NOTICE: When government or other drawings, specifications or other data are used for any purpose other than in connection with a definitely related government procurement operation, the U. S. Government thereby incurs no responsibility, nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use or sell any patented invention that may in any way be related thereto.
Cumulative Scaling, Error Estimation, and other Methodology Problems in Social Psychology.
Work under this contract has occurred in several areas.

Statistical and Numerical Procedures

A number of statistical and numerical procedures have been brought under scrutiny in this program of research. The most interesting findings to this point center on the analysis of the problem of utilization of dichotomies in computing correlations for factor analytic procedures. One general stricture frequently encountered in factor analysis is that dichotomies should be avoided because in the nature of the computation of $r_{\phi}$, difficulty factors will arise. Systematic exploration of this question has directly contradicted the stricture. Alternate findings did arise with reference particularly to shifts in definitions that occur for the items at different cutting points. However, emphatically, no additional factors arise in our explorations. Copies of a comprehensive report on this research are available on request under the title: "Difficulty Factors and the Use of $r_{\phi}$."

In the next period an intensive concentration of methodological research will center on problems of system analysis.

Methodological Developments in the Analysis of Social Structure

One of the key concerns in this project has been the exploration of application of analytic numerical procedures to the study of interaction processes. Exploration has centered on the factor analytic procedures as a means for partitioning and organizing sources of variance in group participation.

A fruitful approach in this type of analysis appears to occur as follows. First, a general principle of ordering of group members must be established. For this principle, some assumptions are required
with regard to the validity of prior work and the general importance of the
principle utilized itself. For example, one principle of ordering is the
total interaction rate of the group members. Such a variable is known to
have concomitants in peer rankings, and may be translated in other contexts
as directly related to other important theoretical variables. Having
ordered the group on this principle, then, utilizing category system scores
and other sources of information it is possible to input simultaneously the
scores of individuals as group scores. This method has been explored with
family data as well as with more abstract data derived from prior Air Force
research. The method appears productive; findings to this point are being
accumulated while additional analyses are being conducted. In particular,
more knowledge about the general principles of ordering of members must be
established, and the procedures involved are time consuming. For example,
corresponding to the notion of "Great Men," it is possible to do classifi-
cation of group membership. As a further example, in the allocation of roles,
groups where allocations occur to different members in different role
concept areas may be contrasted to those in which this is not clearly the
case. Availability of reports on this aspect of methodological exploration
and its consequent substantive contributions is expected in the late spring
of 1963.

Additional methodological explorations are being carried out in
the analysis of input characteristics on the consequences of group behavior.
These center on examination of how much of the system characteristics can
be attributed to individuals and how much appears emergent in the social
interaction. Parallel structural analyses at individual and group levels
are being carried out and then being joined.
Publications

During the course of this period additional tasks have been completed related to prior Air Force contracts and several publications listed below have come into print.

Mood, personality, and interaction. *Journal of General Psychology*, 1961, 64, 105-137.


The coincidence of subtests in four personality inventories. *Journal of Social Psychology*, 1962, 56, 227-244.


Coalitions and interaction concepts of support in three-person groups. (with Marie L. Borgatta), *Social Forces*, 1962, 41, 68-75.