RELATIONSHIP BETWEEN SOCIOMETRIC STATUS AND ANXIETY

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An attempt was made to explore intensively the relationship between sociometric status and general anxiety, where the status was determined by GRS among both sexes combined and anxiety by the Taken GAT with 8 subscales. Ss were 72 4-th graders and 120 junior-high school pupils.

Main findings were as follows: (1) With adolescent samples, sociometric status was significantly related to the two GAT subscales assessing psychosomatic complaints and impulsive tendency, but not to any other subscale. (2) With 4-th grade children, sociometric status was not significantly related to any of GAT subscales, but some relation was suggested between sociometric status and impulsive tendency.

The present study is an investigation into the relationship between sociometric status and anxiety. There have been a considerable variety of studies demonstrating some relation of personal adjustment to social acceptance by the classroom group, but only a few have ever been concerned with anxiety in relation to sociometric status.

B. R. McCandless, A. Castaneda, and D. S. Palermo (1956) were the first to directly explore the relation of anxiety measured by CMAS to sociometric status based on friendship criterion, finding a moderate negative correlation among children in grades 4 through 6. Although F. D. Horowitz (1962) and R. D. Trent (1959) have obtained similar results employing the same anxiety measure, K. T. Hill (1963) has recently reported somewhat different relations. As a measure of anxiety, he used TASC, instead of CMAS, with a sample of 84 third grade children, and made an analysis of the correlation between test anxiety and play status on cross-sex as well as same-sex ratings, equating subjects in terms of intelligence and the trait of defensiveness. Hill's finding was different from earlier studies in that cross-sex sociometric status related strongly to anxiety while same-sex sociometric status did not.

In earlier studies reported thus far, however, analysis of the relationship between detailed aspects of anxiety and peer status measure has never been made. Therefore, the Taken General Anxiety Test (GAT) with 8 subscales was employed in the present study to make such analysis possible. There will be some fluctuations in the relationship among the GAT subscales. This is our first prediction.

Furthermore, the relationship of anxiety with sociometric status among normal adolescent pupils has remained totally unexplored. Since adolescents, especially those in early adolescence, are expected to be more anxious than children in general, the adolescent samples will give results somewhat different from those of child samples. This prediction is another one to be examined.
Method

Samples: Subjects consisted of 36 pupils with high sociometric status (HS) and 36 with low sociometric status (LS) in the 4-th grade in an elementary school and of 60 HS and 60 LS pupils in the 7-th and 9-th grades combined in a junior-high school. The two schools were situated in and around Osaka, the second largest city in Japan. They were, in each group, divided equally by sex and by classroom. Those subjects at the elementary school level were drawn from an original sample of 176 pupils (4 classrooms), and those at the junior-high school level from an original sample of 183 pupils (2 classrooms in the 7-th and 9-th grade, respectively). There were approximately equal number of boys and girls in each classroom.

Sociometric measure: All pupils in the original samples were requested to choose the three classmates with whom they most and least liked to work in cleaning their classrooms towards the end of February, 1963. The reliability of this kind of sociometric test has been fairly established (Ueda, 1963, 1964a, 1964b). Then, based on choice-rejection status score (CRS) distribution of each classroom, 9 Ss were selected from the highest end, and 9 Ss were chosen from the lowest end of the distribution. The former group was assumed to have high sociometric status (HS), and the latter group was assumed to have low sociometric status (LS). Similarly, 15 HS and 15 LS pupils in each classroom of the junior-high school were chosen.

Anxiety measure: The Taken General Anxiety Test (GAT) devised by Tanaka Institute of Educational Research in Tokyo was administered to the two original samples on the day following the administration of the sociometric test. This test is rather similar to the General Anxiety Scale (Sarnoff, Lighthall, Waite, Davidson, & Sarason, 1958) in the basic principles, but considerably different from it in that the former contains more detailed items, selected chiefly by clinical psychologists, of general anxiety concerning everyday life. The GAT is composed of 8 subscales; anxiety in learning situation (15 items), interpersonal anxiety (10 items), seclusive tendency (10 items), introspunctive tendency (10 items), sensitive tendency (10 items), psychosomatic complaints (15 items), phobia (10 items), and impulsive tendency (10 items). The first four subscales described above are designed to assess objects toward which anxiety is directed, and the rest to assess behavior resulting from anxiety. In addition to these, there is a lie scale of 10 items. The test-retest reliability as well as validity were fairly established. This test is a kind of questionnaire to be responded with a Yes and No alternative, and anxiety score is obtained merely by summing up Yes answers.

Results

Results for child samples: Differences in mean GAT raw scores, by subscale, for the two sociometric status groups were generally very slight. The most conspicuous difference was observed in the subscale assessing impulsive tendency, where the difference was 1.19 points (LS=4.58 vs HS=3.39). Differences in other subscales were all less than 0.81, at the most. Although an analysis of variance was run, none of the F ratios for group and group x subscale interaction proved significant (F=1.01, df=1 and 70; F=1.14, df=7 and 490).

Since the difference between GAT means in impulsive tendency was greater than that in any other subscale, the coefficient of correlation in this subscale was computed, as was often the case with earlier studies, for the original sample of 176 pupils, and it was found to be significant at the .05 level (r = -.171).

Results for adolescent samples: Mean GAT raw scores for the two sociometric status groups in the 7-th and 9-th grades combined are given in Table 1. Inspection of Table 1 seems to reveal that there were two subscales (psychosomatic complaints and impulsive tendency) where the two groups differed rather remarkably. Here again, the data were submitted to an analysis of variance, which indicated that there
Relationship between Sociometric Status and Anxiety

TABLE 1
Mean GAT raw scores for the high sociometric status group (HS) and the low sociometric status group (LS) in grades 7 and 9 combined

<table>
<thead>
<tr>
<th>Group</th>
<th>A†</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS (N=60)</td>
<td>7.62</td>
<td>4.82</td>
<td>2.52</td>
<td>4.95</td>
<td>4.43</td>
<td>5.03</td>
<td>2.80</td>
<td>3.48</td>
<td>35.65</td>
</tr>
<tr>
<td>LS (N=60)</td>
<td>7.75</td>
<td>4.27</td>
<td>2.62</td>
<td>4.83</td>
<td>4.20</td>
<td>6.15</td>
<td>2.72</td>
<td>4.67</td>
<td>37.20</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.13</td>
<td>0.55</td>
<td>-0.10</td>
<td>0.12</td>
<td>0.23</td>
<td>-1.12**</td>
<td>0.08</td>
<td>-1.19**</td>
<td>-1.55</td>
</tr>
</tbody>
</table>

† GAT subscales are shown in abbreviation. A represents anxiety in learning situation, B interpersonal anxiety, C seclusive tendency, D intropunitive tendency, E sensitive tendency, F psychosomatic complaints, G phobia, and H impulsive tendency.

** Significant at the .01 level of confidence.

TABLE 2
Analysis of variance of mean GAT raw scores

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Ss</td>
<td>119</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade (A)</td>
<td>1</td>
<td>36.4</td>
<td>2.14</td>
</tr>
<tr>
<td>Group (O)</td>
<td>1</td>
<td>9.0</td>
<td></td>
</tr>
<tr>
<td>A×O</td>
<td>1</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>error (b)</td>
<td>116</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>Within Ss</td>
<td>840</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subscale (S)</td>
<td>7</td>
<td>316.2</td>
<td>83.21**</td>
</tr>
<tr>
<td>S×A</td>
<td>7</td>
<td>12.8</td>
<td>3.37**</td>
</tr>
<tr>
<td>S×O</td>
<td>7</td>
<td>11.8</td>
<td>3.11**</td>
</tr>
<tr>
<td>S×A×O</td>
<td>7</td>
<td>5.2</td>
<td>1.37</td>
</tr>
<tr>
<td>error (W)</td>
<td>812</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>959</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** Significant at the .01 level of confidence.

was no significant group difference in over-all GAT scores, but that the difference in subscale, the group×subscale and the grade×subscale interactions were significant at the .01 level, as is shown in Table 2.

However, our main concern lay in the group×subscale interaction. It was suggested that there would be some variations of difference between the two status groups by subscales, and this permitted us to step further into the examination of group differences observed in each subscale. It was revealed, by the t test, that the LS group had significantly higher means in psychosomatic complaints and impulsive tendency than did the HS (t=2.36 and 2.79, respectively).

This finding led us to further exploration of the items where the LS group differs significantly from the HS group. Chi-square test, in 2×2 table, was run, item by item, in both subscales. The differences were found to be significant at the .01 level in two items (Nos. 63 and 85), and at the .05 level in three items (Nos. 60, 69, and 91). Differences in two more items (Nos. 93 and 97) just missed the .05 level of confidence. The five items where the LS group gave significantly more anxiety responses than the HS are as follows:

[psychosomatic complaints]
“Do you often notice your heart beats very fast even when you do not run?” (No. 60: $\chi^2=4.06$)
“Have you much trouble in falling asleep?” (No. 63: $\chi^2=9.97$)
“Have you often trouble in getting your breath?” (No. 69: $\chi^2=5.21$)
[impulsive tendency]
“Do you wish you would rather die?” (No. 85: $\chi^2=6.95$)
“Do you get angry easily and feel like resorting to violence when spoken ill of?” (No. 91: $\chi^2=4.57$)

DISCUSSION
The obtained results in the adolescent pupils showed that there were some fluctuations, among the GAT subscales, of the relationship between sociometric status and anxiety; sociometric measure was significantly and strongly related to the two
GAT subscales assessing psychosomatic complaints and impulsive tendency, but not to any other subscale. The quick inspection of the items where the LS showed significantly higher anxiety scores than the HS revealed the following interesting facts. The pupils with low sociometric status showed more anxieties reflecting several physical disturbances similar to neurotic symptoms, and they were characterized by emotional instability, due probably to the frustration of adequacy needs. These findings are consistent with the previous studies (Baron, 1951; Bjerstedt, 1956; Laughlin, 1954; Northway & Wigdor, 1947). With the 4-th graders, the relationship was not so clear-cut. But the significant and negative correlation between sociometric status (CRS) and impulsive tendency obtained for the original sample of 176 children suggests that a larger sample might yield a significant difference, between the HS and the LS, in impulsive tendency. Thus, it may safely be said, tentatively at least, that the results generally fell in the predicted direction; impulsive tendency and partly psychosomatic complaints were suggested to be determinants of sociometric status. 

But, when these findings are compared, though not directly, with those obtained in earlier studies, a certain difference is found. We could not demonstrate clearly the significant difference in GAT total scores between the HS and the LS, as a group, though earlier studies referred to elsewhere in this article have usually shown moderate negative correlation between sociometric measure (mostly among same-sex classmates) and anxiety determined either by CMAS or by TASC. This discrepancy, we feel, is partly accounted for by the different measure we employed. To measure anxiety, we used the GAT covering a wider scope of general anxiety than either CMAS or TASC. This difference in scope might influence the present findings. If we had employed TASC instead of the GAT, the obtained results would have been different, to some extent, with both samples. Our procedure of sociometric test, too, was quite different. Sociometric status in this study was determined by CRS obtained from both sexes in each classroom, being based on workmate criterion. In view of Hill's suggestion on sex identification (1963), however, this way of defining status among both sexes combined might have influenced the relation analyzed here. The criterion (workmate) appeared to be both weak and specific, as compared with that of "playmate" or "friend". Such sharp criterion as study companion, and treatment of the sociometric data separately by sex might make some difference to sociometric status. To sum up, differences in anxiety and sociometric measures might considerably contribute to the difference described above, and need for further analysis is keenly felt. Further attempt should be focused upon making a deeper and more intensive analysis of the relationship, like one between sociometric status based on a more sharp and specific criterion and various aspects of anxiety. It may prove both fruitful and valuable.

The second prediction was confirmed, too, by the fact that the obtained results with adolescent samples were quite different from those with child samples; significant relation of anxiety to sociometric status was revealed in 2 out of 8 GAT subscales in the 7-th and 9-th grade pupils combined, but it was not the case with the 4-th grade children. This difference might be explained as follows; adolescent pupils choose their companions more often than not, on the basis of personality characteristics as compared with children in the intermediate grade level. In addition, these personality variables mentioned above seem to be most influential particularly when the sociometric criterion is work-companion.

Whether there will be a different relationship of general anxiety to social acceptance by the classroom group as grade
level increases, as is suggested by the significant grade × subscale interaction, this is another interesting problem worth attempting to solve.

REFERENCES

BARON, D. 1951 Personal-social characteristics and classroom social status: a sociometric study of fifth- and sixth-grade girls. Sociometry, 14, 32–42.


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