriate test of the hypothesis of the "necessary but not sufficient" role of cognitive development vis a vis moral or identity development.

The fact that women were not properly represented limits severely the inferences of the findings.

These limitations were, of course, apparent from the beginning. The intent of this investigation has been in the main exploratory. The author has been attempting to utilize three quite separate models of different aspects of development to explore the nature of development. This study in the context of the methods of science belongs in the phase of observation and hypothesis generation. Given the aforementioned epistemological limits it could not be anything more.

It remains, therefore, to suggest a direction and a design for a full scientific test of the findings of this work as well as other more particulate exploratory work.

This author is convinced that moderately large N longitudinal studies are the most promising design for studies of development in general. The design would remain sensitive to the idiosyncrasies of individual subjects and would follow them from early adolescence through adulthood.

Studies of particular patterns of development are another promising extension of this work. Given the interesting "clumping" or constellations that seem to

occur, a study which screened a large N to select for just the profile of a constellation until a sufficiently large N was obtained would be able to illuminate problem areas of development or the nature of optimal development. For instance a study that simply identified a group of thirty identity achievers and then studied them intensively using other measures would be illuminative of the nature of highly developed human behaviour.

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