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ABSTRACT

During the course of the National Longitudinal Study of the High School Class of 1972 (NLS), a tremendous amount of data will be collected on the educational, vocational, and personal development of high school graduates, and the personal, familial, social, institutional, and cultural factors that contribute to that development. Information of a correlational nature collected on a broad and representative sample of persons is available for use in establishing normative information and in providing construct validation for tightly controlled experiments conducted on an unrepresentative sampling of persons--e.g. college sophomores. These data are potentially most useful to psychologists and other researchers for generating hypotheses. The scope of the NLS survey is described briefly, as are the results on self-esteem and locus of control obtained from an analysis of the NLS data. The issues which can be studied by using NLS data on self-esteem and locus of control are also discussed. (Author/EVH)

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Implications of NLS Data on Self-Esteem and Locus of Control for Psychological Research

Introduction

Our presentation today has three major purposes: (1) describing the scope of the NLS survey; (2) describing results on Self-Esteem and Locus of Control obtained from NLS data and (3) describing current plans and issues which can be studied by using NLS data on Self-Esteem and Locus of Control. The focus of our presentation will, however, not be on specific results or plans, rather we hope to indicate the potential benefits to psychologists of using such data for confirming laboratory studies or generating further hypotheses.

If there is a single point that we wish to make it is that there is sometimes information available of a correlational nature collected on a broad and representative sample of persons which could be used to establish normative information, and which could be used to provide construct validation for tightly controlled experiments done on an unrepresentative sampling of persons--e.g., college sophomores.

We do not wish to condemn psychological researchers who often work with limited funds and resources. We obviously won't condemn them since we ourselves do just this kind of research. Rather our purpose is to demonstrate the usefulness of a supplemental source of information--and anyone involved in research on either locus of control or self-esteem would hopefully try to avail themselves of these data which are in the public domain.

The Scope of NLS

NLS is an abbreviation for the National Longitudinal Study of the High School Class of 1972. It is a multi-million dollar effort to follow over 23,000 young adults for a 6 year period. NLS is sponsored primarily by the United States Department of Health, Education, and Welfare and is administered by NCES--the National Center for Education Statistics. Briefly, the overall purpose of the NLS survey is to determine what happens to young adults after they leave high school--as

measured by their experiences, plans, aspirations, and attitudes at various points in time. This information is deemed essential for the review and reformulation of Federal policies and programs designed to enhance educational opportunity and achievement and to upgrade occupational attainment and career outcomes.

The major vehicle for obtaining data has been mail administered questionnaires buttressed and augmented by telephone or personal interviews as required. But other information has also been collected. The instruments so far include: high school records and high school descriptive information for every student and high school comprising the sample. A counselor questionnaire administered to at least one counselor from every participating high school. These of course provide information only on the high school class of 1972. Each student in the sample also was administered a test battery covering a range of verbal and nonverbal ability measures; this instrument was devised and administered by Educational Testing Services. Each student has been administered three questionnaires so far: a Base-Year questionnaire administered during the spring of 1972, the First Follow-Up questionnaire mailed out in October of 1973, and a Second Follow-Up questionnaire mailed in October of 1974. A Third Follow-Up questionnaire is being field tested this spring with a planned final administration date of October 1976, and a Fourth Follow-Up is currently planned for October 1979. In addition, a Replication study of the high school class of 1978 or 1979 is on the drawing boards.

Every question (new ones have been added from time to time) has been field tested and different formats for questions and questionnaires have been evaluated on a 900 member sample of students from the high school class of 1971. In this way problems with formatting, wording, and item redundancy have been worked out on an independent sample of persons before arriving at the final instrument.

Sample Design

The sample design is a deeply stratified two-stage probability sample with schools as first stage sampling units and students within schools as second stage units. The population sampled consisted of all 1972 twelfth graders enrolled in public, private, and church affiliated schools in the

fifty states and District of Columbia. A variety of strata were used for school selection:

1) Type of control
2) Geographic region
3) School size
4) Percent minority enrollment
5) Income level of community
6) Degree of urbanization
7) Proximity to institutions of higher learning

In order to increase the numbers of disadvantaged students in the sample, schools located in low income areas and school with high proportions of minority group enrollments were sampled at approximately twice the sample rate used for the remaining schools. A variety of other considerations were also employed, but they may be read about elsewhere so hopefully this brief overview will suffice for our purposes.

The basic sample involved about 1,300 primary and back-up schools--and over 23,000 students. This breaks down for Base Year questionnaires into: 1,070 participanting schools with 19,144 respondents; and a resurvey during the fall of 1972 provided data from about 4,450 students from 257 schools declining to participate in spring 1972. The resurvey was undertaken to complete the basic sample--but some critical data are lacking on these respondents: viz. ability, locus of control, self-esteem; that is, all data which are "soft"--i.e., psychological in nature, were not obtained.

Of the 23,020 students mailed First Follow-Up questionnaires--a total of 21,350 respondents either returned the questionnaire or were personally interviewed (by the Bureau of the Census) yielding the high return rate of 92.7 percent. The Second Follow Up survey produced an even better return rate--20,876 students or 94.6 percent of the mailout at that time. Over 90 percent of the original full sample size has been retained in the study through two Follow-Ups.

Clearly--the sample on which data are available is quite unique!

As stated earlier--the questionnaires tap many areas--furthermore they involve complex skip patterns directing students in and out of certain

sections depending on their responses. And of course--any questionnaire which taps so many areas cannot provide in depth details so the locus of control and self-esteem scales used are unfortunately but unavoidably brief. The locus of control scale and self-esteem scales each involve four items--which were carefully chosen by previous researchers. The locus of control scale is that developed for the Coleman report (Coleman, et.al., 1966) and involves a five point Likert rating on the following items:

1) Good luck is more important than hard work for success
2) Everytime I try to get ahead, something or somebody stops me
3) Planning only makes a person unhappy since plans hardly work out anyway
4) People who accept their condition in life are happier than those who try to change things

The self-esteem scale is based on Rosenberg's self-esteem scale (Rosenberg, 1965) and has his personal endorsement. The four items used to measure self-esteem are:

1) I take a positive attitude toward myself
2) I feel I am a person of worth, on an equal plane with others
3) I am able to do things as well as most other people
4) On the whole, I'm satisfied with myself

All eight of these items appear together in all of the questionnaires. As such--this coappearance allowed us to investigate the factor structure--to which end, we did a principal axes factor analysis on all eight items for the Base Year data. This analysis demonstrated a good simple structure with high loadings for all four self-esteem items on one factor and high loadings for the four locus of control items on the other factor.

These loadings are provided in Table 1 along with the items and coefficients of internal consistency. The coefficient alpha's were .66 for the self-esteem scale and .56 for the locus of control scale. These values are respectfully high for four item scales and are in the same range as longer scale indices. For example, studies on the twenty-three item Rotter locus of control scale have a median reliability of about .65 (e.g., Hersch and Schiebe, 1967). Currently, test-retest data are being evaluated on both scales and preliminary results indicate test retest correlations over a two month interval to be .63 for self-esteem and .55 for locus of control, values very close to the indices of internal consistency.

Table 1

Factor Loadings for Self-Esteem and Locus of Control Items

Item	Self-Esteem Factor I	Locus of Control Factor II
SELF-ESTEEM		
Positive attitude (1)*	.73	-.09
Equal worth (3)	.72	-.13
Able to do as well as most people (4)	.69	-.05
Satisfied (8)	.65	.08
LOCUS OF CONTROL		
Luck more important than work (2)	.08	.60
Try to get ahead, but stopped (5)	-.22	.65
Plans hardly work out (6)	-.14	.73
Accept condition (7)	.04	.62

*Numbers in parentheses indicate order of appearance in questionnaires.

Hopefully, this overview of the NLS survey, particularly as regards the variables of locus of control and self-esteem, is sufficient not only to explain what NLS is all about but also to whet your appetite for what this unique and rich data base reveals about locus of control and self-esteem.

Analyses and Results Based Base-Year and First Follow-Up Data

Drs. Conger, Peng, and Dunteman of Research Triangle Institute have analyzed psychological profiles for the high school class of 1972 based on the Base Year and First Follow-Up questionnaire data. (Conger, Peng, and Dunteman, 1976). The analyses looked at between group differences at each time point and differences across the two time points. The profiles included locus of control, self-esteem and three life goal orientations for subgroups formed on the basis of Sex, Ethnicity, SES, and Ability among others and for subgroups formed on the basis of planning, activity, and transition states. The activity states, for example, were studying, studying and working, working, looking for work, homemaking, military, and miscellaneous. Plans during high school and activities during October of 1972 and October of 1973 were crossed to yield transition sequences. Psychological profiles of these transition sequence groups were analyzed in order to investigate the relationship of life experiences to changes in self-esteem, locus of control and life goal orientations.

Just focusing on locus of control the results may be summarized as follows:

There is a small difference among males and females with males tending to be more external. This difference tended to diminish over time. This fits with previously documented differences (cf. Crandall, Katkovsky and Crandall, 1965).

Whites were substantially more internal than either blacks or Hispanics--a difference well established by prior research. (Battle and Rotter, 1963; Franklin, 1963; Graves, 1961).

Low SES persons were more external than middle or high SES persons--with the latter two being slightly different (high SES persons were most internal). Franklin and Battle and Rotter cited this result in the early 60's (Battle and Rotter, 1963; Franklin, 1963).

Ability is positively correlated to internality--in fact the largest between group differences on locus of control were manifested among ability groups. This finding is important and demonstrates the use of the NLS data. Most studies done relating ability to locus of control have

inexplicably used groups with attenuated ability distributions. There have also been conflicting claims about the relationship of ability to locus of control with some studies claiming a relationship (e.g., Bialer, 1961; Crandall, Katkovsky and Preston, 1962) while others claim no relationship (e.g., Rotter, 1966). It is interesting to note that the studies documenting a correlation have used lower ability samples while those claiming no relationship have used college populations. The results of our study show that there is a nonlinear relationship between internality and ability with a larger difference between the lowest ability quartile and the middle 50 percent than between the middle 50 percent and highest ability quartile. The implication is clear: statements of relationships between ability and locus of control should not have been attempted from attenuated ability distributions: the absence of a relationship in a high ability college population says little about the relationship of locus of control to ability--particularly if there is a nonlinear relationship showing a stronger relationship among lower ability persons.

The existing literature could have been used to make this same point--but we generally are cautious about integrating conflicting findings at a conceptual level without empirical verification. Such an empirical verification now exists.

In all of the above--nothing was said about differences over time. This is not an oversight. There simply were no major changes among subgroups --the trend was for Base-Year differences to be slightly attenuated 1 1/2 years later--but the differences were still there. One would believe that locus of control (and the same was observed for self-esteem) is a relatively stable variable over time--but as we shall see momentarily such a conclusion is not only premature it is invalid.

Turning now to groups classified on the basis of activity states during 1973, we can see a slightly different picture: seven activity states were used to define subgroups: study only, work only, study and work, military, homemaker, looking for work, and undefined or other activities (e.g., travel). During Base-Year, as expected from the ability relationship to locus of

control, the two groups engaged in study activities were highest on internality --the persons who entered the military, became homemakers, or only worked were external--however, the most external group during high school were those who would be looking-for-work 1 1/2 years later. Most of these groupings showed normative changes--i.e., became slightly more internal over the 1 1/2 year interim; however two significant deviations are worth noting. Those who entered the military became substantially more internal. They also manifested a large increase in self-esteem. It would seem that the Army does make men! The looking-for-work group by contrast became more external--the only group to do so--they likewise showed a relative loss in self-esteem. Before reaching any conclusions--we do have additional information on looking-for-work as it relates to locus of control.

We classified groups on the basis of plans during high school activity states during October 1972 and activity states during October of 1973. Of current interest are the following two groups: those planning to work who were not employed during October of 1972 but who were employed during October of 1973 and those planning to work who were working during October of 1972 but out of work during October of 1973. Both of these groups experienced a major plan frustration but in a different order: the group which was out of work and then found jobs showed an above average gain on internality whereas those who first worked and then were out of work showed a significant increase in externality. Apparently; life experiences can significantly moderate perceived locus of control--but an additional point can be made. The observation that locus of control (and also self-esteem) is significantly and meaningfully modified by life experiences--indicates that these variables are not stable if groups are formed on the basis of dynamic variables (e.g., life activities). This relates back to the illusion of stability manifested by the grouping of persons on the basis of static variables (e.g., sex, ethnicity, parental SES, and ability). This implication of these results is clear: the investigation of score or construct stability should certainly involve those variables which theoretically or hypothetically are related to changes in the construct under investigation: simply using static classifiers or not using any other

variables can produce the illusion of constancy.

What we have presented so far hardly does justice to the full potential of NLS data for psychological research on locus of control or self-esteem; we however do have two major studies pending.

Proposed Investigations

The first of our planned investigations represents a multifaceted attempt to examine whether or not locus of control moderates the relationships between aspirations, abilities and attainments. The importance of the moderating role of locus of control in the achievement process was first noticed by Rotter (1960) and empirically established by Wolk and Ducette (1973). Rotter proposed that any articulated picture of the achievement process must simultaneously take account of three achievement related dimensions: (1) the achievement behaviors and achievement aptitude of the person (2) the achievement needs or aspirations of the person and (3) the person's achievement expectancy (i.e. his or her belief that the exercise of achievement behavior will or will not result in the attainment of achievement needs.) Thus, for example, an individual may have ample ability to reach a chosen goal but owing to his/her belief that goal achievement is a matter of fate rather than effort or ability may fail to exercise the achievement behaviors which could result in attainment. In a related vein an individual with low ability may set unrealistically high achievement goals partly because of an external control orientation which results in a belief that ability (or knowledge) is independent of goal attainment. Many other examples of disruptions in the achievement and achievement planning process involving these three dimensions may be cited. What is important is that

congruencies between ability and aspiration and ability and attainment may be strongly moderated by the individual's locus of control orientation. While this possible moderating status of the locus of control variable has been examined previously (Wolk and Ducette, 1973), the NLS provides us with an opportunity to investigate the plausibility of this relationship using the "real-life" attainments and aspirations of a large and diverse sample of high school students. To investigate the ability achievement link in high school, the base year measures of locus of control, ability and demographic variables (race, sex, social class) will be used to predict high school achievement within different curricular programs (to control for between program ability and achievement differences). While it can be assumed that ability is a determinant of achievement and locus of control, the causal relationship between achievement and locus of control cannot be so easily stated. Consequently, no causal modeling will be undertaken. Instead, base year locus of control will also be used as an outcome variable of ability and achievement (controlling for other variables). While the simple linear relationships noted above can be anticipated, the distinct possibility that locus of control will act as a moderator of the ability-achievement relationships will be investigated by comparing the regression equations for persons in the upper and lower-quartiles of the locus of control continuum (see Overall and Klett, 1972, pp. 437-438). If the moderating status of locus of control were to prevail, one would expect strong ability-achievement relationships among internals but not among externals.

The investigation of the ability-aspiration process will be done as follows; Base year ability and self reported high school achievement will be related to various base year aspiration measures (educational goals and expectations, occupational and career plans). Locus of control will be used as a potential moderator of this relationship in the manner described by Overall and Klett and noted above. In addition, there is the possibility that demographic factors such as race, sex, and SES may also affect the congruence of ability and aspirations, consequently these demographic variables will also be handled as potential moderators. These two sets of analyses will provide useful information on the impact of locus of control on ability-aspiration-achievement congruencies.

Yet, the NLS provides us with the unique opportunity to investigate the longitudinal consequences of such congruencies in that one can investigate the ability, aspiration, attainment relationships with real life attainments. For example, the mere identification of a lack of congruence between abilities and aspirations would hardly prove problematic if those with higher aspirations actually had greater attainments irrespective of ability level. In order to investigate attainments as a function of ability, aspirations and locus of control, various first follow-up attainments will be used as outcome variables. Thus for persons planning to continue their education, educational attainment will be used as an outcome; while for those planning to work, employment status and the congruence between aspired job level and obtained job level, earnings and satisfaction will be used as outcome measure. These outcomes will constitute criteria for regression analyses using locus of control, SES, and ethnicity as predictors. Given the above discussion, we would expect

that the congruence of aspiration and real life attainment would be a function of the individual's standing on locus of control. A second set of analyses which is in the planning stage involve examining the relationships of locus of control to self-reported attributions for failure.

Previous analyses of NLS data by RTI have analyzed reasons for not obtaining work, dropping out of school, etc. The reasons cited varied by ethnicity and SES with, for example, nonwhites reporting reasons like a shortage of jobs or inadequate training while whites reported reasons like not wanting to work. These reasons may respectively be classified as external (e.g. shortage of jobs) and internal (not wanting to work). Conger, et. al., (1976) noted a relationship between ethnicity and locus-of-control (whites being more internal). There is thus the possibility that reasons cited for various activities or inactivities vary with demographic variables (indicating potential inequalities in job or educational access) or with psychological states (indicating differences in perception but not necessarily differences in opportunity). Since the reasons may at face value be used to establish or modify federal policies and involvement, it would appear critical that the role of locus-of-control and demographic or personal characteristics be sorted out.

The planned analyses would seek to determine the likely determinants of attribution for failure. To do this, all persons undergoing a particular failure experience would be used and reasons for failure would be associated with both demographic variables and locus-of-control. If the demographic

variables do not add to locus-of-control, a case could be made for not using the stated reasons.

As one can readily see, the NLS provides us with a potentially rich source of information and data about the theoretical relationships among components of the achievement process. In addition, owing to the broad scope of the sample and the inquiry into real life aspects of the achievement process, it provides for a useful base for pragmatic application to the educational and career planning processes.

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