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Social and Psychological Antecedents of Depression: A Longitudinal Study from Adolescence to Early Adulthood of a Nonclinical Population

Hilde T. Himmelweit
THE LONDON SCHOOL OF ECONOMICS
AND POLITICAL SCIENCE
LONDON, ENGLAND

and
Charles F. Turner
NATIONAL ACADEMY OF SCIENCES
WASHINGTON, D.C.

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If . . . one were to try to foretell logically what season would be most favourable to suicide, one might easily assume the season when the sky is darkest and the temperature lowest. . . . Does not the desolate appearance of nature at such times tend to incline men toward revery, awaken unhappy passions, provoke melancholy? Moreover, this is the time when life is most difficult. . . .

[However] Neither in winter nor in autumn does suicide reach its maximum, but during the fine season when nature is most smiling and the temperature mildest. Men prefer to abandon life when it is least difficult. (Durkheim, 1897/1966, pp. 106–107)

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Abstract

The genesis of depressive symptoms in a "normal" (nonclinical) sample of young men ($N = 450$) is explored. A variety of methodological, sociogenic, and pyschogenic explanations for the positive correlation between occupational attainment and depression are examined using personality and social data collected when the respondents were aged 13–14 and self-reports of nonsomatic symptoms of depression obtained from the same sample 11 years later, at age 24–25. A multivariate model of the antecedents of depression is presented. The principal antecedents isolated are poor family relations in childhood, introversion in adolescence, and high occupational and educational achievement. Evidence is presented which suggests that the positive correlation between high occupational attainment and depression reflects the "anomia of early success," rather than stresses induced by the demands of status occupations.

I. Introduction

In their review of the epidemiology of depression, Boyd and Weissman (1981) note that research on depression has been hindered by major differences in diagnostic classification over time, between countries, and among investigators and clinicians within countries. The same terms have different meanings in different diagnostic schemes. Klerman (1972), in discussing the related problem of how to establish a boundary between moods of sadness and insecurity and a clinical diagnosis of depression, points out that the gradient between normal mood and the clinical state remains incompletely defined. Wing, Mann, Leff, & Nixon (1978) develop the argument further by pointing out that there are particular difficulties in arriving at what constitutes "a case" as distinct from a depressive condition, which is not, or may never become, sufficiently pervasive to be treated as a clinical condition.

In understanding the antecedents of depression there are particular difficulties. An additional distortion obtains when accounts of antecedents are obtained from the clinically depressed individual or his family. It is not surprising, therefore, that the findings about antecedents are inconsistent.

In *Mourning and Melancholia* Freud defined depression (*melancholia*) as regression to the oral stage in reaction to the perceived loss of a loved object. It has long been accepted that both social conditions and psychological factors can predispose individuals to depressive reactions; parent-child relations are frequently cited in this regard (see Birbring, 1953; Jacobson, 1953). While there is general agreement that depressed patients more often report a rejecting family environment during childhood and report that as adolescents they were socially more introverted or lacking in gregariousness, there is less agreement as to the relationship between social class and the incidence of depression. At a theoretical level one might expect that—since there is a very substantial relationship between self-esteem and an individual's success in his work role—if anything,

there would be a negative correlation between occupational level and depression. In the 1960s a great deal of evidence had been accumulated that more of the middle- and upper-middle class were depressed (see review by Bagley, 1973). The finding of a positive correlation posed a theoretical paradox: Why should "success" engender depression? However, by the 1970s, to judge from Boyd and Weissman's (1981) review, the research literature indicated that the working class was more prone to some depressive conditions (but not others), and that, indeed, the evidence was equivocal.

We decided to investigate the problem by drawing on a longitudinal study we carried out of middle- and working-class 13- to 14-year-old adolescents attending state secondary schools in the Greater London area. This sample was reinterviewed 11 years later as young adults aged 24–25.

Because the evidence of a positive correlation between high occupational status and depression had been so consistently reported in the 1950s and 1960s not only in one but in several countries—for example, Odegaard (1956) in Norway, Rao (1966) in India, Jaco (1960) in U.S.A., El-Islam and El-Deeb (1969) in Egypt—a variety of hypotheses had been developed to account for the paradox that "success" engenders depression. We wanted to investigate how far such a relationship held during the latter part of the 1960s within Britain and if it did, to test the validity of the hypotheses advanced to account for the relationship.

Unfortunately, this paradoxical correlation is frequently dismissed with the facile assumption that it reflects the "stressful nature" of professional and managerial jobs. This interpretation, like many in this area, is empirically untested (see review by Bagley, 1973).

The dearth of reliable data about the etiology of depression stands in contrast to the high incidence of depressive disorders. It has been estimated that approximately 100 million of the world population suffer from some form of clinically diagnosable depression, and this number is apparently growing (NIMH, 1973; Sartouris, 1974). "Stressful" social conditions are usually considered to be responsible for this trend. Thus, Kielholz (1974), opening a recent conference on the treatment of depression, observed, "the growing stresses imposed by modern life, especially in an urban environment in which a man finds himself cut off from his fellows has led to an increase in the prevalence of depression" (p. 13).

Laymen and clinicians share this view. They attribute the rising incidence of depression, the abuse of chemical antidepressants, and the greater frequency of depression in upper occupational strata to the "stresses" of life in the "advanced" sectors of modern society. The present article attempts to test the validity of this interpretation. We will present a variety of evidence of the social and psychological antecedents of adult depression—paying particular attention to the role of occupational "stress" in the genesis of depression.

To date inquiries such as ours have usually been hampered by serious method-

ological problems. The common design for research in this area compares the premorbid history of patient populations with that of control groups. These designs are subject to significant biases, since data about a patient's past are obtained after he has been diagnosed. Thus, assessment of a patient's previous history, interpersonal relations, and other experiences are viewed through the distorting lens of hindsight. Attribution and consistency theories suggest that such retrospective accounts are contaminated by knowledge of the present, so that they cannot be treated as independent data on which to base causal inferences. (A recent experiment by Snyder and Uranowitz, 1978, entitled "Reconstructing the Past: Some Cognitive Consequences of Person Perception" spells out the subtlety of this process.)

Moreover, there are also substantial and related difficulties in even arriving at accurate and uniform diagnoses. These difficulties arise not only because loss of confidence and depressed mood are symptoms prevalent in many psychiatric disorders but also because of varying interpretations of what constitutes "ill health" across cultures and even across subgroups of the same society (cf. Becker, 1974, Chap. 4; Boyd & Weissman, 1981; Hollingshead & Redlich, 1958; Schwab, Bialow, Bronn, Holzer, & Stevenson, 1967).

These problems become more manageable if the same subjects are followed through time, and, in particular, if the initial data are gathered prior to the onset of depressive reactions. The research to be reported here exploits such an opportunity by drawing upon a longitudinal study extending over 19 years. This study was begun by the first author in 1951 and continued until 1970. The original study of boys aged 13–14 aimed at examining the interplay of home (social background and quality of homelife) and school (and, in particular, the divided secondary state school system current in Britain at the time) in affecting educational and occupational aspirations as well as attitudes toward self, toward significant others, and toward social issues. Each adolescent was studied for a total of 7 hours and completed a variety of projective and other personality tests and answered open-ended and Likert-type questions. Information was also obtained about the individual's ability and school performance, his social background, and his family relations. To assess the adolescent's psychological functioning, measures were obtained of his self-image, peer versus adult orientation, introversion, intropunitiveness, and authoritarianism. Subsequent personal interviews on the career progress and personality development of the sample were conducted 11 years later in 1962 (at age 24–25).

Longitudinal data allow us to surmount the common obstacles to causal inference in this area. First, and most important, we have information on an individual's psychological state prior to the beginning of his occupational career, together with subsequent assessments of the incidence of depressive symptoms. Secondly, biases arising from self-selection and variations in the labeling of such

depressive symptoms are avoided, since each member of our sample completed the same symptom inventory. (The study gathered extensive information about educational and occupational progress as well as information about the social and educational background of the family and its structure.) Finally, the study's starting point, early adolescence, provides psychological data at a period thought to be crucial to the development of an enduring self-image or self-identity (Erikson, 1950).

We begin by using these data to examine three types of hypotheses that have been suggested as explanations for the positive correlation between occupational status and depression. They are:

1. *Procedural and methodological explanations*. The correlation is an artifact arising from the greater tendency of the upper occupational strata to seek help for depressive symptoms and/or of psychiatrists to label such people as "depressed."
2. *Sociogenic explanations*. The correlation arises because social mobility predisposes individuals to depression and/or because depressive symptoms are a consequence of particular child-rearing practices in the middle and upper classes (e.g., ready use of withdrawal of love as a means of controlling behavior; high demands; pressure to achieve).
3. *Psychogenic explanations*. Personality orientations which cause people to be high achievers also make them vulnerable to the symptoms of depression.

Subsequently, we will propose a multicausal model for the genesis of depression. Using this model we will identify several adolescent personality variables and social processes which predispose an individual to depressive symptoms in adulthood. We will also suggest an explanation for the correlation between occupation and depression which is consistent with empirical data and theoretically more plausible than interpretations based upon the notion of "stress."

II. Method

A. SAMPLE

In 1951 a sample of 614 London schoolboys was drawn for study. These boys comprised the entire third-form classes (13–14 year olds) of nine purposely selected state schools. In choosing the schools, care was taken to ensure that equal numbers of grammar and secondary modern school students were drawn in each neighborhood. Since the national ratio of grammar to secondary modern students is approximately 1:5, the resultant sample contains a larger number of abler students who have better educational and occupational prospects. To con-

trol this overrepresentation, we have performed separate analyses for the grammar and secondary modern portions of the sample.

While this selection of boys was not random, the school selection procedure did provide a full range of IQs and good coverage of the social class spectrum. Indeed, as Table I demonstrates, when the sample is weighted to reflect the oversampling of grammar schoolboys, the social class composition of this sample closely parallels the distribution obtained in the British National Mobility Survey of 1949 (Glass, 1954)—except in the semiskilled and the two highest categories of the Hall-Jones (Hall & Jones, 1950; Moser & Hall, 1954) occupational scale. The underrepresentation of the latter groups is due to the fact that some parents in these classes opt out of the state school system by paying for their children to attend independent schools (in Britain they are called public schools).

In 1962, when the subjects were aged 24–25, the first follow-up inquiry was

TABLE I

Percentage Distribution of Occupations for Fathers of Boys in Longitudinal Study (1951) and for All Men in British National Mobility Survey of 1949

Hall-Jones occupational class	Longitudinal study			National survey of 1949[b]
	Grammar	Secondary modern	Weighted[a] average	
1. Unskilled manual	3.0	14.4	12.2	12.4
2. Semiskilled manual	14.8	25.7	23.6	16.5
3. Skilled manual and routine nonmanual	34.6	43.3	41.6	41.2
4. Inspectional, supervisory, and other nonmanual (lower grade)	23.6	11.2	13.6	12.7
5. Inspectional, supervisory, and other nonmanual (higher grade)	17.1	4.3	6.8	9.8
6. Managerial and executive	4.9	0.5	1.4	4.5
7. Professional and high administrative	1.9	0.5	0.8	2.9

[a] Since the longitudinal study purposely oversampled grammar school boys, the average is weighted to reflect the proportions of boys in each type of state school: 19% grammar and 81% secondary modern or its equivalent (cf. Ministry of Education, 1953).

[b] Estimate for all men residing in England, Wales, or Scotland (Glass, 1954).

made. Home interviews were conducted with 73% of the original sample, and 81% of these subjects additionally completed lengthy mail questionnaries.[1]

Elsewhere, (Himmelweit & Swift, 1969) we have shown that the two types of secondary schools in Britain generated different expectations and created different demands and opportunities for attainment both at school and in later life. Estimating Blau-Duncan (Blau & Duncan, 1967) models separately for each school type, has shown (Turner, 1978; Turner & Himmelweit, 1976) that the relative importance of ability and social background in accounting for attainment differs significantly between the two school types—a fact which is obscured in aggregate analyses. For this reason, analyses were carried out separately for each school type. Aggregate results will be reported only where the separate analyses show no significant divergences. We do note that by using two samples who differ in their initial levels of ability, their social origin, and in their subsequent educational and occupational attainments, we can provide a stringent test of the independent effect of occupation upon depression, since we will be demonstrating it both in absolute and in relative terms (i.e., relative to the school group to which the individual belonged in adolescence).

B. MEASURES

Since the study was concerned with psychological factors that influence development, a wide range of social, personality, and attitude measures were obtained in adolescence and again in adulthood.

1. Demographic information about family composition, parental education and social class, type of school attended and track or stream at age 13, school-leaving age, school and further educational qualifications, type and level of first job and of job at age 25.
2. Personality measures at age 13, including measures of self-esteem, gregariousness, introversion, anxiety, irritability or tension management, intropunitiveness.

[1]A careful analysis (Bebbington, 1970) of attrition in the longitudinal sample indicated that the follow-up sample diverged in three ways from the initial sample; reinterviewed respondents (*a*) were slightly "brighter", (*b*) showed more acquiescence to social demands, and (*c*) were more likely to endorse "boy scout" values. While these divergences should be kept in mind, the bias which results from this attrition is probably no greater than the biases which result from "refusals" in ordinary cross-sectional surveys. In such surveys completion rates of 70 to 85% are common; for example, NORC General Social Survey (NORC, 1978) had a 25% noncompletion rate in 1976, while the British National Electoral Survey (Butler & Stokes, 1969), conducted in the same year as our reinterview (1962), had a 21% refusal rate.

Regarding the follow-up sample it should be noted that one nonurban locality in the 1951 sample (total $N = 725$; cf. Himmelweit, 1954) was not included in the 1962 follow-up (total $N = 614$), so as to yield a more homogeneously urban sample.

3. Measures of identification with school values and educational and occupational aspirations.
4. Measures of the adolescent's perception of selected social issues.

In all, each boy completed 25 inventories in a variety of formats ranging from open-ended to the multiple choice variety. As a general procedure, scales were created from semantically similar items using Likert scaling methods, and the resultant scales were factor analyzed.[2] This analysis accounted for 58% of the common variance in the scales and yielded seven factors (see Himmelweit & Swift, 1971), of which three are relevant for the present analysis:

1. Achievement Motivation, a measure of achievement orientation toward schoolwork.
2. Gregariousness or Extraversion, a measure found to correlate with high self-esteem (i.e., self-esteem loads highly on this factor).
3. Neuroticism, a measure of tension. This factor loads primarily on an inventory of anxiety and one of irritability or high tension.

We also use the principal component of a factor analysis of 44 questionnaire items which the adolescent completed on parent–child relations; it provides a measure of the adolescent's perception of the quality of his homelife (positive, warm, accepting, easy to confide vs negative, cold, critical, and difficult to confide). Finally, we included a measure of social conformity. Further details of these scales are presented elsewhere (Himmelweit & Swift, 1969, 1971; Turner, 1978).

Eleven years later when the adolescents had become men of 24–25 years of age, they were reinterviewed and also completed questionnaires. The study by that time had broadened into a study of personality development and the antecedents and correlates of the men's goals and values and of their attitudes toward themselves, their careers, and social and political issues. In addition, detailed information was obtained about their school achievement, school-leaving age, further education and occupational progress. Details of the measures are given in Himmelweit and Swift (1969, 1971).

C. INDEX OF DEPRESSIVE SYMPTOMOLOGY

A specially designed measure of the incidence of (nonsomatic) symptoms of anxiety and depression was derived from a self-image scale in which the respondent checked one of three statements as most accurately describing himself. The 20 sets of such items were factor analyzed, and the resultant factors were rotated

[2]Following a procedure put to good use by Block (1971) in his analysis of the Berkeley growth studies.

TABLE II

Items Used in Index of Depressive Symptomology and Parallel Items from Standard Clinical Scales

Factor loading	Item	Corresponding items[a]	
		From Beck *et al.*	From Hamilton
+.71	I often feel depressed	A: Mood indicator	1: Depressed mood
+.51	I am often worried and anxious	None	10: Psychic anxiety
+.50	I frequently worry about my inability to cope with situations	C: Sense of failure (?)	7 and 10: Anxiety and feeling of incapacity
+.59	I have great difficulty in making new friends	L: Social withdrawal	7: Decreased social activity
+.58	I am a serious (rather than happy-go-lucky) sort of person	A: Mood indicator	1: Depressed mood (?)
+.57	I am a rather discontented sort of person	D: Lack of satisfaction	10: Tension and irritability (?)

[a] Corresponding items are from the scales of Beck, Ward, Mendelson, Mock, & Erbaugh (1961) and Hamilton (1960); a question mark indicates that correspondence is incomplete.

to achieve simple structure.[3] The three factors that emerged—ambition, depression, and interdependence—accounted respectively for 15, 14, and 10% of the common variance. The question that loaded most highly on the depression factor received a high score if the respondent indicated a suitable mood by checking

> I often feel depressed. (factor loading = .71)

and this was reinforced by a blander mood item, together with other items tapping the respondent's level of anxiety, self-satisfaction and confidence, and social withdrawal. Table II presents the full set of items included in the index, and parallel items found in two standard diagnostic inventories.

The dependent variable for our analyses was constructed using the factor loadings to weight the importance of each item in the index; the resultant index was then recalibrated to a standard 9-point scale (mean = 5.0, SD = 2.0). One important result of our scale construction effort was the confirmation in our "normal" population of the finding that the constellation of depressive symptoms—including feelings of inadequacy, chronic anxiety, mood depression, and social isolation—are highly intercorrelated.

It will be seen from Table II, however, that the dependent variable, and hence

[3]Principal factor solution used squared multiple correlations as communality estimates and the varimax criterion for factor rotation.

all of our conclusions, are restricted to a subset of the domain of depressive symptoms. It needs to be borne in mind that the scale did not ask for somatic manifestations and relies on self-reports typically describing the frequency of these symptoms; i.e., we know if respondents frequently "feel depressed," but not whether they were "depressed" at the time of the interview. Although we shall speak loosely of "depression" in our analyses, we are referring more specifically to the self-reported incidence of nonsomatic depressive symptoms in a "normal" population.

D. STANDARDS OF INFERENCE

In attempting to use these data to draw inferences about the origins of depression, the particular character of this longitudinal sample needs to be remembered.

First, generalizations from these data apply directly only to the universe from which the sample was drawn[4]; that is, the cohort who were 13- to 14-year-old (third-form) state schoolboys in greater London in 1951.

Secondly, the use of schools as a primary unit for sampling in this study requires some qualifications. Ignoring for a moment the method of school selection, we should note that use of the entire population of children from a sample of schools usually diminishes sampling efficiency (cf. Blalock, 1972). In many instances, the effective size of such clustered samples is more nearly equivalent to the number of clusters in the sample (nine in this instance) than it is to the number of individual respondents. (In this case, however, analysis of the intracluster homogeneity of sample estimates[5] showed the reduction of efficiency through such clustering to be relatively modest.)

The third and most serious qualification that must be made about our inferences results from the way in which particular schools were chosen. Schools

[4]Our situation in this regard is not unique; other investigators using unusually specified or sampled populations have encountered similar problems. See, for example, Duncan et al.'s (1972) secondary analysis of data from Westoff, Potter, Sagi, and Mishler's (1961) study of family growth in metropolitan America.

[5]Intraclass (i.e., intraschool) correlations for the univariate distributions of these variables were as follows:

Variable	Sample	
	Grammar	Sec. modern
Occupation at 25	.00	.03
Depression at 25	.01	.06
Adolescent achievement orientation	.06	.04
Adolescent introversion	.00	.00
Adolescent neuroticism	.02	.00
Adolescent conservatism	.02	.08

were purposely selected to provide "good coverage" of the socioeconomic spectrum. That they do so is impressively documented in Table I. Elsewhere (Turner, 1978, Chap. 2), it has been shown that estimates derived from this sample of the bivariate correlations between social origin and social attainment variables are consistent with other estimates derived from probability samples of the population of Great Britain. The sample is therefore not atypical of the general population. Nonetheless, since the method of sample selection is not random, the normal conventions of statistical inference do not strictly apply; the models underlying such statistics presume random, rather than purposeful, sampling. These statistics therefore provide no more than reasonable conjectures as to the relative importance and likely generalizability of specific results.

III. Analyses

A. PROCEDURAL ALTERNATIVE HYPOTHESES

Almost all of the affirmative evidence (reviewed by Bagley, 1973) on the relation of occupational status to depression has used patients who were currently under treatment for their symptoms. These studies have demonstrated that there were more depressed patients from the upper classes than one would expect on the basis of normative data, (e.g., national censuses or age-matched groups of nonpsychiatric patients). Two counterhypotheses which explain this result in terms of sampling or diagnostic biases have been put forward. The first states:

1. There may be a greater tendency for upper-class patients to seek medical care in general; or, more specifically, there may be a greater tendency for such individuals to seek medical advice when faced with unhappiness, discontent, anxiety, etc.

Thus, the apparent correlation between occupation and depression might arise not from class differences in the incidence of depressive symptomology, but from differential access or willingness to seek medical treatment for such symptoms.

A second hypothesis derives from Schwab *et al.*'s (1967) finding that "it seems that our clinicians perceive depression as an upper-class malady" (p. 537). An empirical investigation by these investigators has provided proof of such bias on the part of clinicians, and thus another alternative interpretation of the evidence has been formulated:

2. Given equivalent depressive symptoms, physicians are more likely to elicit the report of such symptoms and/or are more likely to correctly diagnose patients from the higher occupational groups.

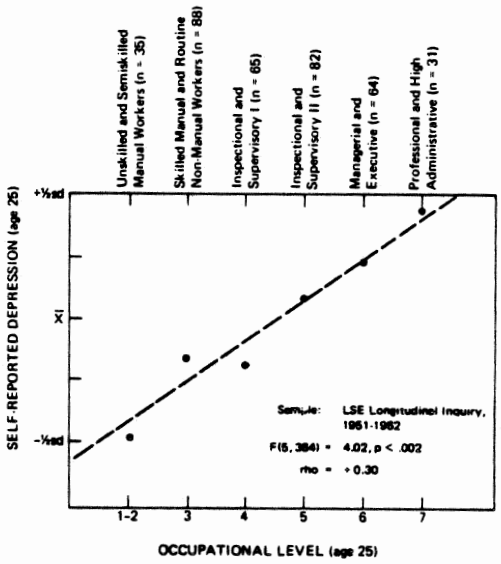

Fig. 1. Mean levels of depression for longitudinal sample at age 24–25 as a function of occupational level.

Given our sample selection procedure and the standardized nature of our index of depressive symptomology, the present data should not be subject to the distortions described by these counterhypotheses. Thus, if these alternatives were sufficient explanations of the relationship, we would expect to find no relation in our data between occupational level and depression. This was not so.

Figure 1 shows a strong linear relationship between depression and the occupational level of our subjects at age 25 [$F(5, 364) = 4.02$, $p < .002$; $r = +.30$]; the difference between the depression scores of the highest and lowest occupational levels is almost 1 standard deviation on our depression index. This evidence permits us to reject the two methodological counterhypotheses and proceed to the substantive interpretation of this correlation.[6]

[6]It is sometimes suggested that the reported correlation (cf. Bradburn, 1969; Campbell, Converse, & Rodgers, 1976) between economic well-being and self-reported happiness is incompatible with the finding of a correlation between occupational attainment and depression. A careful examination of this evidence suggests otherwise. For example, Bradburn's scale of negative affect includes items tapping depression and loneliness. This scale shows a modest negative association with income (cf. Bradburn, 1969, Table 6.1). That is, people with high incomes are less likely to report experiencing "negative affect" than those receiving low incomes. Nonetheless, working with the same sample, Bradburn reports data which suggest that the correlation between the prestige of a respondent's occupation and his score on the negative affect scale is null, or slightly positive. That is, men in high-status occupations report slightly higher levels of negative affect (cf. Bradburn 1969, Table 10.6)

We have briefly explored this relationship in one other large American data base, the NORC

B. SOCIOGENIC ALTERNATIVE HYPOTHESES

The most plausible sociogenic hypothesis argues that the important factor in explaining this correlation is not the final occupational level achieved, but the experience of occupational mobility. This hypothesis draws a parallel to the relationship between anomie and suicide detailed by Durkheim. In one author's words:

> When children move into social classes which differ from those of their parents, their emotional ties to their families are weakened and the extended family unit is less stable. Thus mental illness may occur more commonly in people whose social class differs from that of their parents. (Birtchnell, 1971, 218)

Although the hypothesis has plausibility, largely by analogy to Durkheim's findings regarding suicide, there are substantial problems with this interpretation. First, there is good evidence that extended family cohesion does not diminish with the experience of social mobility (see, for example, Litwak, 1960). Secondly, such a hypothesis could explain our results only by the additional stipulation that *upward* mobility alone caused such effects.

Despite such problems, the third hypothesis continues to attract serious consideration (cf. Kessin, 1971; Stacey, 1967).

3. The experience of (upward) social mobility causes depression.

To test this hypothesis we have computed a raw mobility score for each respondent (son's occupational level *minus* father's); Table III shows the distribution of scores on the depression index by the respondent's social mobility. These results are shown separately for the grammar and secondary modern samples, since there was some minor divergence in our findings for these groups. Overall, we find that the hypothesis is not confirmed [$F(4,360) = 1.30$, ns], but we do observe a weak trend indicating that boys who were "written-off" by the educational system and assigned to secondary modern schools, but who were highly mobile (+2 or +3 classes), were *more* depressed than their less successful schoolmates [$t(131) = 2.15$, $p < .05$]. This finding is unexpected. We should note, however, that this latter group represents the extreme case of the "successful misfit"—men who broke out of the mold made for them by the

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Continuous National Survey (cf. NORC, 1974). Using a subsample of males aged 22-30 (to match our London sample), we found no evidence of a negative association between self-reports of depression and occupational attainment. When education was controlled (covariance analysis with linear coding of education) the occupational attainment of men who reported themselves to be depressed was found to be (insignificantly) greater than that of men who reported that "during the past few weeks" they had not felt "depressed or very unhappy" (sample size = 739, difference: + .06 on Siegel-Hodge scale of occupational prestige, ns).

TABLE III

Depression and Intergenerational Social Mobility[a]

Social mobility	Mean score on depression index		
	Grammar school sample	Secondary modern sample	Total sample
Downward 1 or more classes	4.94	4.50	4.76
Immobile	5.00	4.45	4.69
Upward 1 class	5.16	4.77	5.00
Upward 2 classes	5.22	5.42	5.27
Upward 3 or more classes	5.10	5.12	5.10
F ratio	.15	1.33	1.30
df	(4,228)	(4,127)	(4,360)
p	ns	ns	ns

[a] Intergenerational social mobility is the difference between the Hall-Jones class of father's job (in 1951), and the level of respondent's occupation (in 1962). The depression index has a mean of 5 and a standard deviation of 2.

educational system. One suspects that these men may have been in double jeopardy, since their success may have strained ties to their social origins, while their inferior education (i.e., inferior to the average education of those in their achieved position) left them ill at ease in their newly attained social class. This interpretation is obviously speculative and will require independent verification.

Before moving on to other analyses, we should point out that the greater incidence of depression found among the grammar school sample is entirely attributable to the higher occupational attainment of this group. When occupational level is controlled, there are no systematic differences between the two samples; i.e., at each occupational level men from grammar and secondary modern schools have equivalent scores on the depression index.

Our second sociogenic hypothesis inverts the logic of the preceding explanation. Rather than arguing that the experience of rising in the social structure generates depression, this hypothesis claims that the experience of passing a childhood in the upper classes typically produces a guilt-ridden, depression-prone personality. Since there is some tendency for men to obtain occupations at approximately the same level as their fathers,[7] and since there is substantial evidence that different social classes use different methods of child rearing with different results (see Bronfenbrenner, 1966; Davis & Havighurst, 1948), this

[7]Using data from a representative sample of 536 British men, Treiman and Terrell (1975) found a correlation of + .34 between the prestige of the occupations of fathers and sons. See also Goldthorpe (1980).

claim is theoretically plausible. And indeed, some authors have formulated variants of our fourth proposition:

4. Child-rearing practices in the middle and upper classes predispose individuals to depressive disorders.

To test this hypothesis we have plotted men's scores on the depression index by the occupational level of their father in 1951. Figure 2 presents the results, which reveal a weak and unreliable trend in the appropriate direction. This result is not sufficient to account for the association between occupational level and depression; when we controlled father's occupational status, the correlation between son's occupational level and depression was only slightly reduced from +.30 to +.26.

C. PSYCHOGENIC ALTERNATIVE HYPOTHESES

While it is not reasonable to assume that depression per se heightens the occupational achievements of an individual, it is possible that depression may have psychological antecedents which are also conducive to occupational attainment. If this were so, the correlation between depression and occupational level would be void of causal significance. As Bagley (1973) hypothesized, it may be that

5. A particular type of personality predisposes certain individuals both to rise in the occupational world and to be vulnerable to depression.

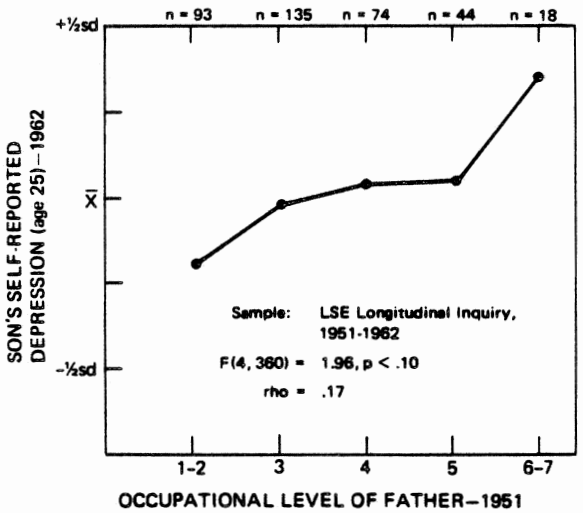

Fig. 2. Relationship of social origin to mean level of adult depression in LSE longitudinal sample at age 24–25.

Some evidence for this proposition does exist. Two variables with known influences on occupational attainment (see Duncan, Featherman, & Duncan, 1972), intelligence and achievement drive, are thought to be linked with depression. Becker (1960) has reported that manic depressives score higher than normals on McClelland's (1953) measure of achievement motivation; and there is some clinical speculation (e.g., Astrup, Fossum, & Holmboe, 1959) that high intelligence may have emotional consequences. Depressive patients have also been shown to have a higher level of aspiration than do either normals or hysterics (Himmelweit, 1947). Similarly, introversion, which is a likely antecedent of depression, has also been linked to socioeconomic attainments (cf., Eysenck, 1971; Turner, 1978, Chap. 3).

The investigation of the psychogenic theories of the origin of depression requires a two-step process. First, we have to show that one or more of the psychological variables suggested by our theories covary with adult depression; second, we must show that when such variables are introduced into a multivariate model of the origins of depression, the net impact of occupational status is nil. The present data are particularly well suited to such an analysis because of the wide variety of personality measures obtained early enough to be uncontaminated by the subject's subsequent depressive reactions or by his occupational experiences.

In the present analysis three personality variables obtained in adolescence are included: academic achievement orientation, introversion, and neuroticism. Since clinicians report that depressives are more "conforming" (Noyes & Kolb, 1963) and that childhood interactions with parents are crucial in personality development (Orvaschell, Weissman, & Kidd, 1980), we have also included a measure of conformity and a measure of self-reported family relations (both obtained at age 13).

Since it has previously been found that the type of secondary school a boy attends moderates a range of social and psychological relationships (see, for example, Turner, 1978), the analyses were performed separately for each sample. Where these results showed no "significant" differences between samples, the data have been aggregated. These analyses, representing separately the relationship of each personality variable to depression, are shown in Fig. 3. Clearly, the first requirement for establishing the validity of a psychogenic interpretation is satisfied.

D. MULTICAUSAL ANALYSIS: INTEGRATING SOCIAL AND PSYCHOLOGICAL HYPOTHESES

Given that the foregoing psychological variables predict the emergence of depressive symptomology 11 years later and, of course, predate the commencement of the occupational career, we can now examine how well such factors

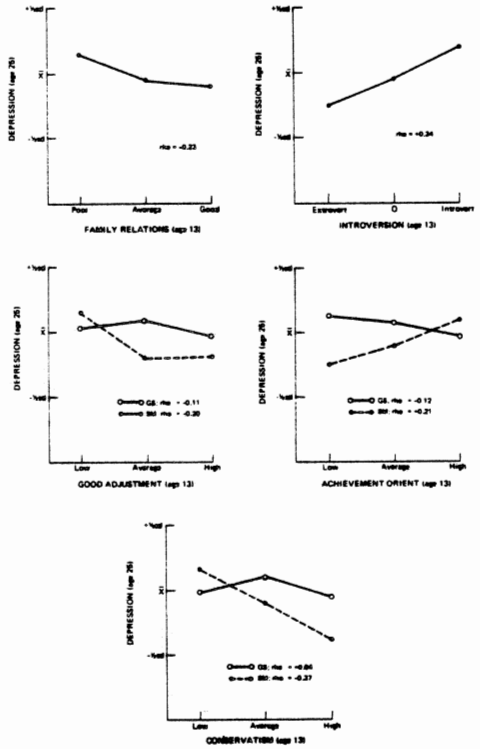

Fig. 3. Relationship of adolescent personality (age 13–14) to early adult depression (age 24–25).

account for the correlation between occupational achievement and depression. We used the decomposition techniques of path analysis (cf. Land, 1969), which are particularly useful in the study of multistage causal relationships.

Figure 4 presents a schematic representation of our causal model; the pattern of causal asymmetry assumed by our model is implicit in the life cycle. Thus we postulate that social class background and intellectual ability can influence the course of adolescent personality development; and that social background, ability, and personality factors influence a boy's educational achievement. Similarly, occupational success is postulated to arise from educational achievement, personality, ability, and social background. Adult depression is seen to potentially depend on the joint influences of all these factors.

The path coefficients represent the independent effects of all influences upon the outcome variable—depression. Coefficients representing the magnitude of

TABLE IV

The Genesis of Depression in Early Adulthood: Estimated Coefficients for Structural Equation 4[a]

Independent variable	Sample[b]	Standardized path coefficient	Unstandardized path coefficient	Significance level[c]
F: Occupation of father (in 1951)	GS	+.110	+.165	.10
	SM	−.003	−.006	ns
I: Intellectual ability (IQ at 12)	GS	+.025	+.007	ns
	SM	+.145	+.021	.15
R: Family relations (self-report at age 13)	GS	−.154	−.146	.025
	SM	−.267	−.267	.05
A_1: Adolescent introversion	GS	+.272	+.269	.0025
	SM	−.097	−.094	ns
A_2: Adolescent neuroticism	GS	+.085	+.079	.15
	SM	+.110	+.102	.15
A_3: Adolescent achievement motivation	GS	−.229	−.225	[d]
	SM	+.063	+.062	ns
A_4: Adolescent conservatism	GS	−.002	−.002	ns
	SM	−.155	−.143	ns
E: Education (years completed)	GS	−.021	−.020	ns
	SM	+.191	+.279	.05
O: Occupational level (age 24–25)	GS	+.282	+.418	.025
	SM	+.189	+.278	.15
R^2	GS	.219	[$F(9,223) = 3.6$, $p < .0005$]	
	SM	.252	[$F(9,122) = 2.6$, $p < .01$]	

[a] Estimates were derived using ordinary least-squares procedures. Correlations for *F*, *I*, *R*, *E*, A_1, and *O* were estimated using data for all cases in the 1962 sample (total $N = 450$); correlations involving *D* were derived from the smaller sample of men ($N = 365$) who returned the 1962 home questionnaire. The coefficients presented in this table provide a basis for meaningful cross-sample comparisons (cf. Schoenburg, 1972); i.e., they provide (a) both standardized and *un*standardized coefficients, (b) variables that are identically coded in both samples, and (c) a reasonable accounting for measurement errors. To satisfy the final requirement, the matrix of intercorrelation estimates was adjusted to correct for attenuation arising from random measurement errors (cf. Johnston, 1963). Estimated reliabilities of measurement were in the range +.89 to +.95 for demographic variables (*F*, *E*, *O*) and IQ, and an estimate of +.75 was used for the adolescent personality variables and the family relations and depression indices. Measures of scale homogeneity for the latter variables indicate that our reliability estimates may be slightly conservative; hence, the results presented probably understate, to a modest extent, the "true" relation between these variables and depression. Unfortunately, more precise estimates would require explicit test-retest data which are not available in the present study. The standardized path coefficients may be interpreted to be the effect (as a proportion of 1 *SD* on the depression index) of increasing the value of a given independent variable by 1 *SD* while holding other variables constant. The unstandardized coefficients describe a similar relation in the metric of the original variables, i.e., as a change in the raw depression score resulting from a 1 unit (year, level, etc.) change in the independent variable. Unfortunately, there is no sampling theory—except in a nonapplicable, special instance treated by Lord (1960)—to permit formal hypothesis testing using regression coefficients estimated when measurement of the independent variables are imperfect. To provide some guidance in this regard we have

(*continued*)

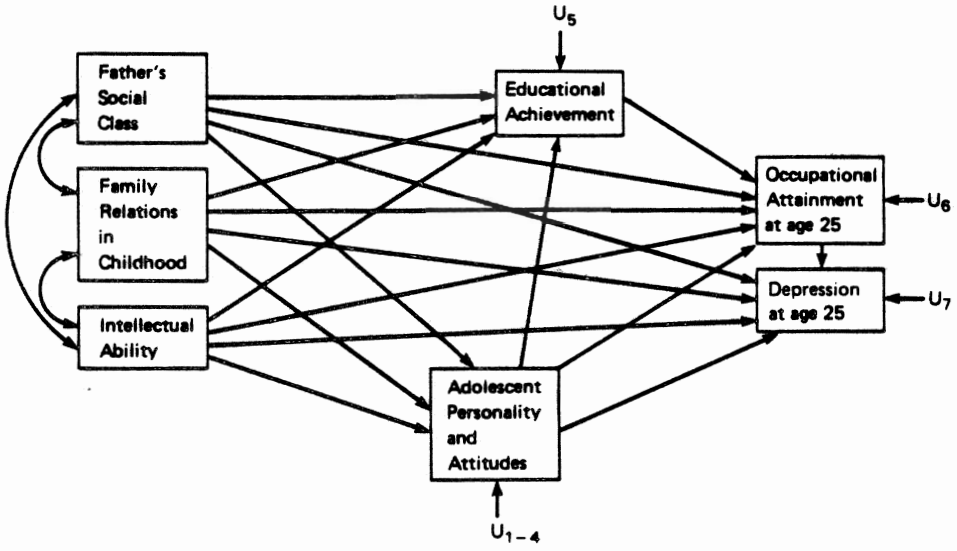

Fig. 4. Schematic causal model of social and psychological origins of depression.

Model definition: Variables: R = family relations (self-report at age 13); F = occupational level of father; I = IQ at age 12; E = educational attainment; A_i = four dimensions of adolescent personality (1 = introversion, 2 = neuroticism, 3 = achievement orientation, 4 = conservatism); O = occupational level at age 24-25; D = depression at age 24-25; U_i = unmeasured determinants of variable; P_{ij} = standardized path coefficient representing net direct influence of j upon i.

Structural equations

$$i = 1,4 \quad A_i = P_{A_iF}F + P_{A_iI}I + P_{A_iR}R + P_{A_iU_i}U_i \tag{1}$$

$$E = P_{EF}F + P_{EI}I + P_{ER}R + [\sum_{i=1}^{4} P_{EA_i}A_i] + P_{EU_5}U_5 \tag{2}$$

$$O = P_{OF}F + P_{OI}I + P_{OR}R + [\sum_{i=1}^{4} P_{OA_i}A_i] + P_{OE}E + P_{OU_6}U_6 \tag{3}$$

$$D = P_{DF}F + P_{DI}I + P_{DR}R + [\sum_{i=1}^{4} P_{DA_i}A_i] + P_{DE}E + P_{DO}O + P_{DU_7}U_7 \tag{4}$$

Constraints

$$i=1,6;\ j=1,6 \quad r_{U_iU_j} = 0$$

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reestimated these coefficients under the assumption that the raw correlations were "true" measurements (i.e., unattenuated by measurement error) derived from simple random samples of sizes 233 (grammar school) and 132 (secondary modern).

[b] GS = grammar school, SM = secondary modern.

[c] Values are one-tailed; the expected sign of the coefficient is consistent with the discussion in the text. See Method section for qualifications concerning inference.

[d] Coefficient is opposite in sign to that predicted; t value of coefficient is 2.1.

these effects are fitted using a model equation which represents the severity of depressive symptomology as a linear, additive function of occupational level, educational attainment, adolescent personality, social background, and intellectual ability.[8] Table IV presents estimates derived separately for each sample.

Assuming that our model correctly specifies the causal linkages, our results indicate that the major causes of depression in the grammar school sample were adolescent introversion, poor family relations, high occupational attainment, and lack of an academic orientation in school. In the secondary modern sample the most important influences were high occupational *and* educational attainment, poor family relations, and relatively high intellectual ability. For both samples, there is a modest trend for boys who were "poorly adjusted" in adolescence to report more depressive symptoms in adulthood.

In interpreting these results it should be remembered that the two types of schools we sampled differ markedly in character and function. The English grammar school of the 1950s was an institution of high academic standards which accepted only the brightest 20% of the school-age population and prepared these students for entry to higher education and nonmanual occupations. The secondary modern schools, on the other hand, were nonacademic in orientation, providing places for all pupils who did not gain entry to grammar schools.[9] Viewed within this context, it is not so surprising to find that the brighter secondary school boys who failed to win grammar school places—and also preparation for professional careers—should be more depressed in adulthood than the less able secondary modern pupils. Indeed, this is striking evidence for the frequently conjectured long-term effect of early selection in the English school system. Similarly, we find that boys who were selected for grammar school, but who did not share this institution's high valuation of academic pursuits, were also more depressed in adulthood. These two sets of findings point to the need to look at the fit between the individual's characteristics and needs and the social situation in which he finds himself. These specific context effects apart, the two sets of results are remarkably consistent. In both samples, poor

[8]Analysis of the bivariate relationships between all model variables (Turner, 1978, Appendix A1.1) and examination of residuals for estimates of structural equations 1–4 (Turner, 1978, Appendix 3.4) indicate that the linear, additive functional forms are not grossly inadequate representations of these data. Tests of the fit of the proposed (overidentified) model (equations 1–5) show a tolerable correspondence between the model and observed correlations [likelihood ratio $\chi^2(6) = 6.9$, grammar school sample; $\chi^2(6) = 6.8$, secondary modern sample; cf. Land (1973, pp. 45–46) for discussion of test of fit].

[9]It should be remembered that this was a characterization of the state school system at midcentury (i.e., when these men were pupils). In recent years pressures against early allocation of students to different educational careers has been mounting and the intervention of various governments has resulted in growing adoption of a unified secondary school system (the comprehensive school).

family relations during childhood and high socioeconomic attainment as an adult increases one's vulnerability to the symptoms of depression. (It is also likely, although we cannot explicitly test this hypothesis, that the significant education coefficient for the secondary modern sample further identifies the occupational level of these men by singling out those who stayed in school to obtain qualifications for higher-grade nonmanual occupations.)

One final result, the strong causal influence of adolescent introversion upon adult depression, fits well with the notion that social isolation is symptomatic of depression. The fact that this trait predisposes individuals to depressive symptoms 12 years after it was first measured is remarkable, although we hasten to observe that this finding held only for the grammar school sample.

Having estimated the independent effects of our social and personality variables, it appears that both contribute to the genesis of adult depression. Our task now is to determine the extent to which the observed correlation between occupational attainment and depression arises through the correlated effects of other model variables. Using the basic theorem of path analysis it is possible to examine the extent to which the zero-order correlation between occupation and depression arises from the direct effect of occupation, and to what extent it arises because occupational level is correlated with other model variables, which in turn exert a causal influence upon an individual's proneness to depression.

Table V shows that for the estimates derived from our multicausal model the direct linkage between occupational level and depression is the largest component of the correlation between these variables. The other variables included in our model play an explanatory role of the sort suggested by Bagley (1973), but

TABLE V

Decomposition of Correlation between Occupation and Depression[a]

Sample	Zero-order correlation	Component attributed to causal influence of occupation	"Spurious" component
Grammar school	+.224	+.272	−.048
Secondary modern school	+.291	+.188	+.103

[a] These decompositions, using the technique of path analysis (cf. Land, 1969), are based upon the causal model presented in Fig. 4 and the related equations. The spurious component of correlation arises from instances where a model variable is causally related to both occupation and depression; in such instances there is a component (devoid of causal significance) which is added to the correlation between occupation and depression. In the ideal case of spurious correlation we might have two variables A and B (say, energy consumption and the incidence of suicide) which have no direct causal connection, but which could be empirically correlated because they both were influenced by a third variable (e.g., economic depression).

only for the secondary modern school sample; and even in that group their contribution to the observed correlation is less substantial than the direct linkage between occupation and depression.

IV. Discussion and Interpretation

In Fig. 4 and the related equations we proposed a schematic causal model representing certain broad social and developmental processes we believe to be involved in the genesis of adult depression. In working with this model we have been especially fortunate in having data on the same individuals followed for many years. These data allowed the resolution of problems that would have otherwise been intractable. For example, rather than engage in endless speculation about whether personality influences socioeconomic attainment or vice versa, it was possible for us to study the role of attainment in producing depression while *controlling for the effects of four major adolescent personality variables*.

In fitting our model to the available data we found that the correlation between its predictions and the level of depression observed in our samples was reasonably high (+ .42 for the grammar school and + .50 for the secondary modern school group). Although these results indicate that there were substantial idiosyncratic variations in the incidence of depressive symptoms, they also show that one-quarter of the variance in individual vulnerability to depression was systematically related to identifiable social and psychological factors. Our analyses also demonstrate that failure to employ explicit multicausal models can bias inferences regarding the effect of specific variables. For example, our results indicate that the correlation between the socioeconomic status of parents and their offspring's level of depression was largely attributable to the causal chain which links social origins to socioeconomic attainment and, in turn, to depression. Thus, although one finds a reliable association between social origin and depression, proper controls for indirect influences show this association to be void of causal significance.

It must be borne in mind that all of our analyses describe how social and pyschological factors predispose normal populations to the symptoms of depression. Our work differs from other studies in this area not only in its focus upon a nonpatient population but also because it follows this population from early adolescence into adulthood. As a result, the framework of our analyses is somewhat different. Rather than enumerating ways in which populations of depressed patients differ from "normals," we have sought to understand how the personality of individuals and the nature of their social history make some individuals particularly vulnerable to the symptoms of depression. That is, we have been especially concerned with the causal schema which lie behind the raw correlations found in our data and the published literature.

Within the context of our model, we have identified a number of variables which have a direct causal influence upon the genesis of depression. Foremost among these are poor family relations during childhood, poor psychological adjustment in adolescence (i.e., high levels of anxiety and tension), employment in higher-level occupations, and social introversion. Furthermore, variations between models estimated for the grammar and secondary modern school samples suggest that early selection and tracking of students causes increased depression—even 12 years later—among the more able students who were denied admission to grammar schools.

Our finding with regard to occupational level is unexpected. We had anticipated that, given adequate longitudinal data, we would be able to isolate the cause(s) of the theoretically anomalous correlation between occupation and depression and, by embedding the relevant variables within an appropriate multicausal model, to expose the spuriousness of the correlation while simultaneously providing a framework for its interpretation. Our expectation in this regard followed from the fact that the relationship between occupational success and self-esteem (or "loss of loved object") is the reverse of that required in classical theories of the etiology of depression.

We have considered a number of procedural, sociogenic, and pyschogenic explanations of this empirical anomaly, but the data have stubbornly refused to be "explained." Taking account of every objection, there still remains a substantial correlation between the level of a man's job and his vulnerability to the symptoms of depression at age 24–25. Given this result, we have no choice but to reconsider the conventional wisdom regarding this correlation.

Simply put, the commonly accepted interpretation postulates:

1. "Stress" is a greater occupational hazard for accountants, university professors, etc., than it is for coal miners, truck drivers, and other similar workers.
2. "Stress" causes depression.

We find this interpretation deficient in several respects. First, the concept of "stress" used in this explanation is ill defined, and there is no empirical evidence in support of the first postulate. Furthermore, the second postulate is inconsistent with research and theory on the etiology of depression. Although there has been some research (e.g., Leff, Rotach, & Bunney, 1970) showing that "stressful life events" appear frequently in the premorbid history of depressed patients, these stressful events typically involved loss of self-esteem or loss of a loved object, for example, by divorce, bereavement, or threats to sexual identity. Thus, unlike occupational success, these stressful events involved a "stress-by-loss" which is entirely consistent with traditional theories of the etiology of depression (Brown & Harris, 1978).

We believe these deficiencies to be crucially important. However, we also must note that our analyses have failed to confirm our initial expectations regarding the correlation between occupation and depression. Therefore, rather than

argue further on theoretical grounds for the rejection of the stress hypothesis, we will propose one further interpretation and empirically examine its merits.

Our alternate interpretation is motivated by a concept which has been called the "anomia of success" (cf. Cohen, 1972; Merton, 1964). For the task at hand we have applied this concept by standing on its head the "success" of our successful young men. Specifically, rather than inquiring as to what they have gained by their achievements, we seek to discover what it is that they have lost.

It is tautologically evident that in reaching their goals these men have lost their goals. Thus, the man who at age 24 has succeeded to a high-status professional or administrative position no longer has the same well-defined occupational path with important milestones to anticipate. By fulfilling his aspirations he enters a state which is relatively normless; the normative goals that remain are more amorphous, and progress toward them may be difficult to assess. Moreover, we suspect that the translation of one's idealized aspirations into reality may engender disaffection with the imperfections of reality and may initiate a process whereby past accomplishments are devalued and ever-higher aspirations replace those which have already been satisfied. In contrast, less successful men still may have conventional goals to strive toward at age 24, and they may yet expect to make notable advances toward these goals.

Although this interpretation is admittedly post hoc, it is sufficiently well defined for its adequacy to be tested. Using the available adolescent and adult measures of job aspirations and expectations, we can measure the association between men's vulnerability to depressive symptoms and three of the mechanisms postulated by this interpretation: (*a*) early satisfaction of aspirations, (*b*) rising levels of aspiration, and (*c*) early closing off of the expectation of major occupational advancements.

The relevant data are summarized in Table VI. These calculations provide considerable support for the "anomia-of-success" interpretation. Specifically they show:

1. Men who satisfied the occupational aspirations they set for themselves during adolescence were considerably more depressed than other men (difference $+.4$ *SD*; $p < .001$).
2. Men who raised the level of their occupational aspirations between age 13 and age 24–25 were also more depressed than other men (difference $+ .2$ *SD*; $p < .01$);
3. The expectation of future occupational advancement was associated with lower levels of depression:
   a. Men who reported that they did not anticipate rising to a higher occupational level were more depressed (difference $= +.2$ *SD*; $p < .05$).
   b. Men who expected to rise two or more levels above their present position were significantly less depressed than other men (difference $= -.3$ *SD*; $p < .01$)

TABLE VI

The Relation of Depression to Occupational Aspirations and Expectations

Variables	Coding[a]	Means	Significance level	Correlation[b] with Depression	Correlation[b] with Occupational level
A. Occupation (age 24) equals or exceeds adolescent aspirations	0 1	4.76 5.54	.001	+.23**	+.51**
B. Raised occupational aspirations (age 13 vs age 24)	0 1	4.75 5.22	.01	+.15*	+.22**
C. Occupational aspirations stable[c] (age 13 vs age 24)	0 1	5.02 4.94	ns	+.02	+.03
D. Present occupation two or more levels below that expected at end of career	0 1	5.11 4.61	.01	−.15*	−.33**

[a] 0 = no, 1 = yes.

[b] Correlations are for combined (grammar and secondary modern) samples.

[c] Aspirations were considered "stable" if the occupation selected at age 24–25 was the same Hall-Jones level or no more than one level below the level of the job selected at age 13.

*$p < .01$.

**$p < .001$.

Furthermore, when we introduced these variables (from Table VI) into our model of the genesis of depression (Fig. 4), the relationship between absolute occupational level and depression was reduced to insignificance (standardized partial regression coefficients = +.07 and −.04).

These results demonstrate that the "anomia-of-success" interpretation is consistent with available data and powerful enough to account for the entire correlation between occupational level and depression. Put in a different way, acceptance of the anomia interpretation makes moot the question of the validity of the stress hypothesis.

While the foregoing empirical results do not invalidate the stress hypothesis, our alternative interpretation does have certain theoretical advantages. In particular, it is consistent with a substantial body of evidence on the nature of other environmental factors associated with depression, and it is also sufficiently well defined to be empirically testable. Finally, we would observe that evidence recently provided by Inkeles and Smith (1974, Chap. 18) has cast doubt upon a widely accepted corollary of the stress hypothesis. This corollary postulates that industrialization imposes psychic "stress" upon a population, and this stress gives rise to psychiatric disorders, in general, and depression, in particular. As two proponents of this thesis have written:

> The rapidly changing psycho-social environment of man often gives rise to situations of acute and/or prolonged environmental stress which may lead to depressive reactions. (Sartouris, 1974, p. 18)
>
> It is widely believed in many developing countries that the rising incidence of psychiatric disorder is a product of the march of civilization and industrialization. (El-Islam & El-Deeb, 1969, p. 288)

Inkeles and Smith studied populations in six developing countries. They found no evidence that participation in industrial (vs agricultural) production, or migration to urban centers, or exposure to the "modernizing" influence of the mass media or formal education increased the rate of psychiatric symptoms (including "nervousness," insomnia, feelings of insufficiency). Indeed, the bulk of their evidence contains insignificant trends in the opposite direction.

Given the foregoing evidence, we believe it advisable to consider the correlation between occupation and depression to arise not from the "stressful" nature of high-status occupations, but as an anomic consequence of success. As Durkheim (1897/1966) concluded in his study of suicide:

> In resume, just as suicide does not proceed from man's difficulties in maintaining his existence, so the means of arresting its progress is not to make the struggle less difficult and life easier. If more suicides occur today than formerly, this is not because, to maintain ourselves, we have to make more painful efforts, nor that our legitimate needs are less satisfied, but because we no longer know the limits of legitimate needs nor perceive the direction of our efforts. (p. 386)

V. Summary

The correlation between occupational status and the incidence of depression has been variously reported as positive, negative, or nonexistent. In the present study, we have capitalized upon the existence of longitudinal data for a sample of men to study the social and psychological antecedents of depression. Using this sample of a normal population (interviewed at age 13–14 and reinterviewed in early adulthood), we find the correlation between adult occupational status and the reported incidence of (nonsomatic) depressive symptoms to be positive and rather substantial ($r = +.30$). While this result is consistent with some reviewers' conclusions based upon the published literature (e.g., Bagley, 1973), it is nonetheless perplexing. Why should "success" engender depression?

A variety of explanations for this perplexing correlation have been proposed. Bagley (1973) notes that

> There seem to be three possible reasons for this excess of individuals with a diagnosis of serious depression in the upper social classes. First of all there may be diagnostic biases, so that depressed patients from lower social classes are not properly diagnosed. Secondly, a particular type of personality disposes certain individuals to both rise in the social scale, and to be prone to depression. Thirdly, the stresses of upper middle and upper class life (or the stresses of having moved into such a position) may predispose certain individuals to depression. (p. 338)

We have used the available longitudinal data to test various formulations of these explanations for the observed correlation. We found, however, that (*a*) even using standardized measurement instruments the correlation persists; (*b*) the incidence of depression is only weakly related to either the social class in which one was reared or the experience of social mobility; and (*c*) when adolescent measures of IQ, personality (Neuroticism, Introversion, Achievement Orientation, and Social Conformism), and self-reported family relations were introduced as control variables, the correlation was attenuated to only a minor extent. Using a multicausal model of the life cycle, we did nonetheless find that introversion, poor family relations, and neuroticism in early adolescence were antecedents of adult depression. We also found some evidence that, net of other factors, the brighter boys who failed to gain entry into the elite grammar school system reported (disproportionately) more depressive symptoms in early adulthood. (This suggests that the traditional British practice of segregating students at age 12 may have some untoward psychological consequences which persist even a decade later).

Our analysis, however, did not succeed in explaining the perplexing correlation between occupational achievement and depression. As a final attack, we explored the notion suggested by Merton (1964) and Cohen (1972) that success has anomic consequences. (In particular, the early loss of clearly identified occupational goals is implied by early attainment of high-status occupational positions.) Using measures of occupational aspirations obtained at age 13–14, we were able to identify men who had satisfied their occupational aspirations by age 24–25. We found these men to be more depressed than average. Moreover, men who raised their occupational aspirations (between age 13 and 25) were also significantly more depressed. Conversely, men who still expected at age 25 that they would rise two or more occupational classes were significantly less depressed than average. When these factors were controlled, the perplexing correlation between occupational attainment and depression disappeared.

We conclude, on this basis, that while reports of depressive symptoms in this "normal" population were associated with various social and psychological factors, the correlation between occupational achievement and depression can be accounted for by factors other than the nature of the occupations performed by men of different social classes. In particular, we find it unnecessary to invoke the allegedly "stressful" nature of middle- and upper-class occupations to account for the observed correlation between occupational status and reports of depressive symptomology.

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