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STATUS IN HUMAN ORGANIZATION AS A DETERMINANT OF MENTAL-HEALTH AND PERFORMANCE

by
Uri Michael Levitan

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ABSTRACT

STATUS IN HUMAN ORGANIZATION AS A DETERMINANT OF MENTAL-HEALTH AND PERFORMANCE

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The theoretical model proposed in this paper states that there is a causal relationship between the esteem accorded to individuals on the basis of their status-relevant roles within an organization, and their mental-health indices and performance vis-a-vis the organization goals. Nine hypotheses were suggested to predict the process and the way through which the above relationship holds. Single objective public esteem scores (OPEs) accorded to a person on the basis of each of his status-relevant roles were hypothesized to contribute to his total objective public esteem (TOPE). TOPE was hypothesized to be a causal determinant of the opportunities offered to the individual. The higher the TOPE of an individual, the more he is given opportunities to fulfill various needs. The opportunities offered to a person were hypothesized to determine his level of mental health indices, i.e., the greater the opportunities available to him, the more positive the mental health indices. The opportunities were also hypothesized to affect the performance of individuals so that those with more opportunities would perform better for the organization. It was also predicted that performance would be affected by the amount of satisfaction that the individuals exercise from their life in the organization. The above hypotheses were the central ones and in addition to them several less central hypotheses were suggested mainly as refinements of the initial relationships. The sample used for the test of the hypotheses was a sample (N = 500) of Israeli Kibbutz members who work in industrial plants and in agriculture branches. The variables were operationalized by the uses of self-administered questionnaires, interviews, documents and records. Most of the hypotheses were tested by means of correlational and regressional analyses.

All the central hypotheses were supported to a degree of statistical significance ($p < .05$) with correlation coefficients reaching the order of .30 - .65. The refining hypotheses were not supported to the same degree of strength and it was suggested that this failure was due to the limitations imposed by the data and not because of the theory.

It was pointed out that although the theory was developed on the basis of data collected mainly in the United States, it was supported with an entirely different population, the Israeli Kibbutz. This was interpreted as an indication for the generality of the organizational behavior laws that were studied in this research.

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This study consists of inputs by thought and deed from many individuals. Although it is impossible to thank each of them individually, this does not diminish my gratitude to every one of them for his or her contribution to make this study possible.

First I want to thank the hundreds of Kibbutz members who patiently, and sometimes skeptically, agreed to participate in this study as respondents. The Institute for Social Research on the Kibbutz in Givat Haviva, Israel, conducted this study. For their part as the research team I want to thank Michal Palgi, Moshe Bar-Semach, Ephraim Yuchtman and in particular Yael Sade who worked days and nights in order to meet the, always too close, deadlines.

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My committee members were insightful and resourceful in dealing with the theoretical problems that the subject never ceased to raise. They were also very understanding and helpful about the pressures of the deadlines in which I stood. I would like to use this opportunity to express my deepest thanks to Robert Kahn, who was to me a teacher, a colleague, and above all a friend, and who made every effort possible to help me go through the most difficult periods in working on this dissertation.

More than by anyone else the completion of this work was made possible by my wife Rachel. Without her courage and encouragement, her patience and love I would have never completed it. Rightly this work may be considered equally hers as mine, and so I want to dedicate it to her.

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CHAPTER I

THE THEORY; THE MODEL; THE HYPOTHESES[1]

A. Introduction

As the title suggests, this dissertation deals with three general clusters of variables: status structure as an independent variable, individual mental health and organizational effectiveness as dependent variables. However, the focus on these three concepts is not equally distributed. Individual mental health and organizational effectiveness are treated in terms of variables used by other writers. No effort is made here to probe those concepts deeply. The status structure concepts, on the other hand, are the main interest of the current paper. Not only are status, status structure, and related concepts theoretically formulated and developed, but also intervening variables that explain the relationship of status structure to the dependent variables are given a great deal of attention.

The concept of status has been frequently used in the disciplines of sociology, small group social psychology, and of late, organizational psychology. The typical approach is that every writer selects some variables that are labeled by him as status variables and proceeds without specifying explicitly why those particular variables are status variables. Some sociologists are apt to select such variables as income, occupation, race, education, etc. Small group researchers select variables such as age, task difficulty, amount of responsibility, control over

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[1]This chapter is a condensed form of a previous theoretical treatment, as well as a literature review, given to this subject by the author (Levitan, 1969).

results, and the like. Organizational psychologists choose variables such as skill level and level in the managerial hierarchy. All those variables and many others have been labeled, by at least one writer each, as status variables--the question is, what is the common criterion, if any, for naming them so. The position taken here is that all those variables should be called status variables or non-status variables for a given group or social system, depending on whether or not they fulfill several conditions that are criteria for inclusion in the class of status variables. The conditions to be fulfilled are described in section (b) of this chapter. This position implies that the label of "status" on a given variable has to be accompanied by either empirical proof or other justification that the variable indeed fulfills the criterion conditions. This approach is clearly empirical (because it seeks empirical evidence for defining a given variable as "status"), but it specifies in an unambiguous way what is to be sought empirically, and therefore is useful.

The purpose of the following section of this chapter will be to establish a general conceptualization and definitions for the status notion. Throughout this chapter the framework of terminology as well as some of the theoretical concepts and hypotheses are adaptations of the concepts of self-identity theory as developed and used by Miller (1963), French and Kahn (1962), French and Sherwood (1963), Sherwood (1965), and French (1966). A very brief summary of the concepts of this theory, relevant to this paper, is now offered.

According to self-identity theory, the majority of the basic units that compose the person's self-identity are self-attributes. A self-attribute is defined as the location on a cognitive dimension or on a primary sub-set of dimensions that is part of the self-identity. According to this definition, a given self-attribute is a score that a person assigns to himself on a given cognitive dimension. The combination of all self-attributes constitutes the person's self-identity. There is a medium step between the two called sub-identity, which is a cluster of all the attributes of a person which correspond to a given role that the person occupies within a given social group. Corresponding

to those three steps in self-identity, from the unit to the totality, the theory defines attributes, sub-identities, and public-identities, which are the way others perceive the person's identities.

In parallel lines to Identities (self and public), the theory defines esteem. So, there is total self-esteem and total public-esteem. The first is arrived at by the combination of all evaluations of self attributes (or, alternatively, self sub-identities) weighted by the importance of each dimension to the person (Miller, 1963, calls this variable "self-involvement"). Public esteem is the combination of the evaluations of all public identities of a person weighted by their salience to the relevant group (significance of dimensions in light of group values). These concepts, or rather their adaptation, form the basis upon which the different uses of status scores are incorporated here into one theoretical model.

In order to help the reader anticipate the theoretical developments that follow, an overall short account of the model is presented in Figure 1 and the accompanying text that follows. The best way to follow the model is to start at the right hand side of Figure 1 and go backward, in the causal flow, toward the left.

The general goal of this study is to discover what may explain the variance in the two clusters of variables that are considered as end results: the performance cluster and the mental health cluster. The interrelationships among variables within each of these clusters is not dealt with profoundly. This fact is indicated by the broken line that designates these clusters in Figure 1. However, I maintain that mental health is to a certain extent responsible for the variance within the performance variables, an assertion that is indicated by the solid line connecting these two clusters. The model also portrays the set of opportunity variables (opportunities for the individual).

Total subjective public esteem (TSPE) is considered to affect only mental health variables, and this relationship is moderated by personality variables which are <u>not</u> studied in this paper. The model states that opportunities are actually offered to individuals on the basis of

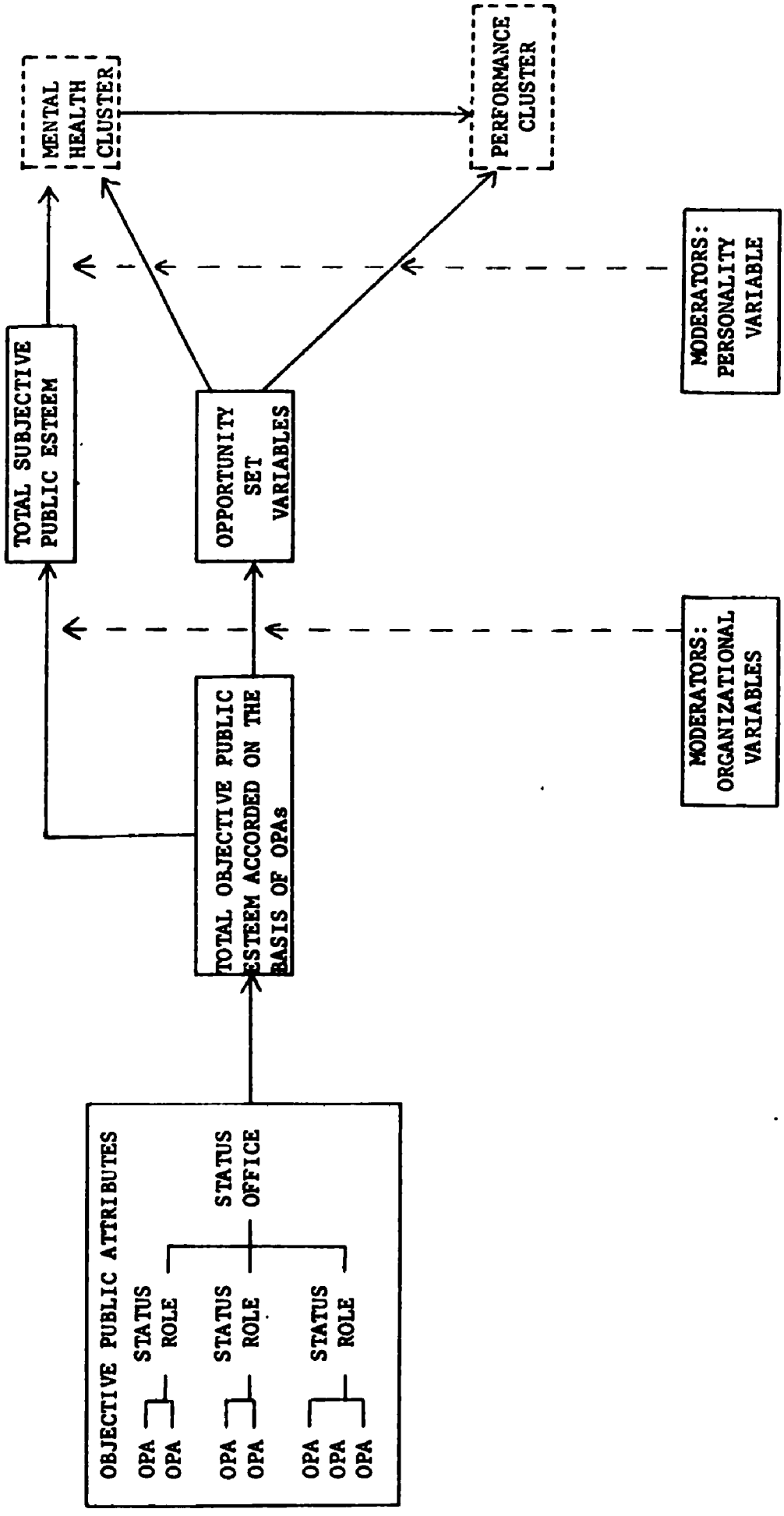


Figure 1. General Theoretical Model For Individual Level of Analysis

their status within the given organization, total objective public esteem (TOPE). This relationship between TOPE on the one hand and the opportunity set and TSPE on the other hand is moderated by the managerial style and other organizational variables, which are considered here as control variables only and not studied in detail.

Total objective public esteem is considered to be a function of the person's status office, which is the totality of all status roles (SR) of an individual within a given organization. Each SR is a representation of the standing of an individual (attributes) on all status dimensions within a given sub-system of an organization (OPAs). Total objective public esteem is also a function of all the objective public esteem scores given to an individual on the basis of his OPAs. Thus, total objective public esteem may be considered as a variable that connects the SRs or OPAs to the opportunities. There are additional relations among the variables in Figure 1, as well as relations with variables outside the model. These relationships are not dealt with in the current study and one would have to assume about them the attitude of: "other things being equal."

Before we move to develop the theoretical notions and concepts in detail, we present in Table 1 a short glossary of abbreviations and symbols of the terms used here.

B. Status Dimensions and Public Esteem

We start by defining a status dimension (SD):

Status dimensions (SDs) are a sub-class of all dimensions or primary sub-sets of attributes (French and Sherwood, 1963) of an individual within a social system. A primary sub-set has to fulfill four conditions in order to be labeled as SD in the context of a given social system. Each of the following conditions is necessary, and all of them together are sufficient:

1. The dimension should be characterized by the fact that a high position on it is considered desirable (and is likely to be valued by P),

Table 1

Glossary of Symbols Used to Denote Theoretical Concepts and Terms

1. O; Os: Other, an individual different from the focal person; others.
2. OPA: Objective public attribute (in general).
3. OPA_g, OPA_{gi}: Objective public attribute on status dimension g; objective public attribute of individual i on status dimension g.
4. OPE: Objective public esteem (in general).
5. OPE_g; OPE_{gi}: Objective public esteem for OPA_g; objective public esteem of individual i for OPA_g.
6. OPE_{sub}: Objective public esteem in a social sub-system (in general).
7. OPE_{subq}; OPE_{subqi}: Objective public esteem in sub-system q; objective public esteem of individual i in sub-system q.
8. P: Person, the focal individual.
9. SD, SD_g: Status dimension (in general); status dimension g.
10. SE: Self esteem (in general).
11. SE_g; SE_{gi}: Self esteem in status dimension g; self esteem of individual i in status dimension g.
12. TOPE; $TOPE_i$: Total objective public esteem (in general); total objective public esteem of individual i.
13. TSPE; $TSPE_i$: Total subjective public esteem (in general); total subjective public esteem of individual i.

while a low position is considered less desirable and it is less valued.[1]

2. Individuals within a social system who are perceived to be high on the dimension are esteemed by other members of that social system more than those who are low on it (when the esteem is expressed by some statistical consensus).

[1]Condition (1) is not operationalized in this paper. It is assumed here that whenever condition (2) is holding, condition (1) holds also.

3. The potential location of a person on the dimension is a continuous variable. The limiting case of this definition is a two-point continuum, such that the person either has a unit score or he has none (examples are given below).

4. The individuals of the given social system are located on the dimension in a differential way. Some are located higher and some are located lower.

Examples of potential SDs may be taken from many spheres, such as:

(a) Physical characteristics (height, weight, strength, beauty, etc.)
(b) Personality traits (honesty, intelligence, humor, etc.)
(c) Demographic characteristics (age, sex, education)
(d) Abilities and skills
(e) Possession of resources (especially when scarce from the point of view of a given social group), such as money, knowledge
(f) Possession of esteem in outside social systems
(g) Activities (roles) within a given social system.

Several notes about the four conditions which specify an SD, and about SDs in general, are now in order:

The four conditions are not mutually exclusive--condition 4, for instance, cannot be fulfilled if condition 3 does not hold. The conditions are separately specified for purposes of explicitness, not logical independence.

In condition 3, it is specified that a two-point scale is considered a special case. This is different from what French and Sherwood (1963) specified as their definition for identity dimension. An example will illustrate the difference. According to their definition, the hair color of people cannot be included as a cognitive dimension because it answers the requirements of no more than a nominal scale. I would argue for the inclusion of this variable, not as the variable of "hair color" but rather as several potential variables, such as "brunette hair," "blond hair," etc. For each of those variables the potential score to

be assigned can be viewed as located on an ordinal scale, e.g., score "1" for having blond hair and score "0" for not having blond hair. This extension allows one to include under the heading of SD, not only hair color, which some readers might have difficulty thinking of as a status dimension, but also activities (roles) within a framework of a social system. Activities provide frequent examples of that two-point continuum. An instance is the activity: "inspection of a finished product" in a production organization. A person either inspects (is the "inspector") or he does not. It seems to me that this dimension would intuitively be considered a status dimension, but if there were no allowance for the two-point continuum, it would have to be eliminated.

Nothing has been said about the reason why a particular dimension becomes a status dimension; neither is anything said with respect to the question of why status dimensions exist at all. (A dialogue has been raging for a long time among sociologists about this latter question and its extension--the causal relation between role differentiation and reward differentiation in society. Good examples of this dialogue are the statements and counter-statements by Davis and Moore [1945] and Tumin [1953].) For the purposes of this paper the existence of SDs is taken as a given fact of life and as a starting point for further observations.

For different social systems or groups, different primary sub-sets answer the requirement of SD. Example: For an organization of pacifists, the dimension of marksmanship is not an SD, and a member who excels at it would not get higher esteem from others than a member who does not know how to hold a rifle. This same dimension of marksmanship is an SD for a combat unit in the military. Note, that marksmanship does not become an SD among the pacifists, even if the person who so excels views it as his most valued skill.

The relationships between the different spheres of SDs and that between the single SDs are quite complicated, and involve a great deal of mutual causality. For example: skills and abilities may serve as

the reasons leading to the assignment of certain activities to P, and because of those activities the same skills and abilities may be developed even more. Activities usually go in clusters within a given social sub-system so that the correlation between the single activities within a cluster is high. Such activity clusters are "roles" as defined by Katz and Kahn (1966).[1]

Activities have a little different conceptual status than the other SDs. When a social system is created, an assignment of a given activity to a given person would generally follow the other dimensions in the causal flow (e.g., roles are assigned on the basis of abilities, possession of resources, etc.). That causal flow would also be expected when a new member joins a social system. Here, however, it is assumed that the social system and the membership are already established and are constant at the moment of inspection. Another characteristic of activities which distinguishes them from other SDs is that they are usually best described in terms of a two-point continuum.

Now we turn to definitions of additional concepts.

Objective Public Attribute of an individual (i) on a given status dimension (g)(OPA_{gi}), is the location of a P on a SD as perceived by others (Os) in his organization. It does not involve evaluations about how good or bad it is to have a particular level of OPA_g this evaluation is denoted by the next concept.

Objective Public Esteem of an OPA_{gi} (OPE_{gi}) is the esteem given by Os to P on the basis of his OPA_{gi}, i.e., $OPE_{gi} = f(OPA_{gi})$.

Status Sub-system is a combination of all (and only) SDs relevant to a given sub-system of a human organization (i.e., only those dimensions that meet the four conditions specified on pp. 5-7 apply). By including only SDs, a status sub-system may be considered as a part of

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[1]The terminology used in this paper with regard to social organizations is borrowed from Katz and Kahn (1966). We will make use of the following terms: social system, social sub-system, human organization, sub-organization, role, office, and organizational space.

what is meant by social sub-system as the term is used by Katz and Kahn (1966, p. 98) and at the same time an extension of this term, as it would include such dimensions as traits, skills and the like, which are not part of a social sub-system as defined by the above writers.

Status Role (SR) is defined in an anologous way: A given SR corresponds to the combination of all OPA_gs within a given sub-system. SR is the location of an individual in a status sub-system just as OPA is the location of that individual on a SD. Another way to view SR is to conceive it as a partly overlapping concept to the role as defined by Katz and Kahn (1966, p. 179), that is: It consists only of the components of the role that are related to SD (i.e., only these roles that fulfill the four criteria stated on pp. 5-7). The status role also includes locations on dimensions such as traits and skills, which would not be considered by the former authors as components of a role.

Objective Public Esteem of SR (OPE_{sub}), is the esteem given to a person as a function of his standing within a sub-system. OPE_{sub} is analogous to OPE_g just as SR is analogous to OPA_g and status sub-system to SD_g. OPE_{sub} is also analogous to the way sub-identity is defined by the self-identity theoreticians. (It is the clustering of several OPE_gs into a single dimension.)

$OPE_{sub\ i}$ (of a given individual i), is in fact, a function of his OPE_{gi}s within a given sub-system. Moreover, according to self-identity theory, it is probably a function of the form: $OPE_{sub\ i} = \sum_{i} W_g OPE_{gi}$; where i = 1, 2, . . . n; n = number of SDs relevant to the particular sub-system; and W = the weight assigned to OPE_g based on its importance to the group in question. As was stated earlier, OPE_{sub} can also be viewed as a function of SR.[1] This definition is helpful for operations: Respondents who are members of a given organization would generally have

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[1] It should be clear why OPE_{sub} can be viewed both as a function of OPE_gs and of SR: Both these concepts are defined as a function of the OPA_gs. SR is a combination of all OPAs within a given sub-system and OPE_{sub} is (by definition) the esteem accorded to a person on the basis of his SR in a sub-system. Each OPE_g is a function of the respective OPA_g so the combination of all OPE_gs from one sub-system should give OPE_{sub}.

difficulties in specifying explicitly all the single status-dimensions that are bases for creating OPE_{sub}, but they would be able to think, quite explicitly about the SR as such a base.

An example to illustrate the way that OPE_{sub} is created either out of OPE_gs or from SR is now offered. Using a departmental faculty as the relevant social system, one can distinguish among several sub-systems, such as: the internal administrative sub-system, the professional sub-system, and the teaching sub-system. Relevant SDs for the sub-system of internal administration would be: the activities of participating in different committees in which each individual can be either a non-member, a nominal member, or an officer; the skills of administration and human relations; certain personal traits; seniority; activities of planning and decision-making concerning general policies of the department; and the like. Members of this social system would be assigned OPE_gs of certain magnitude for each dimension as a function of their OPA_gs on those dimensions (Faculty who are non-members of any of the committees would get OPE_gs for those SDs equal to zero). Similar to the SDs for the administrative sub-system, one can observe the positions of the faculty on the SDs relevant to the teaching sub-system, such as: teacher or not, degree of popularity with students, skills as a teacher, seniority, participation in planning and deciding upon the curriculum, and the like. Here the OPE_gs assigned to a person would be assigned in the same way as for the other sub-system. Similarly, the OPE_gs for the professional sub-system can be established. (Relevant SDs might include number of publications, prestige in the relevant professional community at large, contribution to the field, etc.)

The OPE_{sub} for a given P within one such sub-system can be reached by combining all his single OPE_gs in this sub-system weighted by their importance to all other persons within that sub-system. Another way of generating OPE_{sub} of a given individual in a given sub-system would be to ask about his SR in that sub-system and leave the computation of this SR to the respondents. In the particular example shown here, the SRs are assigned different names which are, to an extent, an expression of the OPE_{sub}. Thus, within the administrative sub-system

one would find the titles of Department Chairman, Program Chairman, Committee Chairman, etc. For the teaching sub-system one would find titles ranging from Teaching Fellows to Full Professor. It is true that it is more desirable in principle to use the more basic units (i.e., SDs and OPA_gs) for the calculation of OPE_{sub}s but this seems to be very difficult operationally. Indeed, in this research OPE_{sub}s would generally be derived by using more information about SRs and less about OPA_gs, with the understanding that a certain error term is introduced by that compromise.

The formulation of OPE_{sub} offered here differs from that of the self-identity theory not only in the fact that it uses only a sub-class of the dimensions used by the latter, but also with regard to another feature. Miller (1963) states that a person has as many sub-identities as he has associations with different groups. Here we maintain that a person may have several status roles within the framework of the same group, each of them related to a different segment of the group's role interactions (or sub-system). This is a significant point, as will be seen later.

Total Objective Public Esteem (TOPE) is defined as the esteem given to P by others on the basis of his positions on all SDs relevant to the particular social system. Alternatively, one can say that TOPE is a function of the combination of all SRs held by P in the given social system. All SRs of a person would mean his "status office," which is different from the concept "office" used by Katz and Kahn in the same way as status role is different from their "role." I.e., it excludes on the one hand all roles that cannot be placed on status dimensions--namely, do not fulfill the four conditions required--but includes, on the other hand, such attributes as skills, personal traits, abilities and the like. TOPE is also a function of all P's OPE_{sub}s: $TOPE = f(OPE_{sub}s)$.

With respect to the self-identity theory, TOPE is similar to what that theory calls total OPE (tOPE). Both concepts refer to the total esteem for an individual in a whole system. There are, however, two main differences: (1) TOPE refers only to those SDs which are

relevant to the particular social system in question, while tOPÈ is a function of all cognitive dimensions; (2) TOPE refers to a particular social system (or group) while tOPÈ refers to the totality of P's social environment. Another way to state this same point is to say that tOPE for a given P is constant at a given time, no matter what social environment is our frame of reference, while TOPE depends on the definition of the social system in question, and it is the objective public esteem given to P from that social system. Thus: If the social system is defined as a department in a university, the TOPE of P is calculated on the basis of his status office in this department, but if the social system is defined as the community within which the university is located, then the new total objective public esteem (TOPE') is not the same as the old one. TOPE' includes TOPE as one of its components. In fact, in the community case, the old TOPE has a status of OPE_{sub} for the new TOPE'.

The question to be dealt with now is what exact function relates TOPE to OPE_{sub}s. This question is, of course, an empirical one but there are theoretical reasons to expect some functions to be closer to reality representation than others.

Let us consider now two problems that may lead to an appreciation of what the right function might be.

It was suggested by the self-identity theoreticians that the total OPE of a person is the summation over all his sub-identities (OPEs) weighted by their centrality (importance) to the group in question. The weighting factor could vary between 1.00 and 0.00 and the weights of all OPEs of the sub-identities (or of the attributes) sum to 1.00. The analog of this statement to the concepts used here is: TOPE of an individual in a given group is the summation over all his OPE_{sub}s weighted by their importance to the group in question. If one assumes some sort of standardized scores of individuals on a given OPE_{sub} (as one should assume in view of the crude measure one is liable to use in obtaining any $OPE_{sub\ gi}$s), then the representing function may be written as

$$TOPE_i = f\left(\sum_{g=1}^{g} [OPE_{sub\ gi} \quad Importance_g]\right).$$

Where the index letter g stands for the status sub-systems and index letter i stands for individuals.

There is a bothersome implication that follows from the weighting procedure suggested by self-identity theory. The fact that all the weights have to sum up to 1.00 restricts to a constant the amount of TOPE available in a given social system. That means that there is the same amount of TOPE available in the system if it is composed of three or of thirty sub-systems. The importance attached to each individual sub-system is reduced in proportion to the number of sub-systems added. This sounds intuitively wrong. It assumes implicitly that within every given social system all the functions operate, no matter how many operative sub-systems it has, and therefore any addition to the number of operative sub-systems forces the distribution of the same functions among a larger number of sub-systems and hence allows less centrality to each (or to some) single sub-system. One can pick social systems at almost any level of generality and see that at least some functions are being supplied from outside, i.e., that there is "room" for a new subsystem. An example in terms of the opposite implication of this assumption (of TOPE as a constant) may illustrate the point very clearly. The opposite implication says that if the number of sub-systems in an organization is reduced, then the importance of each of the remaining subsystems is increased and consequently any OPE_{sub} score on one of the remainder will make a greater contribution to P's TOPE than before the reduction. This may be true in the extreme cases where only one subsystem is left but is it also true in the nonextreme cases? Consider, for instance, the U.S. government--would the TOPE of any of the secretaries to the President increase as a result of the elimination of the U.S. Post Office as a governmental agency and the subsequent elimination of the postmaster from the cabinet?

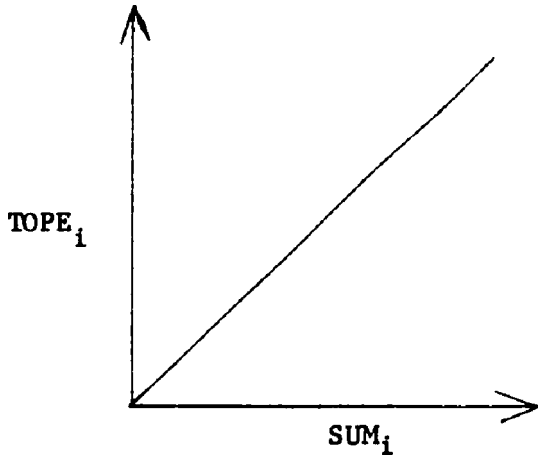
In view of the above intuitive idea, it is suggested here that a more appropriate weighting procedure is to allow assignment of weights of importance by using as a frame of reference some scale that ranges between two numbers (e.g., 1-10). This, however, does not alter the general equation.

Let us now return to equation

$$TOPE_i = f(\sum_{g=1}^{g} [OPE_{sub\ gi} \quad Importance_g]).$$

We replace the lefthand side of the equation from $TOPE_i$ to SUM_i (which stands for "sum of all OPE_{sub}s of an individual"). The reason for doing that is that we really cannot reasonably expect that in any operationlization of the variables, we will be able to get real raw scores of TOPE out of a summation over OPE_{sub}s. There is, however, another reason for doing that interchange of terms. We may ask ourselves what is the exact relationship between SUM_i and $TOPE_i$; are they linearly related as is suggested by the self-identity analog (and shown in Figure 2).

Although the above function has been tested and the test produced fairly satisfying results (Sherwood, 1962), it seems to me intuitively that another function is more appropriate. Two general ideas are to be expressed in such an alternative function:



$$SUM_i = OPE_{sub\ ji} \cdot Importance_j$$

Figure 2. The relationship between TOPE and the sum over OPE_{sub}s - SUM_j being linear.

(1) There are diminishing returns in TOPE; the higher the sum is, the less the elevation in TOPE would be brought by an additional increase in sum. This is because the contributions of each OPE_{sub} to

TOPE is limited and so in order to increase TOPE further, contribution from other OPE_{sub}s are needed. But these other OPE_{sub}s contribute by offering amounts of the opportunity-set variables (which are expressions of TOPE level) in regions that are overlapping with what have already been offered. The overlapping increases as more OPE_{sub}s are used; hence, a positively decelerating function.

(2) There is a limit to TOPE above which it does not rise. This limit is not the same as that implied by the definition that weights must sum to 1.00. It is not a theoretical limit, but rather practical. It is the ceiling of the opportunities that a social system can offer a member.

Those two ideas can be expressed by a function of the following type (Figure 3): $TOPE_i = A - \frac{1}{SUM_i}$, where A stands for that asymtote of TOPE. Graphically it is expressed by a function of the following family:

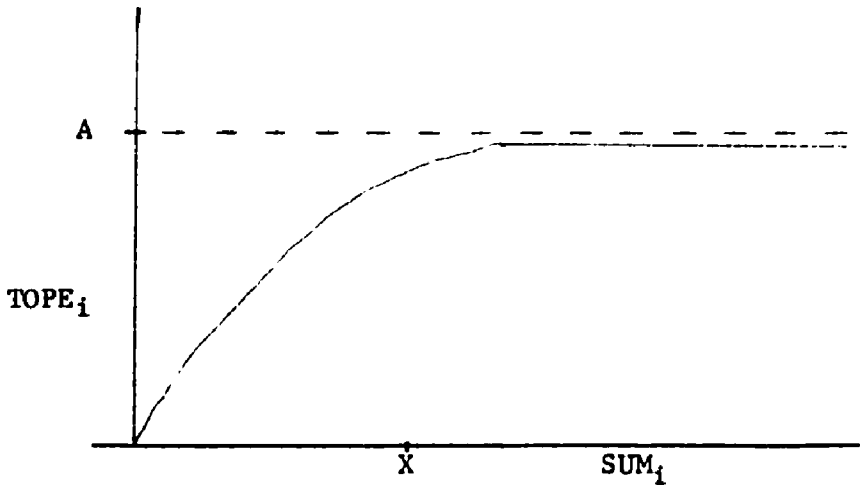


Figure 3. Relationship between TOPE and SUM according to the alternative considerations.

An intuitive understanding for such a relation between TOPE and OPE_{sub} can be gathered if one considers the following anecdotal observation: A prominent industrialist has high $OPE_{sub\ 1}$ in a community. A high-ranking professor also has high $OPE_{sub\ 2}$ in the same community. (Let us assume that $OPE_{sub\ 1} = OPE_{sub\ 2}$ and also that $Importance_g$ = constant). We suggest that if the industrialist becomes a high-ranking

professor at a university, his TOPE in the community would not be double his $OPE_{sub\ 1}$. The same rule applies to the professor if he becomes a prominent industrialist.

The ideas expressed above are now stated in a formal hypothesis:

Hypothesis I: (a) TOPE as a function of all OPE_{sub}s has an asymtote. (b) TOPE is a positively decelerating function of the sum over OPE_{sub}s multiplied by their importance to the social organization in question.

Hypothesis I deals with OPE_{sub}s as the basic units. It is maintained here that OPE_{sub}s are achieved not only on the basis of present SRs but also as a result of past and, to an extent, future SRs. This view stems from the following arguments:

Implicitly organizations are considered as systems that exist through time. Explicitly, however, the time dimension is not considered seriously and systematically. Thus, Katz and Kahn talk about organizational space as denoting the different kinds of relations among offices (points) in an organization but the dimension of time is not taken into account.

We will define now several concepts to accommodate for this theoretical lack:

Organizational Volume (OV) denotes the organizational spaces (a-lá Katz & Kahn) multiplied by the length of time that the organization exists.

Organizational Volume Unit (OVU) denotes an arbitrary time length (say, one year) in the life of an organization. The Organizational Volume is in fact the summation over all Organizational Volume Units.

A given SR--hence, OPE_{sub}--for an individual may be denoted within single OVUs. E.g., if we would have decided to study for three years in the past and one in the future, an organization that has only one sub-system, and at the same time decided that one OVU would be

considered as one year--each individual would potentially have four SRs and four OPE_{sub}s.

It is legitimate to ask how can high OPE_{sub}s in the past or in the future contribute to current TOPE. The answer to this question takes several routes: The past high ranking SR has endowed P with experience, which is evaluated by others. His relevant skills are probably more developed, and he has knowledge of relevant information acquired in his previous role (scarce resources). Also the "unlearning" of endowed TOPE on the part of Os takes time; members evaluate P's past contributions for a while, even though he can no longer make them. Future foreseeable service in a high-ranking SR paves the way for current OPE_{sub} because of the expected rewards and interpersonal relations the Others expect from P shortly.

It is hypothesized also that the further away in time the particular OVU is from the present, the less influence OPE_{sub} of that OVU exerts upon the present.

This it now expressed formally in Hypothesis II:

Hypothesis II: (a) TOPE is affected not only by current SRs but also by past and future SRs. (b) The effects of past and future SRs are positively related to their closeness in time to the present.

The above hypothesis could be modified by the introduction of a new variable: the degree of commonness among others regarding the esteem accorded to Person. In some organizations there will be greater agreement than in other organizations--on the average--about the level of TOPE for each person. Also, within one organization there will be differences in the agreement level for assigning a TOPE score to different individuals (Operationally it would appear as differences in the standard deviations of the TOPE scores for every given person--if the measure is ratings by others). We would suggest that the greater the commonness, among others, of the esteem accorded to Person the more is the predictive power of TOPE for the rest of the theoretical model. This degree of commonness introduces, in fact, a measure of error--or reliability--in the quantification of TOPE. Hence, the smaller the error, the more

"correctly," should it behave in terms of the relationships hypothesized throughout this paper.

C. The Opportunity Set

Social organizations express and accompany their esteem, to members who get it, by offering them opportunities in their social and non-social environment which, if taken advantage of, would lead to gratification of various needs. In particular it is hypothesized here that TOPE tends to be associated positively with one or more of the following opportunities:

(1) Access to information about goals, means, and performance of the organization.

(2) Opportunities for self-development.

(3) Opportunity for autonomy and control over one's environment.

(4) Opportunity to satisfy social and affiliative needs.

(5) Opportunity to increase competence in interpersonal relations.

(6) Opportunity for self-utilization.

(7) Opportunity to satisfy lower level needs (a lá Maslow) by economic rewards, compensation, and security.

(8) Opportunity for risk-taking and non-conformity.

In a previous paper (Levitan, 1969) the literature pertaining to the relationship between status and opportunities has been reviewed and empirical evidence for its reality has been established (e.g., Porter, 1962; Kornhauser, 1965; Carnasius, 1962; Herzberg et al., 1959).

The variables which are included in the opportunity set are indeed variables, i.e., under different conditions and in different social organizations varying amounts of them are associated with differentiated TOPE. Within some social organizations the association is quite strong and holds across all the variables mentioned above, while with other social systems the association is weak. One of the main reasons for such a differentiation between organizations may be the

organization climate. In organizations where participation in decision-making by all members is greater, we would expect that the associations will be lower because in such organizations the opportunities will be offered to more individuals (while the esteem distribution may stay at the same level).

This is not the only differentiation that one may find among organizations. The number and the kind of opportunity variables with differential distribution rules may also vary. The only two general statements that can be made about the association between TOPE or OPE_{sub} and the variables in the opportunity set are:

(1) that they tend to be positively associated across all social systems,

(2) the association holds most strongly in formal social organizations (Katz & Kahn, 1966, p. 47).

Note that there is no claim made to the effect that the variables of the opportunity set must be associated with TOPE.

Before turning to the discussion of the reasons which are responsible for the relationship between TOPE and the variables in the opportunity set, let us consider the relationship between the opportunity set and SDs. This relationship, at least for some variables, might involve mutual causality: high TOPE, which is the result of OPAs on several SDs, brings about high standing on several of the opportunity-set variables. Those very variables might themselves be SDs in the given social system, and therefore a high standing on them enhances TOPE and so the cycle is closed. However, a conceptual differentiation between the two sets of variables can be made along several lines:

(a) SDs are the basis upon which TOPE is determined, while variables of the opportunity set are facilitated by TOPE;

(b) SDs are scales of attributes of person while variables of the opportunity set designate what the organization offers (or withholds) in terms of resources and conditions to its members;

(c) SDs have to fulfill the four defining conditions that specify

them, while the variables in the opportunity set do not have to fulfill the requirement of differential distribution (neither potential nor actual), nor do they have to fulfill the requirement of being valued both by P and Os. The opportunities are considered as such if they offer potentiality to need fulfillment of P and/or facilitate outcomes in the sphere of mental health and/or performance.[1]

Viewing the opportunity set variables as intervening between TOPE and the dependent variables of mental health and performance, signifies that the boundaries of the opportunity set (what variables are included and which are not) are open to inclusion of more variables than were named here--whenever one finds proof that additional variables serve the same function. The particular ones selected for discussion here are those for which evidence for the intervening role has already been established.

The different variables within the opportunity set are not entirely independent from each other. Access to information, for example, is related to the degree of control that one has on the environment. Yet, the concepts are theoretically and operationally distinct enough to warrant their separate status.

There are three different processes through which the environment acts in a more favorable way toward members of social organizations who are endowed with high TOPE by the organization:

(1) They are offered high amounts of some variables of the opportunity set as rewards and/or incentives for members who occupy SRs with high OPE_{sub}. The rewards are given to such members as an implication of the norm (or perhaps even value) of distributive justice (Homans, 1961) held in the Western culture. According to that norm, the outcomes that

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[1]This last point is perhaps the main characteristic of the variables in the opportunity set and from the point of view of clarity in presentation, the opportunity set should have been developed only after the outcomes (mental health and performance) had been presented. The reason why this order was not chosen was because I have elected to follow the order of the causal flow in the model.

a person gets from his participation in the life of an organization should be proportional to the investments or inputs that he carries into that participation (the criterion is others' investment and outcomes). Some of the activities or other SDs that are the basis for forming an SR in an organization carry with them differential amounts of investment (such as energy, time, time of preparation for the role, and the like) and therefore are allotted higher rewards. Incentives are offered by the organization to occupants of some SRs so that members with potential and appropriate skills and traits will seek to take upon themselves certain activities which are crucial to the functioning of the organization and which other members do not have the potential skills to fulfill.[1]

(2) A second way through which persons with high TOPE get more of the opportunity-set variables than those with low TOPE stems from the nature of the components of their particular TOPEs. If their high TOPE is determined by their standings on SDs which are certain activities, some rewards will occur to them because they are an inseparable part of the activities proper. An example is the activity of "planning ahead for the organization." This activity cannot be carried out if appropriate information about goals, means, and performance of the organization is not supplied to the person who is assigned to that activity.

(3) A third process responsible for the differential way that resources are distributed among members of a social organization is the process of concentration of control over the resources, in the hands of those members with high TOPE, and their reluctance to distribute it more equally. Persons who are in a position of control of resources (in the Western culture) tend to be reluctant to share them equally with all others for several reasons:

(a) There might be a scarcity of the particular resource (or

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[1]Those rewards and incentives are not necessarily given on the basis of a vote by members of the organization in every single occasion. Usually they are parts of the norms prevailing in the organization and are applied automatically whenever certain conditions are fulfilled. Those rewards and incentives, one might say, become in time part of the expectations built into a given role within the organization.

favorable condition) and therefore they would rather award the resource to themselves than to others.

(b) By keeping the resources to themselves they may enhance their TOPE and make sure that others will not be able to compete with them.

(c) They hold to the assumption that TOPE in a given organization is a "zero-sum" game, i.e., if somebody else gains in his TOPE (by virtue of getting access to resources represented in the opportunity set[1]), they themselves must lose part of their own TOPE.

None of the processes that determines the distribution of scores on the variables in the opportunity set is operating alone. In every case of such distribution, one is likely to find the operation of the three processes in some combined fashion, as will be seen from the discussion that follows. Each of the opportunity set variables is now considered in the context of social organizations:

(1) Access to information. Information about goals, means, and performance of the social organization reaches with more adequacy and in greater amount members with high TOPE than members with low TOPE, for several reasons, two of which stem from the processes mentioned above. TOPE in social organizations is accorded according to the SRs people hold in the different sub-systems (productive, maintenance, supportive, adaptive, and managerial). Those SRs are composed mainly of SDs which are skills and activities. So, TOPE in social organizations is mainly a function of the type of activities that a person is engaged in. The character of the activities composing SRs with high OPE_{sub} in social organizations is such that information about the sub-systems and the system as a whole is an integral part of them. Those activities would generally consist of various degrees of coordinating, planning, deciding,

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[1]As it was noted earlier, a position on certain variables of the "opportunity-set" might lead to higher positions in SDs which in turn affects TOPE.

problem-solving, advising, and the like. Information would also tend to flow upward from the low-OPE_{sub} SRs to high-OPE_{sub} SRs, because in most social organizations the linking pins among the low-OPE_{sub} SRs are higher-OPE_{sub} SRs. (There is usually no direct connection between the low-OPE_{sub} SRs.) The information accumulated by the high-OPE_{sub} SRs is usually not shared back with the low-OPE_{sub} SRs for two reasons:

(a) Inadequacy of means and processes to disseminate information downward;

(b) Intentional withholding of information.

(i) because of the assumption that information of certain types (general policies of organization, future plans, past reviews) is of no interest to those SRs with activities that do not require that information as an integral part of themselves,

(ii) because some types of information are secret <u>vis-a-vis</u> other organizations, and therefore the circulation of it is restricted to the fewest possible persons, i.e., only those who need it most,

(iii) because by withholding information the high-OPE_{sub} SRs can exercise control over the low-OPE_{sub} SRs (E.g., by claiming lower rates of profits in a business organization, one can avoid demands for higher salaries and fringe benefits),

(iv) because of fear of losing TOPE by sharing that resource (the "zero-sum" assumption).

(2) <u>Opportunity for self-development and self-utilization</u>. SRs with high OPE_{sub} are usually composed of more diversified activities than SRs with low OPE_{sub} (E.g., think of the difference in job composition within the production structure of an industrial plant, between that of an assembly worker and his foreman). Skills compose an important part of SRs in social organizations, and skill level is almost by definition an indication of self-utilization, as it requires higher and more abilities.

Advancement and development are offered to SRs with high OPE_{sub} more than to SRs with low OPE_{sub}:

(a) Because the structure of social organizations is usually pyramidal and skewed toward the top (i.e., at levels with higher OPE_{sub}, the ratio of people in SRs with higher OPE_{sub} to those with lower OPE_{sub} is larger than in levels with lower OPE_{sub}; there may be one department head for four superintendents but one foreman for forty workers). This structure offers a greater probability of advancement for persons in higher OPE_{sub} (in the above example, for the workers the probability of promotion is 1/40, while for the superintendents it is 1/4.

(b) Because SRs with high OPE_{sub} are composed of more diversified activities and skills than those with lower OPE_{sub}, the sheer development of each skill gives, when summed across skills, more self-development than SRs with lower OPE_{sub} even if one assumes that each skill is developed equally in both levels,

(c) Because the higher the OPE_{sub} of a person, the more he is offered time for training and developing himself.

(3) Opportunity for autonomy and control. In most social organizations, high OPE_{sub} is associated with a position in the managerial structure which is, among other things, an expression of the authority structure. This authority is offered to people with high TOPE because it is believed that they are more qualified to lead the organization toward its goals. But once the holders of SRs have high authority they tend to enhance it vis-a-vis others by restricting the authority of others (the "zero-sum" assumption).

(4) Opportunity to satisfy social needs and to increase interpersonal relations competence. Persons with higher TOPE are forced by their activities to have contacts both within and outside the boundaries of the organization (Kahn et al., 1964, p. 145). Because of the association of TOPE with the managerial level, those with high TOPE have to develop managerial skills, including skill in the interpersonal relations.

(5) Opportunity to satisfy lower level needs. Salaries, other economic rewards, and security are offered by the organization as rewards and incentives in order to attract people into the particular SRs. In addition to the offer from the organization, the people with high TOPE use their power (see above) to add to themselves more of the compensating variables.

(6) Opportunity for risk-taking and conformity.

(a) TOPE is accorded to some extent on the basis of conforming to the group norms; thus one would expect TOPE to be positively related to conformity. But this condition is true only for the establishment of TOPE. Once a person establishes his TOPE, he is given more credit than others with lower TOPE, when he does not conform to group norms (e.g., Homans, 1961; Krech et al., 1962, p. 250).

(b) Because of the larger amount of control that persons with high TOPE have, they can experiment and make mistakes without being severely sanctioned by the organization. In fact, one of the characteristics required from them is innovative behavior (Kahn et al., 1964, p. 147).

(c) Members of the organization with lower TOPE, while in the presence of members with high TOPE, usually conform to the ideas of their superiors either because of fear of retaliation on the part of the superiors, or because they think that the superior's ideas are better because they are higher on the SD of expertise or because of the process of status diffusion (Berger, et al., 1966).

To summarize, the expected relationship between TOPE and the variables in the "opportunity set" is stated by a formal hypothesis.

Hypothesis III: In social systems in general and in social organizations in particular, (a) TOPE tends to be the cause of the variables of the Opportunity-set (as stated on page 20); (b) this association is moderated by various organizational variables. (The moderation is

expected in particular with respect to the level of participativeness of an organization. The more participative an organization, the weaker the expected association.)

D. Mental Health as a Dependent Variable

In this section the focus of attention is directed toward the relationships between the independent variable (TOPE) and the intervening variables (opportunity-set), and the variables of mental health, rather than a discussion of mental health variables per se.

The basis for the definitions of the mental health concept is taken from the programmatic suggestion of French and Kahn (1962) and its extension in French (1963).

French (1963) has listed thirteen variables that he considers to indicate the state of an individual's mental health. Here, in this paper, we slice the list of mental health indices in a different way, in terms of the treatment given to each of them. The indices of mental health that relate to the performance of an individual in accordance with the goals of a given social system are considered as a separate cluster of variables and will be treated in the following section of this chapter as the performance cluster. Self esteem is given special consideration here because it is conceived to be both a criterion of mental health and an intervening variable for other criteria of mental health. The possibilities of operationalization of mental health variables in the social context of this study have dictated that the particular indices of mental health to be studied will be:

(1) Satisfaction with job and organization in which person is member;

(2) Involvement with job;

(3) General affective states (depression, resentment, various alienation indices);

(4) Self esteem;

(5) Illness behavior;

(6) Disease entities.

As will be remembered from Figure 1 in the introduction, the general theoretical model calls for (a) positive relationship between TOPE and Mental Health variables; (b) positive relationship between the opportunity set variables and the mental health variables. In order to test this model with cross sectional data, we need to assume (i) that Hypothesis III is correct (i.e., TOPE is causal to the opportunity indices and not the other way around). (ii) We will have to assume that not only is Hypothesis III correct but also that the association between TOPE and the opportunity indices is fairly strong, so that a great deal of the variance in the opportunity indices is explained by TOPE. (iii) The third assumption that one has to make is that the mental health variables are not causal to the opportunity variables. (The hypothesis then will test between no relationship at all between the two clusters of variables, and between causal relations in the opposite direction.) There exists empirical evidence as well as theoretical considerations to support this last assumption. Part of the evidence is presented shortly and more is summarized in a previous paper (Levitan, 1969).

If these three assumptions hold, then a demonstration of the intervening role of the opportunity variable is achieved by finding that the association between TOPE and mental health variables is weaker than the association between TOPE and the opportunity indices and weaker than the association between the opportunity indices and the mental health variables. Although a demonstration of the above requirement may be considered as a sufficient condition for inference about the intervening role of the opportunity indices, it is not a necessary condition. Given the validity of the three assumptions, one can demonstrate the intervening role of a variable by showing that when it is partialed out of the relationship between the independent and the dependent variable--this relationship is reduced in its strength. A similar way for such a demonstration would be to show that the independent and the intervening variables together explain a greater share of the variance in the dependent variable, than would have been explained by each of them alone. In

our case this third requirement would call for evidence that the variance in the mental health cluster explained by both TOPE and the opportunity-set variables, is greater than the variance explained by each of them alone. If this requirement is fulfilled, then one can argue that each of the two (TOPE, opportunity-set) is responsible for not entirely overlapping parts of the mental health variables' variance. The three requirements as such do not have, to my knowledge a direct empirical test in the literature. At the end of this section they will be stated as hypotheses.

Association between TOPE and Mental Health. The evidence that bears upon the association between TOPE and mental health variables is usually relating not TOPE but one or more of its components ($OPE_{sub}s$) to the variables of mental health. The findings for this association have been summarized by Levitan (1969) as well as by several literature reviews for the context of both social organization as well as the society as a whole (e.g., Porter & Lawler, 1965; Herzberg, et al., 1957; Kleiner & Parker, 1962).

The general empirical evidence suggests that positive relationships exist almost invariably between TOPE (or $OPE_{sub}s$) and self esteem, self development, self utilization, autonomy, interpersonal competence, adjustment, and affective states, particularly with regard to satisfaction with the job and the social system in question. The findings for the criteria of illness behavior, disease entities and pathological behavior are more ambiguous: Some pathological states are positively associated with TOPE or OPE_{sub} and some are negatively associated. Some have no relation at all or curvilinear association, as summarized by Kleiner and Parker (1962) and by Kasl and French (1962). The reason for that is that together with the opportunities offered to persons with high TOPE or $OPE_{sub}s$, the system, or organization, imposes upon them demands (responsibility, work load, conflicting expectations) which might relate to those mental health indices in exactly the opposite way from what opportunities do. For example, Kahn et al. (1964) have shown that supervisory level and occupational level are positively associated with a tension index and with an index of worries about the job. Kasl

and French (1962) also report data that show that frequency of dispensary visits is sometimes higher for higher occupational levels--when they are on the supervisory level--than for lower occupational levels--when they are not in supervisory positions. However, within groups of SRs from which the demands are about the same, illness behavior was positively associated with skill level and supervisory level.

To summarize, it seems as if all those criteria of mental health that are perceived in a conscious way by Person, and positively evaluated by a Maslowian man, are associated positively with TOPE or OPE_{sub}; on the other hand, those criteria that are the product of either the autonomous system of the body (physiological states) or of the unconscious psychological level, do not have that clear-cut a relationship. This same idea can be stated in another way: High TOPE or high OPE_{sub} tend to bring to Person what he consciously wants.

Association between Opportunity-set Variables and Mental Health Variables. The first line of argument for that association is by offering an assumption and then looking at the implications that arise. The assumption is: There is a tendency in individuals to use opportunities and means to satisfy needs that are offered to them. If that assumption is accepted, then by implication a positive relationship exists between variables in the opportunity-set (opportunities) and some variables of mental health (the use of the opportunities).

The second line of argument is the support of empirical findings (e.g., Zander & Quinn, 1962, have reviewed studies pertaining to the relation between social environment and mental health; their conclusion generally support the relationship suggested here).

A third line of argument is to explain why the use of some opportunities would lead to higher mental health. This explanation is not needed for those opportunities which bear the names of mental health variables (they have a "by definition" implication). One variable, however, does not have that clear implication--access to information. When access to information about one's life-space is blocked, the result is

uncertainty about one's own behavior and hence stress. It also means that one loses his autonomy to those who have that information and he becomes dependent upon them.

Self esteem as a concept is given special attention here for two reasons: (1) It is one of the main concepts in the self-identity theory, and as many concepts of this theory have been adapted here, one should also show how this concept is adaptable. (2) Among the variables of mental health, this one has foremost importance not only as a criterion of mental health, but also as an intervening variable that leads to other criteria of mental health, as was pointed out by the review of Zander and Quinn (1962). I will start by giving definitions of the concepts:

Self-attribute (SA_{gi}) is the location of $P_{(i)}$ on a given $SD_{(g)}$ as he perceives himself to be. It is the analog to OPA_{gi}.

Self esteem (SE_{gi}) is the esteem that P awards himself on the basis of his standing on SD_g, i.e., $SE_{gi} = f(SA_{gi})$. Again, as in the relation $OPE_{gi} = f(OPA_{gi})$.

$SE_{sub\ i}$ is the self esteem that P ascribes to himself on the basis of his own perceptions of his SR in a given social sub-system. $SE_{sub\ i}$ is related to SE_{gi} just as an OPE_{sub} is related to OPE_{gi}.

Total self esteem (TSE) is the analog to TOPE and just as the latter is a function of OPE_{sub}s, so is the former a function of SE_{sub}s. TSE is also the total self esteem that P ascribes to himself on the basis of his office in the social system in question.

The direct relationship between $TOPE_i$ and TSE_i (or for that matter, $OPE_{sub\ qi}$ to $SE_{sub\ qi}$, or OPE_{gi} to SE_{gi}) has been suggested by French and Sherwood (1963) and Sherwood (1965). They have suggested that self esteem is influenced by subjective public esteem, which is the way P perceives how his normative others esteem him. This subjective public esteem is influenced by the objective public esteem, which is the way the normative others really esteem P. The last relation is dependent upon the accuracy of the communicated objective public esteem. To

use French and Shwerwood's notations, the causal flow is as follows: OPE → COPE[1] → SPE → SE.[2] In their theoretical paper (French & Sherwood, 1963), they point out several studies that support the relationship in the causal flow above. Sherwood (1965) has demonstrated this relationship in his own study conducted with T-groups. Maehr et al. (1962) have also shown relation between OPE of referent others ("physical education experts") and SE with high school students, where the relevant SD was physical coordination.

Now the adaptation of the self-identity theory model to the concepts used here is presented. The simple analogue would be

$$\begin{array}{c} \text{CTOPE} \\ \downarrow \\ \text{TOPE} \rightarrow \text{TSPE} \rightarrow \text{TSE}. \end{array}$$

There are, however, several differences between the two models which are not only variations in the letters used. Both TOPE and OPE refer to objective public esteem, which is the esteem accorded to P by Os. However, the "others" in the two models are not the same conceptually. The "others" used to derive OPE are what Sherwood has called "referent others" and Kelley (1968) called the "normative reference group." While the "others" in TOPE are a statistical representation of "all others" in the given social system, the "normative others" are only a sub-group of "all others" (a special case of which is when the normative others are all others as was assumed in Sherwood's study, 1965). Another difference between the two "others" is that while "all others" are almost the same for every individual in the system in question,[3] the "normative

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[1]Communication of Objective Public Esteem.

[2]French and Sherwood draw their causal model as follows: OPE → COPE → SPE → SE. This drawing seems to me erroneous because the variable COPE is of a different theoretical order than OPE, SPE, and SE. OPE does not cause COPE and the latter does not cause SPE. OPE causes SPE (according to theory) and this relation is moderated by COPE. Therefore, the model should be drawn as follows:

$$\begin{array}{c} \text{COPE} \\ \downarrow \\ \text{OPE} \rightarrow \text{SPE} \rightarrow \text{SE} \end{array}$$

[3]It is "almost" because the focal person himself is not included

others" do not have to be the same for different individuals. This observation leads toward the conclusion that the correlation between OPE and SE could be perfect if COPE and SPE were constant, but the correlation between TOPE and TSE under the same conditions and according to the same model would not be so.

The above section is now summarized by several hypotheses:

Hypothesis IV: There tends to be a positive association between TOPE and the mental health index of self esteem through the intervening variable of Total Subjective Public Esteem (TSPE).

Hypothesis V: There tends to be a positive association between variables in the opportunity-set cluster and the corresponding variables in the mental health cluster, i.e., the opportunities offered to individuals are taken advantage of. There also tends to be a positive association between the opportunity indices (as defined in section c) and other mental health indices. (Specifically, we predict that association for the list of indices given on page 27).

Hypothesis VI: The opportunity indices are another intervening route (in addition to TSPE) through which TOPE affects the mental health indices. (Again the relevant mental health indices are those listed on page 27.)

E. Performance as a Dependent Variable

Performance variables as such are not the focus of this paper and hence they will be treated in the same way that the mental health variables were handled. A list of variables suggested and used by other writers as performance variables are granted the same label here (performance variables) without further discussion. Nor will the relationships among the several performance variables be discussed in any great detail. They will simply be referred to as the cluster of performance variables.

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in the definition of his own "all others" and the focal person is different for every person.

We will use here a rather broad definition of performance which will include both direct and indirect indices of performance. By indirect indices we mean variables that can be assumed to affect performance although they themselves are not measures of performance. An example of such a variable is the extent to which individuals feel that they are responsible for the goal-achievement of the organization (hence, will do whatever they can to help achieve such goals). Another example is the extent to which individuals involve themselves with problem-solving and innovative behavior in the context of their organization. The assumption is that the more such behavior occurs, the more likely the organization is to benefit from it. Therefore it can be taken as an index of performance. The more direct measures of performance involve contributions in quality and quantity by the individual to his organization's product. They also involve absenteeism rates and tardiness behavior. Operationalization of these variables is described in Chapters II and III.

The first relationship to be dealt with is that between the variables in the opportunity-set and those in the performance cluster. The general hypothesis is that the relationship between variables in those two clusters tends to be positive. This hypothesis is based upon assumptions and several considerations:

(1) First Assumption: Human beings will exercise their skills upon the environment to their fullest capacity if given the opportunity to (e.g., McGregor, 1960; White's concept of efficacy, 1959).

(2) Second Assumption: Human beings as members of organizations (especially modern productive organizations) have within themselves assets and resources that can contribute to the organization's performance if they are used (Likert, 1967). The considerations are the following:

(a) When motivated individuals are given access to information about the goals of their organization, the problems the organization is facing, feedback about past performance, plans for the future, etc., this knowledge facilitates their participation in

contributing their resources toward the needed solutions of their organization's problems. This knowledge also eliminates some of the conflicts within the organization which erupt because groups in it differ in their perceptions of problems due to the fact that some know less and some know more about the organization.

(b) If a member of an organization has more control of his environment and upon himself in it, he will also perform better because he will be able to apply his relevant resources when he sees that they are needed.

(c) If a member of an organization is given the opportunity to develop himself, then by implication his skills are improving and he has more resources to offer to his organization.

(d) When a member of an organization is encouraged to be innovative (as a non-conformer, risk-taker), then he performs better in situations where the demands of the environment change and force an innovative approach toward problem-solving--a situation which is characteristic of modern productive organizations.

(e) Social organizations are characterized by the fact that interpersonal interaction is one of their most important components. Most task performances require, at least in part, the skills of interpersonal interaction and successful performance depends, at least in part, on the level of that skill. Hence, the positive association between the opportunity to develop that skill and performance.

(f) When individuals are offered rewards from their participation in an organization, they tend to invest and offer inputs into the organizations in proportion to the rewards they get--this is a simplified statement of the "equity" concept.

Evidence for the considerations above is offered in the following examples. Control has been related to performance in studies conducted by Tannenbaum and his associates (1968). Another classic example

is the study by Coch and French (1948), and others are Vroom (1960), Burnstein and Zajonc (1965). Tannenbaum has shown that control is positively associated with loyalty (1968, ch. 4). The fact that dissemination of information within an organization is related to performance is emphasized by Likert (1967) and individual studies like Hundals (1969). Likert (1967) has also surveyed the findings that related interpersonal relations competence, particularly of supervisors, to measures of performance. Studies with the concepts of equity have been conducted by Adams (1962), Adams et al. (1964), Arrowood (1961). In those studies the reward that was manipulated was pay. Performance was positively related to the reward.

To summarize, the above is captured into a general hypothesis:

Hypothesis VII: There is a positive causal association between variables in the opportunity-set and variables in the performance cluster.

Several studies have found that there is a positive association between OPEs and OPE_{sub}s of individuals, and their performance (e.g., Herzberg, 1965; Stodtbeck, 1957; Bridges, 1959).

Because the model in Figure 1 specifies no direct relation between TOPE and performance variables, but the above evidence is stating that such a direct association exists, one has to prove that the above findings are simply the result of a failure to employ intervening variables.

We would argue that the opportunity indices act as intervening variables between TOPE and the performance variables just as they intervene in the relationship between TOPE and the mental health variables.

Hypothesis VIII: The opportunity indices act as intervening variables between TOPE and the performance variables.

In order to demonstrate the intervention effect we will have to assume the same three assumptions employed for Hypothesis VI and test whether or not any of the three requirements stated there are fulfilled with regard to the relationships of the three groups of variables that appear in Hypothesis VIII.

Another type of causal relationship portrayed in Figure 1 is that between the mental health variables and the performance variables. Because both of the clusters are not discussed here in great detail, the argument for this relationship is stated very briefly.

While the opportunity-set variables act mostly as facilitators of performance, one can say that the mental health variables contribute their share as motivators. It has been argued by the self-identity theory, e.g., Miller (1963) and Sherwood (1965) that involvement of P in a given group is a function of his SE in that group. Involvement, as should be remembered, is a variable in the performance cluster. Naurer (1968) has found that work involvement is related to the degree of need-satisfaction. Another variable in the performance cluster that is related to variables in the mental health cluster is that of absenteeism, turnover, and tardiness. This relation is mediated through the attractiveness of the organization. If needs are not satisfied by the organization, then P will tend to avoid it by absenteeism or tardiness or resignation.

This is now stated by an hypothesis:

Hypothesis IX: (a) There is a positive relationship between the mental health variables and the performance variables. (b) More of the variance of the performance variables is explained by both the mental health variables and the opportunity-set variables, than by either of them alone.

This concludes the presentation of the theory and the theoretical model that this paper is intended to test. We have covered all the relationships indicated by the model in Figure 1, and stated them as theoretical hypothesis. Chapter II and Appendix II will describe the operationalization of the variables that are employed in the actual test of the hypotheses. Chapter III will report the findings with regard to these tests.

CHAPTER II

METHODOLOGY

A. Site and Population

The study reported here was conducted on industrial plants and farm branches in a sample of Israeli Kubbutzim. A Kibbutz is a communal settlement with a population range from 60 to 2000 people. The life in a Kibbutz is based upon principles of equality and sharing among members. Socialism, democracy and Zionism serve as the Kibbutz ideological essentials. It has developed its own institutions and techniques of education and child raising and supports itself by farming and by industrial production.[1]

This study is part of a larger project undertaken with the Kibbutz population and dealing with the problems of industrialization. The Kibbutzim are now turning very rapidly from farm-oriented communities into industrialized ones. One of the main purposes of the larger project was a comparative study between factory workers and farm-branch workers; hence, the sample studied is composed of representatives of both these groups.

The report that follows uses as its sample all Kibbutz members who work in 24 industrial plants (one plant per Kibbutz) and in 20 farm branches. The plants manufacture a variety of products and are concentrated mainly in the medium and lower level of technology. (That is to say, their production techniques are mainly mechanical--some even manual

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[1]Detailed accounts of the Israeli Kibbutz, its history, principles, problems, and description can be found in various sources in English. The more detailed of them is that of Darin Drabkin (1962).

--a few semi-automated.) There is also a range in the size of the plants: some of them are no larger than small workshops and some are of medium size (relative to the size distribution of Kibbutz plants in general). The range of the number of workers was from six to eighty workers (hired, labor, temporary workers, and non-members included), or six to fifty-three Kibbutz members who are permanent workers, with a mean of twenty-five for this last category.

The farm branches are represented here mainly by the poultry raising and the number of workers in each of these branches is even smaller: the range is from sixteen to two permanent Kibbutz members as workers. The mean number of workers per branch is seven.

B. Instruments in Use

Data for this study were collected with the use of several types of instruments:

I. The Questionnaire[1]--A paper and pencil questionnaire was administered to all individuals defined into the study sample (i.e., all Kibbutz members who are permanent workers in the plants, or farm branches, selected for study). The questionnaire consisted of 116 questions, most of them in closed form. The few questions in the open-ended form asked for an answer of one to several words only. The items relevant to the study reported here, appear in their English translation as Appendix I.

To most individuals the questionnaire was self-administered. One or two members of the research team would come to the working site, hand out the questionnaires to everybody present at a pre-arranged meeting, explain and answer questions related to the study objectives and procedures. They would go over the questionnaire and clarify confusing items, emphasize the confidentiality of the questionnaire

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[1]Appendix I reproduces the questionnaire items used in this study. The items are arranged according to clusters of the theoretical variables dealt with in this study. Each item carries with it the actual number that it had in its administration to the respondents.

(identification of respondents was by serial number only), and hand out self addressed envelopes, so that the questionnaires could be sent back to the research headquarters. A small percentage of respondents were interviewed by a research staff member because they had difficulties in reading or understanding either the language or the meaning of the items. Some others were interviewed regarding items that they failed to answer when sending the questionnaire back.

The response rate for the plants and branches used in this report (which are only part of the sample used in the larger study) ranges between 100% and 40%. The exact distribution of the response rate is as follows:

Response Rate	Number of Plants/Branches
90% and above	10
80% - 89%	7
70% - 79%	4
65% - 69%	7
60% - 64%	6
50% - 59%	4
49% and less	3

This response rate reflects the percentage of refusals in each plant but it does not reflect the percentage of potential respondents not available for interviewing (due to being on vacation, in army reserve training, sick, or working in another department of the Kibbutz). This category consists of about 5% of the total population studied. The refusal rate indicated by the numbers above is a bit over-estimated; some respondents who completed the questionnaire are included as refusals because their questionnaires came too late for the analyses in this report. All in all, from the plants and branches used for the study in this report, 73% of the available members answered the questionnaire.

II. Written documents. Some data were collected from written documents and records related to various variables. The research staff did this either alone or with the help of office holders within each of the plants/branches (such as the managers, secretaries or accountants). Two types of data were collected in this fashion:

(a) facts related to the organization in question--economic outcomes; labor composition and amount; history of growth and change; organizational and physical structure; the environment in which the organization operates (Kibbutz size, age and movement affiliation);

(b) facts related to individuals--number of hours that they work per day, what job they have, what office in the organization they hold, number of days that they have been absent from work and formal reasons for that absenteeism.

This latter type of information was collected with the use of a questionnaire form called the "manager's questionnaire." The economic data were collected by another form which was labeled "Economic data."

III. Manager's interview. Each of the managers was interviewed about his views concerning his own role, and the relationship of the organization (plant or branch) vis-a-vis the Kibbutz as a whole. The managers have also been asked to rate all workers on several dimensions. (In the cases where the manager thought that he was not sufficiently acquainted with the workers' behaviors, this task was delegated to the production managers.)

IV. Judgments of outside experts. Outside experts (the heads of the industrial departments of each Kibbutz movement) were asked to rank-order all plants within each movement. The dimension used for this rank ordering was overall effectiveness. They were also asked to rate each plant according to its relative standing vis-a-vis similar plants in the country. As only one judge was asked to rate any given plant, there is no evidence for the reliability of this procedure. However, it will be possible to compare these ratings to other measures of performance and see whether or not they stand a convergent validity test.

C. Operationalization of Variables[1]

In this section we present the operationalization of variables

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[1]In order not to impede the reading of those who are not interested in the minute details related to the methodology of the operationalization of theoretical variables--the detailed treatment has been transferred to Appendix II. Whenever such a treatment continues in Appendix II, the interested reader is referred there.

involved in the hypotheses advanced in the first chapter.

(1) Social sub-systems. This concept is a principal one as it serves to help conceptualize other variables. In the theoretical presentation of Chapter I, social sub-systems were used in the sense suggested by Katz and Kahn (1966). Although the concept seems very useful theoretically, it turns out to be difficult to operationalize. It is particularly difficult to operationalize it so that various sub-systems would be distinguished clearly from each other.

However, the particular emphasis of this study makes the task of operationalization a little bit easier.

In Chapter I (p. 7) a number of potential status dimensions were given as examples. Each of them was labeled so because it potentially could fulfill the four conditions that were defined as necessary and sufficient for status dimensions.

The list of examples was as follows:

(a) Physical characteristics (height, weight, strength, beauty, etc.).

(b) Personality traits (honesty, intelligence, humor, etc.).

(c) Demographic characteristics (age, sex, education).

(d) Abilities and skills.

(e) Possession of resources (scarce from the point of view of a given social group), such as money, knowledge.

(f) Possession of esteem in outside social systems.

(g) Activities (roles) within a given social system.

In this study, we are mainly interested in causal variables that can be manipulated with relative ease by the organization in question. This emphasis eliminates from consideration such status dimensions as physical characteristics, personality traits, demographic characteristics, skills and abilities, and leaves us with such dimensions as possession of resources, possession of esteem in outside social systems, and activities (roles) within the given social system.

We elected to concentrate in this study on the last two status dimensions (esteem in outside social systems, and roles within the given social system). Possession of resources was excluded because of the ambiguity of the theoretical distinction between viewing it as a status dimension or as opportunity variables (see Chapter I, p. 20).

We were able to define several spheres of activities, within a given social system, which are logically independent from each other. Activities outside the social system (that bring with them esteem in that outside sphere), are also independent, at least potentially, from those within the social system in question. Such definitions represent several social subsystems.

True, these spheres of activity would probably not comprehend fully the concept of a social subsystem. We have eliminated by intention the spheres which fail to meet the conditions of status dimensions (Chpater I, pp. 5-7) but we have also eliminated many status dimensions that are not the focus of the present study--such as skills, abilities and the like.

As for this study and the unique population to which the theory is applied, namely, work organizations in the Kibbutz, three such spheres of activity are suggested as particularly relevant:

(a) The sphere of jobs within the organization (plant/branch).
(b) The sphere of offices within the organizations.
(c) The sphere of offices within the Kibbutz outside the organization.

The operationalization of these three spheres was as follows: Sphere (a) consisted of all jobs within the given work organization as defined by the manager of each of these organizations. It varied across organizations in terms of the frame of reference. In some, each job was defined according to the machines involved in carrying it out. In others it was defined according to the product produced by the job (which may have involved more than one machine). In still other organizations the definition involved the name of the department where th job is carried out (which could involve several products and several processes--machines).

Sphere (b) consisted of all offices to which persons are routinely elected or nominated (by Kibbutz institutions or nominating committees) in an organization. Again the source for that information was the manager of each organization.

Sphere (c) was defined as all elected or nominated offices (by Kibbutz institutions) outside the plant/branch but in Kibbutz. The source for that knowledge (i.e., what are the relevant offices) was the research team itself.

These three spheres are independent from each other, and answer the requirement that location on each of them can be determined by the social system in question. Although we do not expect such operationalization to cover the theoretical concept of subsystem fully, it seems that each of the three spheres defined above may be considered as representing part of the theoretical concept of social subsystems: The sphere of jobs represents the production and supportive subsystems. The sphere of offices within the organization represents the managerial and maintenance subsystems. The sphere of offices in the Kibbutz represents, in part, the adaptive subsystem, as it provides a link with the leadership in part of the outside environment.

Now that subsystems have been operationalized, the task of operationalizing related variables is easier.

(2) Status role. Since we have defined the social subsystem, a status role is simply a position that a person holds in any of the subsystems. In this study: a position that a person holds in any of the three spheres are status roles. The respondents' status roles are measured by their answers to question 5, 6, 9, 10, 11, and 12 in the questionnaire (Appendix I). These questions ask what jobs, plant offices, and Kibbutz offices the respondent held in the past five years; and what job, plant office and Kibbutz office he will hold in the next year. This self-report was checked against a list of jobs and organization offices currently held by workers, as supplied by each organization's office. The correspondence between the two measures was very high (a correlation coefficient of .93 for plant office for the current year), and so the self-report has been considered as not being biased.

(3) Objective public esteem attached to a given status role (OPE_{sub}). The OPE_{sub}s variables were operationalized in two ways:

(a) The "positional" measure was developed from responses to questions 15-17 from which the esteem attached to each particular office or job was found. The mean score of esteem given to each job or plant office within an organization was assigned to the individual(s) having this job or office (according to the information given in questions 5, 6, 9, 10, 11, and 12).

The number of raters per job ranged: $1 < N < 14$, with mean = 7.2 and standard deviation = 3.0. The number of raters per organizational office ranged: $1 < N < 25$ with mean = 10.4 and standard deviation = 6.8. The number of raters per Kibbutz office ranged: $376 < N < 419$. (The differences in the number of raters between Kibbutz office and other spheres is explained in Appendix II.)

(b) The "personal" measure was produced from use of question 106. In that question, respondents were asked to assign "esteem" scores to several of their peers (randomly selected). The respondents were asked to assign esteem scores on the basis of the ratee's job, organization office, and Kibbutz office. Each of the ratees was then assigned an OPE_{sub} score, for each of the three spheres, which was the computed mean of the esteem scores given to him by his raters. The numbers of raters in the "personal" measure was smaller than in the positional measure in every sphere. This was mainly a result of the design of the question but it reflects also the somewhat greater reluctance to answer this question. For the job sphere the range was: $1 < N < 9$, mean = 4.0, standard deviation = 1.85. For the organization office the respective numbers ranged: $1 < N < 8$, mean = 2.5, standard deviation = 1.53. For the Kibbutz offices the results were: range $1 < N < 6$, mean = 2.4, standard deviation = 1.22.

Methodological analysis has revealed that the "positional" OPE_{sub} scores are superior to the "personal" ones in terms of their theoretical interpretations and validity. That finding led to the decision to use the "positional" scores in further analyses. (A detailed analysis of

these variables and their operationalization problems is given in Appendix II).

In the following chapter we make use of various symbols to denote variables related to the concepts of objective public esteem. Table 1 is a glossary of these symbols with their definitions.

(4) Total Objective Public Esteem (TOPE). This variable was operationalized by question 105, in which respondents were asked to assign scores to indicate general esteem which they (and others) accord to each of several persons. These scores were computed so as to arrive at a mean score of the esteem attached to each person by his peers ($1 < N < 10$, mean of $N = 4.9$, standard deviation of $N = 1.9$). It turned out that this measure had in it a large proportion of variance from a factor not relevant to the purpose of this study, i.e., people were rating to a great extent the personality and performance of a ratee and not only his various roles. This fact had forced the use of substitutes for this variable in some analyses. Further methodological discussion about the TOPE variable is presented in Appendix II.

(5) Total Subjective Public Esteem (TSPE) and Self Esteem (SE). These two variables were operationalized simply by means of questions 104 (TSPE) and question 107 (SE).

(6) Opportunity Set Variables. The variables related to this cluster have been operationalized by the use of questionnaire items (questions 20a-e; g-i; 22; 58a-d; 59; 73e). Not all the variables mentioned in Chapter I (p. 19) were used in the study as independent variables because of considerations of reliability. In order to increase the reliability of the measures, the inter-item correlations among the questions mentioned above were used to construct indices with higher reliability. (The way and the data upon which these indices were built, is described in detail in Appendix II.)

Four indices came out of the analysis:

(a) The "intellectual opportunity" index, which included in it the questions that asked about the amount of opportunity that a

Table 1

A Glossary of Symbols that Denote Operationalized Variables Related to the Concepts of Objective Public Esteem

1. OPE: General term for objective public esteem accorded to a person on the basis of his job or Kibbutz office, or organization office during one year only.
2. OPE_j: General term for objective public esteem accorded to a person on the basis of his job in one year only.
3. OPE_k: General term for objective public esteem accorded to a person on the basis of his Kibbutz office during one year only.
4. OPE_z: General term for objective public esteem accorded to a person on the basis of his organization office during one year only.

   The operations in terms (1)-(4) are by the use of the "positional" method to measure objective public esteem.
5. OPE_{j70}; OPE_{j69}; OPE_{j71}: Objective public esteem accorded to a person on the basis of his jobs in 1970, 1969, and 1971 (next year), respectively.
6. OPE_{k70}; OPE_{2k70}; OPE_{k69}; OPE_{k68}; OPE_{k67}; OPE_{k66}; OPE_{k71}: Objective public esteem accorded to a person on the basis of his first Kibbutz office during 1970; second Kibbutz office 1970; and first Kibbutz office in the years 1969; 1968; 1967; 1966, and 1971 (next year), respectively.
7. OPE_{z70}; OPE_{2z70}; OPE_{z69}; OPE_{z68}; OPE_{z67}; OPE_{z66}; OPE_{z71}: Objective public esteem accorded to a person on the basis of his first organization office during 1970, his second organization office during 1970, his first organization offices during 1969, 1968, 1967, 1966, and 1970, respectively.
8. OPE_{sub}: A general term to denote objective public esteem accorded to a person on the basis of his jobs or Kibbutz offices or organization office in all years.
9. OPE_{subj}: Objective public esteem accorded to a person on the basis of all his jobs, as measured by the "positional method."
10. $\widehat{OPE}_{subJ}$: Objective public esteem accorded to a person on the basis of all his jobs, as measured by the "personal" method.
11. OPE_{subk}: Objective public esteem accorded to a person on the basis of all his Kibbutz offices, as measured by the "positional" method.
12. $\widehat{OPE}_{subk}$: Same as in (11) but measured by the "personal" method.
13. OPE_{subz}: Objective public esteem accorded to a person on the basis of all his organization-offices, as measured by the "positional" method.
14. $\widehat{OPE}_{subz}$: Same as in (13) but measured by the "personal" method.

person has in his work to learn new things, utilize his abilities, do interesting work and try unconventional new ways (Questions 20a-d; i).

(b) The "opportunity to have authority and control over one's environment." This consisted of questions 20g; 22; 73e.

(c) The "affiliative and interpersonal relations opportunity" composed of questions 20e; 20h.

(d) The "access to information" index composed of questions 58a-d; 59. This index has a little different theoretical standing than the other three. It does not ask about opportunities but rather infers opportunities and the use of them from the attainment of a given state: being knowledgeable.

In addition to the above indices, which were to indicate to what extent any respondent has a particular set of opportunities, Question 77 asked about the general advantages and disadvantages that are associated with moving into a higher position within the organization.

(7) Mental Health Variables. These variables were operationalized by the use of both questionnaire and documentary data.

The following variables were measured:

(a) Satisfaction with work and job--Questions 35; 103.

(b) Involvement with job--Question 30.

(c) General affective states--Depression: Questions 44a, c.
Resentment: Questions 44b, d.
Self esteem: Questions 44e, f.

Another item (Question 104) asked directly about self esteem and it did not correlate highly with Questions 44e, f (see Appendix II). Both measures, however, were used in different analyses because the two measures were adapted from previous studies (Tannenbaum et al., 1970, Sherwood, 1962) in which they were used for the same purposes as here, and it was interesting to find out to what extent our data replicated the findings from the other studies.

(d) Self reported physical symptoms: Questions 46a, b, d-f.

(e) Five indices of alienation according to Seeman's (1959) formulation:

Social isolation	45a, b
Powerlessness	45c, d
Meaninglessness	45e, f
Self alienation	45g, h
Normlessness	45i, j

(f) Documented evidence of illness behavior. In one Kibbutz (96 respondents) we were able to document the number of visits to the dispensary during a two-week period, and the number of visits to the physician during a three month period. The visits to the physician are under-estimated because of difficulties in documentation.

In addition to the above, data were collected about the number of work days that a person was absent from work due to the formal reason of sickness.

(8) Performance Variables. These variables were again measured in several ways: questionnaire items, manager's ratings, and documentary data.

The following were the spheres in which measures were taken:

(a) Self reported commitment to own work (Question 108a); to own work group (Question 108b) to whole organization (Question 108c).

(b) Self reported innovative, extra work and involvement with work (Question 29, 31, 32, 34).

(c) Self reported tardiness (Question 33).

(d) Evaluation of worker by manager on scales of skill level-knowledge, dependability, quality of work. These three variables were used separately and as an index--"evaluation by manager."

(e) Number of days absent from work during a three month period because of sickness, vacation, "days-off," and working in other

departments of the Kibbutz. Again, these four variables were used separately and in combination as a sum.

(9) Organizational Indices. Respondents were asked about various aspects of their organizations. The answers to these questions were then factor-analyzed. Five meaningful factors came out of this analysis. (The simpler factor structure after a varimax rotation is presented in Appendix II, accompanied with other details.) The five factors were given names and were composed of the following questionnaire items:

(a) First factor: The evaluation of the superior by subordinates. This factor included Questions 80, 82-86, 89, 90.

(b) Second factor: Participativeness of workers in organizations decisions. Here the questions included were: 64, 65, 71a-g.

(c) Third factor: Upward and downward communication. This was represented by Questions 60-63.

(d) Fourth factor: Relationship with co-workers. Questions 47-50 formed this factor.

(e) Fifth factor: "Consideration" qualities of the organizations leadership (as opposed to "instrumental" qualities). Questions 66, 78, 79, 81, 83 represented this factor.

For each of the five factors, factor scores were derived for each individual by means of computing a mean across all scores of the individual, for the variables that composed the factor. An organization's factor score for each of the five factors was arrived at by computing a mean across individual-factor-scores over all organization members.

We turn now to Chapter III, where the hypotheses advanced in Chapter I are tested in their operationalized form.

CHAPTER III

FINDINGS AND HYPOTHESES TESTING

In this chapter we present the results of the analysis performed on the data with respect to the hypotheses presented in Chapter I. Each section in this chapter deals with one of the several hypotheses.

A. The Relationship between the Summation over Objective Public Esteem in Several Social Spheres (OPE_{subs}) and Total Objective Public Esteem (TOPE)

The data presented several problems that made it impossible to test the hypothesis in its pure form. The first such problem relates to the variable of TOPE. In Appendix II we have shown, by the use of a multimethod-multitrait matrix, that the operationalization of TOPE by the use of Question 105 (Appendix I) introduced into the variable two sources of variance, personality and methodology, and that these reduced, if not nullified, its usefulness for the analysis called for in this hypothesis. The reason is that any extraction of the source of variance relevant for the analysis of Hypothesis I on page 17 (i.e., the variance attributed to the esteem scores given to a person on the basis of his different status roles), would extract additive components only. But the hypothesis requires testing whether or not an interaction exists among the various OPE_{sub}s, when they are used simultaneously to predict TOPE. (E.g., if we were to partial out the SRs effect by some multiple regression or classification analysis [so that the sources of variance that are considered error would not interfere with the analysis], we would have been left only with additive components in TOPE, because the models under which such analyses operate assume additivity of variables.)

In view of the difficulty posed by the TOPE variable, a substitute was selected. This selection was based on the following theoretical consideration: According to the theoretical model suggested in Chapter I, there exists a curvilinear relationship between the summation over the OPE_{sub}s and TOPE but a linear relationship exists between TOPE and the opportunity-set variables. If the model is correct, then there should also exist a curvilinear relationship between the summation over the OPE_{sub}s and the variables in the opportunity-set, and so, Hypothesis I can be tested with a substitute for TOPE. This substitute variable was constructed by computing the mean score for each respondent over the four indices that represent the opportunity-set (intellectual opportunities, interpersonal opportunities, control and authority, and access to information). We call this variable "overall opportunities." This substitute variable cannot be expected to behave in the hypothesis as well as a pure TOPE could be expected to because it is one step removed in the theoretical causal flow.

The next several problems were presented by the independent variables, i.e., the summation of all OPE_{sub}s.[1] In order to test the hypothesis we needed to construct independent groups of respondents, each group representing a different pattern of a combination of OPE_{sub}s and all the patterns were to be regarded as categories on one variable. Such cross tabulation of the OPE_{sub} variables reduces, very rapidly, the number of valid cases. A missing data score for a case in any of the variables entering into a given pattern, would cause the whole case to become missing data.

We could not use OPE'_{sub}s (Question 106) for the same reason that TOPE could not be used (it had the same sources of noise), so OPE_{sub} had to be measured by the "positional" method which meant combining OPEs into OPE_{sub}s. (E.g., combining $OPE_{k70} + OPE_{k69} + OPE_{k68} + OPE_{k67}$ into OPE_{subk}). Such approach is very costly with regard to the number of valid cases that are left, as was noted earlier, and it could not be done for all OPE_{sub}s. As a result of these difficulties the

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[1] The notation here is the one defined in Chapter II, Table 1 (p. 47).

three OPE_{sub}s were only roughly estimated. Each OPE_{subj} was estimated by its respective OPE for 1970, i.e., OPE_{subj} was represented by OPE_{j70}. (Sections [a] and [b] in Appendix II describe how these variables were measured.) Because we use these three variables in this section in their role as representative of their respective OPE_{subs} we will denote them without the year (i.e., OPE_j, OPE_k, OPE_z). The possibility of the appearance of missing data in some categories of a variable that combines the three OPE_{sub}s (i.e., the variable that would have in it all the possible combinations of the categories from each of the three), had forced the reduction of the number of categories in each of the three variables. Thus OPE_k has been reduced from a four category variable to a dichotomy: 1--No Kibbutz office at all; 2--Any office. The same applies to the OPE_z which was dichotomized (although the original variable had eight categories). OPE_j was reduced from seven categories into a trichotomy. The combination of the three variables with the reduced number of categories in each, produces twelve distinct patterns (2x2x3) of combinations of OPE_{sub} scores. These categories compose the "interaction of OPE_{sub}s" variable which is the independent variable for the test of Hypothesis I.

Before we move further to explore the relationship between the combined variable of the OPE_{sub}s with the "overall opportunity" variable we show that OPE_j, OPE_k and OPE_z had, each of them separately, an effect upon the dependent variable. This is shown in Table 1.

Returning to the combined variable, Table 2 shows the twelve different and independent patterns that formed the categories of this variable.

The order of the categories in Table 2 is the one that would have been expected if the relationship between the "interaction of OPE OPE_{sub}s" variable was linearly related to TOPE (or, in our case here, TOPE's substitute--"overall opportunities"). Such a linear relationship is another way to express the additive, rather than interactive, contributions of the three OPE_{sub} variables to the "overall opportunities" index.

Table 1

Main Effects of OPE_j, OPE_k, and OPE_z on the Variable of the "Overall Opportunities"[a]

Variable	Category	Mean	N	Eta	df	F	
OPE_j	Low	3.10	63	.217	234/2	5.77	< .01
	Medium	3.22	69				
	High	3.50	105				
OPE_k	Low	3.22	148	.142	235/1	4.55	< .05
	High	3.45	89				
OPE_z	Low	3.11	167	.367	235/1	38.89	< .01
	High	3.77	70				

[a]The low level of the relationship between those three variables and the dependent variable is due in part to the fact that categories on the three OPEs were lumped together. Using 7 categories for OPE_j and 8 categories for OPE_z would increase the etas to .243 and .546, respectively.

Table 2

Twelve Independent Patterns of Combination of Scores from OPE_j, OPE_k, and OPE_z

Pattern or category no.	N	OPE_j	OPE_k	OPE_z
1	35	Low	Low	Low
2	37	Medium	Low	Low
3	15	Low	High	Low
4	39	High	Low	Low
5	11	Medium	High	Low
6	8	Low	Low	High
7	30	High	High	Low
8	15	Medium	Low	High
9	5	Low	High	High
10	14	High	Low	High
11	6	Medium	High	High
12	22	High	High	High
	237			

A little bit more should be said about the question of the expected order of categories in the "interaction of OPE_{sub}s" variable:

If there exists an additive function of the three OPE_{sub}s on the "overall opportunity" variable, it could operate in two different ways:

(i) The first way is what might be called the "constant increment" principle. Here increment in the score of the "overall opportunities" variable as a result of adding a given OPE_{sub} score, is independent from the base level to which the OPE_{sub} score is added. Thus, if the increment is X after adding medium OPE_j to a base level of A (and so getting a result score of A + X), it would also be X when adding medium OPE_j to the previous result (and so elevating it to A + 2X).

(ii) The second way of conceiving an additive function is to expect the increment to a base-score to be proportional to the base-score level. Thus, if the increment is X when medium OPE_j is added to a starting base A, it would generally be an increment of Y ($Y > X$) when the same OPE_j is added to the previous result. The computations would use the ratio between A + X and A($A + X/A = W$) as the weighting coefficient so $A + X = WA$ and $A + Y = W^2A$. This principle may be called the "proportionate increment." Strictly speaking, the second principle is not additive but rather a case of interaction. Such an interaction model would produce an accelerating graph of the "overall opportunity" score as a function of the "interaction of the OPE_{sub}s" variable. It is additive in the psychological sense that every additional OPE_{sub} score increases the "overall opportunity" score. It is also the opposite expectation from that predicted by the hypothesis, which speaks about a decelerating function.[1]

The first test performed on the scores of the "overall opportunity" variable as a function of the various OPE_{sub} patterns (the "interaction of OPE_{sub}s" variable) was designed to find out which of the

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[1]Such a principle makes intuitively a lot of sense because in many situations it is obviously used. Salaries, for instance, are usually raised according to this principle. That is, the higher your salary, the higher the raise you get (in absolute amount).

two additive models fits the data better. In order to do so, the expected increments from one pattern to another were computed.

The computations involved the findings of the coefficients of increment (for the proportionate principle) and the amount of increment (for the constant principle) of each of the separate three OPE_{sub} when they are compared to the basis level where none of them is operating.[1]

Table 3 shows how the various constant increments and the various coefficients were computed. One should keep in mind the patterns shown in Table 2 while inspecting Table 3.

Table 3

Computation of Constant Increments and Coefficients for the Two Alternative Additive Models

Additive principle	Variable	Increment or coefficient computations	Symbol
Constant increment	OPE_j	Pattern 2 - Pattern 1 =	J
	OPE_k	Pattern 3 - Pattern 1 =	K
	OPE_z	Pattern 6 - Pattern 1 =	Z
Proportionate increment	OPE_j	Pattern 2/Pattern 1 =	J
	OPE_k	Pattern 3/Pattern 1 =	K
	OPE_z	Pattern 6/Pattern 1 =	Z

It can be seen from Table 3 that the scores in the actual patterns 1, 2, 3, and 6 are equal, by definition, to these in the expected patterns of both additive models (because they are used to produce the two expected scales). This leaves the remaining eight patterns to be used as the basis for a test to see which of the expected additive

[1]This approach is an empirical substitute for the variable of "Importance," which was introduced as the weighting variable in Chapter I. This variable--importance--was not measured in a direct way (by a question) because experience with such a measurement did not prove useful in other studies.

models agrees better with the actual scores. Table 4 shows the expected scores for both additive models on the "overall opportunities" variable, as well as the way that such scores were computed. It also indicates the actual scores for each of the patterns. The correlation coefficient

Table 4

Expected Scores According to Two Additive Models, and Actual Scores on the "Overall Opportunities" Variable for Each Pattern of the Combination of $OPE_{sub}s$

(B = basis level)

Pattern	Actual score	Constant increment		Proportionate increment	
		Model	Expected score	Model	Expected score
1	2.886	B	2.886	B	2.886
2	3.054	B+(J)	3.054	(J)B	3.054
3	3.200	B+(+K)	3.200	(K)B	3.200
4	3.333	B+(2J)	3.223	$(J^2)B$	3.232
5	2.909	B+(J+K)	3.368	(JK)B	3.386
6	3.375	B+(+Z)	3.375	(Z)B	3.375
7	3.200	B+(2J+K)	3.537	$(J^2K)B$	3.584
8	3.400	B+(J +Z)	3.543	(JZ)B	3.572
9	3.800	B+(+K+Z)	3.689	(KZ)B	3.743
10	3.929	B+(2J+Z)	3.712	$(J^2Z)B$	3.780
11	4.333	B+(J+K+Z)	3.858	(JKZ)B	3.961
12	3.909	B+(2J+K+Z)	4.029	$(J^2KZ)B$	4.191

between the actual scores and the expected scores of the constant increment model (for patterns 4, 5, 7-12) is .855, while the correlation coefficient between the actual scores and the expected ones for the "proportionate increment" model is only .650. This determines that the expected additive model to be contrasted against the actual one, for a test of Hypothesis I, should be the "constant increment" model.

Now Hypothesis I in its theoretical and operationalized forms is presented:

Hypothesis I: (a) TOPE as a function of all OPE_{sub}s has an asymtote.

(b) TOPE is a positively decelerating function of the sum over OPE_{sub}s multiplied by their importance to the social system in question.

In terms of the operationalizations described in the paragraphs above, the hypothesis would read: (a) The "overall opportunities" variable as a function of the "interaction of OPE_{sub} variable" has an asymtote. (b) The "overall opportunities" variable is a positively decelerating function of the "interaction of OPE_{sub}s" variable when the latter is constructed according to the "constant increment" additive model.

In order to test the hypothesis proper, one has to show that there exists a curvilinear regression of the "overall opportunity" variable on the "interaction of OPE_{sub}" variable when the latter's categories are arranged in increasing order and with intervals among them that correspond to weights calculated on the basis of the "constant increment" additive function.

The graphic representation of the relationship between the two variables is shown in Figure 1 and the analysis for curvilinear regression is presented in Table 5.

Estimation of the percentage of variance explained by the linear rule in the population gives est. ρ^2 = .152 while the percentage of variance explained by the curvilinear rule is est. $(\omega^2 - \rho^2)$ = 0.021. Table 5 and the estimates of the explained percentage of variance show that to the data at hand, the linear rule is much more applicable than the curvilinear one. Figure 1 may give at least a hint to the effect that curvilinearity operates at the upper levels of the "interaction of OPE_{sub}" variable, which is what is predicted by Hypothesis I. It is possible that curvilinearity had just begun to appear at patterns 10-12 and if we were to add more patterns, with a higher sum of OPE_{sub} in them,

Figure 1. "Overall Opportunities" As A Funtion Of The "Interaction Of $OPE_{sub}s$" Variable When The Latter Is Computed According To The Constant Increment Additive Model.

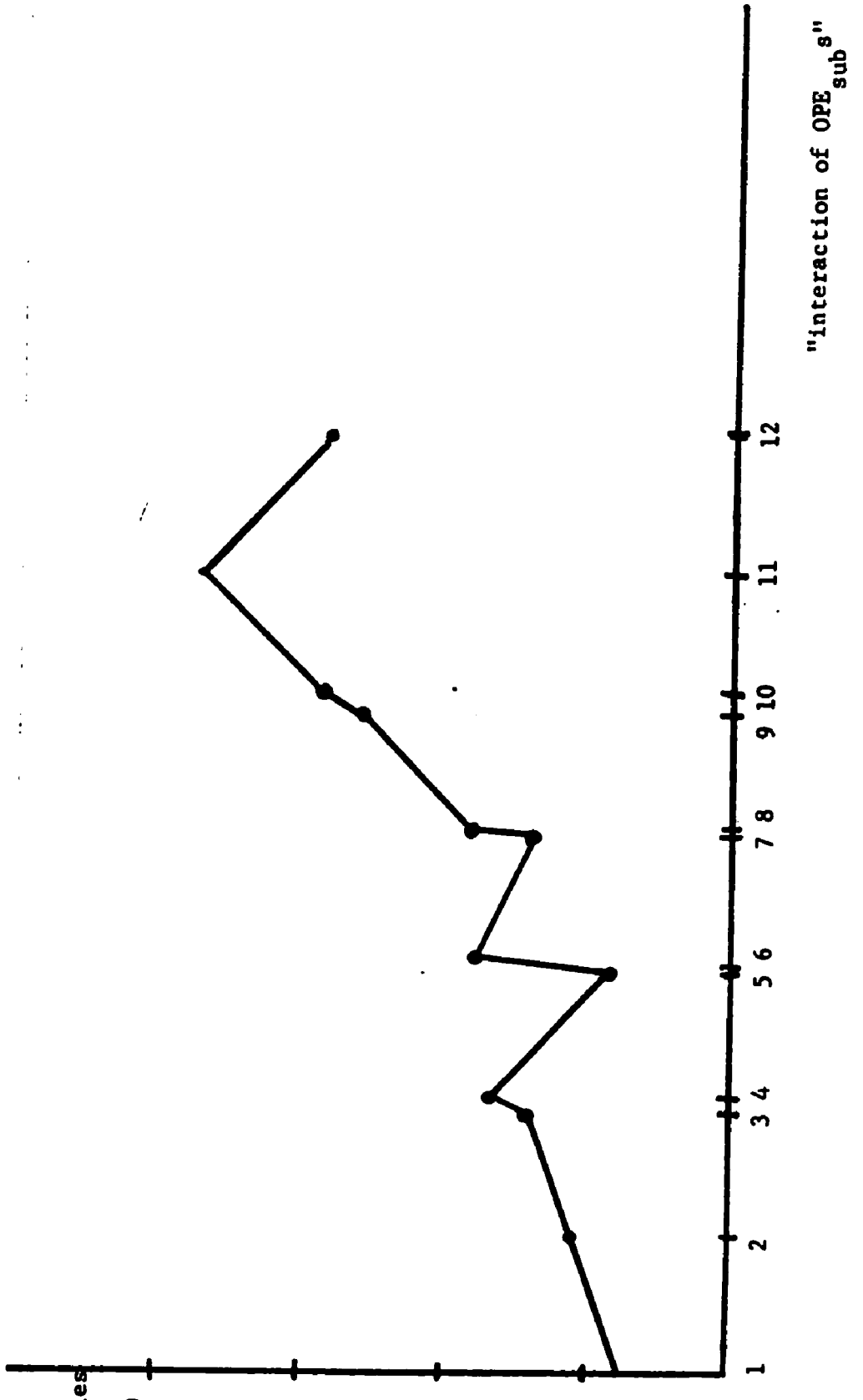


Table 5

A Test for Linear and Curvilinear Regression of the "Overall Opportunities" Variable on the "Interaction of $OPE_{sub}s$" Variable when the Latter's Categories Are Arranged According to the "Constant Increment" Additive Model

Source	SS	df	MS	F	
Between groups:					
Linear regression	23.54	1	23.49	45.17	< .001
Deviation from linear Regression	8.40	10	0.84	1.62	< .10
Error	118.57	225	0.52		
Total	150.51	236			

the curvilinearity trend and the asymtotic attributes of the variable would appear more strongly. Unfortunately, this has to be offered as a suggestion for another study because the data in this study do not allow further divisions into more patterns. There simply are not enough cases. (Note that the current division into twelve independent groups, has reduced the total number of cases from 497 to 237.)

The above values of the degree of relationship between the variables represent the estimation for a population, which is usually lower than the sample values. If one considers only this sample, then the extent to which curvilinearity operates is increasing. This is demonstrated by a multiple classification analysis (Andrews et al., 1967) performed on the three OPE_{sub} variables as three separate predictors in a multiple R to the "overall opportunity" scores, and by the computation of Eta between the combination of the three into the "interaction of OPE_{sub}" variable and the "overall opportunity" variable. The first statistic--the multiple R--represents all the additive components in the three variables. The Eta represents the additive components plus the non-additive ones (interactive components), which for this variable

would appear as the curvilinear parts of its relationship with the dependent variable. The results were as follows:

$$\text{Multiple } R = .403 \qquad R^2 = .162$$
$$\text{Eta} = .461 \qquad \text{Eta}^2 = .212$$

That is to say: In this particular sample, curvilinearity explains about 24% of the variance explained by the independent variable from the dependent variable.

The part of the hypothesis that deals with the asymtotic phenomenon was not pursued, as it is only a special case of curvilinearity and the general case has not been established in a conclusive way.

It is possible that we could get a better indication of support in Hypothesis I, if we constructed a variable composed of interaction among OPE_zs only (e.g., OPE_{z70}, OPE_{z69}, OPE_{z68}, OPE_{z67}). We have seen already that OPE_z has greater contribution to TOPE (in our case--its substitute) than either OPE_k or OPE_j. This fact suggests that if the hypothesis is true in reality, then combination of OPE_zs would cause curvilinearity in the dependent variable in a faster rate than combinations involving OPE_ks and OPE_js. Unfortunately, this cannot be tested with our data. There are very high correlations among the several OPE_zs that we have measured (the correlations are in the range of .52 to .85). These high correlations preclude the possibility of creating different patterns of OPE_zs with enough cases in each. OPE_{z69}, for instance, is entirely overlapped by OPE_{z70}, e.g., there is not even one person who had an organization office in 1969 and who does not have an office in 1970.

We now turn to explore Hypothesis II.

B. The Relationship between Present, Past and Future Status Roles (SRs) and TOPE

In Chapter I, section (b), it was argued that public esteem is accorded to a person not only on the basis of his current status role but also on the basis of what status roles (SRs) he had held in the past and that he is expected to hold in the future. Appendix II, sections (a)

and (b) describe how we measured the jobs, Kibbutz-offices, and organization-offices (SRs) for the past and the future. A time unit was defined as one year, and so the objective public esteem variables constructed were the following:

(1) for the jobs--OPE_{j70}, OPE_{j69}, OPE_{j71};

(2) for the Kibbutz-offices--OPE_{k70}, OPE_{2k70}, OPE_{k69}; OPE_{k68}, OPE_{k67}, OPE_{k66}, OPE_{k71};

(3) for the organization-offices--OPE_{z70}, OPE_{2z70}, OPE_{z69}, OPE_{z68}, OPE_{z67}, OPE_{z71}.

(See Appendix II, section (b) for the way through which the OPE variables were arrived at.)

In Appendix II it is also shown that some of the aforementioned variables had a great proportion of missing data cases and that OPE_{k71} and OPE_{z71} were biased by a disproportionate percentage of current office holders. These facts have dictated the elimination of some of the OPE variables from some analyses related to the test of Hypothesis II.

In addition to the above methodological problems, it is demonstrated in Appendix II that the "personal" measurement of OPE_{subs}, through the use of Question 106, introduced a great deal of "noise" into the variance of the scores of this variable. Nevertheless, this measure is still our only independent estimate of the OPE_{subs} beside the estimates arrived at by the "positional measures." Since the "positional" measures of OPEs, on the basis of SRs in different years, are going to be used as predictors of the global indices of OPE_{sub}, we will use the "personal" measures of OPE_{subs} as separate estimates of these global indices. The question of interest in the hypothesis is whether OPE_{sub}s are determined by the SR of the present year only, or if they are determined by past years as well. That is why we need two measures of OPE_{sub}.

In section (A) of this chapter, we have introduced a substitute for TOPE ("overall opportunities") for the hypothesis tested there. We will use the same substitute variable in the inspection of the data

according to the hypothesis tested here, but the TOPE variable (Question 105) will also be used as another estimate of the "true" TOPE.

The formal theoretical hypothesis and its operations and modifications (change of variables) are now given.

Hypothesis II: (a) TOPE is affected not only by current SRs but also by past and future SRs.

(b) The effects of past and future SRs are positively related to their closeness in time to the present.

Operationally, the hypothesis is tested in several ways:

(a) If the hypothesis is to be supported by the data, then the variables OPE_js, OPE_ks, and OPE_zs of past, present and future should be better predictors of the variables OPE_{subj}, OPE_{subk}, and OPE_{subz} (respectively) than OPE_{j70}, OPE_{k70}, and OPE_{z70} alone.

(b) The same expectation as in (a) holds for the relationship of present, past and future OPEs to the TOPE variable and to its substitute--the "overall opportunities" variable.

(c) For part (b) of the hypothesis to be confirmed, we would expect the dependent variable scores (the "overall opportunities" and TOPE) to be lower for individuals with the same independent variable scores (OPEs), the further away from the present the particular OPEs is. For example, we would expect a person with a high OPE_{k70} to have a higher score on the "overall opportunities" than a person with a high OPE_{k67}.

Below we present the results of analyses pertaining to the three questions posed above. Table 6 presents the single and multiple correlations of OPEs with OPE_{sub}s, "overall opportunities" and TOPE.

In order to see whether the data answer the requirement of Question (c) Table 7 is constructed. From these data we want to see whether or not OPE based on SRs in the past of future have an effect upon the score that a person gets on the TOPE variable and on the "overall opportunities" variable. This table also shows whether or not the

Table 6

Single and Multiple Correlations of OPE_js, OPE_ks, and OPE_zs with OPE_{subj}, OPE_{subk}, OPE_{subz}, and with TOPE and "Overall Opportunities"

	OPE_js (Jobs sphere)			All years	(Multiple R)
	OPE_{j70}	OPE_{j69}	OPE_{j71}		
OPE_{subj}	.210***	.141**	.181***	.241***	(.219)[1]
TOPE	.201***	.200***	.221***	.222***	(.197)
"Overall opportunities"	.218***	.188***	.282***	.303***	(.286)

	OPE_ks (Kibbutz-office sphere)					All years	(Multiple R)
	OPE_{k70}	OPE_{k69}	OPE_{k68}	OPE_{k67}	OPE_{k66}		
OPE_{subj}	.178***	.235***	.289***	.180***	.173***	.324***	(.322)
TOPE	.173***	.076*	.095**	.122***	.035	.200***	(.179)
"Overall opportunities"	.099**	.113***	.110***	.094**	.110***	.163**	(.138)

	OPE_{zs} (Organization-office sphere)				All years	(Multiple R)
	OPE_{z70}	OPE_{z69}	OPE_{z68}	OPE_{z67}		
OPE_{subz}	.339***	.144***	.320***	.327***	.480***	(.467)
TOPE	.335***	.168***	.215***	.228***	.370***	(.352)
"Overall opportunities"	.528***	.249***	.366***	.361***	.549***	(.540)

*$p \leq .05$

**$p \leq .025$

***$p \leq .01$

[1]The correlation coefficients given in parenthesis are the multiple correlations after correction for "shrinkage." (Nunnally, 1967, p. 164.)

Table 7

Mean Scores on TOPE and "Overall Opportunity" Variables as a Function of Scores on OPE_js, OPE_ks, and OPE_zs on the Basis of SRs during Certain Years (and only in these years)

		Score on OPEs	TOPE	N	SD	Overall opportunities	N	SD
OPE_js (jobs)	OPE_{j70}	4-7	5.82**	33	1.82	3.39	31	0.69
	OPE_{j69}	4-7	5.97**	34	1.77	3.41*	32	0.69
	OPE_{j71}	4-7	5.63	32	1.82	3.37	30	0.68
	OPE in all years	1-3	5.09	22	2.33	3.09	23	0.75
OPE_ks (Kibbutz-office)	OPE_{k70}	2-4	5.56***	32	1.72	3.28	36	0.82
	OPE_{k69}	2-4	5.73*	11	1.35	3.55*	11	0.52
	OPE_{k68}	2-4	6.00*	8	1.51	3.56	8	1.01
	OPE_{k67}	2-4	5.60	10	2.17	3.20	10	1.32
	OPE_{k66}	2-4	5.17	12	1.74	3.17	12	0.84
	OPE_k in all years	1	5.19	173	2.03	3.24	167	0.79

*$p < .10$

**$p < .05$

***$p < .01$

The significance levels are computed for the difference in scores between each of the high OPE scores and its respective low OPE score (e.g., the difference, on the dependent variable, of OPE_{j70}(4-7) from OPE_j(1-3) in all years).

scores on the dependent variables are related to the gap in time between the present and the year when the person held the particular SR.

The data were not very appropriate for such presentation because of the tendency among our respondents to have the same or similar Kibbutz-offices, jobs, or organization-offices for more than one year. We wanted to compare office holders or job holders for one year only. This requirement reduced the number of cases per year for the OPE_js and OPE_ks. The OPE_z measures could not be constructed at all, for there were very few persons who had offices in other years than the present and had no offices at the present.[1] Table 7 shows respondent scores on TOPE and its substitute when the independent variables are OPE_k in (and only in) a particular year, and an OPE_j in a given year only.

Table 7 demonstrates that:

(a) Having a high OPE_j or a high OPE_k makes a difference in terms of TOPE or the "overall opportunities" score. People who have such high OPEs accorded to them even on the basis of offices or jobs held some time ago, still get higher opportunities and are accorded higher TOPE by the organization. This effect does not appear very strongly here, but the direction of the predicted effect holds for all three OPE_js on the two dependent variables, and for four out of the five OPE_ks for the two dependent variables. For seven out of the total cases, the effect is statistically significant.

(b) The effect of time on the relationship unfortunately cannot be tested with the OPE_z scores, which had the most significant effects on TOPE and the "over opportunities" (Table 6). It is possible that with data that would allow the use of OPE_z in such analysis, the expected effect of time would show itself sooner and stronger.

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[1] An illustration of this problem is given in Table 12 in section (c) of this chapter. The number of persons who held (or will hold) offices in years other than 1970 (i.e., excluding the current office holders) are as follows: 1969--0; 1968--5; 1967--9; 1971--13. The number of persons who held an organization office during one year only is even smaller: 1969--0; 1968--1; 1967--0.

C. The Association between Objective Public Esteem and Variables in the Opportunity Set

Section (c) of Chapter I pointed out that the objective public esteem accorded to a person in a given social system would bring with it various rewards, incentives and other desirable by-products. "Opportunities" was the general label attached to the variables that were defined in that section. In Chapter II and Appendix II the operationalizations and the construction of the various opportunity indices are described in detail. Four indices were developed:

(i) The index of intellectual opportunities.
(ii) The index of interpersonal relations opportunities.
(iii) The index of control and authority opportunities.
(iv) The index of access to information.

These four indices serve as the dependent variables in the test of the question posed in this section.

The causal variable that determines the level of the scores on the opportunity variables was conceived to be the variable of Total Objective Public Esteem or, as it was labeled, TOPE.

TOPE was operationalized with the aim of becoming a global index of all the OPE_{sub}s scores that a person may have as a function of his various status-role scores. Appendix II demonstrates that the operationalization of TOPE has achieved its theoretical goal rather poorly. We will use TOPE here as it is a convenient, although poor, estimate of the theoretical variable. We will also use it in order to get a feel of the effect that the performance and personality components, suspected to be a part of TOPE, have on the dependent variable.

In addition (in fact, as a replacement) to TOPE we will use its components, namely the individual OPEs (OPE_js, OPE_ks, and OPE_zs), to estimate the strength of the theoretical variable. These variables will be combined through a multiple regression on the dependent variables, an approach that would usually underestimate the strength of the relationship. It is an underestimation because, as may be remembered from section (a) of the current chapter, the relationship between the OPEs

and the opportunities are predicted better by an interactive model than by an additive model. But a multiple regression analysis assumes an additive model. Therefore, if the hypothesis is supported by the multiple regression approach, we can infer that the association in reality is likely to be even stronger.

In a set of independent questions we asked respondents to indicate the advantages and disadvantages of moving into a higher position in the organization (Q77). We will interpret here "higher position" as higher OPEs, and test whether advantages--opportunities--are perceived by the respondents.

A modification of the basic relationship offered in section (c) of Chapter I was also suggested. It was said that the relationship between TOPE and the opportunity variables is moderated by organizational variables. In particular it was hypothesized that organizations in which participation of all members in the decision-making process is enhanced would have a lower level of association between TOPE and the opportunities, because the differentiation of the latter according to status hierarchies would not be as strong. We would expect that in the more participative organizations all members would have higher scores on the opportunity variables.

Factor two (from the factor analysis on organizational variables, Appendix II) was used to dichotomize the total number of organizations for which the factor scores were calculated into high and low exercises of participativeness. The total number of such organizations was 39. The 15 highest in participativeness form one group: "High participation." The 15 organizations that were lowest, formed the other group: "Low participation." Nine organizations (those in the medium range of participation) were not included in the analysis.

Now we turn to the findings. The formal hypothesis read:

Hypothesis III: In social systems in general and in social organizations in particular: (a) TOPE tends to be associated positively with the variables

of the opportunity set. (b) This association is moderated by various organization variables.

The actual test of the hypothesis on its two parts would involve the answer to the following questions:

(i) Is TOPE positively associated with the four opportunity indices? This will be determined by a correlational analysis and by analysis of the answers to question 77.

(ii) Are the OPE_{sub}s related to the four opportunity indices? This will be also done by a correlational analysis.

(iii) Are the relationships in (a) and (b) above moderated by the participativeness factor; are they moderated so that the more participative the organization, the lower the correlations between the independent variables and the dependent variables?

Table 9 presents the answers to that part of question 77 that asked about advantages that go with moving into higher positions. The respondents were asked to choose from a list of possible advantages, and assign a score of 1, 2, or 3 to the three most likely alternatives in the order of their likelihood of occurrences. Table 8 reports the number and percentage of respondents who chose each category as the most likely to occur.

From Table 8 we can conclude that the greatest advantages envisioned by respondents for people moving into higher positions in the organizations are the opportunity to enlarge one's knowledge and experience a greater variety of work. These categories are two of the items that compose the "intellectual opportunities" index. "Independence" goes second and it is part of the control and authority index. Social contacts and esteem, although they have higher occurrence than the "No advantage" category, are not as common as the first advantages. It is interesting that about the same pattern (in relative importance) occurs when we approach this question with another method. That is--asking people from different levels in the organization what opportunities they have. This is shown in Table 10.

Table 8

Number and Percentages of Those Who Chose Each of the Categories of Possible Advantages as the Most Likely to Occur when a Person Moves into a Higher Position in the Organization

Category	N[a]	%	Rank order
1. No advantages	31	7.3	6
2. Greater prestige or esteem	40*	9.4	4
3. Greater variety of work	122***	28.7	1
4. Greater independence	62***	14.6	3
5. Greater number of social contacts	33	7.8	5
6. Greater opportunity to enlarge one's skills	22	5.2	7
7. Greater opportunity to enlarge one's knowledge	108***	25.4	2
8. Greater influence on people outside the organization	7	1.6	8
Total	425	100.0	

[a]Two tests were performed on the data in the table. The first one was a goodness of fit test with a χ^2 testing the actual distribution of the data, across categories, against an alternative hypothesis that all categories have equal probability of occurrence. Given that one of the categories is category 1 (no advantage at all), if the null hypothesis could not be rejected or if the pattern of rejection was such that category 1 had more cases than the rest, we would have had to conclude that people do not think that any advantages go with the higher positions. The results of the test were $\chi^2 = 225.7$, which with 7 df gives $p < .001$. Using category 1 as a base line, the other categories were compared with it by the binomial test, with the results *$p < .10$, ***$p < .001$. This last test is not the most appropriate one for the kind of data we had because each category is sampled without replacement so that there is no chance for all of them to be higher than the "no advantage" category. Nevertheless, it is worthwhile to see to what extent some of them are at least higher than the base line.

In Table 9 we display the correlations of TOPE and OPE_{sub}s with the opportunity indices. The OPE_{sub}s are correlated with the opportunity indices as multiple correlations of several OPE_js, OPE_ks, and OPE_zs, respectively. (That is, OPE_{subj} is represented by several OPE_js, OPE_{subk} is represented by OPE_ks and OPE_{subz} is represented by OPE_zs.) The correlation that appears in each entry is a multiple one on the particular opportunity index. The correlations that appear in parentheses are the multiple correlations corrected for shrinkage (Nunnally, 1967, p. 164).

Table 9

Coefficient Correlations (Single and Multiple) of TOPE and OPE_{sub}s with the Opportunity Indices

	Intellectual opportunities	Interpersonal opportunities	Control and authority	Access to information
TOPE	.331***	.211***	.358***	.362***
OPE_{subj} (OPE_{j70}, OPE_{j69}, OPE_{j71})	.286*** (.268)	.196*** (.164)	.228*** (.205)	.336*** (.321)
OPE_{subk} (OPE_{k70} - OPE_{k67})	.182*** (.158)	.102*** (.045)	.169*** (.145)	.204*** (.184)
OPE_{subz} (OPE_{z71} - OPE_{z67})	.397*** (359)	.467*** (.438)	.568*** (.548)	.574*** (.553)
Multiple correlation with all OPE_{sub}s	.456*** (.345)	.597*** (.533)	.620*** (.561)	.645*** (.592)
Multiple correlation with all OPE_{subs} and TOPE	.495*** (.391)	.605*** (.538)	.650*** (.592)	.669*** (.617)

***$p < .01$

It is clear from Table 10 that the general hypothesis is supported. TOPE and its components are related quite strongly to the opportunity indices. This relationship is altogether more convincing if we note that both the OPEs and TOPE are not variables measured by a self-report technique but rather by what one may consider as objective methods (vis-a-vis the questionnaire-answering techniques), yet the correlations run as high as .62 which means that more than 38% of the variance in the amount of opportunities that a person perceives himself to have can be explained by the esteem variable.

In Table 10 we illustrate with one variable only (OPE_{z70}) that the opportunity indices scores are a function of objective public esteem. OPE_{z70} is selected because it has the highest correlations with the indices (relative to other OPEs).

Table 10

Opportunity Indices Scores as a Function of OPE_{z70} Scores

Opportunity indices	OPE_{z70} scores (number of cases in parentheses)								Total number
	0	1	2	3	4	5	6	7	
Intellectual opportunities	2.86 (274)	3.26 (4)	2.00 (2)	3.26 (28)	3.43 (40)	3.87 (31)	3.70 (20)	3.76 (8)	3.08 (407)
Interpersonal opportunities	3.22 (269)	3.00 (4)	4.50 (2)	3.54 (28)	3.86 (40)	4.48 (31)	4.00 (20)	4.00 (8)	3.46 (402)
Control and authority	2.88 (282)	3.00 (5)	3.50 (2)	2.68 (28)	3.80 (40)	4.42 (31)	4.20 (20)	4.88 (8)	3.24 (416)
Access to information	2.95 (279)	3.20 (5)	4.50 (2)	3.44 (27)	3.80 (40)	4.23 (30)	4.05 (20)	4.71 (7)	3.25 (410)

From the data presented in Tables 8-10 one can come to several conclusions:

(a) There exists a relationship between the esteem given to a person on the basis of his status roles and the opportunities offered to him. Table 8 demonstrated that people perceive such a

relationship to exist in general. Tables 9 and 10 demonstrate that it actually exists (given that the respondents' reports are correct) for the respondents in the sample studied.

(b) From Table 9 one can learn that although all three OPE_{sub}s are correlated with the opportunity indices, the OPE_{subz} has the strongest relationship, from among the three, with the opportunity indices. This fact was also demonstrated when Hypothesis I was tested. It was shown then that the weight assigned to OPE_zs in predicting TOPE (or its substitute) is higher than the weight assigned to either OPE_js or OPE_ks. Theoretically we would expect such a finding, because the OPE_zs are the most relevant to the organization's life, from among the three groups of OPEs.

(c) The combination (the multiple prediction) of the three OPE_{sub}s adds to our ability to explain the variance in the opportunity indices, over and above what is explained by any of them alone. This is true for three out of the four opportunities indices. The fourth one, the intellectual index, is explained by all predictors no better than by the OPE_{subz} alone.

(d) TOPE as operationalized in this study is also related to the opportunity variables. When TOPE is added to the OPE_{sub}s it adds to their prediction power of the opportunity indices. This last fact may be another indication that TOPE is tapping additional variables beside the esteem accorded on the basis of SRs (i.e., performance and personality as was argued in Appendix II).

A basic question that can be asked with regard to Hypothesis III (a) is about the direction of causality. Here we argue that having a given office in an organization brings about it various opportunities to the individual. One could argue exactly the opposite, i.e., that only those individuals who have opportunities to exercise control, who have access to information and who have better human relation skills, will be offered SRs with high OPEs.

Because we have data about previous SRs held by individuals in our sample, we can put these two alternative interpretations to test. The reasoning for the test would be the following:

If the opportunity scores reflect skills, abilities or endowments that the individual carries with him, no matter what SR he holds, then individuals who held offices in the past (but hold them no more) should have the same scores on the opportunity indices as the individuals who hold offices at present (because both were selected into office on the basis of such scores--according to the alternative causal interpretation).

Table 11 presents comparisons between individuals that had offices in the past and those who have organization offices now. (The number of individuals who held offices in previous years (but not now) is very small, due to the fact that most people in offices at present have had them for several years.

It is clear from Table 11 that the alternative hypothesis about the causal direction does not hold and so we conclude in favor of the original hypothesis, i.e., OPEs are causal to the opportunity indices.

All in all, it seems that part (a) of Hypothesis III is supported by the data presented here.

Now we turn to part (b) of Hypothesis III and try to answer question (iii), which specified what the effect of participation should be.

Table 12 presents single correlation coefficients for high and low participative organizations. This table is similar to Table 9 as the correlations are of OPE_s with the opportunity indices. There is, however, this difference: In Table 9 we have used several OPEs from each OPE_{sub} (e.g., OPE_{j70}, OPE_{j69}, OPE_{k70}, OPE_{k69}, etc.) and completed a multiple correlation coefficient on the dependent variables. In Table 12 we use single OPEs to denote the three OPE_{sub}s (i.e., OPE_{j70}, OPE_{k70}, and OPE_{z70} are used). This is because the number of cases in each of the two distinct groups (high and low participative organizations) is too small to justify a multiple correlation. It follows from

Table 11

Mean Scores on the Opportunity Indices for Organization-Office Holders in the Present, Past, and Future[a]

Opportunity indices	Year											
	1970	(N)	SD	1968	(N)	SD	1967	(N)	SD	1971	(N)	SD
Intellectual	3.53	(133)	0.85	3.00*	(5)	0.47	3.11***	(9)	0.13	3.62	(13)	0.10
Interpersonal	3.95	(133)	0.91	3.00***	(5)	0.47	3.44**	(9)	0.55	3.54**	(13)	0.48
Authority	3.79	(134)	0.93	3.60	(5)	0.37	3.44**	(9)	0.30	3.55**	(13)	0.14
Access to information	3.89	(131)	0.95	3.60	(5)	0.37	3.88	(9)	0.28	3.77	(13)	0.72

*p < .10

**p < .05

***p < .01

[a] t values for the difference between 1970 and every other year are calculated.

Table 12

Correlation Coefficients of OPE_{j70}, OPE_{k70}, OPE_{z70}, and TOPE with Four Opportunity Indices for High (Hi) and Low (Lo) Participative Organizations

Independent variables			Intellectual opportunities			Interpersonal opportunities			Authority and control			Access to information		
	Hi	Lo	Hi	Lo	Diff[a]	Hi	Lo	Diff	Hi	Lo	Diff	Hi	Lo	Diff
TOPE	233	287	.38	.36	-.02[b]	.26	.17	-.09	.42	.35	-.07	.47	.34	-.13*
OPE_{j70}	97	133	.26	.18	-.08	.16	.12	-.04	.07	.21	.14	.05	.33	.28**
OPE_{k70}	145	190	.07	.14	.07	-.01	.15	.16*	.01	.14	.13	.01	.16	.17*
OPE_{z70}	130	168	.39	.30	-.09	.35	.36	.01	.59	.42	-.17*	.55	.42	-.13*
Multiple correlation on all 3 OPEs			.46	.34		.39	.38		.59	.45		.55	.50	
Multiple correlation on all 3 OPEs and TOPE			.50	.42		.40	.38		.62	.50		.62	.52	

*$p < .10$ **$p < .05$

[a]Diff means difference.

[b]The sign is in accordance with the original hypothesis. (-) means that the difference is in the opposite direction to the one predicted by the hypothesis.

the above fact that the three OPE_{sub}s will be underestimated in Table 12. This underestimation does not matter with regard to the particular question here, because we are interested in the differences between the correlations of the two groups, on each variable, and not so much in the absolute value of the correlations.

Table 12 indicates clearly that the moderating hypothesis is not supported, but the data offer no hint of the reasons. We expected that on the average the individuals in the more participative organizations would have higher scores on the opportunity indices than the individuals in the low participative organization. This indeed was the case but only for the index of "access to information" was the difference statistically significant. The differences were the following:

Opportunities	High participation	Low participation
Intellectual	3.05	3.02
Interpersonal	3.47	3.34
Authority	3.28	3.18
Access to information	3.44	2.97

We also thought that the variance of the scores would be smaller for the high participative organizations. The trend was in this direction but never approached statistical significance. We thought that the variance of the OPE scores would be the same for both groups. The results show that the variance is larger for the low participation group although this is also not a significant difference. The mean score on the OPE_s was also higher for the high participative organizations.

The fact that the variance was the same for both groups on predictors and dependent variable and that the average scores on both predictors and dependent variables were higher for the high participative organizations may suggest that people in these organizations get more esteem and opportunities (on the average) but that differentiation within organizations is about the same. This looks like an analogous

phenomenon to the one found by Tannenbaum et al. (1968) in studies of the control graph, i.e., that different organization practices would bring about an elevation in the control graph and not necessarily a change in the slope.

D. The Relationship of TOPE and the Opportunity Indices with Mental Health Variables

Section (D) in Chapter I suggested that mental health variables are affected by the opportunity indices and by TOPE. The opportunity indices were said to act as intervening variables between TOPE and the mental health variables. It was further hypothesized (following Sherwood, 1962) that the opportunity indices were not the only intervening route between TOPE and the mental health variables. Total Subjective Public Esteem (TSPE) was conceived also to act as another intervening route. It was argued that TSPE intervenes between TOPE and the variable of self esteem (SE).

The mental health variables used here are from two content clusters. The first cluster is work-related and it includes items measuring job satisfaction and involvement (Qs 35, 103, and 30). The second cluster of variables represent what may be called mental health in general, i.e.:

(1) Affective states: depression, resentment, and self esteem (Qs 44a,c; 44b,d; 44e,f; 106).

(2) Indices of alienation: social isolation (Qs 45a,b); powerlessness (Q45c,d); meaninglessness (Q45e,f); self alienation (Q45g,h); normlessness (Qs 45i,j).

(3) Self reported physical symptoms (Qs 46a,b,d-f).

(4) Documented number of visits to the dispensary (during a two-week period) and to the physician (during a three-month period).

(5) Documented number of sick days per three-month period.

We present now the hypothesis related to these sections in their formal form and follow each of them by presentation of the data relevant

to it.

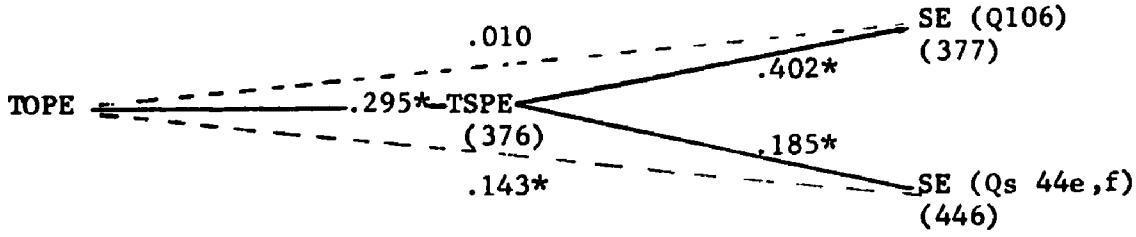
Hypothesis IV: There tends to be a positive association between TOPE and the mental health index of self esteem through the intervening variable of total-subjective-public-esteem (TSPE).

Self esteem was inferred from two questions. The first (Q106) asked directly "What is the esteem that you would assign to yourself?" The respondent was required to select a score from a six-category scale. The second index was the mean score over questions which asked the respondent to indicate on five point scales how true the following statements were: (44e) "Usually everything I try seems to fail," and (44f) "I sometimes feel that my life is not very useful."

The following correlation coefficients were found among TOPE, TSPE, and the two measures of self esteem are shown in Figure 2.

Figure 2

Correlation Coefficients Among TOPE, TSPE, and SE Measures



*p < .01

[a]Numbers in parentheses indicate the N size.

The results in Figure 2 are clearly supportive of the hypothesis. One can see that the correlation coefficients of TOPE with the SE measures are lower than those of TOPE with TSPE and of the latter's with the SE measures. This pattern of relationship, although not a necessary one for proof of the existence of an intervening variable, is a sufficient condition for such a proof. (When we partial TSPE out of the relationship of TOPE to SE (Qs 44e,f), the correlation drops from .143 to .09.)

Hypothesis V will be revised somewhat from the formulation in the text of Chapter I. This change is due to the fact that we did not have in this study appropriate measures to test the hypothesis in its original form. The revised version is the following:

> Hypothesis V: There tends to be a positive association between the opportunity-indices and mental health variables. In particular the association is higher with mental health variables which are organization-relevant (satisfaction with the job and with the organization).

The findings relevant to this hypothesis are presented in Table 13 and Table 14. Table 13 presents the correlation coefficients of the opportunity indices with the mental health variables. The table displays single correlations (each opportunity index with each mental health variable) as well as multiple correlation coefficients of all four indices on each mental health variable.

Table 14 is an illustration of the actual spread of scores of several mental health variables on the intellectual opportunity index. The aim of this example is to give the reader a feel for the pattern of the associations.

Several conclusions can be drawn from the results displayed in Table 13.

(a) The general hypothesis is supported, i.e., there exists a fairly strong association in the expected direction between opportunity indices and mental health indices.

(b) This relationship is stronger for the organization-relevant mental health variables than for the general mental health indices--as predicted by the hypothesis.

(c) The four opportunity indices are differentially associated with the various mental variables. The best predictor of organization-relevant variables is the intellectual-opportunity index, which in fact explains more than three times as much of the

Table 13

Correlation Coefficients between the Opportunity Indices and Mental Health Variables
(465 < N < 490 for all variables except where noted differently)

The opportunity index that is highest in its association with each dependent variable is put in brackets

Mental health variables	Intellectual opportunities	Interpersonal opportunities	Control and authority	Access to information	Multiple correlations of all opportunity indices
Organization relevant					
Satisfaction with job	[.44]***	.10 **	.24 **	.07 **	.47 ***
Satisfaction with organization	[.40]***	.10 **	.20 **	.11 **	.41 ***
Job involvement	[.21]**	.05	.18 **	.07 **	.24 ***
Affective states[a]					
Resentment	.15 **	.12 **	.06 *	[.16]**	.21 ***
Depression	[.21]**	.14 **	.08 **	.17 **	.25 ***
Self esteem (Q44e,f)	[.14]**	.10 **	[.14]**	.12 **	.17 ***
Self esteem (Q106) (N=377)	.19 **	.04	[.22]**	.16 **	.26 **
Alienation[a]					
Social isolation	[.25]**	.20 **	.05	.14 **	.30 ***
Powerlessness	[.32]**	.18 **	.13 **	.24 **	.36 ***
Meaninglessness	.17 **	.14 **	.07 *	[.24]**	.28 ***
Self alienation	[.30]**	.10 **	.13 **	.19 **	.32 ***
Normlessness	.12 **	.14 **	.04	[.20]**	.25 ***
Physical health					
Self reported symptoms	.04	.03	.06 *	[.11]**	.11
Dispensary visits (N=96)	-.01	[-.19]**	-.07	-.18 **	-.26 *
Visits to physician (N=86)	-.05	-.23 **	-.04	[-.37]***	-.45 ***
Sick days (N=303)	-.09 *	[-.14]***	-.12 **	-.13 **	-.17 **

*p < .10 **p < .05 ***p < .01

[a]The scale of the question is reversed so that the higher the score is on the variable, the less of the quantity implied by the name.

Table 14

Mean Scores of Several Mental Health Variables as a Function of Scores on the Intellectual Opportunity Index

(Ns are displayed in parentheses)

	Intellectual opportunity index					Grand mean
	1	2	3	4	5	
Satisfaction with work[a] (Q35)	2.57 (28)	3.19 (97)	3.55 (205)	4.04 (120)	4.56 (27)	3.60 (477)
Satisfaction with organization (Q103)	2.96 (27)	3.19 (95)	3.63 (206)	4.12 (121)	4.39 (26)	3.67 (475)
Depression (Q44a,c)	4.24 (25)	4.19 (93)	4.47 (199)	4.72 (118)	4.70 (27)	4.48 (462)
Resentment	4.26 (27)	4.24 (91)	4.34 (201)	4.56 (119)	4.78 (27)	4.40 (465)
Alienation (social isolation) (Q45a,b)	2.82 (28)	3.62 (95)	3.84 (204)	3.97 (121)	4.19 (26)	3.79 (474)
Alienation (powerlessness) (Q45c,d)	2.63 (27)	3.27 (92)	3.52 (202)	3.95 (121)	4.22 (27)	3.57 (469)

[a]All mental health variables displayed here are on five-point scales.

variance in the mental health variables, as any other opportunity index. In other groups of mental health variables the lead in prediction is spread and often in a meaningful way. For example, "meaninglessness" and "normlessness" are associated most strongly with "access to information"; that is, the less informed a person is, the more meaningless and normless the world seems to him.

(d) It is interesting to note that the index of interpersonal opportunities is relatively low in its associations with the various groups of mental health variables, except for the group that deals with physical health. That seems to be a genuine example of psychological illness-behavior which can be interpreted as follows: Those respondents who have lesser opportunities for affiliative and other interpersonal relationships seek such relationships by acting sick or ill and thus attracting care and contact with others (the nurse, the physician, the family).

(e) From the correlations of the opportunity indices with the physical health variables one can conclude two things:

(i) the "self reported symptoms" variable does not fulfill the expectations that we had with regard to its construct validity: it does not correlate to any reasonable degree with the independent variables. Partly this failure can be explained by the fact that the standard deviation of this variable was very small compared to other variables (.672 for a five point scale), but this explanation is not satisfactory because there are other variables with similar levels of standard-deviations and their correlations are higher (e.g., self esteem, question 106, has a standard deviation of .776 for a six point scale).

(ii) The second point that should be noted in this group of correlations is that the variable of "visits to the physician" is a more sensitive variable than the one of "sick-days." (The variable of the dispensary visits is not very sensitive but that can be explained by its apparently low reliability. It was measured only for a two-week period and for 96 respondents.

Tables 13 and 14 lead one to conclude that Hypothesis V is supported by the findings of this study.

Hypothesis VI: The opportunity indices are another intervening route through which TOPE affects the mental health indices.

Hypothesis IV has shown that TSPE acts as an intervening variable between TOPE and SE. Hypothesis VI states that the opportunity indices act in the same role--but for other dependent variables. In operationalizing the hypothesis we will have to consider several modifications.

(a) It was shown in the test of the previous hypothesis that the opportunity indices are associated more strongly with mental health variables that are organizational-relevant, than with these that are more general. This fact has to be incorporated into the current hypothesis. The first modification would be that the opportunity indices act in their intervening role more for the organizational-relevant variables than for the general mental-health variables.

(b) In previous sections of this chapter, as well as in Appendix II, we have demonstrated that TOPE as operationalized here is a more general measure of esteem than intended. It measures not only the esteem accorded to a person on the basis of his SRs but also the esteem accorded on the basis of his performance in his SRs and probably on the basis of his personal traits, abilities, intelligence and the like. The opportunity indices are assumed to be associated with that part of TOPE that is due to the SRs which a person holds. This is another reason why the opportunity indices should display more of an intervening character with organizationally-relevant variables than with general variables of mental health.

The particular characteristics of TOPE as operationalized here suggest that a measure that would represent more purely the $OPE_{sub}s$

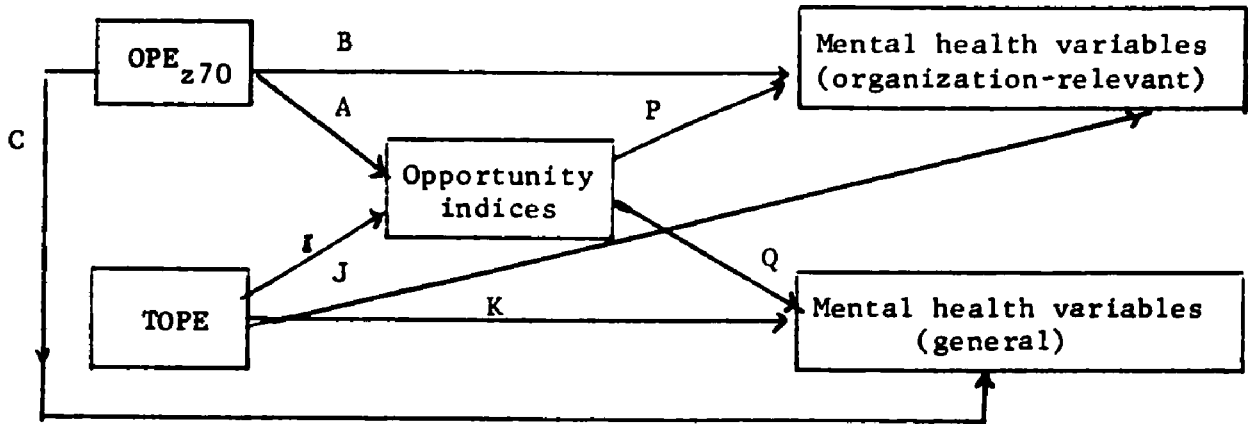
would demonstrate better the intervening role of the opportunity indices. Unfortunately, we do not have a measure that reflects all the variance that might be explained by the OPE_{sub}s in the opportunity indices (that is exactly what TOPE was intended to be), but we can estimate the pattern of associations of such a variable with both the opportunity indices and the mental health indices. A good estimate would be achieved by the use of OPE_{z70} which, as we have already seen, is the most important variable among the OPEs in predicting the opportunity indices.

Figure 3 is a model of the relationships between TOPE, OPE_{z70}, the opportunity indices, the organization-relevant mental health variables, and the general mental health variables. The text that follows Figure 3 is a statement of the requirements to demonstrate that Hypothesis VI with its modifications is supported by the data.

Figure 3

The Causal Flow of the Relationships between TOPE, OPE_{z70}, Opportunity Indices and Mental Health Variables (Organization-Relevant and General)

(The letters on the connecting lines designate correlation coefficients)



In order to prove or test the intervening role of the opportunity indices, one first has to state several assumptions.

(i) The data presented for Hypothesis VI do not give us all the information needed to state whether TOPE and OPE_{z70} are causal

to the opportunity indices or if it is the other way around, i.e., the opportunity indices are causal to TOPE and OPE_{z70}. We have to assume that TOPE and OPE_{z70} are the causal variables if we want to treat the opportunity indices as intervening variables. The basis for that assumption is provided by the results of Hypothesis III and the discussions that followed, presented in section (c) of this chapter.

(ii) We would have also to assume that the mental health variables are not causal to the opportunity indices. (We can then test if the opportunity variables are causal to the mental health variables or if both are results of the independent variable or whether there is no relationship whatsoever.) Our data do not allow us to demonstrate this assumption because we do not have longitudinal measures. However, the whole argument in Chapter I section (D) points out theoretical as well as empirical reasons in support of the assumption and we adopt it here.

(iii) It has to be assumed that TOPE and OPE_{z70} explain a sizeable proportion of the variance in the opportunity indices. This has been demonstrated by the findings presented in Hypothesis III, where it was shown that the OPE_{sub}s plus TOPE explain from 25% to 45% of the variance in the opportunity indices.

Given that the assumptions are correct, to support Hypothesis VI we should be able to demonstrate that:

(a) The direct correlations of TOPE and OPE_{z70} with mental-health indices are smaller than their correlations with the opportunity indices and correlations of the latter with the mental health variables. That is, $B < A$, $B < P$, $C < A$, $C < Q$, $K < I$, $K < Q$, $J < I$, $J < P$. If these conditions are fulfilled, we may conclude that the opportunity variables mediate the relationship between TOPE and OPE_{z70} and the mental health variables, and we need not resort to any additional test. The fulfillment of this condition, however, is not a necessary one for the demonstration

of the intervening role of a variable. It could very well be that the opportunity indices are just one intervening route in the model and other such routes exist but we have not tapped them (or are intentionally not dealing with them). A relevant example is the TSPE variable, that was shown to act as another intervening route in Hypothesis IV. If there exists such other intervening routes we still could show that the opportunity indices act in their intervening role for some of the relationship between the independent and the dependent variables (in our case, TOPE and OPE_{z70} with the mental health variables).

(b) The requirement of the last paragraph can be checked by partialling out the opportunity variables from the relationship of the independent to the dependent variable. If these last correlations drop when such a partialling out occurs, then one may conclude in favor of the intervening phenomenon.

(c) Another way to test the same phenomenon as dealt with in (b) above is the following: If the multiple correlation of both TOPE (and/or OPE_{z70}) and the opportunity indices explains more of the variance of the mental health indices than would be explained by any of them alone, (and if assumption [i] is correct), then one may conclude that the opportunity indices act in an intervening role.

It should be re-emphasized here that the fulfillment of the requirements in (a), (b) and (c) above would carry with it the inferences suggested there only if assumptions (i), (ii) and (iii) hold. If these three assumptions are not reasonable then the same condition would be interpreted differently. For example, condition (a) could be achieved when the opportunity indices are causal to both TOPE (or OPE_{z70}) and the mental health variables have no (or low) relationship between the last two. Condition (c) could be fulfilled if both TOPE and the opportunity variables caused (or were caused by) the mental health variables, without any association between them. One could think of many more such alternative explanations. That is why the assumptions are so important.

Table 15 presents the basis for testing whether or not requirement (a) holds. We present in it the correlation coefficients of TOPE and OPE_{z70} with the mental health variables. We also repeat in the table the presentation of the correlation coefficients of that index of the opportunity variables that had the highest correlation with each of the mental health variables, so that the reader can check whether or not condition (a) is fulfilled. (The correlations with only one opportunity index are given, rather than the multiple, because we use OPE_{z70} as an estimate of the independent variable although it is only one component of a potential index. Hence, condition (c) could be demonstrated more easily by using all opportunity variable indices combined in relation to OPE_{z70}. We elect to work against the hypothesis so that if it is supported we may trust it more. The variables of self esteem are not included in Table 15 because we have used them to demonstrate the intervening effect of TSPE.

Table 15 demonstrates in a fairly clear way that condition (a), for a proof of the existence of an intervening variable, is fulfilled. Out of the 28 correlation coefficients displayed in the table as relevant for the test (14 for TOPE and 14 for OPE_{z70}), 24 stand up to the full requirement and 4 fulfill only part of it.

If we test for condition (c), whether the addition of TOPE and OPE_{z70} to the multiple regression of the opportunity indices on the mental health variables increases the level of prediction, we find that indeed it does so but much less for organization-relevant variables than for the rest. This finding supports the first modification of the hypo hypothesis: the opportunity indices play the strongest intervening role where organization-relevant variables are concerned. This last point is also confirmed by the fact that on the average the correlation coefficient of TOPE and OPE_{z70} are lower with the organization-relevant variables than with the general mental health variables (from the four groups of variables displayed in Table 14). The correlation coefficients of the opportunity indices, on the other hand, are highest with this organization-relevant group of variables. Also, the additional variance explained by TOPE or OPE_{z70} as against the variance explained by the

Table 15

Correlation Coefficients of TOPE, OPE_{z70}, and the Best Representative of the Opportunity Indices with Mental Health Variables[a]

Mental health variables	Opportunity index (best predictor) out of four)	TOPE	OPE_{z70}	Multiple correlations of TOPE, OPE_{z70} and opportunities
Organization relevant				
Satisfaction with job	.44*	(+)[b].16	(+) .10	.47
Satisfaction with organization	.40*	(+) .11	(+) .11	.41
Job involvement	.21*	(+) .18	(+) .18	.28
Affective states				
Resentment	.16****	(-)[c].20	(+) .13	.25
Depression	.21*	(+) .19	(+) .17	.29
Alienation				
Social isolation	.25*	(+) .16	(+) .15	.32
Powerlessness	.32*	(+) .26	(+) .19	.39
Meaninglessness	.24****	(+) .11	(+) .18	.30
Self alienation	.30*	(+) .23	(+) .15	.34
Normlessness	.20****	(+) .15	(-) .24	.26
Physical health				
Self reported symptoms	.11****	(+) .07	(+) .02	.12
Dispensary visits	-.19**	(+)-.07	(+)-.13	-.26
Visits to physician	-.37****	(+)-.35	(+)-.14	-.53
Sick days	-.14**	(-)-.19	(-)-.19	-.24

*indicates that the intellectual opportunity index is used.
**indicates that the interpersonal opportunity index is used.
***indicates that the control and authority index is used.
****indicates that the access to information index is sued.

[a]The correlation coefficients of TOPE with four opportunity indices (in the following order: intellectual, interpersonal, authority, access to information) are: .33, .01, .36, .36. The correlation coefficients of OPE_{z70} with the opportunity indices (in the same order as for TOPE) are: .35, .35, .51, .46.

[b](+) indicates that condition (a) is fully achieved, i.e., the correlation of TOPE or OPE_{z70} with the mental health variable is weaker than the correlation of TOPE or OPE_{z70} to the opportunity index or the latter's to the mental health variable.

[c](-) indicates that only part of condition (a) is fulfilled, i.e., the correlation of TOPE or OPE_{z70} with the mental health variable is not smaller than the correlation of the opportunity index with the same variable.

opportunity indices is highest for the organization-relevant group of mental health variables.

The second modification of the hypothesis is also supported by Table 14. The modification suggested that OPE_{z70} would have less explanatory power left than TOPE when the opportunity indices are partialled out of the relationship of TOPE or OPE_{z70} with the mental health variables. Without going into computations, the reader can see that this is the case because the correlations of TOPE with the opportunity indices are weaker than the correlations of the latter with OPE_{z70}. On the other hand, the correlations of TOPE with the mental health variables are stronger than those of the OPE_{z70} with them. The reader should be cautioned of the possibility that part of the relatively high association of the opportunity indices to the satisfaction variables may be attributed to the fact that people may consider such an association as an expected one and therefore report to that effect even if it is not entirely true. In view of all the above evidence we can conclude in favor of Hypothesis VI.

E. The Relationship of Opportunity Indices and TOPE to Performance Variables

This section will handle questions similar to those discussed in the previous section. Here we deal with the way that performance, rather than mental health, variables relate to both TOPE and the opportunity variables. In section (e) of Chapter I we specified that by performance variables we mean to include not only the strict measure of performance indicated by quality or quantity, but other indices of individual behavior that can be expected to affect the performance of the organization. Below we will present the list of variables that are considered to belong to that cluster of performance variables. This list is reproduced from Chapter II:

(a) Commitment: to "own work," to "own work-group" and to "the whole organization." This variable was measured by asking the respondent to what extent he feels responsible for the success of each of the three entities mentioned above. These

are examples of indirect measures of performance. It is assumed that the more committed a person is, the more effort he will put into his work and hence, the better his performance.

(b) Innovative behavior, extra work, and involvement with regard to one's work. We have measured these by asking the respondent to report the extent to which he behaves in such ways (Qs 29, 31, 32, 34). It was assumed that the more a person engages in innovative behavior, extra time and effort in his work, and studies about his job and related subjects--the more valuable to the organization he is and the more his contributions, potential or actual , to the organization.

(c) Tardiness was measured by a self-report of the respondent about the frequency of his being late in coming to work in the "last two-week period." Here it is assumed that if a person is late in reporting to his work, he not only works less time but he also impairs the production of others who depend upon his own production.

There is an extra assumption inherent in the measures employed in (a), (b), and (c) above: the assumption that self-reports are valid representations of actual behavior. This, of course, is true to a certain extent only, but as we do not have better measures of the same variables, we will have to be content with this assumption.

(d) Performance was inferred also from the evaluations given by the managers of each organization to each worker on scales of skill-level and knowledge, quality of work, and dependability. The problem with these measures is that we have no way to check their validity nor reliability across judges because for each worker we obtained the evaluations from one person only--the manager. As a substitute approach to reliability determination, we combined the three evaluations (after it was found that they correlate highly with each other). The intra-consistency index of reliability was .89.

(e) Another measure of performance was absenteeism. It was assumed

that people who are absent with a higher rate per a given period, impair the production of the organization more than those who are absent less. The variable was operationalized by counting the number of days each respondent was absent from work during a three month period, for each of the four official reasons given for absence. Theoretically, we expect that people who have less opportunities would be less attracted to the organization and hence, more absent.

The categories of absence were defined as: sick days, days off, vacation, and working in other places. The first three were combined into one index-absenteeism due to the person himself. All the four of them were combined into another index--"total absenteeism."

Now we state the theoretical hypothesis.

Hypothesis VII: There is a positive causal association between variables in the opportunity-set and variables in the performance cluster.

The actual test of the data cannot display what variables are causal to what variables as our data are cross-sectional. The interpretation of causality will have to be on the theoretical and empirical arguments brought up in Chapter I. Here we can demonstrate the degree of association only.

Table 16 is a summary table for the relationships of the various performance measures with the opportunity indices.

In Table 17 we illustrate the distribution of the scores of various performance variables as a function of the authority and control opportunity-index. This table is displayed in order to convey the meaning, in terms of actual distributions, of the correlation coefficients displayed in Table 16.

Tables 16 and 17 suggest several conclusions.

(a) The basic hypothesis about the association between the opportunity indices and the performance variables (as defined here) is supported: out of 68 predictions for association in a given

Table 16

Correlation Coefficients between the Opportunity Indices and Performance Variables
(440 < N < 489 except when noted differently)

The opportunity index which has the highest correlation with each performance variable is designated by brackets

Performance variables	Intellectual opportunities	Interpersonal opportunities	Control and authority	Access to information	Multiple correlations of all opportunity indices
Commitment					
To own work	[.20]***	.15 ***	.15 ***	.12 ***	.22 ***
To own group	.26 ***	.21 ***	[.33]***	.19 ***	.35 ***
To whole plant	.21 ***	.16 ***	[.42]***	.28 ***	.43 ***
Innovating					
Try better ways (Q29)	[.21]***	.05	.17 ***	.13 ***	.23 ***
Tried new approaches (Q34)	[.40]***	.22 ***	.36 ***	.37 ***	.48 ***
Extra work done	.24 ***	.15 ***	[.32]***	.29 ***	.36 ***
Reads relevant books and magazines	.37 ***	.18 ***	.40 ***	[.42]***	.50 ***
Tardiness[a]	-.05	-.10	-.03	-.07	-.15
Evaluation by manager (N=336)					
Skill level	.30 ***	.16 ***	.27 ***	[.31]***	.38 ***
Quality	[.28]***	.12 **	.24 ***	.24 ***	.33 ***
Dependability	[.28]***	.16 ***	[.28]***	.26 ***	.34 ***
All in one index	[.30]***	.16 ***	.28 ***	.29 ***	.37 ***
Absenteeism (N=305)					
Vacation	-.03	.06	-.06	[-.17]***	-.21 ***
Days off	-.06	-.03	-.01	.03	-.09
Working in other place	-.06	-.04	[-.11]**	-.06	-.11
Combined index (1)					
Sickness, days off, vacation	-.10 **	-.11 **	-.14 **	[-.18]***	-.19 ***
Combined index (2)					
All days absent	-.11 **	-.11 **	[-.19]***	-.17 ***	-.21 ***

*p < .10 **p < .05 ***p < .01

[a]The scale of the variable is reversed so that it corresponds to the expected hypothesis.

Table 17

Mean Scores of Several Performance Variables as a Function of Scores on the Control and Authority Index

(N is displayed in parenthesis)

	Control and authority index					Grand mean
	1	2	3	4	5	
Commitment to success of own work group (Q108b)	3.04 (23)	3.37 (73)	3.75 (116)	4.10 (116)	4.07 (41)	3.78 (369)
Commitment to success of whole organization (Q108c)	2.64 (25)	3.33 (86)	3.68 (141)	3.95 (132)	4.40 (56)	3.73 (440)
No. of times tried new approach during last month (Q34)	1.48 (27)	1.83 (86)	2.24 (145)	2.48 (128)	3.75 (25)	2.37 (440)
Frequency of doing extra work (Q31)	2.44 (27)	2.61 (83)	3.09 (152)	3.40 (129)	4.22 (59)	3.20 (450)
General evaluation by manager (7 point scale)	5.06 (18)	4.70 (53)	5.23 (86)	5.81 (74)	5.68 (19)	5.31 (250)
Absenteeism: combined index (2)	16.59 (17)	14.65 (43)	12.68 (77)	12.96 (67)	5.21 (24)	12.11 (228)

situation, 55 are significant at the .05 level or better.

(b) The relationship is weakest with the tardiness behavior. In fact the sign of the relationship is reversed from the direction expected according to the hypothesis. This is unexplainable unless the relationship is entirely mediated by the "satisfaction with work" variables. We will see later that to a certain extent that indeed is the case but even then, too little of the variance is explained. One suspects that the reason is methodological. We asked the respondents to give the number of times that they were late during the "last two weeks." The mean score

was a little less than "once" with a small standard deviation. It is possible that if the length of the time in question was longer, the result would be more conforming to the hypothesis. The cost of such a lengthening in time, could be a deterioration in reliability (due to memory distortions). The cost against the gains should be tested empirically.

(c) The absenteeism components do not correlate very highly with the opportunity indices when each is taken alone (i.e., days-off, vacation, working in other places). When they are combined, as a sum over all days of absence, the correlations go up. This indicates that the expected relationship exists but it is not very strong with few days of absence. It also indicates that absenteeism of all three sources is related to the opportunity indices.

(d) Interesting are the comparisons between Table 16 and Table 13. This comparison shows that there are different patterns of relationship between the opportunity indices and the two groups of dependent variables. In Table 13 the intellectual opportunity index "commands the field." Eight out of the fifteen mental health variables, are best predicted by it. Only two are best predicted by the authority and control index. In Table 17 the picture is different. Six out of the seventeen relationships are best predicted by the control and authority index and the same number by the intellectual opportunity index. It looks as if that is the branching (from the opportunity set) that was theorized in Chapter I, i.e., the control and authority index acts as a facilitator of performance while the intellectual opportunity index works as a motivator.

We now turn to state the next hypothesis:

Hypothesis VIII: The opportunity indices act as intervening variables between TOPE and the performance variables.

In order to test this hypothesis we will have to go through the same procedure as for the test of Hypothesis VI. We make the same three assumptions that we have stated there, except that now we deal with performance variables instead of mental-health variables.

Table 18 is analogous to Table 15, and it also compares the correlation coefficients of TOPE, OPE_{z70} and the opportunity indices with the dependent variables (performance variables).

An inspection of Table 18 shows immediately that the opportunity indices here do not act as strongly in the role of intervening variable as they do in Table 15. Here in nine out of thirty-two correlations, condition (a) is fulfilled only partially and in four correlations (these of TOPE with the evaluations by manager) it is not fulfilled even partially.

This unexpected result with the items of evaluations by the manager has, we believe, a satisfactory explanation. One should remind himself how the TOPE measure was operationalized. Members of the organization evaluated each other on a scale. If the manager is considered as just another individual evaluating members, we would expect the correlation to be high and not affected so much by the opportunity indices. OPE_{z70}, on the other hand, should not affect the manager's evaluation as strongly as TOPE. The effect of OPE_{z70} should be mediated to a greater extent by the opportunity indices. We can test the above speculation by means of the condition (b) for a test of an intervening variable, i.e., by partialling out the effect of the hypothesized intervening variable to see whether the correlation between the independent variable and the dependent variable drops substantially. We would expect a greater proportionate drop in OPE_{z70} than in TOPE.

When the opportunity indices are partialled out of the correlation between TOPE and the manager's evaluations, TOPE still retains 71-80 percent of its predictive powers. When the opportunity indices are partialled out of the correlations between OPE_{z70} and the manager's evaluations, OPE_{z70} drops to 40-55 percent of its initial level of prediction, this means that about 50 percent of the variance in the

Table 18

Correlation Coefficients of TOPE, OPE_{z70} and the Best Representative of the Opportunity Indices with Performance Variables

Performance variables	Opportunity index (best predictor) out of four)	TOPE	OPE_{z70}	Multiple correlations of TOPE, OPE_{z70} and opportunities
Commitment				
To own work	.20 *	(+)[a].14	(+) .04	.24
To own group	.33 ***	(+) .21	(+) .18	.36
To whole plant	.42 ***	(+) .23	(+) .26	.43
Innovating				
Tries better ways	.21 *	(+) .08	(+) .12	.23
Tried new approaches	.40 *	(+) .18	(+) .34	.49
Extra work done	.32 ***	(+) .23	(-) .36	.41
Reads relevant books and magazines	.42 ****	(+) .23	(+) .40	.51
Tardiness	.03	.05	.03	
Evaluation by manager				
Skill level	.31 ****	( ) .44	(+) .30	.50
Quality of work	.28 *	( ) .46	(+) .22	.48
Dependability	.28(*)(***)	( ) .44	(-) .31	.49
All three in one index	.30 *	( ) .48	(-) .31	.52
Absenteeism				
Vacation	-.17 ****	(+)-.14	(+)-.08	-.23
Days off	-.06 *	(+)-.06	(-)-.17	-.22
Working in other places	-.11 ***	(+)-.09	(-)-.11	-.14
Combined index (1)				
Sickness, days off, vacation	-.18 ****	(-)-.25	(-)-.26	-.32
Combined index (2)				
All days absent	-.19 ***	(-)-.24	(-)-.27	-.31

*indicates that the intellectual opportunity index is used.
**indicates that the interpersonal opportunity index is used.
***indicates that the authority and control is used.
****indicates that the access to information index is used.

[a](+) indicates that the correlation of TOPE, or OPE_{z70} with the performance variables is weaker than the correlation of TOPE or OPE_{z70} to the opportunity index and the latter's to the mental health variable.

(-) indicates that only one of the two conditions that are given in the preceding footnote is fulfilled.

( ) indicates that neither of the conditions stated in the first footnote is fulfilled.

evaluation variables that can be explained by OPE_{z70} is mediated by the opportunity indices, while only about 25 percent of the variance explained by TOPE is mediated by the opportunity indices.

To summarize: given the three asuumptions employed here, one can conclude that the opportunity indices are acting as intervening variables between TOPE and OPE_{z70}, and the performance variables. This relationship is strongest among self-reported behavior, or attitudes relevant to performance, and weakest for the variables that deal with absence from work (for which we have no explanation). This intervening role is stronger for correlations involving OPE_{z70} than for TOPE. It is especially weak for the relations of TOPE to the managers' evaluations, and that may be because TOPE and these two variables have a strong method-similarity.

The last of the hypotheses developed in Chapter I is now stated.

Hypothesis IX: (a) There is a positive association between the mental health variables and the performance variables.

(b) More of the variance of the performance variables is explained by both the mental health variables and the opportunity indices than by either of them alone.

This hypothesis was based on the argument that performance is a product of both motivation and facilitation to perform. The organization-relevant mental health variables are supposed to act as motivators, especially with regard to the performance variables of absence from work and tardiness. According to the hypothesis, one would expect that the organization-relevant mental health indices--satisfaction and involvement with job and organization--would contribute to our ability to predict absenteeism and tardiness scores. The less a person is satisfied by his work or organization, the less he will be attracted to his work or organization, and he will demonstrate that by such behavior (if absence from work and tardiness do not involve too great a cost to the individual). Table 19 presents data relevant to the hypothesis.

Table 19

Coefficient Correlations between Absenteeism and Tardiness as a Function of Satisfaction and Involvement with Job and Organization

Absenteeism	Like job (Q35)	Like working in plant/branch (Q103)	Time seems to drag (Q30)
Sickness	.02	.03	-.08
Days off	.10	.08	-.08
Vacation	-.06	.03	.01
Work in other place	-.05	-.05	-.16***
Combined index (1)			
Sickness, days off, vacation	.05	.08	-.03
Combined index (2)			
Sickness, days off, vacation, work in other place	.00	.03	-.15***
Tardiness	.11***	.15***	.25***

***$p < .01$

Absenteeism variables are shown there as a function of the satisfaction and involvement variables.

It is interesting to note that the data in Table 19 support the hypothesis in a peculiar way. The only performance variable that is associated with strength (in the predicted direction) with all three predictors, is the variable of tardiness. It may be remembered that in Table 16 no relationship was found between the opportunity indices and the tardiness variable if anything, The direction of association was even opposite to the one expected (although not in a significant way). So part (b) of hypothesis is supported not by the fact that the mental health variables add to the strength of prediction of performance variables that are already predicted by the opportunity indices, but rather by predicting outcomes that are not accounted for otherwise.

Although responses to question 30 are also associated with the variable of absence "due to work in other assignment," they do not add to the variance explained by the opportunity indices, TOPE and OPE_z. Nevertheless it is interesting to speculate about why of all absenteeism variables the highest association of the involvement variable occurs with this one (Q30). Could it be that in a work oriented society, like the Kibbutz, absenteeism from work is not an acceptable way of "protest," but shifting to another job is more acceptable.

This concludes the testing of all hypotheses stated in Chapter I. In the next section we attempt an evaluative summary of the extent to which the theory stands up to the test by data.

F. An Evaluative Summary of the Theory in View of the Data

The theory postulated hypotheses that may be classified into two groups. One group of hypotheses predicted that certain variables will be related to certain other variables. The second class of hypotheses may be called "the refiners." These hypotheses predicted that some relationships of the first group will be modified according to certain conditions.

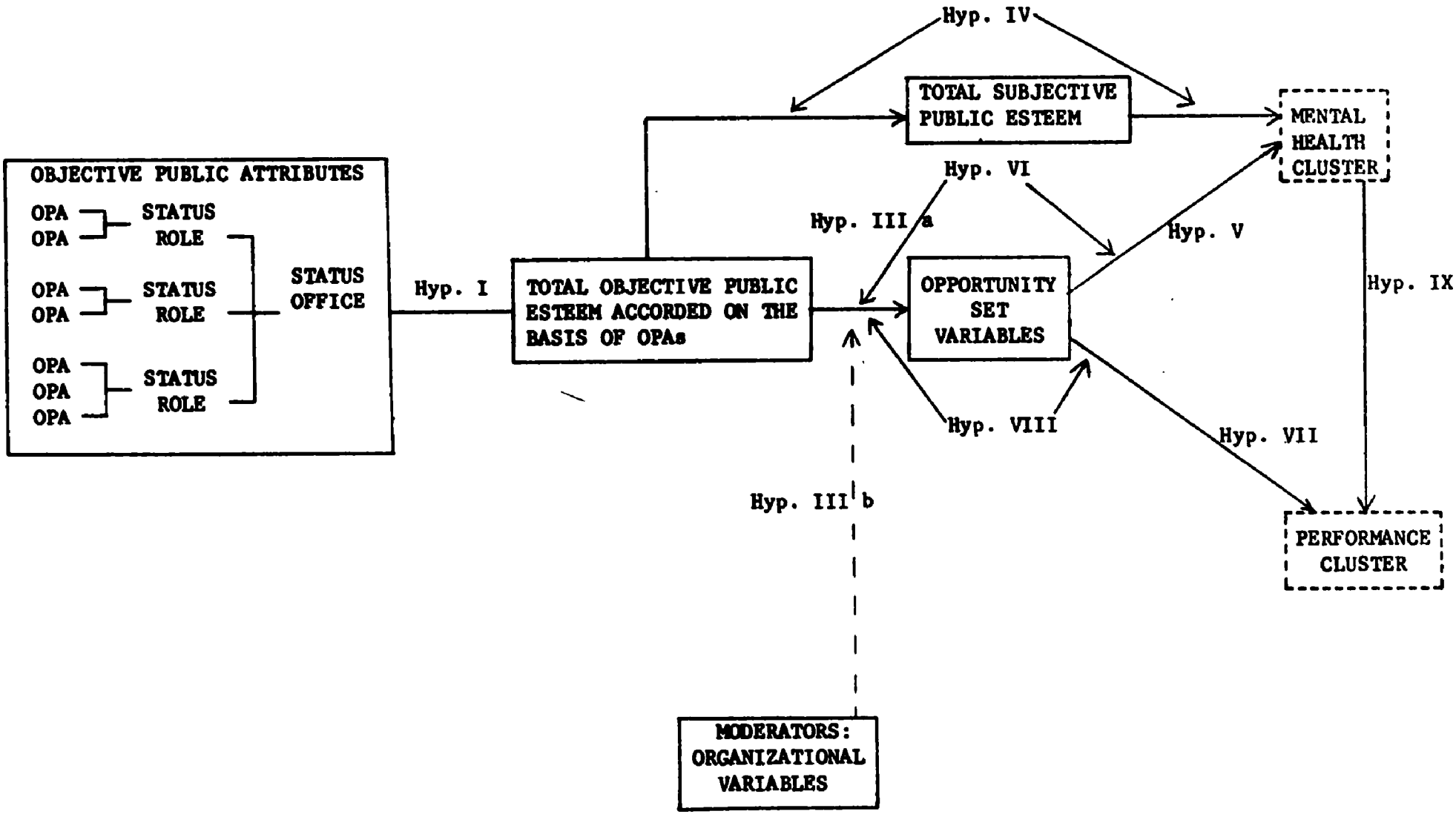
Perhaps the best way to go about evaluating the extent to which the hypotheses of the first group were sustained is to redraw Fig. 1 (Ch. 1) where we have introduced the theoretical model. Each of the connecting lines in Figure 1 in fact represents a hypothesis about associations between variables. By following these lines we will cover all hypotheses of the first kind. Figure 4 is a reproduction of Figure 1 with some small modification, and it does not include untested relationships. Each connecting line is assigned a number which identifies the hypothesis that predicted it.

We now read Figure 4 from left to right:

(1) Hypothesis I was not offered in a simple manner, i.e., both parts (a and b) of it were "refiners" in the sense used earlier. Implicitly, however, it predicts a relationship between OPE_s or OPE_{sub}s and TOPE. This relationship has been established by the data.

Figure 4. General Theoretical Model For Individual Level of Analysis

Hypothesis numbers are assigned to their respective locations in the model.



(2) Hypothesis III(a) predicted a relationship between TOPE (or its components) and the opportunity indices. This relationship has been borne out strongly. The association was predicted to be of a causal nature. This was also mildly supported.

(3) Hypothesis IV predicted a relationship of TOPE with self-esteem through the mediation of TSPE This was supported by the data.

(4) Hypothesis V predicted a positive association between opportunity indices and mental health variables. This was confirmed.

(5) Hypothesis VI suggested that the opportunity indices act in an intervening role between TOPE and the mental health variables. The data has supported this idea.

(6) Hypothesis VII predicted an association between the opportunity indices and the performance variables. This association was found.

(7) Hypothesis VIII suggested that the opportunity indices act in an intervening role between TOPE and the performance variables. Although the confirmation of this hypothesis was weaker than the analogous one for mental health variables, still it was confirmed in general.

(8) Hypothesis IX predicted relationships between mental health variables and the performance variables. This was supported only to a very limited extent.

If we summarize the fate of the hypotheses about major associations among variables, we see that all eight of them were supported to an acceptable (at least) degree of strength. The fate of the refining hypotheses was not so happy.

(9) Hypothesis I(a) predicted an asymptotic function of TOPE on $OPE_{sub}s$. We could not demonstrate this but the possibility remained open that the fault is in the measures and not in the predictions.

(10) Hypothesis I(b) predicted a decelerating function of TOPE on $OPE_{sub}s$. We could not demonstrate this either, but an encouraging hint in the right direction was found. Again the possibility remained that with better data this effect will be more visible.

(11) Hypothesis II(a) predicted that past and future OPE_s will be associated with TOPE. This was supported by the data.

(12) Hypothesis II(b) predicted that the further away a given OPE is from the present, the less strong its association with TOPE. Results were in the right direction but too weak to be trusted without reservation.

(13) Hypothesis III(b) predicted a moderating effect on the relationships between TOPE and the opportunity indices by the participativeness factor. The moderating effect was not found and we could not explain the results.

(14) and (15) Hypotheses V and VI were modified to the effect that the relationships between the opportunity indices and the mental health variables are stronger for the organization-relevant variables than for the general mental health indices. The second modification was that the opportunity indices act in their intervening role more strongly for the organization-relevant variables than for the general mental health variables. Both these modifications were supported by the data.

In general, one can conclude quite confidently that the theory that was developed in this paper and the model generated by it stood up to the test of real life. Out of about 15 predictions, only one did not come out at all. Another two did not come out, but there remained hope that with better data they may be confirmed. All the major associations came out and many times with great strength. The confirmations of the hypotheses give support and strength to those who believe that it is possible to conduct social organizations under the guidance of scientific laws.

Perhaps even more important than the confirmation of the hypotheses per se is the fact that they were confirmed in the context of the Israeli Kibbutzim. The principles upon which the theory in this paper was based were developed mainly in the context of a Western capitalistic society, the United States. The Kibbutz is as different in its principles of life from the United States as one could think of, yet predictions based on knowledge accumulated in the United States are confirmed

in the Kibbutz. This is strong indication that the principles of organizational psychology dealt with in this study are approaching the status of scientific laws in the sense that they can be generalized across cultures.

This study was prompted by an interest in structural variables of organizations. In particular, interest was focused upon structural variables that can be changed in any direction which the decision makers of an organization may choose.

It was assumed that the status structure of an organization can be so manipulated. We aimed to show how the causal variables of status can affect performance and mental health at the individual level. The next step is to draw the relevant conclusions for the level of organizations. In an earlier paper (Levitan, 1969), we have stated the implications for action (and research) on the organizational level if the hypotheses of the individual level of analysis are supported. We will not repeat the theoretical developments of that aforementioned paper, except for the major principle. The basic idea was that, if high status (individual) brings with it benefits to the individual (mental health) and to the organization (performance), increasing the proportion of individuals with high status within a given organization would almost by definition increase the proportion of good performers and health people in that organization. The paper has also suggested that additional variables will be at work, mostly on the group level, that would enhance the organization's performance. The main suggestions for action that were advanced in that paper were to create low correlations within individuals across OPE_s (or OPE_{sub}s) as the way to achieve a high proportion of individuals with high status. Now that the basic hypotheses on the individual level have been supported, the way is open to test their implications for organizations.

APPENDIX I

Questionnaire Items*

(Translation from the Hebrew version)

I. STATUS ROLES

A. Kibbutz Offices

Now we would like you to tell us about your current and past occupational and public life in the kibbutz and this work place.

5. Please write in the table below all the elective offices that you have held in the past five years (from 1966 through to 1970). (Examples of elective offices would be committee chairmanships and memberships; offices like treasurer, secretary and farm coordinator and the like.

	Years				
Offices	1970/69	1969/68	1968/67	1967/66	1966/65
1.					
2.					
3.					

6. What offices will you have in the kibbutz next year 1971/70?

a. (Write all that is known) . . .

b. I do not know anything yet.

* The questionnaire items are numbered here with the same numbers that they had in the actual administration.

B. Organizational Offices

9. Please write in the table below all the offices that you have held in this plant (branch) in the last five years. (If you started to work here after 1966, count only the years from the one indicated in your answer to Question 7). (Examples of such offices would be committee chairmanship, membership, work coordinator, departmental manager, plant manager, etc.)

	Years				
Offices	1970/69	1969/68	1968/67	1967/66	1966/65
1.					
2.					
3.					

10. What offices in the plant will you hold next year, 1971/70?

a. (Write all that is known) . . .

b. I don't know anything yet.

C. Jobs

11. This question is similar to Question 9, only now we ask about jobs, instead of offices-in-the-plant, held in the past five years. Write in the table below all the jobs you have held in the past five years in this plant/branch (use the attached list of jobs to select the proper names).

Jobs	Years				
	1970/69	1969/68	1968/67	1967/66	1966/65
1.					
2.					

12. What jobs will you have next year, 1971/70?

(1) _____

(2) I don't know anything yet.

II. OBJECTIVE PUBLIC ESTEEM IN SUBSYSTEMS ($OPE_{sub}s$)

A. The "Positional" Method

(a) Job Esteem

15. The list that follows consists of several jobs in the plant (branch). Please indicate near each job, what is the esteem that is generally attached to it (a) by yourself and (b) by most other workers. Select your scores from a scale that consists of 7 categories as follows: 7. Maximum esteem*

.
.
.
.
.

1. Very little esteem

---

*This and all other scales employed in the questions were using adjectives for all categories. These adjectives are not translated into English because it would be hard to connote exactly the same meaning for each category.

Please write the scores under (a) and (b) respectively.

List of Jobs (unique to the organization)	(a) Esteem attached by yourself	(b) Esteem attached by most others
.....	.....	.....
.....	.....	.....
.....	.....	.....

(b) Organizational Office Esteem

16. The list below is that of the several roles and committees that exist in the plant (branch). Please indicate near each of the roles what is the esteem attached to that role by (a) yourself and (b) most other members of the plant (poultry branch). Select your scores from a scale that consists of 7 categories as follows: 7. Maximum esteem

. . . . .

1. Very little esteem

Please write the scores under (a) and (b) respectively.

List of Elective Roles (unique to the organization)	(a) Esteem attached by yourself	(b) Esteem attached by most others
.....	.....	.....
.....	.....	.....
.....	.....	.....

(c) Kibbutz Office Esteem

17. The list below is that of central elective offices within the framework of the kibbutz at large. Please indicate near each of the offices what is the esteem attached to that particular office by (a) yourself and (b) most other members of the plant (poultry branch).

Select your score from a scale that consists of 7 categories as follows: 7. Maximum esteem

.
.
.
.
.

1. Very little esteem

Please write the scores under (a) and (b).

List of Elective Offices in the Kibbutz*	(a) Esteem attached by yourself	(b) Esteem attached by most others
.....	.....	.....
.....	.....	.....
.....	.....	.....

B. The Personal Method

In this section we will include the items that were intended to measure another two variables:

Total Objective Public Esteem--TOPE (Q. 105)

Total Subjective Public Esteem--TSPE (Q. 104)

---

*This list was a standard one for all respondents. It consisted of ten kibbutz office names that represented three levels of centrality as specified in Chapter II.

These two variables have to go together with the personal method of measurement of OPE_{sub}s because the instructions to all the three questions were the same.

In the next section we would like to find out the extent to which people possess "Social Intelligence," i.e., to what extent can people guess correctly how others feel about them. In the several questions that follow, you will be asked to guess how other persons in your social environment perceive and evaluate you in various spheres of relevant social life. You will be asked, on the other hand, to supply information about how you feel and evaluate others in the same spheres, so that we will be able to check about the social intelligence of others. Please try to answer all the questions to the best of your knowledge (indicate the extent of that esteem by selecting a number from a continuum that runs from 0-100. "0" would stand for "no esteem at all;" "100" would stand for "maximum esteem" and the numbers in between would stand for intermediate degrees of esteem).

104. In your opinion, how much esteem do you generally get from the majority of the plant (branch) workers? Write the correct number at the end of the following sentence.

The esteem given to me by most workers is _____.

105. Below you'll find a list of several members of the plant (branch) who participate in this study. Please indicate near each name the extent of esteem given to each member by (a) yourself and (b) most other members in this plant (branch).

Name	(a) Esteem given by yourself	(b) Esteem given by most others
.....	.....	.....
.....	.....	.....
.....	.....	.....

106. Below you will find again the same list of members. Now we would like you to assign six scores to each individual, under the headings of (a), (b), (c), etc. Each score should be selected from the range of 0-100, just as had been done in the previous questions.

	Esteem given on the basis of the job in the plant (branch)		Esteem given on the basis of the office held in the plant (branch)		Esteem given on the basis of the office held in the kibbutz (outside plant)	
Name	(a) In your opinion	(b) In the opinion of most other workers	(c) In your opinion	(d) In the opinion of most other workers	(e) In your opinion	(f) In the opinion of most other workers
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....

III. OPPORTUNITY-SET VARIABLES

A. Intellectual Opportunities Index

(Source: Tannenbaum et al., 1970)

20. In your work, to what extent can you

(Circle one number on each line across.)

	Not at all	A little	Some-what	Quite a bit	Very much
a. Learn new things?	1	2	3	4	5
b. Use your own ideas?	1	2	3	4	5
c. Do interesting work?	1	2	3	4	5
d. Use your skills, knowledge and abilities?	1	2	3	4	5
i. Try any unconventional ways or methods of doing your job?	1	2	3	4	5

B. Interpersonal and Affiliative Opportunities Index

20. In your work, to what extent can you

(Circle one number on each line across.)

	Not at all	A little	Some-what	Quite a bit	Very much
e. Talk with other people during work time?	1	2	3	4	5
h. Develop competence and skills in dealing with various kinds of people?	1	2	3	4	5

C. Authority and Control over One's Environment Index

20. In your work, to what extent can you

(Circle one number on each line across.)

	Not at all	A little	Some-what	Quite a bit	Very much
g. Have authority over other people?	1	2	3	4	5

22. In general, how much responsibility do you have in the plant (branch)?

6. I have a very great deal of it.
.
.
.
.
1. I have very little of it.

73.

e. How much influence do you, personally, actually have on what happens in this plant?

1. Very little influence.
.
.
.
5. A great deal of influence.

D. Access to Information and Knowledge Relevant to the Organization Index

58. To what extent are you familiar with what is happening in the plant (branch) in the following 4 spheres?

	To a very little extent				To a very great extent
Yearly Production Plan	1	2	3	4	5
Yearly Investment Plan	1	2	3	4	5
Economical Outcomes	1	2	3	4	5
Technological Problems	1	2	3	4	5

59. Do you know how your present job fits into the functioning of this plant?

    1. I don't know at all.
    2. I know slightly.
    3. I know somewhat.
    4. I know quite well.
    5. I know completely.

E. Advantages and Disadvantages Associated with Moving into Higher Positions within the Organization

77. What do you think are the main advantages, or disadvantages, of moving into a higher position in this plant (branch)? (Please choose the three most important and place the number 1 before the first most important, 2 before the next most important, and 3 before the third most important. (Rank in each column separately).

Advantages	Disadvantages
___ Greater prestige or esteem	___ Too much responsibility
___ Greater variety of work	___ Ingratitude from others
___ Greater independence	___ Conflicts with other members
___ Greater number of social contacts	___ Less freedom
___ Greater opportunity to enlarge one's skills	___ No time for activities besides work
___ Greater opportunity to enlarge one's knowledge	___ No regular work hours
___ Greater influence with people outside the plant	___ Other
___ There are no advantages	
___ Other	

IV. MENTAL HEALTH VARIABLES

A. Satisfaction with Job (Q. 35) and with Work in Organization (Q. 103)

35. Do you like the work you are doing in this plant (branch)? (Circle one number.)

5. I like it very much.

4. I like it quite a bit.

3. I like it somewhat.

2. I like it only a little.

1. I do not like it at all.

103. Do you like working for this plant (branch)?

1. It is not a very good plant (branch) to work for.
2. It's all right.
3. It's a fairly good place.
4. It's a good place.
5. It's a very good place.

B. Involvement with Job

30. On most days on your job, how often does time seem to drag for you?

1. About half the day or more.
2. About one third of the day.
3. About one quarter of the day.
4. About one eighth of the day.
5. Time never seems to drag.

C. Affective States (Source: Tannenbaum et al., 1970)

44. How true are the following statements?

(Circle one number on each line across.)

	Very true	Somewhat true	Neither true nor untrue	Somewhat true	Very untrue
Depression					
a. I feel depressed	1	2	3	4	5
c. I often feel bored	1	2	3	4	5
Resentment					
b. Other people are always more lucky than I	1	2	3	4	5

	Very true	Somewhat true	Neither true nor untrue	Somewhat true	Very untrue
d. I seem not to get what is coming to me	1	2	3	4	5
Self-esteem					
e. Usually everything I try seems to fail	1	2	3	4	5
f. I sometimes feel that my life is not very useful	1	2	3	4	5

107. What is the esteem that you would assign to yourself from the following 6 categories?

6. Maximum esteem

5.

4.

3.

2.

1. Very little esteem

D. Self-reported Physical Symptoms

46. These next questions are about your health at the present time.

	Always	Often	Sometimes	Seldom	Never
a. Have you ever been bothered by nervousness, feeling fidgety and tense?	1	2	3	4	5
b. Are you ever troubled by headaches or pains in the head?	1	2	3	4	5

	Always	Often	Sometimes	Seldom	Never
d. Has any ill health affected the amount of work you do?	1	2	3	4	5
e. Have you ever been bothered by your heart beating hard?	1	2	3	4	5
f. Have there ever been times when you couldn't take care of things because you just couldn't get going?	1	2	3	4	5

E. Alienation Indices (Source: Tannenbaum et al., 1970)

45. How true are the following statements?

(Circle one number on each line across.)

	Very true	Somewhat true	Neither true nor untrue	Somewhat true	Very untrue
Social Isolation					
a. It is not possible to reiy on others	1	2	3	4	5
b. Today it is practically impossible to find real friends because everyone thinks only of himself	1	2	3	4	5
Powerlessness					
c. Men like me cannot influence the course of events; only men in high positions can have such influence	1	2	3	4	5
d. I have never had the influence over others that I would have liked	1	2	3	4	5

	Very true	Somewhat true	Neither true nor untrue	Somewhat true	Very untrue
Meaninglessness					
e. Public affairs are so complicated that one cannot help but be confused by them	1	2	3	4	5
f. Despite the many advantages science has made, life today is too complicated	1	2	3	4	5
Self Alienation					
g. I can never do what I really like because circumstances require that I do otherwise	1	2	3	4	5
h. Life is so routinized that I do not have a chance to use my true abilities	1	2	3	4	5
Normlessness					
i. Life seems to be moving on without rules or order	1	2	3	4	5
j. Nowadays, it is hard to know right from wrong	1	2	3	4	5

V. PERFORMANCE VARIABLES

A. Self-reported Commitment

108. To what extent do you feel really responsible for the success of

	Not at all	A little	Some-what	Quite a bit	Very much
Your own work group	1	2	3	4	5
Your department	1	2	3	4	5
The whole plant	1	2	3	4	5

B. Self-reported Innovative Behavior, Extra Work and Involvement in the Context of the Job

29. How often do you try out on your own a better or faster way of doing the work?

(Circle one number.)

5. Very often
4. Often
3. Sometimes
2. Rarely
1. Never
7. In my work it is not possible

31. How often do you do some extra work for your job which is not required of you?

1. Almost every day
2. Several times a week
3. About once a week
4. Once every few weeks
5. About once a week or less often

32. How often do you read any books or magazines connected with your work?

1. Very often
2.
3.
4.
5. Not at all

34. In the last month, how many times have you tried a new approach and/or have suggested a new method of approach in the plant (poultry branch)?
(Circle the most correct alternative.)

1. Not even once
2. One time
3. Two times
4. Three times
5. Four times or more

C. Self-reported Tardiness

33. In the last two weeks, how many times have you come to work (at the beginning of your shift) late by ten minutes or more?

1. Not even once
2. Once
3. Twice
4. Three times
5. Four times
6. Five times or more

D. Manager's Evaluation of Each Worker in the Plant (taken from the Manager's questionnaire)

4. What is the skill level of each of the permanent workers who are also kibbutz members? Assign a score to each of them on this dimension from a 7-point scale where 1 = very low level and 7 = very high level.

6. How would you judge the quality of work of each of the workers in the plant (branch)? Please assign a score to each of them from a 7-point scale where 1 = low level of quality and 7 = high level of quality.
7. To what extent is each of the workers in the plant dependable? Please assign a score to each of them on the basis of this dimension, from a 7-point scale where 1 = low level of dependability and 7 = high level of dependability.

(The last page of each Manager's questionnaire contained a table with a list of all workers' names as the first column and columns for the above ratings.)

VI. ORGANIZATIONAL INDICES -- USED AS MODERATORS

(These indices are the result of a factor analysis on 43 questions that describe the organization.)

A. Factor 1 - superior's evaluation

80. What are the attitudes of the company members toward plant management? (Circle one number).

1. Attitudes are strongly opposed to the management.
2. Attitudes are somewhat opposed to the management.
3. Attitudes strongly support the management.

82. How good is your immediate superior in his relations with the people he supervises? (Circle one number).

5. He is very good at this.
4. He is good at this.
3. He is fairly good at this.
2. He is not good at this.
1. He is poor at this.

83. Is your immediate superior friendly and easily approached if there are problems? (Circle one number).

1. Not at all.
2. To a very little extent.
3. To some extent.
4. To a considerable extent.
5. To a very great extent.

84. How well does your immediate superior do in reconciling the interests of your work group with that of other groups in the plant?

5. He is very good at this.
4. He is good at this.
3. He is fairly good at this.
2. He is not good at this.
1. He is poor at this.

85. How good is your immediate superior in organizing the work of your group? (Circle one number).

1. He is very poor.
2. Poor.
3. Fair.
4. Good.
5. Very good.

86. How adequate are the technical and professional skills of your immediate superior? (Circle one number).

1. Poor.
2. Fair.
3. Good.
4. Very good.
5. Excellent.

89. When you do what your immediate superior requests you to do on the job, why do you do it? (Circle one number on each line across).

Because:

e. I respect his competence and judgment

Not at all	To a very little extent	To some extent	To a considerable extent	To a very great extent
1	2	3	4	5

90. Taking it all in all, does your immediate superior do a good job as a superior? (Circle one number).

1. He does a poor job.
2. He does a fair job.
3. He does a good job.
4. He does a very good job.
5. He does an excellent job.

B. Factor 2 - Participativeness

64. Do workers participate in making important decisions related to their work? (Circle one number).

1. Not at all.
2. They jointly decide about few important things concerning their work, opinions and suggestions.
3. They jointly decide about some important things concerning their work
4. They jointly decide about many important things concerning their work.
5. They jointly decide about all important things concerning their work.

65. Do workers participate in making important decisions related to general plant problems? (Circle one number).

1. Not at all.
2. They jointly decide about few important things concerning general plant problems.
3. They jointly decide about some important things concerning general plant problems.
4. They jointly decide about many important things concerning general plant problems.
5. They jointly decide about all important things concerning plant problems.

71. In what way does the workers' assembly deal with the following subjects:

Subject/Authority Level	Not discussed at all	Given Information	Reaffirms Decisions	Discusses and Recommends	Discusses and Decides
Yearly planning	1	2	3	4	5
Investment suggestions	1	2	3	4	5
Training of personnel	1	2	3	4	5
Election of office holders	1	2	3	4	5
Election of committees	1	2	3	4	5
Internal work arrangements	1	2	3	4	5
Election of Co-ordinator	1	2	3	4	5

C. Factor 3 - Upward and downward communications

60. To what extent does your superior take care to get from you the information he needs for his work?
    5. To a great extent.
    4.
    3.
    2.
    1. Not at all.

61. To what extent do you take care to provide your superior with the information needed for his work?
    5. To a great extent
    4.
    3.
    2.
    1. Not at all.

62. To what extent does your superior take care to provide you with the information needed to carry out your job?
    1. To a great extent.
    2.
    3.
    4.
    5. Not at all.

63. To what extent do you take the initiative to get the the information needed to carry out your job?
    1. To a great extent.
    2.
    3.
    4.
    5. Not at all.

D. Factor 4 - Relationship with co-workers

47. Indicate which of the statements below corresponds to the branch team's level of group spirit and mutual help among workers.

1. _____ Much less than other teams in other branches.
2. _____
3. _____ About the same as other teams in other branches.
4. _____
5. _____ Much more than other teams in other branches.

48. How many of the workers in the plant are also your close friends?

1. None of them.
2. A few of them.
3. Many of them.

49. To what extent do your co-workers show an understanding to your problems in work?

1. To a very great extent.
2.
3.
4.
5. To no extent at all.

50. If you could select the team to work with in jobs other than your current permanent job (kitchen, picking fruit, bringing the hay home), how desirable a choice for you would be the same team that you are working with now?

1. This would be the most desirable choice.
2.
3. This would be as good a choice as any other one.
4.
5. This would be the least desirable choice.

E. Factor 5 - The "consideration" component in the leadership behavior

66. When decisions are being made, are the people affected asked for their opinions and suggestions? (Circle one number).
    1. They are almost never asked for their opinions and
    2. They are sometimes asked.
    3. They are usualiy asked.
    4. They are almost always asked for their opinions and suggestions.
    5. They are always asked for their opinions and suggestion.

78. Do you think the responsible people here have a real interest in the welfare of those who work here? (Circle one number).
    1. They have no interest at all.
    2. They have a little interest.
    3. They have some interest.
    4. They have quite a bit of interest.
    5. They have a very great interest.

79. Do the responsible people in this plant improve working conditions only when forced to? (Circle one number).
    1. They improve working conditions only when they are forced to.
    2. They seldom try to improve working conditions without being forced to.
    3. Sometimes they try to improve working conditions without being forced to.
    4. Often they try to improve conditions without being forced to.
    5. They always try to improve working conditions without being forced to.

81. Does your immediate superior ask your opinion when a problem comes up that involved your work? (Circle one number).
    5. He always asks my opinion
    4. Often asks.
    3. Sometimes asks.
    2. Seldom asks.
    1. He never asks my opinion.

83. Is your immediate superior friendly and easily approached if there are problems? (Circle one number).
    1. Not at all.
    2. To a very little extent.
    3. To some extent.
    4. To a considerable extent.
    5. To a very great extent.

APPENDIX II

APPENDIX II

DETAILED METHODOLOGICAL CONSIDERATIONS[1]

(A) The measurement of status roles--question 5, 6, 9, 10, 11, and 12 were used for deriving individual's scores on these variables. These questions were coded so as to allow each respondent to have in one calendar year no more than three organization offices, three Kibbutz offices and two different jobs, i.e., if a respondent indicated in his answer to any of the questions that he had, say, four Kibbutz offices in a given year, still only the first three were coded (we really did not expect respondents to have a greater number of jobs and offices per year). The questions asked about offices and jobs held in the past five years and the expected offices or job to be held by the respondent during the next year (only one office and/or one job). Each such Kibbutz-office, organization-office or job per a given year was considered as one SR variable. The potential number of SR variables that we could use for analysis was, therefore, forty-three (16 Kibbutz offices, 16 organization offices and 11 jobs). In reality, however, much fewer variables were used because the distribution of responses was not meaningful for analysis on all the 43 variables:

(1) Relatively few people had more than one Kibbutz office during a given year. Also, as the years became more distant from the present, fewer individuals bothered to fill in the particular Kibbutz office that they had held. These two points are illustrated by the following table.

---

[1]This appendix is intended for the reader who is interested in the details of the methodological considerations that had to be made in order to prepare the data for analysis. It expands on the short comments made in Chapter II.

Table 1

Distribution of Respondents into Kibbutz Offices in the Last Five Years

(5% missing data on all years)

Year	Number of any Kibbutz office held by respondent				Total
	0 (%)	1 (%)	2 (%)	3 (%)	
1970	299 (63.6)	133 (28.4)	31 (6.1)	9 (1.9)	470
1969	322 (68.2)	127 (27.9)	20 (3.3)	2 (0.4)	471
1968	333 (70.4)	126 (26.7)	10 (2.1)	2 (0.4)	471
1967	333 (70.4)	124 (26.2)	13 (2.8)	2 (0.4)	472
1966	335 (71.0)	106 (24.9)	14 (3.0)	3 (0.6)	458

The answer to the question regarding the office to be held next year turned out to be very biased: only about 10% of the respondents answered in a positive way--i.e., indicated whether they would or would not have an office. The rest either did not answer (about 20%) or said that they did not know (about 70%). From the 10% that answered the question, 54.7% said that they will occupy some office. That is, of course, not in line with the percentage of respondents occupying offices in the last five years (as can be seen in Table 1) which leads us to conclude that the positive responses to this question were given by a biased group--biased in the direction of future office holders.

In view of the above consideration and the results shown in Table 1, only the SR variable of "one (or more) Kibbutz-office per year, were retained for further analyses. The variable of "Kibbutz office in 1971" was also deleted from further analyses.

(2) A similar situation to the one in the sphere of the Kibbutz offices occurred with regard to organization offices as can be seen from Table 2. The number of valid cases for analysis decreases as we go back in years. This is due, mainly, to the fact that most plants are relatively new ones. The other reason for that fact, may be due to turnover rates.

Table 2

Distribution of Respondents into Organization Offices in the Last Five Years

Year	Number of any organization office held by respondent: 0	(%)	1	(%)	2	(%)	3	(%)	Total (0-3)	Not working in organization	No answer
1970	283	(65.4)	143	(31.9)	11	(2.4)	10	(2.2)	447	--	64
1969	220	(63.4)	107	(30.8)	16	(4.6)	4	(1.1)	347	98	59
1968	180	(65.7)	80	(29.1)	10	(3.6)	4	(1.4)	274	185	38
1967	140	(66.0)	62	(29.2)	7	(3.3)	3	(1.4)	212	259	26
1966	125	(67.9)	52	(28.2)	4	(2.1)	3	(1.6)	184	291	22

The same situation that existed for the Kibbutz office for "next year," appears for the organization-office. Only about 25% answers this question positively. Sixty percent said that they did not know and about 15% were missing data cases. Out of the 25% that answered the question by specifying whether or not they will have an office in the organization--79.1% said that they will have some office. This contradicts the pattern in Table 2 where only 35% of the respondents had offices, which leads us to the conclusion that this group is biased and loaded disproportionally by office holders. (Note that one cannot assume that all the "don't knows" are potential non-office holders. That would put the percentage of office holders below the expected level.

In view of the above facts only first offices, within organization, for the year 1970 and back to 1967, were retained for analysis. The variable of "organization office next year," was retained for special analyses only, where the bias factor would not matter.

(3) The job variable had, of course, the same trouble as the organization office with respect to the number of people that were not working in the plant (i.e., the further back the year is, the lesser is the number of valid responses) in previous years. Also, it was found that the great majority of people did not have more than one job per year.

In addition to the above two problems, it was also found that about 65% of the respondents had exactly the same jobs during the entire period of their work in the plant. The percentage of no answer, or no knowledge about what job a person would occupy next year, were also in a similar pattern to those in the response to the question about the organization office. In view of the above findings, only the variables of the first job this year, last year and next year were retained for analyses.

(4) In order to check on the validity of the self report of respondents on their Kibbutz offices, organization offices and jobs, we have related the self report answers to the question about the organization office held this year, to a list of such correspondence between person and office which was supplied to us by each organization. The correspondence between the two measures was about .90 (product moment correlation). From this it was concluded that the self-report-measure of these variables are valid.

(B) The measurement and problems associated with the variables of OPE_{sub} and TOPE, OPE_{subs} were measured in two ways called the "positional" and "personal" approaches.

The "positional" method followed these steps:

(1) Questions 15 and 16 of Appendix I asked each respondent to assign a score, from an esteem scale of 1-7 categories, to several jobs and organization offices unique to his organization. These jobs and organization offices were supplied by each of the respective organizations. Question 17 had the same format as question 15 and 16, but asked individuals to rate a selected number of Kibbutz offices (representing various levels of esteemed offices--as judged by the researchers). These Kibbutz offices were standard for all the respondents. Each of these three questions had two parts in it: one part asked about the esteem that the respondent himself assigns to a particular job or office. The second part asked about the esteem assigned to the same jobs and offices by most other workers in the organization.

In order not to overload our respondents with ratings, we listed for each of them as few jobs and offices as possible, as long as we had about seven raters per job or per office. Jobs and offices were assigned randomly to individuals in those organizations where we had enough people to create several rater groups. The above does not hold for Kibbutz offices (Q17), as this list was the same for each individual and everyone was asked to respond to all of it. It was different for the Kibbutz offices because it was not practical to obtain--and let our respondents rate--unique lists of Kibbutz offices for each Kibbutz in the study. It is also true that the offices chosen for rating, in question 17, are existent in almost every Kibbutz if not in all of them.

(2) The second step in this approach was to compute the mean score and standard deviations of the esteem scores given to each job and office within an organization. Also, the number of respondents in each organization who had answered each item was counted. Overall rate of response to items in the three questions varied. It was always lower for that part of questions 15, 16, and 17 that asked about "The esteem given by most other workers," than to the part asking about respondent own score. The rate of response scores were as follows:

Question number			Overall (all items) response rate	Range across items	
				Lowest	Highest
(Jobs)	15	a	80%	78%	89%
		b	65	60	78
(Organizational offices)	16	a	84	66	95
		b	64	47	83
(Kibbutz offices)	17	a	80	75	84
		b	51	47	53

Table 3 presents a summary of the ratings in questions 15-17. For each question we show the mean, range, and standard deviations of the esteem scores, the standard deviations over individual raters and the number of raters for each job, Kibbutz-office and organization-office, after the completion of the second step.

Table 3

Mean Range and Standard Deviation of the Esteem Scores, the Standard Deviation Scores and the Number of Raters for Jobs, Kibbutz-offices and Organization-offices in Questions 15-17

	Mean	Range	Standard deviation
Job esteem scores	5.3	3.0-6.8	0.72
Standard deviations of individual ratings	1.03	0.40-8.00	0.52
Number of raters	7.2	1-14	3.04
Kibbutz offices esteem scores	5.1	4.2-5.9	.42
Standard deviations of individual rating	1.26	1.11-1.40	.57
Number of raters	399	373-419	77.7
Organization offices esteem scores	5.4	3.9- 7	0.68
Standard deviations of individual ratings	1.11	0.4-4.7	0.49
Number of raters	10.4	1-25	8.80

(3) The third step was to assign to each individual several esteem scores, on the basis of his jobs, organization offices, and Kibbutz offices. An individual could potentially get a different score for each of his jobs or offices for each of the past five years and the next year. In reality, these scores were assigned to a reduced number of years and to a reduced number of jobs or organization offices in any of the selected years. (See previous sections in this appendix.)

In coding the answers to questions 5, 6, 7, 9, 10, 11, and 12 (the various status roles), the jobs were coded arbitrarily into a set of numbers. The Kibbutz offices and organization offices, however, were coded according to what the researchers felt would be the approximate

order of esteem assigned to them. In general, this recoding followed some hierarchical order of offices. So, the organization offices were ordered on a continuum that goes from the plant manager, production manager, outside representative, department heads, management member, etc. Kibbutz offices were ordered in groups starting with the most central offices within a Kibbutz going down through less central offices and to no office at all.

The answers to question 17 (esteem given to various Kibbutz offices) turned out to correspond to the prejudged code, i.e., the order of the magnitude of the esteem scores (the mean esteem score computed across all individuals' ratings to a given office) went from highest to lowest in correspondence to the centrality of a particular office. Because the list of Kibbutz offices rated in question 17 was a standard one for all individuals and did not correspond uniquely to Kibbutz offices held by respondents in a particular organization, it was not possible to see whether or not the esteem given to Kibbutz offices held by individuals within a given organization differed from the global assignments of esteem scores to categories of such offices. In view of the above result and considerations we kept the preassigned codes which were as follows: 1--no Kibbutz office; 2--committee member, of another non-central office (except membership in the secretariat); 3--committee chairmanship, secretariat membership of few other central offices; 4--secretary, farm manager, or treasurer. Table 4 below displays the mean esteem scores given to various Kibbutz office categories, grouped according to the codes just mentioned. (The code for no office at all is excluded because by definition the esteem given to it is the lowest.) The scale that was used went from 1 to 7, where 7 is the highest esteem and 1 the lowest. In some of the analyses codes 2-4 were collapsed into one code and a dichotomy was used to present the variable of Kibbutz office (i.e., 1--no Kibbutz office; 2--any Kibbutz office).

In question 16, organization offices which are unique to every organization were listed as the object to be assigned esteem scores. This made it possible to assign to each person the esteem given to his unique office. It has also allowed for a check on whether or not these

Table 4

Mean of Esteem Scores Given to Various Categories of Kibbutz Offices

Kibbutz offices included	Mean esteem score	N	S.D.	Preassigned code
Committee membership	4.18	377	1.37	2
Committee chairmanship	4.91	401	1.26	3
Secretary, treasurer, farm manager	5.74	411	1.19	4

unique esteem scores have a stronger explanatory power than the global prejudged scores. That is to say: does the esteem given to a certain office within an organization explain more of the variance in an outcome variable than that explained by the exteem given to such title across the total population. As can be seen in Chapter III, it really does.

The assignment of esteem scores to respondents on the basis of organizational offices has created a bi-modal distribution where one mode is located in the lowest end of the scale (no plant office at all), and the second mode, a much lower one, in the middle of the scale (as shown in Table 5). This distribution has been collapsed for some analyses into a dichotomy to represent whether or not a person had a plant office. The main reason for such code lumping was usually the problem of too few cases in some categories. The manipulations involved in steps (2) and (3) have reduced the number of valid cases because a missing data case would have appeared whenever a "no answer" occurred in either the questions asking about "status role" or the questions dealing with the esteem given to particular status role. The extent of the reduction in a number of cases was not substantial: only 30 out of 433 cases in the case of the first plant office in 1969/70. It was more apparent in the case of the job esteem variable (e.g., 45 out of 348 on the variable of the job in 1969/70).

Table 5

Distribution of Esteem Scores Assigned on the Basis of Organizational Office Held by Respondent in 1970

Code		Number of cases
Highest esteem:	7	5
	6	2
	5	26
	4	40
	3	31
	2	20
	1	6
Lowest esteem:	0	283
Total		417

Now we turn to describe the second method according to which OPE_{sub} was measured. This method was called the "personal method." It involved the use of question 106, in which respondents were asked to assign esteem scores to their peers on a scale of 0-100 and on the basis of the latter's (1) job within the organization, (2) office within the organization, and (3) office in the Kibbutz. The respondents were asked to assign two scores in each question, one to represent their own assignment and the other to represent "most-other-workers." Each respondent was asked to rate only a sub-group out of the organization membership (in order to reduce the number of ratings required). Again, just as in the "positional" method, when possible, a minimum number of seven raters was assigned to each ratee. The matching between raters and ratees was the result of the following procedure: each organization was broken into groups of seven to ten individuals (or the total number, if less than ten). The membership in each such group was randomly determined. Within each group everybody rated everybody else.

During the administration of the questionnaire it was felt that respondents had difficulties in interpreting the question (106) and many

of them, in rating others, were rating their performance within the jobs and offices (and other idiosyncratic characteristics) and not just the jobs and offices. This suspicion has been, unfortunately, confirmed during the analysis of the data through a construction of a multimethod multitrait matrix (Campbell & Fiske, 1959) that is presented as Table 6.

Table 6

Multimethod Multitrait Matrix of Correlations for the Variables of Esteem Assigned to Respondents on the Basis of Their Jobs, Organization Office and Kibbutz Office

	"Personal" method			"Positional" method		
	Job esteem	Org. office esteem	Kibbutz office esteem	Job esteem	Org. office esteem	Kibbutz office esteem
"Personal" method						
Job esteem	(.87)[a]					
Org. office esteem	.77	(.91)				
Kibbutz off. esteem	.43 (A)	.48 (A)	(.89)			
"Positional" method						
Job esteem	[.21][b]	.23 (C)	.27 (C)	(.73)[a]		
Org. office esteem	.37 (B)	[.48]	.33 (C)	.38 (D)	(.96)	
Kibbutz off. esteem	.16 (B)	.25 (B)	[.33]	.23 (D)	.22 (D)	(.89)

A: Unimethod-Multitrait Triangle (UMMT) (or the "personal" method).

B, C: Multimethod-Multitrait Triangle (MMMT).

D: Unimethod-Multitrait Triangle for the "positional" measure.

[a]Reliability diagonals. The scores are enclosed in parentheses.

[b]Validity diagonal. The correlation coefficients are enclosed in brackets.

Before we proceed with the interpretation of the matrix, an explanation is in order about the way that the reliability entries were computed. Due to the processes according to which the various scores of esteem have been computed, it would have involved a great cost to create the opportunity for a split-half reliability test. (The split-half procedure is the best solution in such a cross-sectional study as this one.) As a substitute, a correlation cofficient has been computed between the mean scores of esteem given to individuals by other respondents according to the latter's opinion and those scores given according to what the raters thought was the opinion of most other workers. This correlation indeed does not have to be high but it had the highest potentiality for both methodological effect as well as convergent content effect. This potentiality is realized in our data to the highest degree and so we have used the two measures to estimate reliability.

Now we return to the interpretation of the matrix in Table 6. The facts to be noted are the following:

(1) The convergent validity criterion is fulfilled. All the validity diagonals are significant at $p < .001$ due to the large number of respondents.

(2) The discriminant validity criterion holds for Kibbutz office and for organization office but does not hold for the job esteem. (The requirement is that the validity diagonal coefficients should be higher than those in the MMMT that appear in the same row or column.)

(3) The pattern of intercorrelations between the variables in the two UMMT triangles (A, D), is similar to that in the lower MMMT triangle.

The above three points indicate that the theoretical variables that are conceived here make sense. That is, they are distinct from each other, have a standing of their own and some valid pattern of intercorrelations among themselves. Our problem is to explain why the validity diagonal is represented with so low correlation-coefficients.

(4) In reality, one should expect in our data, some correlation between the three variables. Such a correlation represents the fact

that individuals who hold Kibbutz office, for instance, are to a certain extent, more likely to hold an organization office than such individuals who have no Kibbutz office.

We know that it is unlikely for a methodological effect to appear in the UMMT triangle of the "positional" method (D), due to the fact that the scores in this method were arrived at after so many manipulations of the data and by both respondents and researchers. Indeed, the fact that the correlation coefficients in this triangle are no higher than in the multimethod multitrait triangles B and C supports that observation. On the other hand, there is a very large factor of methodology expected in the "personal" method. In fact, we would expect two sources of variance to be responsible for the correlations in the "personal" multitrait-unimethod triangle (A): One is sheer methodological effect--the three questions (106a,c,e) were following each other and the respondents were asked to rate the same objects (their peers) in the same order, and on the same scale, three times. The second factor is what may be called a "personality" factor--that is, respondents were evaluating their peers on many other dimensions besides the sort of jobs and offices that they occupy. These dimensions (e.g., performance in the jobs and offices, personality traits, attributes, and the like) are constant from one variable to another within ratees. This, of course, would raise the correlations among the three variables. The two factors just mentioned are to be considered as "noise" from the point of view of this study and, therefore, they interfere with analysis. Indeed, we see that there are very high correlations among variables in the personal method. This "noise" is probably responsible for the relatively low correlations in the validity diagonal. If one compares the level of correlations in the multimethod-multitrait triangles to that in the "personal" unimethod triangle, one can see that the "noise" accounts for, sometimes, four times as much as the explained variance accounted by the correlations without the noise. (E.g., the coefficient correlation of organization-office esteem with job esteem in triangle A is .77 which accounts for 59% of the variance in these two variables. In triangle B the same variables have a coefficient correlation of .37 which accounts for only 14% of the common variance.)

(C) Total Objective Public Esteem (TOPE)--The considerations put forward in the preceding section have a very unfortunate bearing on some hypotheses that involve the use of TOPE. TOPE has been measured in the same method that was labeled the personal method. Question 105 was designed for this purpose. In this question we asked people to rate others according to the general esteem given to them. We were hoping that the factor described above as noise, would not account for too much of the variance, unfortunately, it did--as can be seen from Table 7 where we present the correlation of TOPE with the three variables (job esteem, organization office esteem, and Kibbutz office esteem) as measured in the two methods. The very high correlation coefficients of TOPE

Table 7

Correlation Coefficients of TOPE with Job Esteem, Organization Office Esteem, and Kibbutz Office Esteem as Measured by Two Methods

Variable		TOPE
Job esteem:	Personal method	.83
	Positional method	.22
Organization office esteem:	Personal method	.71
	Positional method	.40
Kibbutz office esteem:	Personal method	.46
	Positional method	.20

with the personal measures (relative to the correlations with the objective measures) is an indication of the fact that TOPE is also very much loaded with the same error factors (error from our point of view) as the other personal measures are.

(D) Variables in the Opportunity Set--Four indices have been constructed from questionnaire items intended to touch upon various opportunities offered to the respondents in the context of the organization. These indices were arrived at after a non-analytical cluster

analysis had indicated that the correlation coefficients among the items, that were subsequently formed into an index, are higher than the correlation coefficients between them and items not entered into the same index. Below we report the inter item correlation for every index and its reliability as measured by a variant of coefficient alpha--r_{ii} (Nunnally, 1967, p. 193).

(1) Intellectual opportunities--questions 20a-d, i.

Variables	20b	20c	20d	20i
20a. Learn new things	.48	.56	.50	.38
20b. Use your own ideas	--	.52	.66	.65
20c. Do interesting work		--	.59	.41
20d. Use your skills, knowledge, abilities			--	.56
20i. Try unconventional ways of doing jobs				--

reliability-- $r_{kk} = .849$

(2) Interpersonal and affiliative opportunities--only two items have entered into this index--questions 20e and 20h--with an inter-item correlation of .50, which gives $r_{kk} = .66$. ("Talk with other people," "Develop skills to deal with people.")

(3) Authority and control opportunities--Three items were entered into this index--questions 20g, 22 and 73e.

Variables	22	73e
20g. To what extent can you have authority over other people?	.46	.55
22. How much responsibility do you have?	--	.47
73e. How much influence do you have		--

$r_{kk} = .795$

(4) Access to information and organizational relevant knowledge--The questionnaire items employed here were 58a-d, 59.

Variables	58b	58c	58d	59
58a. Familiarity with production plan	.69	.59	.64	.45
58b. Familiarity with investment plan	--	.72	.59	.45
58c. Familiarity with economical outcomes		--	.52	.51
58d. Familiarity with technological problems			--	.42
59. Knowledge about job fits in organizational functioning				--

r_{kk} = .863

The intercorrelations among the four indices are also quite high as can be seen from Table 8.

Table 8

Intercorrelation Among Indices of the Opportunity Set

Index	.2	.3	.4
1. Intellectual	.41	.50	.38
2. Interpersonal	--	.37	.32
3. Authority		--	.51
4. Information			--

In some analyses of Chapter III, we reported the use of a global index of opportunities--a mean score across the four indices. The reliability coefficient of this index was also computed, and it stands at r_{kk} = .739, which is lower than three of the individual indices but high enough to justify the usage we needed.

(E) Mental Health Indices--

(1) Three indices of self-reported affective states were adapted from another study (Tannenbaum et al., 1970). These indices were:

Depression - question 44a,c

Resentment - question 44b, d

Self esteem - question 44e, f

Our data did not differentiate among the three indices very well and the correlations between variables from different indices were as high as within indices, as can be seen from the following table.

Table 9

Correlation Coefficients Among Items from Three Indices of Self-Reported Affective States

	Items	44c	44b	44d	44e	44f
44a.	I feel depressed	[.39]	.46	.27	.47	.50
44c.	I often feel bored		.40	.28	.37	.31
44b.	Other people are more lucky			[.42]	.43	.27
44d.	I seem not to get what I deserve				.24	.20
44e.	Everything I try seems to fail					[.44]
44f.	My life is not very useful					

The correlation coefficients in brackets represent the three indices. Because of the above fact and the fact that the overall inter item correlations were positive and relatively high, a general index of these items was sometimes used in analysis--the mean score across all six items. This index had a reliability coefficient of $r_{kk} = .719$ (while the individual indices had reliabilities of .561; 595; 615).

Another direct measure of self esteem (question 107) had a very low correlation with the self esteem index ($r = .19$) but even lower correlations with the other two indices ($r = .07$ and $r = .02$) which gives the self esteem index some hint of discriminative validity. (This correlation is also significant at the $p < .001$ level due to the large number of cases.)

(2) Five indices of alienation were constructed to follow Seeman's components of alienation (1959). These indices were constructed each out of two items from question 45.

Social isolation	45a,b	$r_{ab} = .47$
Powerlessness	45c,d	$r_{cd} = .51$
Meaninglessness	45e,f	$r_{ef} = .37$
Self alienation	45g,h	$r_{gh} = .56$
Normlessness	45i,j	$r_{ij} = .44$

The within-index-correlations were higher than the between indices which, again, is evidence for discriminant validity.

(3) Physical health was measured in several ways:

--Self reports of physical symptoms through answer to questions 44a,b,d-f. The index based on these five items has a reliability of .627.

--In one Kibbutz we were able to collect data on dispensary visits and visits to the physician. There were 96 respondents in this Kibbutz but the follow-up after dispensary visits was for only a two week period. There were no established records for such visits, so the nurse was asked to write down the names of all visitors and the reason for their visit. As the period was such a short one, all categories had to be lumped together and one variable--dispensary visits--was created. The number of visits to the physician was taken from the log of names kept by the physician himself. Some names were dropped due to uncertainty in their identification. It is interesting that the self-reported physical health has its highest correlations--from among all its correlations with the entire study variables--with these two objective measures of illness behavior (-.33 with the combination of them, and -.28 with the dispensary visits, and -.30 with the physician's visits). This helps to boost this measure's claim to usefulness when other--more hard data--measures are unavailable.

(F) Performance measures--As stated in the methodological chapter, one of the measures used was ratings of workers by their manager on seven-point scales of three variables: skill level and

knowledge; quality of work; dependability. As these three variables correlated highly with each other, a common index was also computed by using the mean score across the three separate items. The correlations among the three items were as follows:

Variables	1	2	3
1. Skill level	--	.70	.53
2. Quality of work		--	.75
3. Dependability			--

r_{kk} = .89

(G) Organizational climate variables--Forty-three items that were intended to represent perceptions of various aspects of the organizational climate and managerial style, were submitted to a principle-axes factor analysis. An orthogenal rotation according to the varimax method has produced the factor matrix of which Table 10 is a part.

In Table 10 we present the loading of each variable on five factors. (The factor analysis produced ten factors but only five had loadings of variables large enough to warrant their display.) A variable will be presented only if it had loading of .30 or above on any of the five factors. Loading will be presented also only if above .30.

From Table 10, factor scores were computed by assigning an equal (unit) weight to each variable that loaded on a factor .50 or above, i.e., the factor scores are the computed mean scores across all variables that represent that factor. The individual factor scores were then computed so as to arrive at a mean score over all members of every organization. This last variable is the group factor score as opposed to the individual factor score. The group factor score of participativeness was used to test Hypothesis III, part (b).

Table 10

A Portion of a Factor Matrix of Organizational Variables after Orthogonal Rotation

Variables: Question number	Factors: Evaluation of superiors	Participativeness	Upward & downward communication	Relations with co-workers	"Consideration" attributes of management	h^2[a]
80	.52					.44
82	.66					.61
83	.53				.46	.58
84	.73					.61
85	.76					.62
86	.73					.57
89e	.55					.58
90	.76					.66
64		-63				.55
65		-67				.63
71a		-71				.61
71b		-73				.61
71c		-67				.56
71d		-80				.80
71e		-62				.69
71f		-53				.49
71g		-76				.66
60			-.69			.61
61			-.75			.59
62			-.77			.68
63			-.80			.67
47				.73		.61
48				.35		.44
49				.59		.49
50				.66		.57
66			-.36		.56	.48
78		.32			.64	.60
79					.58	.46
81					.65	.55
Factor[a] contributions (sum over squared loadings)	4.45 (79%)	4.75 (89%)	2.65 (85%)	1.85 (70%)	2.40 (60%)	

[a]Both h^2 and sum of squared loadings are for the total potential matrix of 43 variables.

[b]The percentages indicate the portion of the factor that is accounted for with the variables in the matrix (out of a total that could be achieved with all 43 variables).

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