POPULARITY, FRIENDSHIP, AND INTERPERSONAL PERCEPTION IN THE CLASSROOM*

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In a sample of 54 class groups, drawn from second-level schools in the Republic of Ireland, students (n = 1,491) named three classmates who excelled on a list of 14 abilities and behaviours related to school. They also named the three students they would most like to be friends with, and their three closest actual friends. The study examined the relationship of Popularity to the attributes of Intelligence and Athletic Ability, and to four principal components of the remaining attributes, interpreted respectively as Conformity, Maturity, Sociability, and Non-conformity. Sociability and Athletic Ability had the strongest relationship with Popularity, followed by Intelligence and Maturity. Very little change in this pattern was found for type of school or stream except that Non-conformity was more closely related to Popularity in smaller schools. There was a pronounced halo effect in the attributions made by younger students, producing high correlations between individual attributes.

The relationships between students' perceptions of each other and popularity have been examined in a number of studies. In the case of pre-adolescents and young adolescents, popularity has been linked with personal qualities such as politeness and friendliness more than with competence or assertiveness (10, 16). Physical prowess has also been involved (17). Similar findings have been reported for middle and late adolescence. Social status appears to be unrelated to attributes such as intelligence, punctuality, or confidence and is found to correlate highly with sociability, fair-mindedness, and humour (9) and also with participation in games and social events (8). (For a review of the sociometric studies on this topic, cf. 11). In Coleman's well-known study of adolescence (6), athletic ability also stands out as an important determinant of social status, followed at some distance by sociability and finally by academic status. Other attributes linked with social status by Coleman are 'having a good reputation' and 'stirring up a little excitement'.

In all of these studies, except perhaps Coleman's, the school as such is of secondary importance. Basically the investigators were concerned with the social psychology of adolescence and found themselves dealing with schools only because this is where adolescents are mostly to be found. The present study tries to retain the concern of these studies with person-to-person relations between students but also focuses on the school as such. Thus while popularity and friendship are measured through the nomination of students by other students, the analyses ignore informal friendship-groups in favour of the formal class group, and the independent variables are school variables, e.g., stream, type of school, and size of school. Similarly, the domain of student perceptions is limited largely to school-based behaviours and attributes, e.g., reading, talking to the teacher, and being good at games.

Our study had three main objectives: first, to relate popularity and friendship to interpersonal perception in the class group; second, to examine this relationship as a function of school and class group variables; and third, to examine the formal, internal structure of student perceptions in the context of adolescent cognition generally.

On the first issue we have just seen that, in general, athletic ability and social competence seem to be the main perceptual correlates of popularity. On the second issue — the school factors which may influence this relation-ship — a number of studies has looked at the relationships between class stream and student perceptions.   In an early American study, Cook (7) reported that undesirable social and personal qualities were attributed by top-stream students to students in the lower streams, a finding which has been supported recently by Hargreaves (12) in a detailed study of a single school in England. Hargreaves found that interpersonal perception between high and low streams was strongly negative, in both directions. Moreover, popularity was linked with quite different perceptions within streams. In the top stream it correlated highly with correct school behaviours, e.g., paying attention in class and obeying the teacher. In the bottom stream it correlated with the absence of such behaviours. This contrast was so pronounced that the author spoke of two sub-cultures in schools, one 'academic' and one 'delinquescent'. While the school in question was in a heavily industrialized area, the author did not consider it exceptional, and has generalized his findings in later publications (13, 14).

Differences between boys and girls in the perception of social status are reported in Coleman's study (6). In particular, the attribute 'stirring up a little excitement' was linked with social status among boys but not among girls. Coleman also noted that school size had an influence on the correlates

of popularity. He suggested that attributes such as social and academic ability were generally more visible, and therefore more influential, in smaller schools. On the other hand, he considered athletic ability to be a visible attribute regardless of school size on account of the public forum which it enjoys.

The third issue — the formal structure of adolescent cognition — must always be borne in mind when interpreting findings on the first two issues. It is possible that cognitive and attitudinal factors are seriously confounded in the attributions made by adolescents. Gold (10) notes that the social and emotional qualities attributed to popular students may be expressions of allegiance more than perceptions. In other words, the friendliness or good humour attributed to them may be highly subjective qualities which do not in any sense explain their popularity but merely reaffirm it. The stereotyped quality of some student perception also suggests an involvement of attitude with perception, a point made by Bonney and Northway (3) in connection with the very negative perception of lower stream students reported in Cook's (7) study. This point must be borne in mind when popularity is found to correlate with attributions which possibly have a large attitudinal component.

The tendency for attributes to cluster around some seminal attribute, referred to in attribution theory as a halo effect, must also be given consideration. (For a review of research on the halo effect cf. 5 and 22.) Quite apart from its role in stereotyped or biassed perception, it is very likely a normal condition of adolescent perception, if only because the perceptual differentiation of personality traits is still very rudimentary in early adolescence. According to Watts (23) adolescent perceptions show a transition from *univalent* to *divalent* trait clusters, i.e., from clusters which contain either all negative or all positive elements to clusters which contain both positive and negative elements. In other words, adolescents' descriptions of their acquaintances change from being global approvals or disapprovals, towards a more differentiated perception which can accommodate both positive and negative attributes. While Livesley and Bromley (18) failed to confirm this in one of the studies they report, other studies in the same volume make it clear that open-ended descriptions of acquaintances show a progressive degree of hierarchization and other forms of internal differentiation through adolescence.

Another formal property of perceptual clusters is the stability of individual attributes, i.e., the degree to which perceivers agree in their use of them. Coleman (6) has shown that consensus decreases for many attributes as the school becomes larger, a phenomenon he related to the visibility of attributes,

mentioned above. Lack of consensus may be an important factor when attributes are clustered into larger units since the less stable attributes are more likely to come under the influence of a halo effect or any other forces which might create clusters of attributes. Here again the discovery of a definite formal or abstract pattern may greatly change our interpretation of correlations between social status and individual attributes.

METHOD

Sample

For practical reasons, the population of schools which was sampled was restricted to second-level schools which were attended by boys in the Republic of Ireland. If schools were also attended by girls, they were included in the population. For the purposes of sampling, the schools (N:560) were stratified by type (secondary, vocational, and comprehensive*) and size (small — less than 150 students; medium — between 150 and 349 students; and large — 350 or more students). The secondary sector was further stratified for religious denomination (catholic and protestant), catholic schools being divided into boys' boarding schools, boys' day schools, and boys' and girls' schools with junior and senior cycles.

Schools were randomly selected within each category in the stratification matrix, a minimum of two schools being selected in each category. In all 52 schools were selected. Five refused to participate and three were replaced, leaving a total sample of 50 schools (full details of the sampling of schools are contained in 19).

Within schools, two samples of classes were drawn. One was made up of first year classes; the students in these classes were approximately 13 years old and will be called the junior students. The second sample was drawn from classes in the first year of the Leaving Certificate cycle. The students in the classes were approximately 16 years old, were in their fourth year in post-primary school, and in most cases had just sat for their Intermediate Certificate examinations.   These will be referred to as senior students.

The number of classes selected within a school was proportional to the total number of class groups in a school at the grade level at which the selection was made (streams). Top and bottom streams were selected first, if such existed, and additional class groups were spread over the

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* Since only one comprehensive school took part in the investigation, it was included in the secondary category for analyses.

range of streams which the school contained. Samples at junior and senior levels were drawn independently since in many schools the number of streams at the two levels was not the same. In all, 30 junior class groups in 14 schools and 24 senior class groups in 12 schools were selected. Altogether, 1,491 students took part in the investigation.

Details of the partitioning of the class groups on the seven independent variables to be used in analyses are set out in Table 1. Some of the variables

TABLE 1

PARTITION OF THE CLASS GROUPS ON THE INDEPENDENT VARIABLES

Independent Variables	Number of Class Groups
Class Groups:	
Senior/Junior	24/30
Boys/Mixed	37/17
Streamed/Unstreamed	37/17
Streamed/Destreamed	17/09
Top/Bottom Stream	14/14
Large/Small	29/25
School:	
Secondary/Vocational	33/21
Catholic/Protestant	48/06
Large/Small	30/24

listed require a word of explanation. The mixed class groups are, in effect, male groups, since they contain only a small percentage, typically less than 20%, of girls. Nine junior class groups were not streamed according to the reports of principal teachers, even though other class groups existed in the school at this level. These are regarded as 'destreamed' classes and are contrasted with junior class groups which were streamed. The group categorized as 'unstreamed' includes the destreamed group and all groups which were not streamed since no other class groups existed at their level in the school. The streamed/destreamed contrast applies only at the junior level, while the streamed/unstreamed contrast applies at both junior and senior levels. A class group was regarded as being 'large' if it was larger than the median class size of 25 students.

Dependent Variables

The students were first asked to name the three students in their class 'you would most like to have as good friends', and the three 'you go around with most often'. These two variables will be called Popularity and Friendship respectively. Students frequently nominated in response to the first question may be considered 'popular', at least in the sense of being sought after as friends. Students frequently mentioned in response to the second question may be considered as actual friends of many other students.

The students were then asked to name three students in their class group for each of the following attributes. The names were ranked as first, second, and third preferences.

most clever (*clever*)
best at games or athletics (*athletic*)
know most about art or music (*artistic*)
work hardest at school (*works*)
know most about how to get a suitable job (*job*)
most often talk to teachers about their future (*future*)
best able to meet boys and girls from different kinds of school (*meets*)
read most books (*reads*)
best in debates or discussion (*debates*)
give best example out of school (*example*)
best for obeying the rules of the school (*obeys*)
take part most often in different kinds of activities out of school (*activities*)
most likely to leave school as soon as possible (*will leave*)
most often break the rules of the school (*breaks*)

In the discussion to follow these variables will sometimes be referred to by the words which follow them in brackets.

Each attribute refers to a particular characteristic which a student is perceived as having or not having. In other words there is a definite perception or attribution involved in every case. The same is not true of the nominations for the most popular student or the student one goes around with most often. No particular quality is attributed to a student by such nominations. They record interpersonal attraction between students and may be considered as attitudinal rather than cognitive. They also have a distribution which is quite different from that of the attribute variables. With the cognitive or attributional variables it is typical for a small number of students to receive most of the nominations, while most students receive none or very few. With the attitudinal variables, however, nearly every student is mentioned by some others, and as a result the variance is much

smaller, almost exactly four times smaller than the variance of the attribu-
tions. One can of course consider Popularity and Friendship as inferred
properties and study their relationship to perceived properties, which we
propose to do in the analyses to follow.

Scoring the responses

Totals for each student on Popularity, Friendship, and the perceptual
variables were computed by counting first preference votes as 3, second
preferences as 2, and third preferences as 1. Campbell (4) has derived
weights for first, second and third preferences based on the size of the
class group, an assumption that the attribute voted on is normally distributed
within a group, and an arbitrary value of zero for a no-vote. A sample of
class groups and attributes in the present study showed that total scores,
computed by the conventional weights of 3, 2, and 1, correlated .96 and
upwards with the corresponding scores using Campbell's weights. The
conventional weights were therefore used throughout.

Scores were expressed as a proportion of the total which the student
could have obtained given the poll in his or her class group for the attribute
in question. This prevents class size and other factors affecting the total
vote, such as absenteeism or non-response, from influencing the analysis at
this point. However we will return to the question of class size and non-
response later.

Component analysis of the attributes

It was not feasible to examine all 14 attributes individually in the present
study. Only two seemed worthy of separate analysis, the attributes *clever*
and *athletic*. (Since the term *clever*, as used in the questionnaire, is synon-
omous with *bright* or *intelligent*, we will refer to the corresponding attribute
as *intelligence*, bearing in mind that it is a perceived attribute rather than
one which was formally measured.) The remaining 14 attributes were
factored by principal components, ignoring class groups. Four components
accounted for 70% of the variance. They are presented, after varimax
rotation, in Table 2 and are identified as Conformity, Maturity, Sociability,
and Non-conformity. The interpretation will be discussed later.

Factor scores were computed for each student. Together with scores on
Intelligence and Athletic Ability they provide us with a profile of the student
as perceived by his or her classmates.

TABLE 2

FIRST FOUR PRINCIPAL COMPONENTS OF ATTRIBUTIONS
AFTER VARIMAX ROTATION

	I	II	III	IV	h^2
obeys	86	18	−01	−06	64
example	82	20	14	−07	62
works	70	43	05	−10	61
debates	14	69	32	−03	45
reads	33	63	05	−06	40
job	24	53	43	06	47
future	26	53	35	04	42
art	12	37	31	01	24
meets	−05	20	73	21	39
activities	07	21	57	08	30
breaks	−05	02	18	75	32
will leave	−09	−04	06	71	35

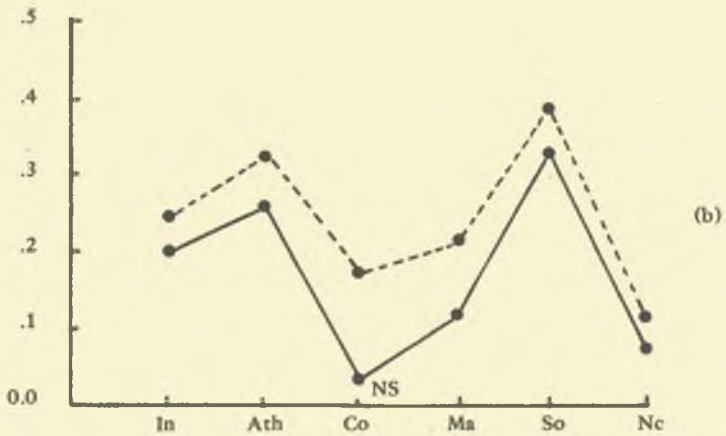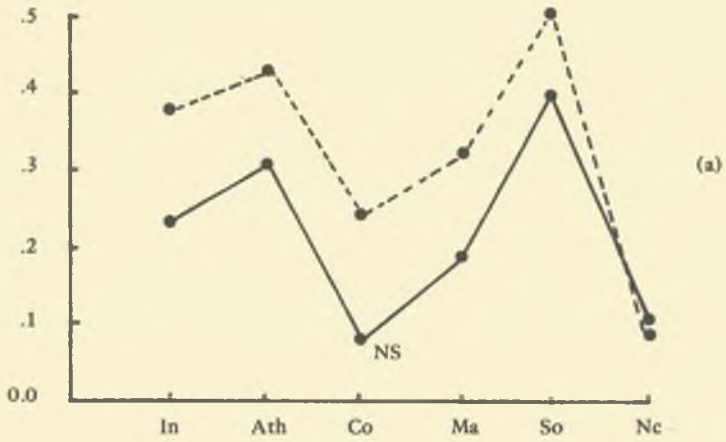Percentage of total variance accounted for: 70

RESULTS

Popularity and Friendship were correlated with student profiles within each of the 54 class groups. The average correlations in senior and junior class groups are shown in Figure 1. Popularity correlates most highly with Sociability ($\bar{r}$ = .46), Athletic Ability ($\bar{r}$ = .38) and Intelligence ($\bar{r}$ = .32). Next comes Maturity ($\bar{r}$ = .26), Conformity ($\bar{r}$ = .16), and finally, Non-conformity ($\bar{r}$ =.09). These are the mean correlations for the combined senior and junior populations (not shown in Figure 1) and each of them is significantly larger than zero. It should be borne in mind that the mean correlation is the average of 54 correlations computed within individual class groups. It can be seen from Figure 1 that the results for Friendship are very similar.

Differences in the size of the correlations over the subpopulations defined by the independent variables were tested. A consistent age effect was evident, as can be observed in Figure 1. All attributes except Non-conformity, i.e., all positive attributes, are most highly correlated with Popularity in junior class groups. All differences are significant at the .05 level. The same pattern is evident for Friendship, though only the correlation

FIGURE 1

CORRELATION OF POPULARITY (a) AND FRIENDSHIP (b)
WITH ATTRIBUTED PERSONALITY CHARACTERISTICS IN
SENIOR AND JUNIOR CLASS GROUPS

Senior	●————● (n=24)	In	Intelligence
Junior	●- - - - -● (n=30)	Ath	Athletic Ability
		Co	Conformity
		Ma	Maturity
		So	Sociability
		Nc	Non-conformity
		NS	Not significantly larger than zero

TABLE 3

SIGNIFICANT DIFFERENCES BETWEEN TYPES OF SCHOOLS AND CLASS GROUPS
IN THE CORRELATION OF POPULARITY AND FRIENDSHIP WITH PERCEIVED ATTRIBUTES

Independent variables		Correlation of Popularity with the attribution of						Correlation of Friendship with the attribution of					
		In	Ath	Co	Ma	So	Nc	In	Ath	Co	Ma	So	Nc
Class-level	Senior/Junior	*	*	*	*	*				*			
	Boys/Mixed												
	Streamed/Unstreamed							**					
	Streamed/Destreamed							*					
	Top/Bottom Stream			*						*			
	Large/Small						*						
School-level	Secondary/Vocational		*										
	Catholic/Protestant												
	Large/Small						***						**

In   Intelligence
Ath   Athletic Ability
Co   Conformity
Ma   Maturity
So   Sociability
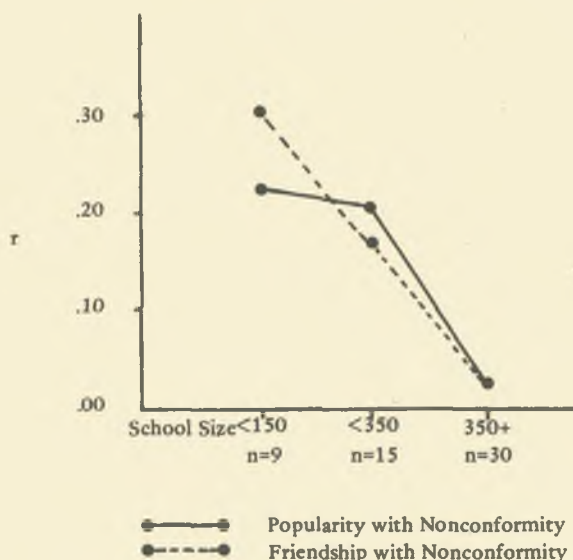Nc   Non-conformity

* p < .05
** p < .01
*** p < .001

of this variable with Conformity is significantly larger in the junior class group (Table 3). The other significant differences reported in Table 3 were obtained after the age effect was removed. Friendship is more highly correlated with Intelligence in class groups which are unstreamed or destreamed. Both Popularity and Friendship are more highly correlated with Conformity in lower stream class groups. Popularity is more highly correlated with Athletic Ability in vocational schools than in secondary schools. Finally, both Popularity and Friendship are more highly correlated with Non-conformity in smaller schools (i.e., in schools with less than 350 students).

The extent of the age difference, illustrated in Figure 1, made it essential to repeat the component analysis within age groups. Identical factor structures were found, with congruence coefficients in the high 90s after rotation to maximum alignment (20). However, the raw correlations on which the factoring was done are substantially larger in the junior population, with the sole exception of correlations involving the pejorative attributes *breaks* and *will leave*. The higher correlation of positive attributes in the junior population can be seen in Figure 2 which presents the results of a cluster analysis of the correlation matrices for seniors and juniors. The method used is Johnson's 'minimum' method (15). At this level of clustering (r = .5), four trait clusters which are distinct in the senior population are merged into a single trait cluster in the junior population.

FIGURE 2

VARIABLES CLUSTERED AT THE LEVEL OF
r = .50 FOR SENIORS AND JUNIORS

Senior Clusters			Junior Clusters
1.	*Clever* *Works* *Example* *Obeys*	1.	
2.	*Job* *Future* *Debates*		
3.	*Reads*		
4.	*Artistic*		
5.	*Athletic* *Activities* *Meets*	2.	
6.	*Will leave* *Breaks*	3.	

FIGURE 3

CORRELATION OF POPULARITY AND FRIENDSHIP WITH
NONCONFORMITY BY SCHOOL SIZE

Popularity with Nonconformity
Friendship with Nonconformity

The relationship between school size, Non-conformity and social status was examined further since it is the strongest effect in the data apart from the age effect. It was possible to subdivide the small schools further into those with 150 students or more and those with less than 150 students. This revealed a linear relationship between school size and the tendency for both Popularity and Friendship to correlate with Non-conformity (Figure 3). The linear trend is significant at the .01 level in both cases.

Percentage of missing data is plotted for seniors against juniors in Figure 4. It should be mentioned here that students were free to omit items if they wished, and it is clear from the axes of Figure 4 that seniors did so more often than juniors*. But when we adjust for this general difference, we

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* Since students were free to omit items which they found objectionable, a high rate of non-response was to be expected. However, a full set of data for an average class group, consisting of some 1,400 nominations, gives an enormous overdetermination of the trait correlations in which the study is interested. For while the most popular or the most clever student in the class might well be absent or refuse to fill out the questionnaire, this makes very little difference since he or she will still be nominated by others for these titles. In effect the prevailing pattern of trait correlation in the class group is determined by a small number of students with extreme scores on some of the traits and this pattern is already well determined by as little as 20% or 30% of the nominations.

FIGURE 4

PERCENTAGE OF MISSING DATA ON ALL VARIABLES,
SENIORS PLOTTED AGAINST JUNIORS

% missing data: juniors
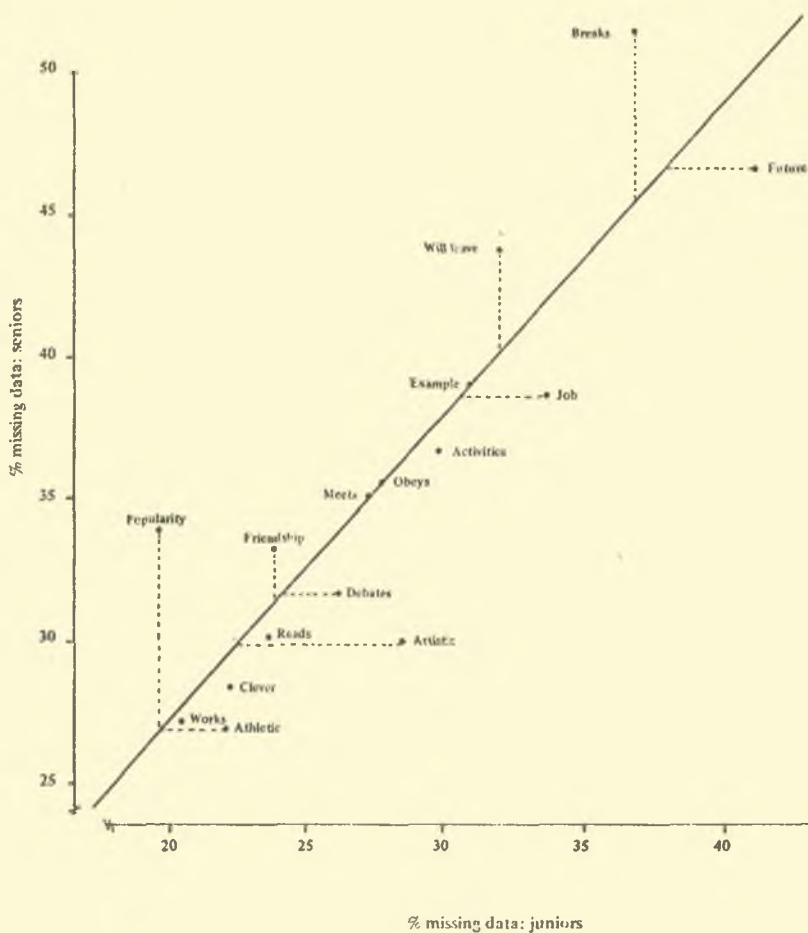
find that the seniors are more reluctant to complete certain items than we would have expected from the junior rate of response, while the juniors are more reluctant to complete certain others, relative to the senior response rate. Seniors are reluctant to complete the items for Popularity and Friendship and the attributes *breaks* and *will leave*. Juniors are reluctant to complete the items *athletic, artistic, debates, job, future.*

DISCUSSION

Three general issues were raised in the introduction: the relation of social status to interpersonal perception in the classroom, the influence of school and class-group variables on this relationship, and the formal structure of interpersonal perception in the classroom considered from the standpoint of adolescent cognition generally. We will deal with each issue in turn.

The present data show that social status in the classroom is strongly linked with perceived traits of sociability, athletic ability, intelligence, and a group of traits (*debates, reads, job, future,* and *artistic*) referred to collectively as maturity. Social status also has a small but significant relationship with conformity and non-conformity.

These results support the findings of previous studies (8, 9, 10, 17) that sociability is the primary determinant of popularity. They also help to link popularity with specific social behaviours. It was mentioned in the introduction that social attributes which are global and positive, such as *helpful, sociable, having a good reputation,* or *fair-minded,* may have a large attitudinal component. As a result it can be argued that their correlation with inter-personal attraction or popularity is a foregone conclusion. In the present study sociability refers to specific behaviours, meeting boys and girls from other schools and taking part in activities outside school. One can say with some confidence, on the basis of our findings, that students perceived to be active in these fields are sought after more often as friends, and nominated more often as actual friends.

The relationship between popularity and athletic ability can be interpreted accordingly. Because it is less pronounced, it is likely that it is not athletic ability *per se* which influences social status but the additional standing which it gives to students on sociability, in the precise sense which has just been given to this term.

The data also help to clarify the relationship of popularity to academic status. Previous studies show that academic ability falls far behind social ability as a determinant of social status. However, in interpreting this

finding it must be borne in mind, as just noted, that measures of social ability are often strongly attitudinal in nature. When expressed in very general terms they already suggest popularity, and may give a prejorative tone to the academic traits with which they are contrasted. In the present study, sociability is defined in terms of specific behaviours and, in addition, academic status is divided into three components: intelligence, conformity to school discipline, and a factor, referred to as maturity, which loads mainly on debating and reading. Our data show that popularity has a substantial correlation with intelligence and maturity, a correlation which in fact is of the same order of magnitude as that reported for popularity with social and athletic ability. However, the correlation of popularity with conformity is negligible, and in the senior population, not significantly different from zero. When we speak of academic traits we should perhaps distinguish between those which denote ability and those which denote compliance with authority. Our data suggest that the former, but not the latter, will be correlated with popularity.

On the first issue therefore, the relation of popularity to interpersonal perception, our results broadly confirm the findings reported in the existing literature, Coleman's (6) work in particular. Social status is linked first of all with social and athletic ability. But the data also show that intelligence and academic maturity are important correlates of popularity, a finding which has not been pointed out in previous studies.

On the second issue, the factors which influence the relationship between popularity and interpersonal perception, we found no effect in our study for stream or type of school. The work of Hargreaves (12, 13, 14) would lead one to expect that status would be linked more closely with conformity in top streams, and with non-conformity in the lower streams. But our data show only two effects for stream or type of school, and one is not in the direction suggested by Hargreaves. In the lower streams, a student's friends are *more* likely to be described as conforming to school discipline. The second effect shows that athletic ability is more highly correlated with popularity in vocational schools, which is consistent with Hargreaves's views.

It is not easy to reconcile these results with those of Hargreaves. As mentioned above, the class groups in our study were selected to maximize streaming differences. Moreover, the distinction between secondary and vocational schools in Ireland incorporates some of the worst features of the streaming variable. The data are therefore in clear conflict with Hargreaves' findings, with the possible exception of the high correlation of popularity with athletic ability in vocational schools. One possible explanation is that

the sociometric methods used in the present study miss out on certain aspects of interpersonal relations in the classroom which are picked up more readily by the observational and interview techniques used by Hargreaves. On the other hand, it is also possible that Hargreaves assumes too readily that students who apply stereotypes to other students in different streams or types of schools will be influenced by the same stereotypes when forming impressions and attachments within their own peer groups. This does not necessarily follow and the present data suggest that it is not the case. What Hargreaves has shown is that upper-stream students perceive lower-stream students as non-conformists, and are themselves perceived as conformists by lower stream students. Within the group perceived as conformists, however, conformity may not be a big issue, and similarly for non-conformity in the group perceived as non-conformist.

In fact it might well be the case that the attributes by which a group is defined externally are less connected with status within the group than they would be in other groups. There is some evidence in the present data that this is so. Conformity to school discipline was more strongly and positively related to friendship in bottom-stream than in top-stream class groups. At the same time it was noted that the correlation was no greater than that which obtained in the unstreamed and middle-streamed class groups excluded from this particular analysis. One does not conclude, therefore, that the lower stream environment induces a relationship between conformity and social status, but that the upper-stream environment lowers the level of this relationship obtaining in class groups generally. This could happen if students in upper streams were uniformly high on the attribute of conformity, which is reasonable to assume. The present data, however, can shed no further light on this possibility since they assign students to attribute scales only in relation to their own classmates, and thus do not allow us to compare attribute levels over class groups.

A similar explanation seems appropriate for the finding that intelligence was a correlate of popularity in unstreamed class groups more than in upper or lower streams. Upper and lower streams will tend to make the perceived intelligence of students more uniform, thus removing it as an important factor in interpersonal attraction.

The present study shows two further effects for type of school and class groups. Non-conformity is more closely related to popularity and friendship in smaller schools. While the overall relationship between non-conformity and social status is not large in absolute terms ($\bar{r} = .09$), it shows a strong effect for school size. Non-conformity is more highly correlated with social status in small schools than in large schools, and the

relationship is approximately linear (Figure 3.). This finding is consistent with Coleman's notion of trait-visibility (6). Disruptive behaviour, lacking any kind of public forum, contributes to popularity only within a fairly limited circle and will tend to lose its impact as the school becomes larger. Some figures presented by Coleman on the attribute 'stirs up a little excitement' also show that it is more closely related to social status in smaller schools (6, p. 125).

The fact that this is a school-level phenomenon is emphasized by a smaller effect in the opposite direction for class-group size in the present data. Non-conformity is a correlate of social status in large class groups more than in small ones.

On the third issue, the formal structure of interpersonal perception in the classroom, the study demonstrates a very strong halo effect for junior students. All positive attributes correlate more highly with each other in the junior population than in the senior population. The extent of this difference can be gauged from the clusters shown in Figure 2 for variables with correlations of .5 or greater. Furthermore, the positive attributes have less of a correlation with the negative attributes *breaks* and *will leave* in the junior population. This is in keeping with the hypothesis of Watts (23) that trait clusters do not mix negative and positive attributes in early adolescence.

Halo effects can be understood in different ways. The term was originally coined by Thorndike (21) to describe a bias in adult cognition. He found that positive qualities tended to be attributed to others in clusters. Raters seemed to infer high levels on a wide range of attributes once they attribute a high level on certain key attributes. It is doubtful however if the notion of bias, or inference which is unwarranted and incorrect, is appropriate in the case of the present data. It may be more reasonable to assume that the halo effect is a result of certain distinctive but entirely natural features of early adolescent cognition.

Both the halo effect and the age effect which we found (Figures 1 and 2) can be accounted for by assuming that attitudinal and cognitive components are not clearly differentiated in the attributions made by younger students. Earlier we distinguished between attitudinal variables (Popularity and Friendship) and cognitive variables (perceived Intelligence, Athletic Ability, etc.). The former were taken to be primarily measures of interpersonal attraction and the latter to be attributes in the strict sense, ascribing a definite characteristic to a student and not necessarily implying attraction or admiration. This distinction was upheld by the empirical distribution of

the two variable types, the attitudinal and the cognitive. Nevertheless, the data indicate that it is a distinction which is truer of senior students than of juniors. In the lower-age group it seems that attitudinal and cognitive components of interpersonal attraction are more closely linked. As a result, attributes tend to be more highly correlated if they are positive in tone, and are more sharply differentiated as a group from those which are negative in tone.

There is further support for this interpretation in the pattern of missing data. If the halo effect is due to attitudinal influences on attribution, as suggested, it is to be expected that the attributes most affected will be those which lack a precise referent while still retaining a positive tone. The pattern of missing data helps in identifying such attributes. It is shown in Figure 4 that seniors are reluctant to complete the items for popularity and friendship and the negative items *will leave* and *breaks* – a difference which persists even when the general difference in response rate between seniors and juniors is removed. This is easy to understand since all four items are confidential in nature. There is nothing confidential however about the five attributes which the juniors are especially reluctant to rate relative to seniors, namely *artistic, future, job, debates,* and *athletic.* We must conclude that juniors were uneasy with these items merely because they found them lacking either in meaning or salience. The items are still positive in tone, however, and it can be seen in Figure 2 that four of them are attracted into the large cluster which constitutes the 'halo' in the attributions of junior students.

It would oversimplify the situation to say that attributions made by junior students were biassed or unrealistic. To say that they are a little over-enthusiastic is perhaps closer to the mark, suggesting as it does that a different type of attribution is involved, one in which perception is strongly influenced by attraction. Attribution may now be taken as a special case of the type of attitudinal cognition studies by Abelson (1, 2) under the heading 'not cognition'. According to Abelson, the primary effect of attitude on cognition is a clustering of attributions and inferences. The meanings of individual attributes move closer together if they happen to share the same attitudinal valence and there is a tendency to make inferences too readily from one attribute to others of the same valence. Such a pattern is quite evident in the present data.

While the cognitions studied by Abelson are clearly cases of bias or prejudice in adult inference, it is not necessary that the involvement of affect with cognition should always be aberrant. Very likely the formation of attachment between children and their parents demands a considerable

interaction of attitude and cognition. Our data suggest that there is also an interaction of attitude and cognition in adolescent attribution and that it grows less with age. As a result, some of the findings reported earlier need to be qualified. It was said that perceived sociability, athletic ability, intelligence, and maturity were correlates of social status for juniors more than for seniors. Normally such a statement implies that the process of attribution and the meanings of individual attributes are invariant as we move from one group to another. The most pronounced pattern in our data, however, indicates that this in not the case, and our interpretation of the age difference must be modified accordingly.

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