A Model for Forecasting Environmental Reaction to Policy Initiation

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Recommended Citation

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REACTION TO POLICY INITIATION

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ABSTRACT

This research proposes and empirically tests a model for forecasting the possible reactions of other organizations to a policy initiation. This model is measuring the amount of reaction to change (A.R.C.) on three levels: relevant organizations, relevant functions, and overall environment. The model is presented in a general mode followed by a quasi-experimental case study. The results of this study are reported and implications, possible improvements and different uses are discussed.

INTRODUCTION

Even when all intra-organizational conditions favor change (support of workers and unions and available facilities), they are not always sufficient to insure the success of the desired change. This is largely due to the fact that other powerful organizations within the same environment may react and are able to affect the planned change. There is a dynamic equilibrium composed of power, clients, domains, resources allocations, and status between the organizations, and each new action of one organization can be a threat to this dynamic equilibrium. Some organizations will favor the change and some will oppose it, depending on what they can expect from the new semi-equilibrium. Thus, external reactions to new policy are almost unavoidable (Zeitz, 1980).

Cook (1977) defined interorganizational ties as "political economy networks in which the distribution of two scarce resources, authority and money, is of paramount concern". In other words, organizations are dependent on each other as none of them has total control over its sources of input, output, growth and survival. Evan (1966) and Thompson (1967) argued that ignoring the super-system means dealing with closed systems, in which outside forces do not exist or at least are predictable. Dealing with open systems in organization analysis means that outer forces can easily affect the organization, which at times is the case.

Haas and Drabek (1973) stated that there is great pressure, internally and externally, to keep an organization in line with its domain. But, as the domain changes, so do the organization's activities and its significant others. The organization can simply adapt itself, but it can also innovate (Aldrich, 1977). De Greene (1977) argues that adaptation is only reactive, while innovation is active and therefore has better chances of success.

Aventi (1978) shows how one organization, during one decade, changed its focus, partners, staff and structure as an adaptation to the environmental pressure. Survival is related to adaptation and innovation, and both are related to the environmental reaction. An unplanned innovation can result in damage due to massive negative unexpected environmental reaction. Thus, a model for forecasting environmental reaction to policy initiating is required. It is to the benefit of every organization which plans a change to learn ahead of time how its environment would react to the change. The initiative organization can strengthen itself when equipped with the advance knowledge on the possible environmental reactions (Hickson *et al.*, 1971). It can create the right coalitions, can compensate the main opposers, and can arrange public relations based on the relevant issues.

A good model to forecast the Amount of Reaction to the Change (A.R.C.) should be characterized by the following:

1. It should be general enough to be used in most possible cases of policy initiation, by most organizations.
2. It should provide the initiating organization with an overall indication of the total reaction of the environment as a whole.
3. It should provide the initiating organization with an indication of the motives within the new policy which can arouse antagonism and which can bring about agreement.
4. It should provide the initiating organization with specific knowledge as to which of the relevant organizations are likely to respond.
5. It should provide the initiating organization with an indication as to which of the organizations would support the new policy and which would oppose it.
6. Among the supporter organizations and among the opposers, it should differentiate within these two groups by the intensity of support or opposition.
7. It should provide the initiating organization with an indication of the total reaction of the environment as a whole, considering the alternative that one or more of the reacting organizations may have changed its attitude (due to bargaining, coalition, etc.).

THE PROPOSED MODEL

Organizations react to a change in the activity and/or policy by other organizations within their environment according to their perception of what is dysfunctional to themselves (Parsons, 1960). Haas and Drabek (1973) summarizes the organization-environment relations from a functionalist point of view. In this vein, organizations are a reflection of the needs or requirements emanating from the environmental context or larger social systems of which they are a part. Any organization arises and continues to exist over time only when it provides a needed contribution to another system or systems. Accordingly, the organization is dependent on its environment in its struggle for survival. There is "a continuing situation of necessary interaction between an organization and its environment that introduces an element of environmental control into the organization" (Thompson and McEwan, 1972).

Davis (1977) found that both environmental factors and internal institutional needs influence the development of new structures and activities within the organization.

These two interacting factors also affect the ways in which the organization reacts to change by other organizations. In theory, it is clear; however, in real life, it is very hard to predict what will be perceived as a threat and what will be perceived as a possible advantage. In addition, less obvious latent functions need be considered along with the more obvious manifest functions. Based on the literature and people's experience, a list of possible functions that may cause a given organization to react to the initiation of other organizations can be drawn for each case. That is to say that in a given situation, the first step is to use existing knowledge in order to list all (or most) possible functions, e.g. all known possible motives which can bring any person or organization to react to the new specific policy.

A second, and probably easier, step is to identify the relevant organizations. The following criteria define a relevant organization: (1) The possible reacting organization and the initiating organization share at least one of the following: clients, domain, source of resources, physical location, staff, profits, stated goals or projects. (2) The possible reacting organization should have some power over the initiating organization. This is to say that the possible reacting organization, if it needed and wanted to, could influence the decision-making process within the initiating organization.

The task of connecting both dimensions (functions and organizations) is the most difficult one, and one that requires personal subjective judgment. In each interaction between any organization and any function, three levels of judgment are required. First, is the question whether the particular organization is at all interested in the specified function (is organization i affected by function j). If there is no interest, there is no need to deal with the other two levels. If there is an interest, the second level is that of the direction of interest: it should be judged whether function j would cause organization i to oppose or to support the initiating organization with its new policy. The third level is that of intensity: it is useful to assign numbers ranging from 1 (slight support or opposition) to 5 (total support or opposition).

It should be noted here that the proposed measure is not a measure of probability, but of an action potential. In other words it does not estimate the chances of something happening but describes the potential of reactions to a tentative change.

Their first task is consider carefully the nature, scope, characteristics, funding, etc. of the new policy. Later they should construct a list of functions and a list of relevant organizations. The experts should then rate each interaction between a certain organization and a certain function with one of eleven scores (-5 to +5) based on the likely degree of support or opposition of each organization to each function. This will be done in a large table in which either the rows or the columns will be the organizations and the other one will be the functions. (An example of such a table is presented in Table 4.)

The applicability of the A.R.C. instrument will be low if it is not sensitive to the power of the reacting organizations. It is important for the initiating organization to know whether the organizations that support it (or oppose it) are strong and powerful organizations or are weak ones. In the first case, the initiating organi-

zation will have to consider the other organizations' opinions; while in the second case, it is possible to ignore them. Furthermore, even the total A.R.C. can be biased by the power of the different organizations, as is the case with unweighted scores. The term, "power of reacting organizations" means: "what is the ability of a certain reacting organization to influence the decision-making process within the initiating organization", (P_i).

The P_i scores will be obtained on a separate questionnaire by the same team of experts[1](or another one) based on past experience and knowledge about existing relationships. The power scale consists of six possible values ranging from zero (no ability to influence at all) to five (ability to force a decision upon the initiating organization). Due to the dynamics of power and relationships, it is possible to obtain P_i scores (and all other predictions in this model) only for a short present time and to hope that no drastic change will occur before the time of implementation of the new policy.

To enhance the interpretability of the measure of A.R.C. it is desirable to arbitrarily fix the extreme values of the measure. The A.R.C. measure will range between -1 (full resistance) and +1 (full support) while zero stands for no reaction at all, or for an active balanced reaction.

With this purpose in mind, we can calculate:

1. The weighted A.R.C. of a certain organization over all the functions will be calculated as follows:

$$A.R.C._i = \frac{P_i \sum_{j=1}^{n} V_{ij}}{25n}$$

2. The weighted A.R.C., based on one certain function, by all the organizations, will be calculated as such:

$$A.R.C._j = \frac{\sum_{i=1}^{k} P_i \; V_{ij}}{5 \sum_{i=1}^{k} P_i}$$

3. The weighted A.R.C. from all the organizations over all the functions will be calculated as such:

$$A.R.C._t = \frac{\sum_{i=1}^{k} \sum_{j=1}^{n} P_i \; V_{ij}}{\sum_{i=1}^{k} P_i \; 5n}$$

When: i = an index number of an organization.
j = an index number of a function.
k = the number of organizations.
n = the number of functions.
V_{ij} = the mean score of the experts' grades of a certain function to a certain organization.
P_i = the mean score of power given to an organization.

No two experts will fill out the table and rate the organizations' P_i exactly the same way. The problem is to combine the different predictions given by the experts to obtain accurate and sensitive A.R.C.s. Such future analysis deals with an area for which no definite natural laws exist. Under these conditions, Delphi Technique (D.T.) offers a means by which opinions within an expert group can be exchanged (Helmer, 1977). In this technique, the data are provided and used from all the experts. This technique has been found to be so successful that it has outgrown its use solely in forecasting (Dalkey and Helmer, 1963). Martino (1975) and Felsenthal and Fuchs (1976) reported successful uses of D.T. in varying complex tasks of forecasting.

The experts should not know each other, and each of them should be asked to fill the tables alone. This lack of communication may prevent the threat of "group think" and enable the researcher to provide the participants with equal information.

In using this technique, each expert will have to grade the V_{ij} and the P_i more than one time. Each of the experts will be asked to re-evaluate his/her grades based on the group's mean that will be provided for all rounds from the second on by a coordinator.

The decision rule whether or not to start an additional round (from the second on) is based on the results of the former one. A strong consensus or strong dissensus will not be followed by additional round, as no additional gain of knowledge is expected. Otherwise, more rounds will be held as time and finance permit. These two terms: "strong consensus" and "strong dissensus" need further explication. The proposed way to look for a concrete definition is by using the standard deviations. For each box in each round, a standard deviation is calculated before weighing it by the P_i. Heuristically, it is clear that a low standard deviation signifies consensus and a large standard deviation signifies dissensus. The range of standard deviation in each box is bounded. As with all standard deviations, the lowest possible value is zero which means no variance from the mean. The highest possible value (as shown in note 1) is half the range and for this model is five.

After the distribution is to be obtained, critical values for S.D. to represent "strong consensus" and "strong dissensus" are to be set. These values are chosen to be $Q_{.25}$ and $Q_{.75}$ of the distribution. Any box which has a S.D. below $Q_{.25}$ will be declared as one of consensus. Similarly, any box which has a S.D. of higher than $Q_{.75}$ will be declared as one of dissensus. Where 75% or more of the boxes show tendency toward consensus or dissensus, "strong consensus" or "strong dissensus" will be, respectively, declared. The S.D. of between $Q_{.25}$ and $Q_{.75}$ will be declared as "negotiation zone".

THE METHOD

Instrumentation

The instrument which was presented above was operationalized for a case study. This
case is related to the Israeli National Insurance Institute (N.I.I.). In this ten-
tative story, (which has nothing to do with the actual purposes of actions of the
N.I.I.) the N.I.I. is depicted as the initiating organization which wishes to change
its activity and, therefore, is interested in forecasting the environment's reac-
tion. The researcher presented a case as if the N.I.I. is interested in doubling
the amount of old age insurance paid monthly to its beneficiaries and bring these
payments to above the average income of an employee in Israel.

The questionnaire was composed of: (a) the cover story;   (b) a list of possible
relevant organizations;   (c) a list of possible relevant functions;   (d) a table
to rate the V_{ij}; and   (e) a table to rate the P_i. All together, it was a fourteen
page questionnaire which required three to seven hours of full concentration in the
first round and about an hour for each of the additional rounds.

The two lists (functions and organizations) were prepared by the researcher based
on his experience with the area. Some of the functions were drawn from Gans' (1972)
work on the functions of poverty and Merton's (1949) work on the functions of the
political system. The functions, when possible, were presented and explained as
issues which could be interpreted both positively and negatively according to the
expert's approach.

Subjects

A list of 30 experts was constructed. Each of them was a knowledgeable person and
knew all or most of the organizations. From the list of 30 experts, only 14 parti-
cipated. The task of rating was found by the rest to be too demanding. As there
were no external incentives to participate, some delayed their participation too
long and, therefore, were not included. In an attempt to find out whether this
group of 14 was representative, the Fisher's Exact Test was carried out. With this
test, the probability of obtaining such a group out of the thirty was examined with
regard to the following characteristics: Education, Occupation, and Gender. In
all cases, it was found that the probability was higher than .20, which means a
representative group. The age range of the 14 experts was between 30 to 50, they
all have more than 15 years of education and only one of them was female.

All 14 participants took part in the first round, but only 13 of them took part in
the second and third rounds as one of the experts was out of the country at the time
of the second and third rounds. In order to evaluate the effect of this mortality
on the validity, a second analysis of the first round was done with only the 13 sub-
jects who continued. The differences were found to be minor or nonexistent.

Procedure

The first round was conducted in Israel between January and April, 1980; the second
round was done in the first week of May, 1980; and the last round was done in the

last week of May, 1980. The experts were allowed to choose between filling out the questionnaire themselves or being interviewed. All the experts preferred to to be interviewed but to fill out the questionnaire in privacy. In the second and third rounds, the researcher went to these experts and sat with them while they filled out the questionnaires. He was not involved with the grading process but answered some general questions. Every subject was asked in the first round to grade each box (270) and to evaluate the power of each organization (15).

In the second and third rounds, all the experts received the same questionnaire but the tables were different. Some boxes were omitted after the first and second rounds, either because in those boxes the experts reached a consensus or due to the fact that three organizations were omitted as they were found to be too weak to be considered. The boxes in the second and third rounds consisted of three parts: the upper left was filled in by the researcher with the group's mean for this box, the upper right was filled in with the expert's former grade, and the lower part was an empty space for the expert's new grade.

RESULTS

P_i - The Power of the Organizations

The subjects were asked in the first round to rate the power (P_i - ability to influence the decision process within the N.I.I.) of the fifteen organizations. An agreement was found among the experts with respect to the power ratings: the largest standard deviation was only 1.1 out of a possible maximum of 2.5. As a result, this set of questions was not repeated in the second and third rounds. Out of the fifteen organizations, three were rated at a score of below one. Thus, their mean P_i was found to be below a slight influence on the decision making. These three organizations were, therefore, deleted from further analysis. One additional organization was added to the second round by the suggestions of one of the experts. It was subsequently deleted because it was found to be of a low influence. The organizations list and their P_i are presented in Table 1.

Table 1——Summary of the P_i Rates

Institution	P_i	S.D.	N
Ministry of Finance	4.5	0.65	14
Ministry of Labor and Social Affairs	3.7	0.91	14
The Association of Local Authorities	1.9	1.08	14
The Labor Party	2.6	1.01	14
The Likud Party	2.8	1.10	14
The Histadrut	3.2	1.10	14
The Union of the Banks	1.2	1.09	14
The Association of Manufacturers	2.5	1.11	14
Union of Private Insurance Companies	1.5	0.90	14
The Association of Artisan and Craftsmen	0.7*	1.00	14
The Union of the Moshavim	0.6*	0.80	14

The Association of the Farmers	0.5*	0.72	14
The Organization of Contractors and Builders	1.1	1.08	14
The Jewish Agency	1.6	1.10	14
The Union of Social Workers	2.8	0.98	13
The Chamber of Commerce	0.8*	0.84	10

*Items which were deleted due to an insufficient ability to influence the decision making in the N.I.I.

Effect of Background Data

Due to the small size of the group, it was impossible to determine the influence of most traditional background factors on the rating. Only two variables were compared: type of academic degree (social work versus no degree in social work), and present occupation (academicians vs. those who are working in services, companies etc.).

Using t-tests, it was found that education in social work has no influence on the individuals' A.R.C.$_t$ or on their S.D. (See Table 2). The second variable, present occupation, was found also not to affect the individuals' A.R.C.$_t$, but shows significant (at the .05 level) difference on their S.D. This is to say that the academicians significantly used categories closer to the mean, while others more frequently used the two ends of the scale.

<p align="center">Table 2——The Impact of Two Background
Variables on the Way of Rating</p>

	The Means		
	Mean of A.R.C.	T-value	2-tail Probability
Social Workers	.042195	.019543	>.20
Non Social Workers	.042762		

	The S.D.		
	Mean of S.D.	T-value	2-tail Probability
Social Workers	1.947	.064571	>.20
Non Social Workers	1.984		

	The Means		
	Mean of A.R.C.	T-value	2-tail Probability
Academicians	.042300	.016768	>.20
Non Academicians	.042611		

	The S.D.		
	Mean of S.D.	T-value	2-tail Probability
Academicians	1.521	2.895101	<.05
Non Academicians	2.216		

Levels of Consensus and the Distribution of S.D.

The $Q_{.25}$ and $Q_{.75}$ had to be determined by the nature of the distribution and its parameters. It was assumed that according to the multivariate central limit theorem approach, these S.D.s will be normally distributed if N is sufficiently large. This N is 216 (after the deletion of the three institutions), which is definitely large enough. As there was no prior information on the parameters (mean and variance) of this distribution, they were estimated from the sample. The mean of this distribution was estimated as 1.968 and the S.D. as 0.6727.

To verify that this distribution is indeed normal, two inferential tests were conducted. First a Pearson X^2 goodness of fit was performed, and a value 1.1099 was obtained, which is less than the critical value for rejecting the normality hypothesis at the .05 level. In addition, a Kolmogorov-Smirnov test was conducted. The largest distance was found to be .0465. Even according to a non-conservative approach to a Kolmogorov-Smirnov test as to whether a set of observations is from a normal population as presented by Lilliefors (1967), the hypothesis of normality cannot be rejected at the .05 level (the critical value for the .05 level is .0603 and even higher for the conservative approach).

These tests show that this is a normal distribution with a mean of 1.968 and a standard deviation of 0.6727. With these parameters, we can derive the critical values for consensus and strong dissensus. As consensus was defined to be the lower quartile of the relevant distribution, the critical value is 1.5739. In other words, our decision criterion is that any S.D. below 1.5739 indicates consensus and should not be repeated in the next round. Dissensus ($Q_{.75}$) was found to be a S.D. above 2.4221.

In this study, a strong consensus was reached in the third round, and there were very few cases of dissensus. From Table 3, it is clear that this is not a case of strong dissensus, but of a strong consensus. In this Table, the columns of consensus are cumulative.

Table 3—Frequencies of Consensus and Strong
Dissensus in the Three Rounds (N=216)

	Number of Cells with Consensus	% of Cells with Consensus	Number of Cells with Dissensus	% of Cells with Dissensus
Round 1	65	30.09	61	28.24
Round 2	65+51=116	53.71	23	10.65
Round 3	116+54=170	78.70	5	2.31

Major Results of the Three Rounds

The first round actually revealed the major tendencies. Although the experts re-
ported many difficulties and some of them later changed their ratings, the overall
picture was clear from the beginning. Even at that stage, a few boxes were found
to be of greater importance than others. Such interactions are: The Likud (con-
servative) Party and Political Legitimation, the Labor Party and Image of Equality,
Manufacturers with the Cost of Production, and Private Insurance Companies with
Example to Save.

The second round was characterized with similar results combined with a general
trend toward higher consensus among the experts and more polarization in their
ratings. The number of boxes which tended toward the absolute value of five be-
came larger. For example, the Ministry of Finance in regard to the Cost of Produc-
tion was rated in the second round at -4.42, while in the first round it was rated
only at -3.21. The Union of the Social Workers in regard to stratification was
rated in the first round at +3.38, while in the second round at +4.08.

The third round, which took place only two weeks after the second round, was to a
large extent, similar to the second. No new trends or major changes in intensity
occurred. Consensus was achieved in more boxes (54), and strong dissensus was
diminished. As an outcome, the A.R.C.s (of all kinds) had been sharpened, and the
trends had been crystallized. The results of the V_{ij}s (weighted by P_i) of the last
round is reported in Table 4.

The Overall Reaction (A.R.C.$_t$)

In all the three rounds, the A.R.C.$_t$ was found to be close to zero (see lower part
of Table 5). In no way, however, can one conclude that the environment is indif-
ferent to the change. It indicates a very active and non-uniform environment,
where the subcomponents are more important than the total score. In other words,
the zero score can be an outcome of a very dynamic balanced environment. In a sense,
it suggests a counter-synergistic effect in which the subcomponents are more effec-
tive than the sum of the effects.

The Organizations' Reactions (A.R.C.$_i$)

In looking at the A.R.C.$_i$s in the three rounds, it is clear that one trend is grow-
ing stronger over time. It appears as if it is possible to divide the organiza-
tions into three groups. In the first group, there are organizations which scored
positively high on most of the functions. In this group, one can find the Histadrut
(general union of all laborers), the Association of the Social Workers, the Labor
Party, and the Ministry of Labor and Social Affairs. This is the group of supporters
who are tentative partners for an action coalition.

The second group consists of institutions which scored negatively high on most of
the functions. In this group, one can find the Ministry of Finance, the Likud Party
and the Association of Manufacturers. This is the potential group of opposers.
These are the institutions for which the proposed change is dysfunctional, and

Table 4 - V_{ij} x P_1 of the Third Round

	Ministry of Finance	Ministry of Labor and Social Affairs	Local Authorities	Labor Party	Likud Party	Histadrut	Banks	Manufacturers	Private Insurance	Contractors	Jewish Agency	Social Workers
Inflation	-19.62	+6.47	-0.40	+4.24	-4.42	+11.62	-0.80	-7.93	-3.00	-0.74	+0.06	+8.88
Production	-19.89	+6.77	+0.48	+2.83	-3.50	+5.73	-0.90	-11.25	-1.56	-1.93	+1.14	+7.48
Stratification	-0.59	+8.18	+1.63	+6.71	-1.40	+10.56	0.00	-2.30	+0.47	-0.76	+1.20	+11.42
Damaged Goods	-3.38	+8.77	+1.22	+4.55	+0.59	+6.94	-0.40	-8.45	+0.26	-0.40	+1.38	+11.42
Occupational Source	-6.00	+8.81	+4.35	+3.77	+1.88	+4.00	+0.43	-1.98	+0.21	0.00	+1.82	+11.20
Support Professions	-0.77	+7.70	+0.95	+2.39	+0.22	+4.80	-0.55	-2.15	-0.96	+0.08	+0.39	+11.20
Good Will	-0.95	+5.92	+1.27	+3.80	-1.18	+2.78	-0.60	-1.93	-0.93	-0.76	-0.27	+8.76
Example to Work	-13.86	-0.63	-2.30	-2.39	-7.81	-1.22	-1.80	-7.30	-0.68	-1.38	-0.14	+7.48
Example to Save	-17.37	+1.22	+0.13	-0.55	-5.60	-0.80	-5.40	-5.20	-6.35	-1.56	+0.43	+3.02
Political Stability	-12.37	+4.00	-2.22	-3.90	-6.02	+0.80	-1.00	-3.03	-1.07	+0.36	-0.14	+6.08
Political Legitimation	-6.00	+3.40	-2.22	-3.15	-7.11	-3.62	-0.10	-0.63	-0.12	+0.08	-0.67	+5.82
Cheap Manpower	-12.20	+2.92	-2.15	+4.26	-3.86	+8.54	-1.60	-8.16	-1.50	-1.44	+0.72	+7.92
Keeping Workers Satisfied	-15.75	+1.07	-1.42	+2.37	-6.08	+6.53	-1.70	-8.28	-2.00	-2.48	+1.20	+7.70
Image of Equality	+4.50	+14.54	+3.65	+10.04	+5.82	+12.26	+0.43	+0.20	+0.75	+0.09	+5.07	+12.04
National Expenditure	-19.62	+14.80	+1.28	+4.45	-5.82	+10.53	-0.92	-7.93	-1.74	-1.56	+1.07	+12.49
Power of N.I.I.	-17.01	+7.70	-1.03	+4.56	-5.60	+0.67	-1.85	-4.88	-4.50	-0.32	+0.53	+10.50
Personal Relationships	-8.64	+3.70	+0.17	+3.59	-2.58	+2.40	0.00	+1.55	-1.23	0.00	+0.24	+9.69
Resources	-15.00	-2.00	-5.02	+2.16	-4.54	+1.22	-1.48	-3.95	-2.36	-0.81	-0.86	+5.94

naturally they will try to stop it. Some of these organizations might come to favor the change or lessen their opposition under the right bargaining and marketing.

The last group is the one of the floating powers. These are the organizations which scored absolutely low. Part of them scored very low on all functions, indicating slight interest, while others are balanced between support and opposition. In this group one can find the Local Authorities, the Union of the Banks, the Jewish Agency, the Private Insurance Companies, and the Contractors and Builders. This group is the balanced group which can be used by the initiating organization to strengthen its coalition, or can remain inactive.

The results of all the A.R.C.$_i$s in the three rounds are presented in Table 5. It is clear in this table that the phenomenon of the three groupings crystallized over time (rounds), and it is clearer in Round Three than in the earlier rounds.

Table 5——Summary Table for the Institutions'
Involvement Over the Functions in the Three Rounds

Institution	First Round		Second Round		Third Round	
	A.R.C.$_i^*$	A.R.C.$_i$	A.R.C.$_i^*$	A.R.C.$_i$	A.R.C.$_i^*$	A.R.C.$_i$
Ministry of Finance	-1.76	-1.58	-1.97	-1.77	-2.13	-1.92
Ministry of Labor and Social Affairs	+1.49	+1.10	+1.55	+1.15	+1.48	+1.10
Local Authorities	-0.03	-0.01	-0.03	-0.01	-0.04	-0.02
Labor Party	+0.91	+0.47	+1.12	+0.58	+1.07	+0.56
Likud Party	-0.87	-0.48	-0.90	-0.51	-1.15	-0.64
Histadrut	+1.07	+0.69	+1.51	+0.97	+1.45	+0.93
Banks	-0.78	-0.19	-0.87	-0.21	-0.84	-0.20
Manufacturers	-1.66	-0.83	-1.80	-0.90	-1.86	-0.93
Private Insurance	-0.85	-0.26	-1.01	-0.30	-0.97	-0.29
Contractors	-0.63	-0.14	-0.66	-0.15	-0.68	-0.15
Jewish Agency	+0.48	+0.15	+0.39	+0.13	+0.45	+0.14
Social Workers	+2.84	+1.59	+3.18	+1.78	+3.16	+1.77
A.R.C.$_t$	+0.0425		+0.0633		+0.0292	

The Functions (A.R.C.$_j$)

In analyzing the reaction to the functions, it is clear that there are three major groups. Group A consists of functions which caused all or most of the organizations to support the new policy, such as: Image of Equality, Change of Stratification, and Source of Work for some occupations. Group B consists of functions which most of the organizations are indifferent to or that are important only to a few, such as: Change in Level of Production, Political Stability and National Expenditure. The last group of functions, Group C, consists of those which caused most organizations to oppose the initiated policy, such as: Example of Work, Example to Save, Cheap Manpower, and Competition over Resources.

Each of these groups has a substantial common denominator. The last group (the opposition) is centered around the financial cost of the program. Group A is centered around the social aspects of the new policy; Group B consists of functions which have both social and economical aspects but do not threaten anyone of them; they are in the center of the socio-economic continuum. The A.R.C.$_j$s in all three rounds are presented in Table 6.

Table 6——Summary Table for the Importance of the Functions
Over the Organizations in the Three Rounds

Function	First Round		Second Round		Third Round	
	A.R.C.$^*_j$	A.R.C.$_j$	A.R.C.$^*_j$	A.R.C.$_j$	A.R.C.$^*_j$	A.R.C.$_j$
Inflation	-0.09	-0.02	-0.10	-0.02	-0.20	-0.04
Cost of Production	-0.49	-0.10	-0.35	-0.07	-0.45	-0.09
Stratification	+0.95	+0.19	+1.11	+0.22	+0.99	+0.20
Damaged Goods	+0.75	+0.15	+0.75	+0.15	+0.62	+0.12
Occupational Source	+1.15	+0.23	+1.19	+0.24	+1.19	+0.24
Support Professions	+0.48	+0.10	+0.57	+0.11	+0.60	+0.12
Good Will	+0.05	+0.01	+0.24	+0.05	+0.36	+0.07
Example to Work	-1.11	-0.22	-0.97	-0.19	-1.01	-0.20
Example to Save	-1.23	-0.25	-1.37	-0.27	-1.39	-0.28
Political Stability	-0.22	-0.04	-0.48	-0.10	-0.58	-0.12
Political Legitimation	-0.54	-0.11	-0.56	-0.11	-0.43	-0.09
Cheap Manpower	-0.14	-0.03	-0.27	-0.06	-0.31	-0.06
Keeping Workers Satisfied	-0.47	-0.09	-0.65	-0.13	-0.54	-0.11
Image of Equality	+1.06	+0.32	+2.17	+0.43	+2.10	+0.42
National Expenditure	+0.05	+0.01	+0.27	+0.05	+0.15	+0.03
Power to N.I.I.	-0.24	-0.05	-0.40	-0.08	-0.31	-0.06
Personal Relationships	+0.31	+0.06	+0.31	+0.06	+0.32	+0.06
Resources	-1.03	-0.21	-0.84	-0.17	-0.99	-0.20

The Nature of Changes in Rating from One Round to Another

Changes were classified into three categories: Conformity (new grade closer to
the group's mean); tenacity (ignoring the group's mean and keeping the former
grade); and counterbalancing (assuming that the former grade is better, and -here-
fore choosing a more extreme point of view).

<div align="center">

Table 7——The Nature of Change in Grading
Between the Rounds. (In percents)

</div>

	From 1st Round to the 2nd	From 2nd Round to the 3rd
Conformity	36.1%	29.4%
Tenacity	61.1%	68.5%
Counterbalancing	2.8%	2.1%

From Table 7, we can see that the last option was rarely used. Tenacity was the
favorite one and occurred more frequently in the third round. This in part is
due to the fact that in the first round some experts were confused with the system
and corrected their mistakes in the second round. Also, it shows that the experts
are not easily influenced by the majority point of view.

After the third round, the researcher talked with a few of the experts and tried
to learn why and how they filled out the table. As a result of these talks three
main factors seem to explain the cases of dissensus.

The first, and probably the most important, is that some experts with regard to
some organizations or functions ignored the guidelines of the researcher. They did
not rate each V_{ij} separately but were influenced either by the organization or by
the function only. For example, many experts graded the Association of the Social
Workers positively and very high regardless of the functions. The second factor
for dissensus is rooted in the structure of some organizations. There are some
organizations which consist of two (or more) groups which, in regard to some func-
tions, are in conflict. The Ministry of Labor and Social Affairs is a good example.
On some functions, the Labor part of the Ministry has an opposite view from the
Welfare part. A few of the experts graded according to the Labor view, a few
others according to the Welfare view, and the rest tried to balance between the two.
The third factor for dissensus is rooted in the discrepancy of some organizations
between their overt goals and ideology and their actual behavior. Some of the
experts graded them as they should act according to their formal declarations, while
others graded them according to their recent moves.

DISCUSSION

The main purpose of this study was to test the applicability of the proposed A.R.C.
tool. In general, under the quasi-experimental conditions, the A.R.C. proved to

be useful and even relatively easy to obtain. Still one key question: To what extent do the results represent the real world? A partial answer can be drawn from what happened to the N.I.I. in April, 1980. After the first round had been completed and before the second round started, the N.I.I. acted to initiate a new policy, which had nothing to do with this study but was similar in nature to the one presented here. As in the case study, all the internal conditions were in favor of this new policy, as the N.I.I. had all the fiscal and manpower resources required within its own budget and personnel. However, the new policy was not implemented as the N.I.I. encountered massive environmental opposition which it did not expect and was not able to deal with.

Four experts from within the N.I.I. and other organizations were asked to analyze this failure. Their conclusions were: First, the N.I.I. had totally ignored the possibility of environmental opposition, and therefore did not try to learn about possible opposition to the new policy. Second, there were a few organizations, such as the Ministry of Finance and the Likud Party which strongly opposed the new policy while the traditional supporters were not active. Third, the main reasons for opposition and support were similar to those found in this study except for the Example to Save which was irrelevant.

This real case supports the following: First, such A.R.C. is a required tool even when the initiating organization feels secure. Second, the A.R.C. was proven to be valid and accurate for this situation. Third, having the results of the A.R.C. is only a key for power and preparing for change. As it was, there were a few strong organizations which supported the new policy, but this was only a potential support which was not actualized. Having the A.R.C. results would have enabled the initiating organization to use the potential support in its environment, since opposers are likely to act more quickly and more energetically than supporters. In this case, the N.I.I. ignored the environment, and only the opposers acted. The actual support given to the validity and accuracy of the A.R.C. combined with the fact that this tool was able to reflect the general tendencies from the first round allow future users opportunity for variations and saving of rounds.

In this study only minor attention was given to the influence of the background data on the whole process. The only interesting finding was that academicians did not tend to commit themselves to either extremes but bound their answers close to the means. As this seems to indicate academic fear of extremeness, it can also be interpreted as a better ability to forecast. Lower standard deviations can signify that in more cases academicians can lower the number of rounds required for consensus. In general, the question of who can be a better expert, and what is the influence of the background variables on the rating process is still open and requires extensive investigation.

The use of the raw data in the Result section was under the assumption of an interval continuum. It is doubtful whether the A.R.C. scores are sensitive enough for the interval assumption or that they are just ordinal. Using the Ordinal approach we collapse sections on the continuum, and all values in one section will be equal numerically and qualitatively. For example, all values between -1 and +1 in the V_{ij} means can be regarded as zero, or as no support and no opposition. Reading the results based on ths approach is much easier than reading Table 4, although the latter is more sensitive; thus, both carry the same information. In order to check

the quality of the results using this new scaling, new $A.R.C._i$s and $A.R.C._i$s were calculated (based on seven sections ranging from -3 to +3). [1] Both were correlated with the results of the third round as presented in Tables 5 and 6. Both were correlated very highly (for the $A.R.C._i$: R = .813, N-12, P<.001 and for the $A.R.C._i$: R = .872, N-15, P<.001) which indicates similar quality but simpler reading for the ordinal approach.

The instrument that was presented in this study is only a prototype of endless possible variations. In the simplest model, it can be used on 3-5 employees of the initiating organization within three days. However, it is possible for a long-term investment to hire all or most of the experts, prepare a computer algarithm which will be programmed to do all the calculations and use computer terminals to allow the experts to feed information directly into the computer rather than by question-naire. The method is one that can be used in many variations according to the needs of the users. Before using this instrument, the initiation organization should estimate the time and money that it will have to spend for such information and, accordingly, decide if and in what scope it wants to use the A.R.C. instrument.

NOTES

The way to calculate the maximum values of the S.D. is the following way:

The usual maximum likelihood estimator for standard deviation is:

$$S.D. = \frac{\sum\limits_{i=1}^{n} (X_i - \bar{X}}{n}$$

We would like to find what is the maximum value this estimator can get. This value will be denoted as S.D. max. We already know that this happens when half of the observations have the lowest possible value, the other half are of the highest pos-sible value, and the mean is the midrange. In our case, the mean is zero and the range goes from +5 to -5. So:

$$S.D._{max} = \sum \frac{n(max^* - midrange^{**})^2}{n}$$

$$= \sum (max^* - midrange^{**})^2$$

$$= \sum max^* - midrange^{**}$$

$$= \sum \text{half the range}^{***}$$

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* As the range from midrange to max and to min is identical, the min can be sub-stituted by the max.

** Midrange = Mean.

*** In cases of odd number of observations, the range of the $S.D._{max}$ will be only $(\frac{max-min}{2})$ $1 - \frac{1}{n^2}$ this addition for all practical purposes is negligible.

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Table 4 - V_{ij} x P_i of the Third Round

	Ministry of Finance	Ministry of Labor and Social Affairs	Local Authorities	Labor Party	Likud Party	Histadrut	Banks	Manufacturers	Private Insurance	Contractors	Jewish Agency	Social Workers
Inflation	-19.62	+6.47	-0.40	+4.24	-4.42	+11.62	-0.80	-7.93	-3.00	-0.74	+0.06	+8.88
Production	-19.89	+6.77	+0.48	+2.83	-3.50	+5.73	-0.90	-11.25	-1.56	-1.93	+1.14	+7.48
Stratification	-0.59	+8.18	+1.63	+6.71	-1.40	+10.56	0.00	-2.30	+0.47	-0.76	+1.20	+11.42
Damaged Goods	-3.38	+8.77	+1.22	+4.55	+0.59	+6.94	-0.40	-8.45	+0.26	-0.40	+1.38	+11.42
Occupational Source	-6.00	+8.81	+4.35	+3.77	+1.88	+4.00	+0.43	-1.98	+0.21	0.00	+1.82	+11.20
Support Professions	-0.77	+7.70	+0.95	+2.39	+0.22	+4.80	-0.55	-2.15	-0.96	+0.08	+0.39	+11.20
Good Will	-0.95	+5.92	+1.27	+3.80	-1.18	+2.78	-0.60	-1.93	-0.93	-0.76	-0.27	+8.76
Example to Work	-13.86	-0.63	-2.30	-2.39	-7.81	-1.22	-1.80	-7.30	-0.68	-1.38	-0.14	+7.48
Example to Save	-17.37	+1.22	+0.13	-0.55	-5.60	-0.80	-5.40	-5.20	-6.35	-1.56	+0.43	+3.02
Political Stability	-12.37	+4.00	-2.22	-3.90	-6.02	+0.80	-1.00	-3.03	-1.07	+0.36	-0.14	+6.08
Political Legitimation	-6.00	+3.40	-2.22	-3.15	-7.11	-3.62	-0.10	-0.63	-0.12	+0.08	-0.67	+5.82
Cheap Manpower	-12.20	+2.92	-2.15	+4.26	-3.86	+8.54	-1.60	-8.16	-1.50	-1.44	+0.72	+7.92
Keeping Workers Satisfied	-15.75	+1.07	-1.42	+2.37	-6.08	+6.53	-1.70	-8.28	-2.00	-2.48	+1.20	+7.70
Image of Equality	+4.50	+14.54	+3.65	+10.04	+5.82	+12.26	+0.43	+0.20	+0.75	+0.09	+5.07	+12.04
National Expenditure	-19.62	+14.80	+1.28	+4.45	-5.82	+10.53	-0.92	-7.93	-1.74	-1.56	+1.07	+12.49
Power of N.I.I.	-17.01	+7.70	-1.03	+4.56	-5.60	+0.67	-1.85	-4.88	-4.50	-0.32	+0.53	+10.50
Personal Relationships	-8.64	+3.70	+0.17	+3.59	-2.58	+2.40	0.00	+1.55	-1.23	0.00	+0.24	+9.69
Resources	-15.00	-2.00	-5.02	+2.16	-4.54	+1.22	-1.48	-3.95	-2.36	-0.81	-0.86	+5.94

The Association of the Farmers	0.5*	0.72	14
The Organization of Contractors and Builders	1.1	1.08	14
The Jewish Agency	1.6	1.10	14
The Union of Social Workers	2.8	0.98	13
The Chamber of Commerce	0.8*	0.84	10

*Items which were deleted due to an insufficient ability to influence the decision making in the N.I.I.

Effect of Background Data

Due to the small size of the group, it was impossible to determine the influence of most traditional background factors on the rating. Only two variables were compared: type of academic degree (social work versus no degree in social work), and present occupation (academicians vs. those who are working in services, companies etc.).

Using t-tests, it was found that education in social work has no influence on the individuals' A.R.C._t or on their S.D. (See Table 2). The second variable, present occupation, was found also not to affect the individuals' A.R.C._t, but shows significant (at the .05 level) difference on their S.D. This is to say that the academicians significantly used categories closer to the mean, while others more frequently used the two ends of the scale.

Table 2——The Impact of Two Background
Variables on the Way of Rating

The Means

	Mean of A.R.C.	T-value	2-tail Probability
Social Workers	.042195	.019543	>.20
Non Social Workers	.042762		

The S.D.

	Mean of S.D.	T-value	2-tail Probability
Social Workers	1.947	.064571	>.20
Non Social Workers	1.984		

The Means

	Mean of A.R.C.	T-value	2-tail Probability
Academicians	.042300	.016768	>.20
Non Academicians	.042611		

The S.D.

	Mean of S.D.	T-value	2-tail Probability
Academicians	1.521	2.895101	<.05
Non Academicians	2.216		