PARTIAL ORDERS OF ISRAELI SETTLEMENTS BY ADJUSTIVE BEHAVIORS

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Israeli settlements (cities, towns, and villages) are partly ordered according to subjective *criteria of adjustive behavior of their residents. Two-dimensional partial orders are first established according to each of four subsets of adjustive behaviors, and these are then amalgamated into a common partial order. In each two-dimensional partial order (POSA), the joint (vertical) direction indicates differences in* level *of the respective adjustive behavior, while the lateral (horizontal) direction indicates differences in* kind *(content) of the adjustive behavior, according to its respective items. For the subsets of wellbeing and coping, the lateral direction contrasts affective with instrumental behavior. The settlements are differentiated according to the difference between their coping (or wellbeing) with social problems and their coping (or wellbeing) with livelihood problems, regardless of their level of coping (or wellbeing). Each settlement is located in the respective POSA spaces according to both directions simultaneously.*

For studying the relationships among the four partial-orders of the subsets of adjustive behavior, only the joint directions were used. The POSA of the combined data turns out also to be essentially two-dimensional. The order of the settlements in the joint direction of this total POSA space is similar to that found for each of the subsets separately, starting at the top with Kefar-Shemaryahu, Shavei-Zion and the kibbutzim, and terminating at the bottom with Yerucham, Yavneh and Atlit. The lateral direction goes from passive wellbeing to active coping.

Analysis according to background characteristics reveals that in order to understand the Israeli social stratification with respect to adjustive behavior, seniority *and* ethnicity *of the settlements should be considered simultaneously. Veteran settlements which absorbed a certain percent of residents of Eastern origin usually have a lower level of overall adjustive behavior than do predominantly Western settlements.*

The background characteristics of ethnicity, education, and income tend to have a monotone relation – if at all – with the joint *direction of the level of adjustive behavior. The background trait of seniority of the settlements tends to have a monotone relation with the* lateral *direction of the kind of adjustive behavior.*

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INTRODUCTION

Multivariate and Multidimensional Nature of Partial Order

One of the most important concepts in the social sciences is that of adjustive behavior. In the vast literature on this topic, many varieties of adjustive behavior have been discussed, such as coping, wellbeing, stress reactions and others. Each variety has usually been treated as a separate topic. For example, in a book on indicators of well-being (Andrews and Withey, 1976), no mention at all is made of coping or of similar varieties of behavior. A major study of the quality of American life (Campbell, Converse and Rodgers, 1976), in which wellbeing is the major topic, mentions an "accommodation process" but includes no direct observations on this.

Conversely, when "coping" and "stress" are the topics being researched, usually no mention is made of wellbeing. Examples of this are the work of Gurin *et al.* (1960), "Americans view their mental health" – which is concerned with emotional stress – and Lazarus' work and summary of the literature on stress (1966, 1968). A possible exception is the work of Marion Just (1974), which attempts a simultaneous discussion of coping and mental health.

Simultaneous consideration of the varieties shows the need for treating adjustive behavior as a multivariate concept. Furthermore, each variety in turn is differentiated into subvarieties, or has a universe of items of its own, also of a multivariate nature. Despite the complexity of the concepts and subconcepts, many authors persist in treating each variety, or adjustment as a whole, as a one-dimensional trait. Data analysis has typically assigned a "total score" on a set of adjustment items, and treated this score as if it were an adequate representative of the multivariate distribution of the items. The situation here is not basically different from that in personality psychology. See the critique by Mischel (1984).

Simple scoring is justified when the structure of the distribution is one-dimensional, or a Guttman scale. However, the usual case is not one-dimensional. In recent years, Partial Order Scalogram Analysis (POSA) has been developed by Guttman for the problem of scoring in the cases where dimensionality is two or more. The adjustive behavior examples treated here are all approximately two-dimensional. Readers previously unacquainted with POSA should have little difficulty in following the exposition, since the technique of two-dimensional presentation is very simple.

Varieties of Adjustive Behavior

The partial-orders of Israeli settlements introduced here are based on subjective criteria of self-reported "adjustive behavior" of their residents.

Two major facets were introduced previously for defining the domain of adjustive behavior items, providing a common framework for wellbeing and coping (Levy and Guttman, 1978). One facet is the *modality* of the behavior, and the other is the *directive* of the behavior. Accordingly, the domain of each item for adjustive behavior is characterized by a structuple of two structs: one struct from each of these two facets. For example, the domain of wellbeing is defined by behavior of modality "satisfaction" with the directive "to be". As usual, the entire universe of possible items could not be studied in one project. The present research was restricted mainly to the three kinds listed below:

Type of adjustive behavior	*Mode of the behavior*	*Directive of the behavior*
1. Wellbeing	satisfied	to be
2. Coping	ability to try	to attack
3. Attraction to place of residence	motivation	to continue

Each kind of adjustive behavior was studied by several questions, incorporating life areas and other relevant elements. Eleven questions were asked on "wellbeing" (satisfaction to be), seven additional questions were devoted to the coping behavior (ability to try to attack). Four questions were asked about the third kind of adjustive behavior listed above, "attraction to place of residence".

For the present analysis, the wellbeing items were divided into two subsets according to the wording of their checklist. Seven of these items had identical checklists worded in terms of "satisfaction", and the four remaining ones had variously worded checklists (but also indicating "satisfaction").

The questions on each kind of adjustive behavior are listed below:

1) *"Satisfaction to be": wellbeing*

a. *Identical checklist:*

A. In general, are you satisfied with your situation these days?
(very satisfied . . . very dissatisfied)
B. Are you satisfied with your daily work?
(very satisfied . . . very dissatisfied)
C. Are you satisfied with the apartment you live in?
(very satisfied . . . very dissatisfied)
D. Are you satisfied with life in your town?
(very satisfied . . . very dissatisfied)
E. Are you satisfied with the way you spend your leisure time?
(very satisfied . . . very dissatisfied)
F. Are you satisfied with your circle of friends?
(very satisfied . . . very dissatisfied)
G. Are you satisfied with your relations with your neighbors?
(very satisfied . . . very dissatisfied)

b. *Varied checklist:*

A. How is your mood these days?
(very good all the time . . . not good almost all the time)
B. Is your family income today sufficient?
(definitely sufficient . . . insufficient)
C. In general, how do you evaluate your health these days?
(very good . . . not at all good)
D. Generally speaking, are you happy these days?
(very happy . . . very unhappy)

2) *"Ability to try to attack": coping*

A. Are you able to cope with your personal problems?
(definitely able to cope . . . definitely unable to cope)
B. Are you able to cope with your livelihood problems?
(definitely able to cope . . . definitely unable to cope)
C. Are you able to cope with your problems at work?
(definitely able to cope . . . definitely unable to cope)
D. Are you able to cope with your health problems?
(definitely able to cope . . . definitely unable to cope)
E. Are you able to cope with your housing problems?
(definitely able to cope . . . definitely unable to cope)
F. Are you able to cope with your social problems?
(definitely able to cope . . . definitely unable to cope)
G. Are you able to cope with problems concerning the spending of your leisure time?
(definitely able to cope . . . definitely unable to cope)

3) *"Motivation to continue": attraction to place of residence*

A. Do you want very much to continue living in your town?
(definitely yes . . . definitely no)
B. Do you want very much to move to another town?
(definitely no . . . definitely yes)
C. If you had the possibility, would you want to live permanently outside Israel?
(very much don't want to . . . want to very much)
D. Are you sure that you will remain in Israel?
(I am sure . . . almost sure that I will not remain)

The questions were put in closed form to the respondents.

Even though the answers to the items are worded in the sense of their specific behaviors, they can all be interpreted as ranked from high to low on the common concept of *adjustive behavior.* It should also be noted that the specific behaviors studied here have a common object, namely, the situation of self.

METHOD

The Sample of Settlements

The data are from a national sample, consisting of 1,732 respondents living in 32 urban and rural Jewish settlements in Israel, surveyed in November 1977[1]. Of the respondents, 573 were chosen from the urban Jewish populations of the big cities, and 1,159 from the rural and small town populations, by sampling from residential lists. The respondents were sampled in each settlement according to its relative size, the minimum being 30 respondents per settlement. This sampling frame enables community analysis of Israeli Jewish settlements, although it was not designed especially for an ecological-typology study like the present one.

Table 1 lists the sample of the settlements according to their geographical location, indicating for each settlement whether it is urban or rural, date of establishment and socio-demographic characteristics of its residents (level of education, ethnicity, income, etc.).

Table 1. Socio-Demographic Characteristics of Each of the 32 Settlements

Name of settlement	Type of settlement	Year of establishment	Percent of Eastern origin (Asia and North Africa) in sample	Median years of education in sample	Percent of low density of persons per room in sample	Percent of high income in sample
Jerusalem and Corridor						
Jerusalem	1. city	--	32%	12	62%	48%
Jerusalem corridor (Ora & Beit-Shemesh)	2. town	1950	92	9.5	41	37
Tel-Aviv and Center						
Tel-Aviv	3. city	1909	29	11	72	45
Ramat-Gan (Givataim)	4. city	1921(1922)	24	11	68	46
Benei-Brak	5. city	1924	28	12	46	24
Holon	6. city	1933	44	11	71	47
Bat-Yam	7. city	1926	51	9.5	53	42
Ganei-Tikva	8. town	1953	60	9.5	44	24
Hod-Hasharon	9. town	1924	33	12	77	45
Yavneh	10. town	1949	79	10	57	40
Yinon	11. village*	1952	94	9.5	24	17
Kefar-Shemaryahu	12. village	1937	16	+13	96	85
Rishon-Lezion	13. town	1882	37	11	72	49
Haifa and North						
Haifa	14. city	veteran	16	12	76	46
Elyakim	15. village	1949	100	7	21	19
Beit-Alfa	16. kibbutz	1922	3	12	94	–
Gadish	17. village	1956	97	6	15	8
Zichron-Yaakov	18. town	1882	41	11	69	54
Hadera	19. town	1890	41	11.8	77	48
Kefar-Giladi	20. kibbutz	1916	10	12	79	–
Menahamia	21. village	1902	47	9	70	50
Nir-David	22. kibbutz	1936	2	12	93	–
Ein-Hachoresh	23. kibbutz	1931	0	12	69	–
Atlit	24. town	1904	72	10	56	43
Shavei-Zion	25. village	1938	4	12	89	52
Beer-Sheva and South						
Beer-Sheva	26. city	1948	56	9	52	59
Eilat	27. town	1951	45	7	58	40
Bitcha	28. village	1950	91	7	15	6
Berechia	29. village	1950	93	9	7	15
Yerucham	30. town	1951	100	6	29	3
Noga	31. village	1955	98	6.5	18	5
Sharsheret	32. village	1951	98	9	15	14

* Village = moshav (except Kefar-Shemaryahu)

As shown in Table 1, the national sample includes all types of urban and rural settlements, varying in seniority and background characteristics of their residents. It would have been desirable to have the large cities divided into smaller and more homogeneous units for the present research, but this was not possible because the sample design was not sufficiently detailed – it being oriented to other purposes.

Recoding the Data

The study on adjustive behavior was originally designed to elucidate the structure of the interrelations over individuals among variables of adjustive behavior. The multivariate lawfulness revealed has been reported in Levy and Guttman, 1978.

The emphasis of the present analysis is on a typology of *communities* in terms of level and kind of stratification. Each community (settlement) can be ranked on each of the 22 adjustive behavior items listed above, according to its distribution on that item. Any of several averages could be used for ranking the distributions. For present purposes, the ranking was according to the percentage of answers in the "positive" categories given by the residents of the settlement. These percentages were grouped into, at most, five intervals. The highest percent "positive" is always coded "1" while the lowest percent may reach code "5". Thus, a new set of coded data was created, ranking the 32 settlements on each of the 22 adjustive behavior items.

Table 2 presents the ranking of settlements on each question, according to the distributions of "positive" answers on that question. The coding for each rank was shared by at least two settlements.

The next sections will be devoted to the analysis of the partial orders of Israeli settlements, generated by their being ranked simultaneously on the 22 items of adjustive behavior.

Partial Order Scalogram Analysis (POSA) will be used first to partly-order the settlements according to each of three subsets of the adjustive behavior items listed above. Then we shall attempt a partial-order of the settlements over all the items simultaneously, based on the POSA for each subset separately. The analysis will also include the correlations between the "objective" demographic data (presented in Table 1) and the partly-ordered "subjective" stratification.

A Partial-order of Israeli Settlements According to the Three Subsets of Adjustive Behavior of their Residents

A partly-ordered analysis begins with some n different criteria for the stratification of the population, each member of the population being assigned a structuple (profile) composed of n structs, one struct from each criterion. Thus, according to the seven wellbeing (a) criteria, each settlement is assigned a structuple consisting of seven structs, one from each item of this subset of wellbeing, namely, satisfied with: life in general, work, apartment, town, leisure time, friends and neighbors. The structs we shall analyze are the ranks on the items as coded in Table 2.

The overall partial-order is an automatic consequence of the simple-orders on each item separately. The structuple of each settlement is composed of one rank from each wellbeing item. By definition, a settlement has the *highest* level of wellbeing if it has the structuple "1111111": it is highest on each item separately. A settlement has the

Table 2. Key for Coding the Percent "Positive" into Ranks, for Each Item

	Rank				
	Most positive				Least positive
	1	2	3	4	5
"Satisfaction to be": wellbeing					
a. *Identical checklist:*					
A. In general, satisfied with situation these days	70-87%	60-69%	50-59%	31-47%	–
B. Satisfied with everyday work	53-64	40-49	23-39	–	–
C. Satisfied with apartment	81-95	58-73	49-55	–	–
D. Satisfied with life in town	45-62	30-41	16-29	–	–
E. Satisfied with way spending leisure time	69-82	53-66	40-51	27-37	–
F. Satisfied with circle of friends	53-64	40-48	25-37	–	–
G. Satisfied with relations with neighbors	50-60	35-49	–	–	–
b. *Varied checklist:*					
A. Mood	82-92	71-79	60-67	47-57	–
B. Family income sufficient	86-92	61-71	47-59	34-44	6-29%
C. Health evaluation	71-90	61-70	52-60	36-48	–
D. Happy these days	62-76	50-60	41-48	32-38	–
"Ability to try to attack": coping					
A. Able to cope with personal problems	65-74	50-60	44-49	23-41	–
B. Able to cope with livelihood problems	88-94	62-75	50-60	29-45	–
C. Able to cope with problems at work	71-82	51-66	42-50	32-42	–
D. Able to cope with health problems	74-89	60-72	48-59	–	–
E. Able to cope with housing problems	81-94	71-76	56-69	43-51	–
F. Able to cope with social problems	62-70	51-60	42-50	–	–
G. Able to cope with problems concerning leisure time	60-75	52-59	40-49	28-38	–
"Motivation to continue": attraction to place of residence					
A. Wants very much to continue to live in town	85-100	70-84	60-69	40-59	–
B. Does not want to move to another town	65-75	50-64	40-48	20-39	–
C. Would not want to live permanently outside Israel	60-73	42-54	31-40	12-29	–
D. Sure to remain in Israel	91-95	80-89	70-79	55-68	–

lowest level of wellbeing if it has the structuple "4333432": it is at the lowest level of each item separately[2].

The lowest possible structuple did not occur empirically among the 32 settlements, the lowest wellbeing structuple being "4323432" (for Atlit). The highest possible structuple did occur (for Kefar-Shemaryahu). All other structuples are located between these two extreme structuples in a partial-order. One structuple is *higher* than another if and only if it is the higher on at least one item and not lower on any other item. For example, Berechia has structuple "2211111". This is higher than Sharsheret's structuple "2222211" on the third, fourth and fifth items (satisfied with apartment, life in town and leisure time). These two structuples are equal on the rest of the wellbeing items (the first two and the last two). Since there is no reversal of rank order between the two structuples, they are said to be *comparable*, that of Berechia being *higher* than that of Sharsheret: Berechia is higher than or equal to Sharsheret on each of the seven items, and never lower than Sharsheret.

Two structuples are *not comparable* if and only if one structuple is the higher on one struct while the other structuple is the higher on another struct. For example, the structuple "2211111" for Berechia and the structuple "1211121" for Shavei-Zion are *not comparable.* Shavei-Zion (structuple 1211121) is higher on the first item – general satisfaction – while Berechia (structuple 2211111) is higher on the sixth item – social satisfaction – all the rest of the items of both structuples being equal. The two settlements actually are on the same *level* of satisfaction in a sense to be explained later, but they differ in the *content* of their wellbeing.

RESULTS

Using the technique of Partial-Order Scalogram Analysis (POSA), the partial-order of the settlements according to wellbeing (a) turns out to be essentially two-dimensional, as portrayed in Figure 1. POSA is one of the nonmetric series for data analysis developed by Louis Guttman and James C. Lingoes. POSA is a special case of Multidimensional Scalogram Analysis (MSA). For details on MSA in general see Zvulun (1978), and Lingoes (1968). A discussion of mathematical and technical aspects of POSA is presented in Shye (1976, 1978). Published examples of uses of POSA can be found in the monograph on modernization of traditional agricultural villages in Israel (Yalan *et al.*, 1972), and in Shye and Elizur (1976).

In the POSA diagram, the *comparable* structuples are connected by lines, while the noncomparable are not connected. The vertical direction – called the *joint* direction – of the partly-ordered space corresponds to *level* of wellbeing. The ordering of the settlements in this direction is from Kefar-Shemaryahu to Gadish and Atlit.

The *lateral* direction of the POSA space indicates the differentiation among settlements according to the *contrast* between their *social* wellbeing (item F) and their wellbeing at *work* and with place of *residence* (items B and D taken together). In Figure 1, settlements which are located at the right of the two vertical lines – like Berechia, Sharsheret, Rishon-Lezion, Holon – are more positive on *social* wellbeing and less positive on feelings of wellbeing at work and towards life in the settlement, regardless of their *level* of wellbeing. Conversely, settlements to the left of the two vertical lines – like Shavei-Zion, Nir-David, Beit-Alfa, Ramat-Gan, Gadish – are characterized by more positive wellbeing at work and with life in settlements, and less positive with social life, again regardless of their wellbeing level.

Between the two vertical lines are located settlements that are relatively balanced on social and instrumental wellbeing, again regardless of level. In this neutral middle band are to be found Kefar-Shemaryahu, Benei-Brak, Yinon and Atlit.

Thus, the POSA presented in Figure 1 reveals not only the *degree* or *level* of wellbeing but also its *quality*: *affective* wellbeing (social) *vis-à-vis instrumental* wellbeing (at work and residence). The differences in degree are indicated by the ranking in the vertical (joint) direction of the diagram, while the differences in kind are indicated by the ranking in the horizontal (lateral) direction.

Figure 1 perfectly represents 75% of the settlements. This fit is quite good considering the relatively high number of items (seven) and the multiplicity of categories in each item (only one item is a dichotomy). The settlements which do not fit perfectly

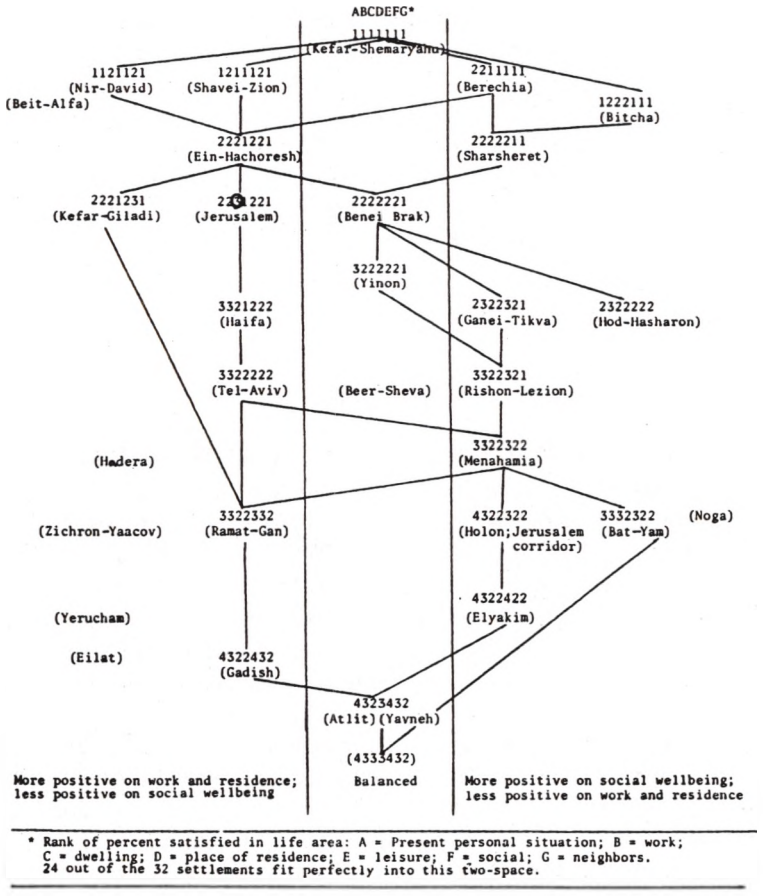


Figure 1. The partial order of 32 Israeli settlements according to their residents' feelings of wellbeing (a).

into the two-dimensional representation of the partial order are indicated in parentheses (omitting their structuples to avoid confusion) at their most fitting location in the two-dimensional approximation.

The same POSA strategy was used in constructing Figures 2, 3, and 4 for stratifying the 32 settlements according to the three remaining adjustive behaviors: coping, wellbeing (b) and attraction to place of residence. In each case a two-dimensional approximation was found to be quite good, permitting perfect representation of 75-80 percent of the settlements.

The phenomenon of lateral contrast between affective and instrumental behavior holds also for coping – and even in a sharper form – as can be seen in Figure 2. The settlements are differentiated according to the contrast of coping with social problems (items F & G taken together) and coping with livelihood problems (item B). All settlements at the left of Figure 2 are higher in their coping with instrumental problems than with affective problems, while all the settlements on the right are higher in their coping with affective problems than with instrumental ones. In the central column of Figure 2 are located the settlements whose coping is balanced with respect to both aspects.

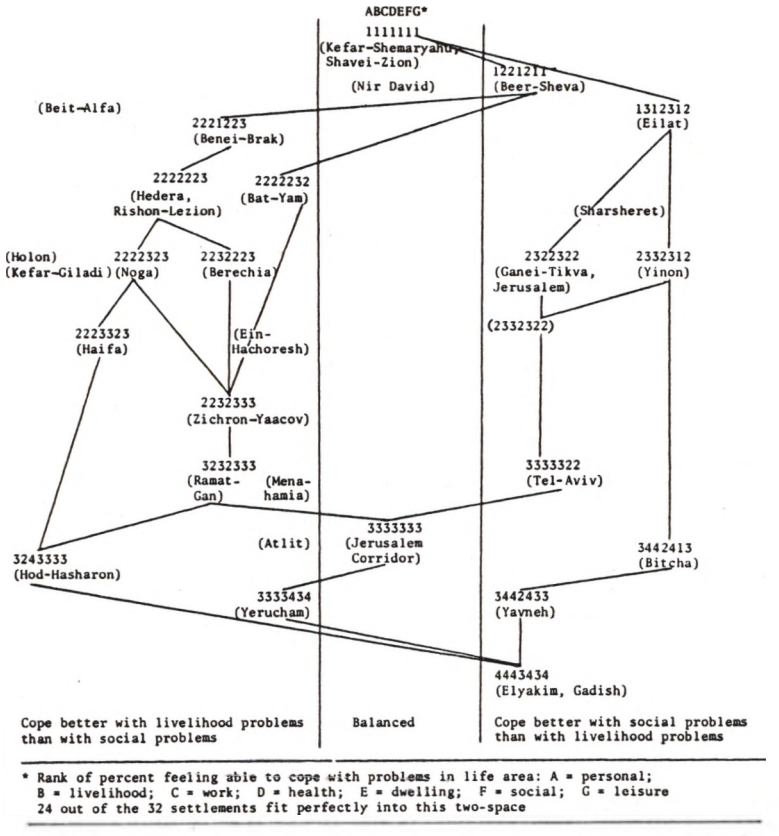


Figure 2. The partial order of 32 Israeli settlements according to their residents' feelings of ability to cope.

The POSA for the four wellbeing items with varied checklists (wellbeing (b)) is presented in Figure 3. The lateral direction, reading from left to right, goes from satisfaction with income and good spirits to satisfaction with health and overall happiness. Regardless of the level of wellbeing, all the settlements on the left of Figure 3 are relatively higher in spirits and income satisfaction than in health satisfaction and overall happiness, while the settlements at the right of Figure 3 are relatively higher in health satisfaction and overall happiness than in spirits and income satisfaction.

It is interesting that averages for these four wellbeing variables, when place of residence is the unit considered, correlate differently from the ranks of the variables when the resident is taken as a unit. The ecological correlations are different from the correlations over individuals. Within these four items, for individuals, mood correlates highest with happiness and least with income. According to the ecological correlation as expressed by the lateral direction of the POSA in Figure 3, mood is closer to satisfaction with income and most distant from overall happiness.

The fourth POSA was used for stratifying the settlements according to the motivation of their residents to continue to stay in Israel and in their present residence (Figure 4). The analysis revealed again that the settlements can be differentiated in two directions; according to the kind of attraction as well as level of attraction. At the

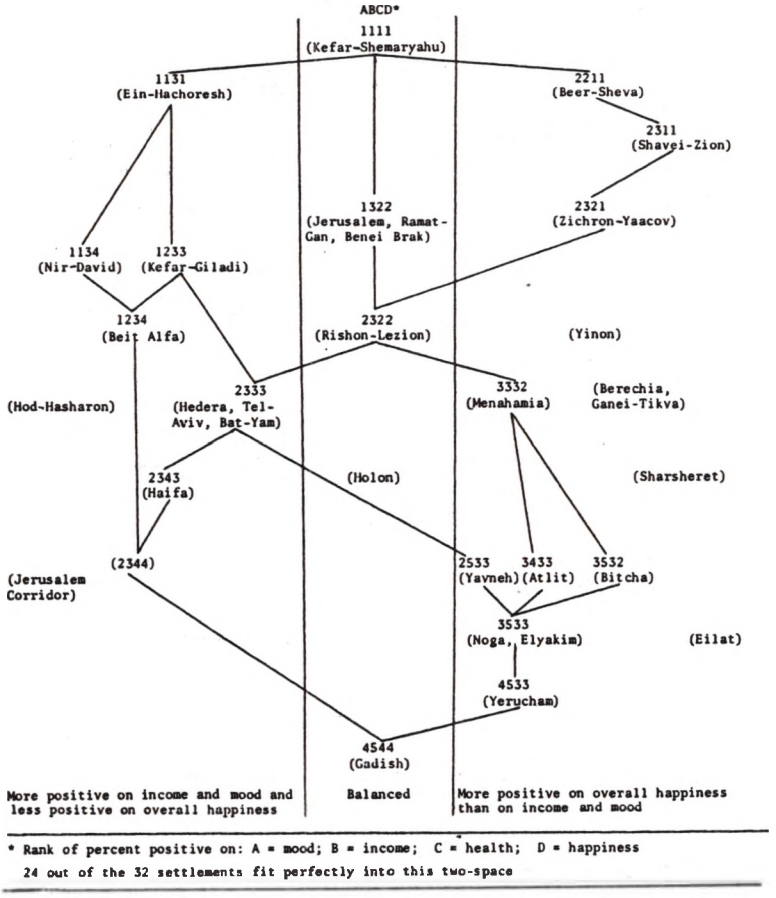


Figure 3. The partial order of 32 Israeli settlements according to their residents' feelings of wellbeing (b).

left of Figure 4, regardless of level of attraction, are located those settlements whose residents are more attracted to their present residence than to the country on the whole (Kefar-Shemaryahu, Shavei-Zion, Haifa, Jerusalem). At the right of Figure 4 are those settlements whose residents are attracted more to the country and less to their present residence (Ein-Hachoresh, Elyakim, Rishon-Lezion, Yavneh, Yerucham, etc.).

Comparing Figures 1-4 shows that some settlements tend always to be at the upper part of the partial-order (for example Kefar-Shemaryahu, Shavei-Zion, and the kibbutzim), and some tend always to be towards the bottom of the partial-order (for instance, Gadish, Atlit, Yerucham, Elyakim). Other settlements vary to some extent in their locations in the respective partial orders. This raises the question of ecological correlations between the subjective partial-orders. Furthermore, how do these different partial-orders relate (ecologically) to the "objective" demographic characteristics of the settlements? The next sections are devoted to these two issues, beginning with the relation of "subjective" to "objective".

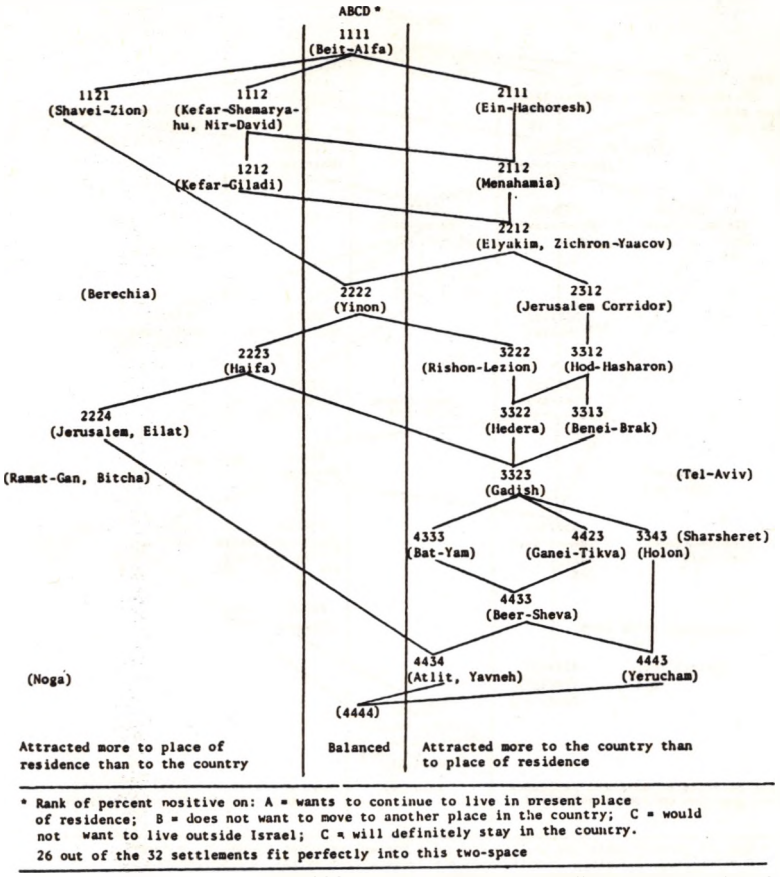


Figure 4. The partial order of 32 Israeli settlements according to their residents' attraction to place of residence.

Relationships between the Subjective Partial-Orders and Objective Demographic Variables

In order to study the relationships between the subjective partial-orders of the settlements and some of their "objective" characteristics, we shall present the four POSA diagrams with the "objective" information superimposed on them. Four "objective" traits will be discussed: year of establishment of settlement, ethnicity of its residents, education and income. The seniority status of the respective settlements was taken from standard sources. The three other criteria were derived from the distributions of answers of the residents to the relevant background questions, as shown in Table 1 above.

To facilitate visual inspection of the relationships between the subjective partial orders and the objective background criteria, each POSA will be represented once again, with a pair of background variables. In Figures 5-8, the year of establishment of each settlement is indicated, along with the percent of residents of Eastern origin (Asia and North Africa). Level of education and income will also be discussed, with regard to the four partial-orders exhibited in Figures 1-4.

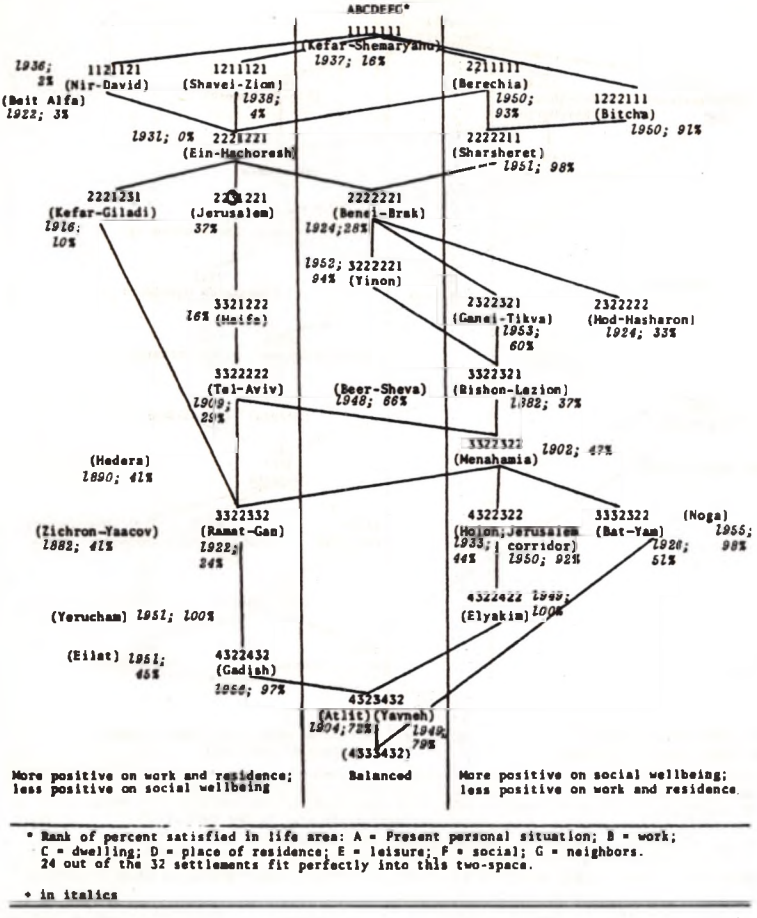


Figure 5. The partial order of 32 Israeli settlements according to their residents' feeling of wellbeing (a) (with indication of date of establishment and percent of Eastern origin).

Relationships with Seniority and Ethnicity of Settlements

As already discussed, the 32 settlements vary considerably with respect to year of establishment; from veteran cities, to rural and urban settlements established at the beginning of modern immigration (at the turn of this century), and through the establishment of the State of Israel and its aftermath. The same holds for ethnicity: from settlements with few residents of Eastern origin (Asian and North-African) to settlements with a majority of Eastern origin, through settlements with more balanced mixtures of ethnicity. For the purposes of the present research, we shall differentiate between two main ethnicity groups: *European or Western origin* (European and American), and *Oriental or Eastern origin* (Asian and North African).

The upper part of Figure 5, indicating a high level on wellbeing (satisfaction) includes old and new settlements of different ethnic composition. Level of life satisfaction does not seem to have a monotone relationship with either seniority or ethnicity, at least when a high level of satisfaction is concerned. Surprisingly, the lateral contrast does indicate a relationship. The settlements at the upper left of the diagram were established at the beginning of the century (before the establishment of the State of

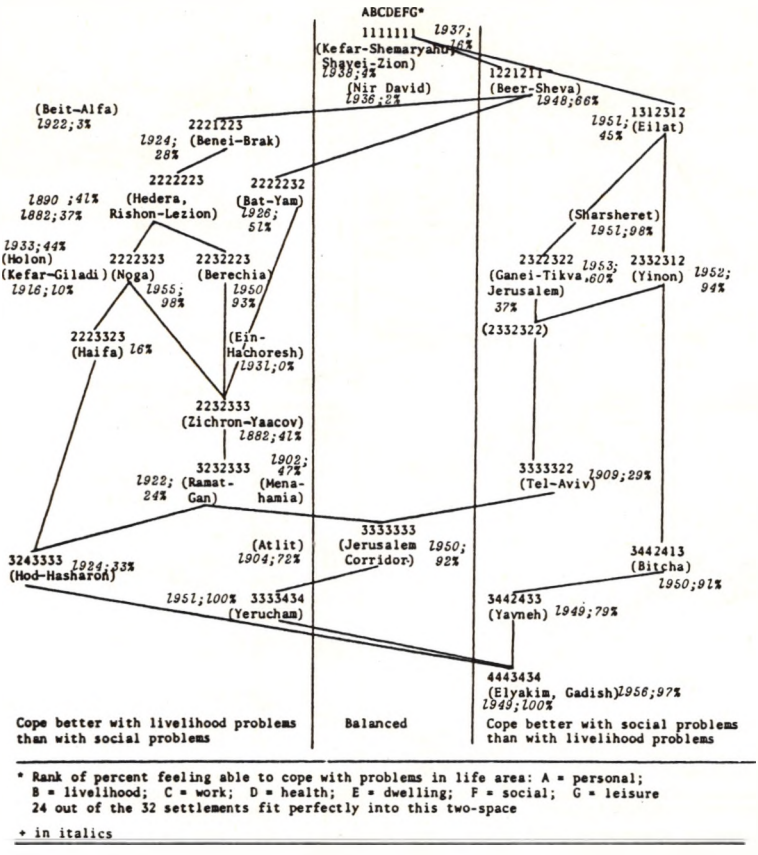


Figure 6. The partial order of 32 Israeli settlements according to their residents' feelings of ability to cope (with indication of date of establishment and percent of Eastern origin.)

Israel), and include almost no residents of Oriental origin (0%-16%). These settlements include Shavei-Zion and the kibbutzim (Nir-David, Ein-Hachoresh, Kefar-Giladi, etc.). Conversely, at the upper right of the diagram are located newly-established settlements (after 1950) with residents of mostly Eastern origin (91%-98%). These settlements include Berechia, Bitcha and Sharsheret. Hence, while having approximately the same amount or level of wellbeing, these settlements differ in *kind* of wellbeing according to their seniority and ethnic composition. New settlements with a high percent of Oriental-origin residents are more satisfied socially than instrumentally, while older settlements with residents of European origin are more satisfied with instrumental aspects than with affective ones. This phenomenon does not hold for the lower levels of wellbeing, but reappears systematically for *coping* (Figure 6). Regardless of their level of coping, almost all settlements to the left of the two vertical lines were established between 1882 and 1922, while the settlements located to the right of the vertical lines were established post-1950, after the establishment of the State (except for the big cities – Jerusalem and Tel-Aviv – as previously pointed out, we do not have enough detailed information on residential districts in the cities to enable us to draw conclusions from this kind of analysis). In the middle band of Figure 6 are located mostly settlements established in the 1930's.

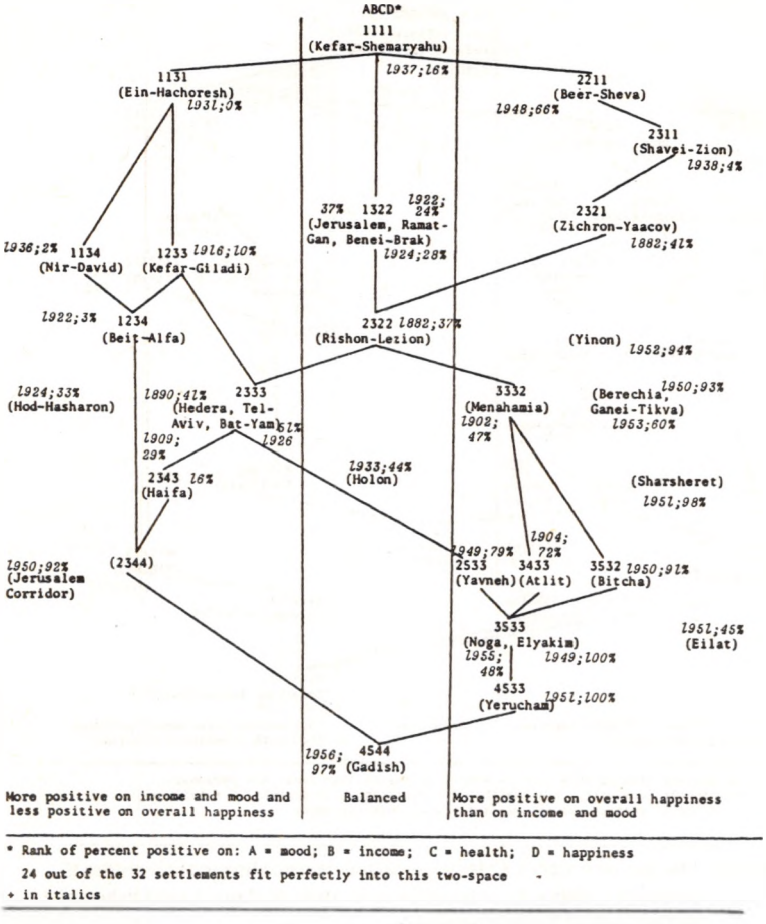


Figure 7. The partial order of 32 Israeli settlements according to their residents' feelings of wellbeing (b) (with indication of date of establishment and percent of Eastern origin.)

In sum, there is a clear monotone relationship between *kind* of coping (the lateral direction of the POSA) and the seniority of the settlements, regardless of the level of coping and ethnicity. Again, newly-established settlements feel better able to cope with special problems (*affective* aspect) than with livelihood problems (*instrumental* aspects), while older settlements feel better able to cope with livelihood problems and less with social problems, regardless of level of coping. A similar phenomenon occurred for wellbeing (b) (varied checklists for items), as presented in Figure 7. Almost all the settlements located to the left of the two vertical lines, and in the middle band in Figure 7 were established before the establishment of the State of Israel. To the right of the two vertical lines are located settlements of varied seniority. Thus, regardless of the level of wellbeing, if a settlement is relatively higher on income satisfaction and spirits than on overall happiness, or if it is balanced on these two aspects, we can be quite sure that the settlement is veteran. (The converse is not necessarily true: knowing that a settlement is veteran does not help us know the kind and level of its wellbeing.) Conversely, if a settlement is relatively new (established after 1950), it is most likely to be relatively higher on overall happiness than on mood and income satisfac-

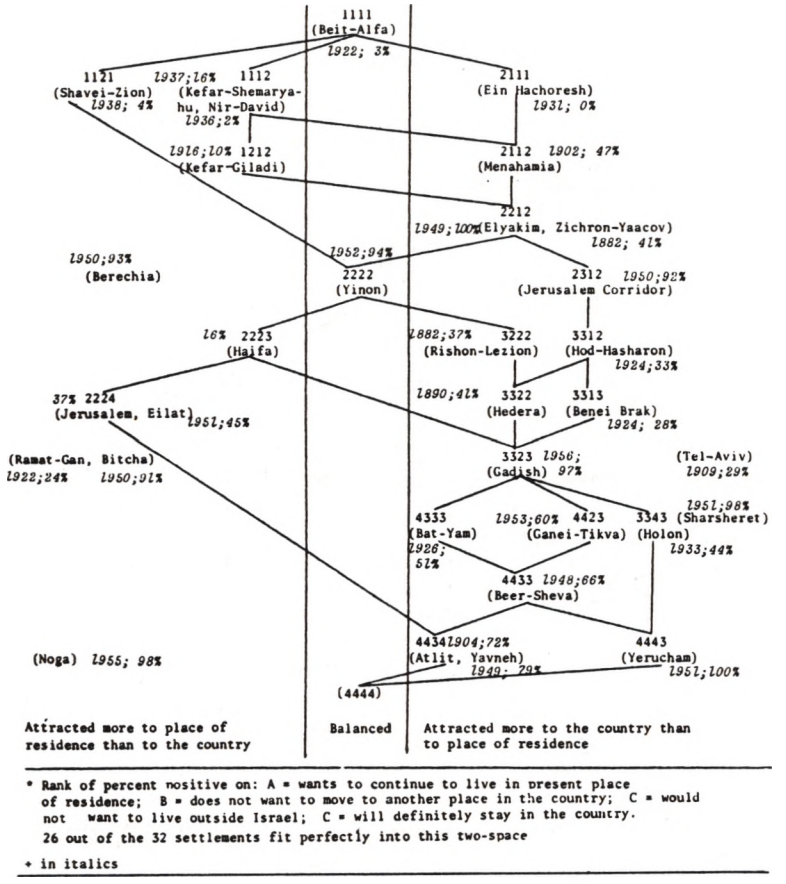


Figure 8. The partial order of 32 Israeli settlements according to their residents' attraction to place of residence (with indication of date of establishment and percent of Eastern origin.)

tion, regardless of level of wellbeing. The newer settlements tend to be more satisfied affectively than instrumentally, and the veteran settlements to be more satisfied instrumentally than affectively, regardless of their level of wellbeing. Year of establishment was not found to have any systematic relationships with the third subset of adjustive behavior, namely attraction to place of residence (Figure 8).

As for ethnicity, the prominent phenomenon – for all subsets of adjustive behavior – is that the settlements which are almost purely of Western origin are always located at the upper parts of the diagrams, indicating a relatively high level of adjustive behavior. These are Shavei-Zion, Kefar-Shemaryahu, and the kibbutzim that have only 0%-16% residents of Eastern origin (and are all veteran). But the opposite is not generally true: settlements with a large proportion of residents of Eastern origin vary in level of wellbeing all the way from highest to lowest. (See the above discussion for wellbeing (a) that holds for the remaining subsets of adjustive behavior, as well.) An interesting related phenomenon is that, among the settlements which are almost purely of Eastern origin, those with a high level of wellbeing are geographically located in the south of the country (Negev), among them Bitcha, Berechia and Sharsheret. Settle-

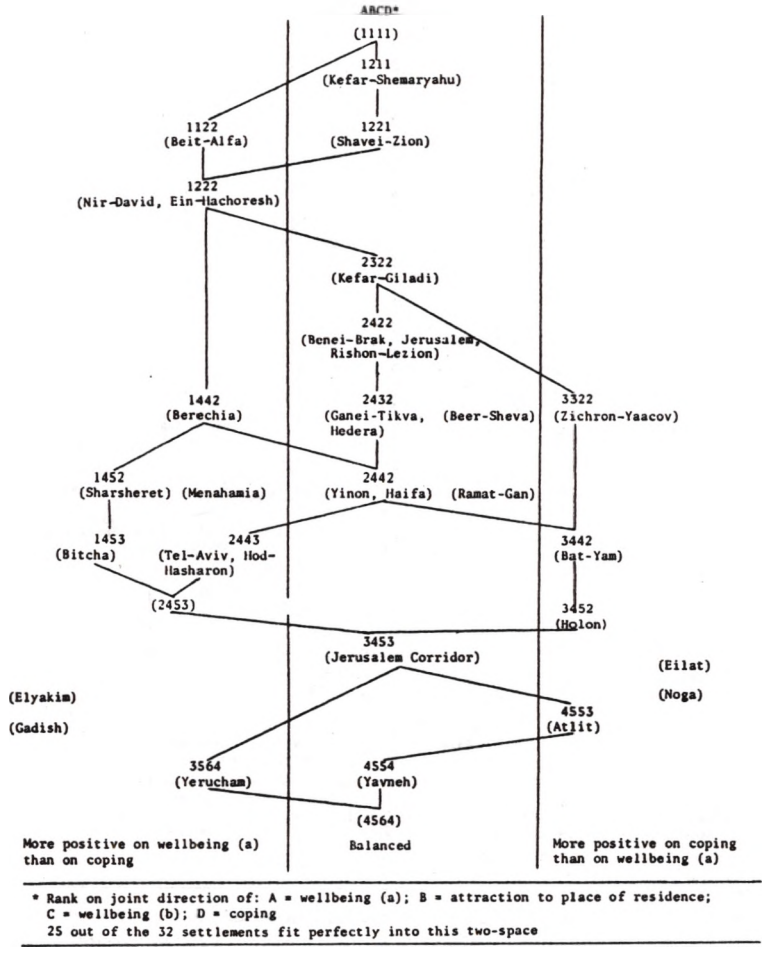


Figure 9. The partial order of 32 Israeli settlements according to joint directions of four kinds of adjustive behavior.

ments in the sample characterized by purely Eastern origin and located in the north – like Gadish and Elyakim – are always at the bottom of the diagrams, indicating low level of adjustive behavior. Thus, while new settlements in the Negev of largely Eastern origin may have any level of wellbeing, new settlements in the north, of Eastern origin, report a *low* level of adjustive behavior. This fact, and the above analysis according to seniority and ethnicity, bring out issues which can be studied most properly by more detailed fieldwork on the settlements, which is beyond the scope of the present research.

Relationships with Education and Income

Of the four partial orders, only that for wellbeing has some systematic relationship with education. The partial-orders for coping and attraction to place of residence do not reveal much correlation with level of education for either direction: joint or lateral.

The relationship with wellbeing has a most unusual structure: it holds *only for the settlements to the left of the two vertical lines of Figure 1.* A monotone relationship

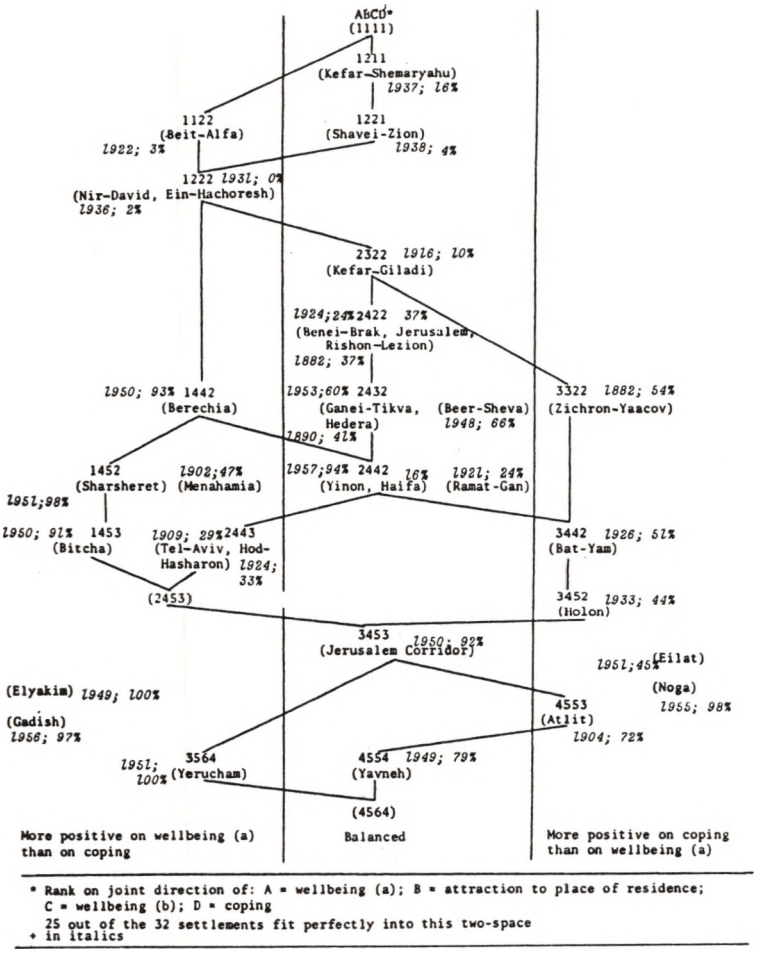


Figure 10. The partial order of 32 Israeli settlements according to joint directions of four kinds of adjustive behavior with indication of date of establishment and percent of Eastern origin.

exists between level of education and the joint direction of wellbeing, but only when *kind* of wellbeing (lateral direction) is held constant, and then only for one end of the lateral direction. Specifically, among the settlements which are relatively more satisfied with instrumental areas of life than with social aspects, there is a clear monotone relationship between *level* of wellbeing and years of education: the higher the education level the higher the level of satisfaction. At the upper left part of the diagram are located settlements with a median of twelve years of education (Shavei-Zion, the kibbutzim, Jerusalem, and Haifa). At the lower left part of Figure 1 are located settlements with a median of 6-7 years of education (Gadish, Yerucham, Eilat). Between these two extremes are located settlements with a median of about 11 years of education (Ramat-Gan, Zichron Yaakov). In contrast, the settlements at the right of the diagram – relatively more satisfied with social aspects of life than with instrumental aspects – are characterized by a low level of education of their residents (medians ranging from 7 to 9.5 years of education). There are only three exceptions – Rishon-LeZion, Holon, and Hod-Hasharon – which are characterized by higher education (11-

12 years). These three are older settlements, established before the State of Israel, and have a smaller proportion of residents of Eastern origin than have the remaining (old and new) settlements to the right of Figure 1 (33%-44% and 47%-100% respectively). No systematic relationships were found between the subjective partly-ordered stratifications and income. Only for the wellbeing (b) stratification does some relationship appear. Most of the settlements at the upper part of the POSA in Figure 3 (above Rishon-Lezion) are characterized by residents with relatively high level of income (48%-85% reported high income) and of education (median of 11-13 years of education). The settlements at the lower part of the diagram are characterized by lower income (3%-50% reported high income) and vary in level of education.

Relationships Among the Subjective Partial-Orders

The preceding discussion of "subjective" partial-orders focused on each partial order separately. The question arises as to the relationships among these several subjective partial-orders. What structure holds for stratifying the Israeli settlements simultaneously according to all four subsets?

The above analysis showed that, essentially, a two-dimensional space is sufficient for portraying the partial order for each subset of adjustive behavior (Figures 1-4 above). The joint (vertical) direction indicated the *level* of the respective adjustive behavior, while the lateral (horizontal) direction indicated the *kind* of adjustive behavior, according to its respective items. Each settlement was located in the respective spaces according to both directions simultaneously. In order to study the relationships between the subjective partial-orders, only the joint direction was used. Having such powerful lateral directions of the content allows us to use the joint directions indicating the level of the respective behaviors by themselves, because they are not merely an arbitrary sum of categories, but rather one meaningful direction out of two for a special sub-universe of adjustive behavior items. To study the relationships between the subjective partial orders, the POSA technique was employed again. The items for the POSA now are the four subsets of adjustive behavior: Wellbeing (a), coping, wellbeing (b) and attraction to place of residence. Whereas in each separate partial-order, the lateral direction was across the variables of a given type of adjustive behavior, in the present analysis the lateral direction is across these subsets of adjustive behavior. Were the analysis to be made on all the items simultaneously – without regard to subsets – the picture would be of high dimensionality because of the many disparate lateral directions involved. The joint direction however is common to all, because of the common range of the universe of adjustive behavior items. When many lateral directions are involved, ascertaining positions in the space is less robust than when fewer dimensions are involved. Therefore, we have adopted the robust procedure of first conducting analysis of subsets of small dimensionality and thereby being able to analyze across subsets in a small dimensional space.

The answer categories for each subset are now the levels of adjustive behavior as indicated by the joint direction of the respective POSA (Figures 1-4 above).

The levels of the adjustive behaviors are determined according to the rows of the respective partial-orders in Figures 1-4. In each figure several rows were collapsed according to the number of settlements in each row. A preliminary POSA helped determine regions according to the joint directions, and thus facilitated comparisons of the ranks of the respective behaviors over subsets.

The adjustive behavior rank order was expressed by four to six ranks, according to these considerations. Rank "1" always indicates the highest level of the behavior concerned. Thus, the structuple "1111" indicates the highest level of adjustive behavior on all four subsets and the structuple "4564" indicates the lowest level. Empirically, neither of these two extreme structuples occurred. None of the settlements was the highest or lowest on all four kinds of adjustive behavior simultaneously, as shown in Figure 9.

The POSA of the combined subset data again shows that it is possible to stratify the Israeli settlements in an essentially two-dimensional space. Seventy-eight percent of the settlements fit perfectly into this two space. (As usual, the structuples of remaining settlements are omitted from the diagram.) The order of the settlements in the joint direction starts at the top with Kefar-Shmaryahu, Shavei-Zion and the kibbutzim, and terminates at the bottom with Yerucham, Yavneh and Atlit. This ordering of the extremes is similar to that found for each of the subsets separately.

The lateral direction of the POSA space differentiates among the settlements according to *kind* of adjustive behavior. Settlements to the left of the diagram are higher on wellbeing (a) than on ability to cope, regardless of the level of adjustive behavior. Conversely, settlements to the right of the diagram feel better able to cope with problems and are less satisfied with their lives. This right-hand pattern is less frequent than the converse one at the left. In the middle band are settlements that are balanced on wellbeing and coping, again regardless of their level of adjustive behavior.

Relation between "Objective" Traits and the Overall "Subjective" Partial-Order

To study relationships between this "subjective" partial-order and "objective" characteristics of the settlements, information about objective demographic background characteristics was again imposed on the settlements in Figure 9, as exhibited in Figure 10 below. The same kind of overlaying of other background traits on the POSA map shows how they relate to the respective joint and lateral directions. The further overlay diagrams are omitted for reasons of space. Here again there occurs the phenomenon of scant systematic relationships between the *joint* direction of the subjective partial-order and the demographic characteristics. Only with education is there some monotone relationship, provided the lateral direction is held constant. Among settlements which are higher on wellbeing than on ability to cope, the higher the level of education the higher tends to be the level of wellbeing. A similar but less clear trend appears among the settlements in the balanced middle band of the diagram of Figure 9.

The lateral direction turns out again to relate to the seniority trait. Settlements to the right of Figure 10 are by and large relatively old (established before the State of Israel) with at least 42% of residents of Eastern origin. If a settlement feels more able to cope with problems than to be satisfied with life, we can be pretty sure it was established before the State of Israel, and that no less than 40% of its residents are of Eastern origin. But the opposite is not true: knowing that a settlement was established before the State, and has 40% or more Eastern-origin residents, does not help us predict its location in the subjective partial order. Such predictability is only one-sided: from the subjective partial order to the objective characteristics, but not vice-versa.

As to country of origin, settlements with almost *no* residents of Eastern origin are always at the upper part of the joint direction of adjustment. Furthermore, they are *not* located laterally to the right of the diagram. Settlements of mostly Western origin have the highest level of adjustive behavior; and laterally, either they are balanced on wellbeing and coping (Kefar-Shemaryahu, Shavei-Zion, and Kefar-Giladi) or they are higher on level of wellbeing than on ability to cope (some of the kibbutzim). Settlements with a high proportion of Eastern-origin residents are spread throughout the diagram, in both the joint and lateral directions.

CONCLUSION

The above analyses reveal the complex roles of seniority and ethnicity in the partial-order of Israeli settlements, but also a certain simple lawfulness. Clearly, to understand the Israeli social stratification with respect to adjustive behavior, seniority and ethnicity of the settlements should be considered simultaneously. Veteran settlements which absorbed a certain percent of residents of Eastern origin usually have a lower level of overall adjustive behavior than do predominantly Western settlements. These settlements are mainly rural (and maybe more "closed" societies than the others), like the kibbutzim, Shavei-Zion and Kefar Shemaryahu. Among those, Kefar Shemaryahu is the only settlement with a somewhat higher proportion of Eastern-origin residents (16%). It probably keeps its place at the very top of the partial-order because of the relatively high levels of education and income of its residents. This settlement succeeds in being "homogeneous", unlike a big city like Haifa which has also only 16% of Eastern-origin residents.

The relation of the subjective partial-order to the background characteristics studied can be summarized concisely as follows. Background traits such as education, income and ethnicity tend to have a monotone relation – if at all – with the joint direction of the level of adjustive behavior. The background trait of seniority of the settlements tends to have a monotone relation with the lateral direction of kind of adjustive behavior.

It should be remarked that low dimensional partial-orders have been found only for the subjective criteria status. The objective criteria have less systematic structure, as should be expected. They are static traits that do not change much over time even though the person's social situation does vary, and are not subject to a process of integration as are subjective reactions. The objective criteria can be correlated less with each other than they are with subjective criteria.

Should further data become available in future years on a panel of the present settlements, POSA may help reveal how the less static traits change over time.

FOOTNOTES

[1] The survey was carried out in the framework of the Continuing Survey of the Israel Institute of Applied Social Research and the Communications Institute of the Hebrew University of Jerusalem.

[2] In Figure 1, the number 3 is circled in the Jerusalem structuple, because this struct prevents it from fitting exactly into the two space.

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