



OVERCOMING DRAWBACKS OF HIERARCHY: EXAMPLES FROM KIBBUTZ COMMUNITIES¹

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***Abstract.** While hierarchical structures have many advantages for the effective running of organizations, they also pose major drawbacks both for organizations and for individuals lower in a hierarchy. Research in kibbutz industry and in its social organizations shows that kibbutzim are not much different from other organizations because within kibbutzim hierarchical structures are common, differentials in power and control are correlated with hierarchical position, differential rewards are correlated with position, and health symptoms and indicators for well being are correlated with hierarchical position. Yet kibbutzim managed to solve the paradox of having organizations that are hierarchically structured and show all the features of hierarchical organizations yet keep up with the principles of equality and democracy. I explain and describe seven different counterbalancing mechanisms employed by kibbutzim to alleviate the drawbacks of hierarchy and yet preserve its advantages. Recently, many kibbutzim went through major structural transformations, and most mechanisms to counterbalance the ill effects of hierarchy were among the "victims" of these structural changes. Results of research show both in the economic sphere and in the social sphere how giving up on the counterbalancing mechanisms brings about deterioration in positive outcomes. The last part of the paper discusses reasons for the deterioration in effectiveness and then discusses possible generalization from kibbutz research to other societies.*

***Key words:** Kibbutz; hierarchy; ill-effects of hierarchy; managerial rotation; direct democracy*

1. Introduction

Any observer of social organizations must come to a conclusion that one of these organizations' common characteristics is a hierarchically structured in a pyramidal mode coupled with strong inequality among members. The pyramidal shape is expressed so that the higher up the ranking in a hierarchy, the fewer the individuals that occupy the ranking. Inequality is a major aspect of hierarchical

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structures. There exists consistent differentiation between leaders/managers (at the top of the ladder) and the lead/members at large (down the ladder) along many resource dimensions: authority, rewards, level of control, self development, and satisfaction of needs. In addition, hierarchy also differentiates among members in levels of health and wellbeing. The differentiation on all these dimensions is such that the higher up a person is on the hierarchical steps, the more he or she possesses any of the resources and the healthier she or he is. The fact that hierarchical structure is so common in so many organizations leads to a question whether these structures would be found in societies that put strong emphasis on equality among their members, and if so, how do such societies deal with the inequalities of hierarchy?

In this paper I first expand a bit on the various aspects of hierarchy and the research performed on the matter. Then I take the Israeli *kibbutz* as an example of a society with very strong emphasis on the value of equality among its members. I show that *kibbutz* communities practice hierarchically structured organizations but at the same time they employ several mechanisms that overcome the drawbacks or ill effects of hierarchy. Consequently, they are able to use the advantages of a hierarchically structured organization without sacrificing principles of equality. I cite research that shows how keeping up with the mechanisms to overcome drawback of hierarchy help an organization to function better and also brings about improved well being, health and satisfaction of life to individuals at the lower rungs of hierarchy. Later the paper explains how many *kibbutzim* went through major structural transformations. One central effect of these transformations was the giving up on the mechanisms that overcome drawbacks of hierarchy. The result of these transformations was very negative for the functioning of *kibbutz* communities. This story of how *kibbutz* communities deal with hierarchical structures raises the question of whether it could be generalized to other societies, and I address this question at the end of the paper.

2. Literature – hierarchical structures and their outcomes

Hierarchical structures in organizations and society are not new, and dealings with them are not an invention of modern organizations. One striking example is offered in the Bible when Yetroh, the father in-law of Moses, suggests how Moses could organize his work as a judge and leader of the Israelites, so that he is not overwhelmed by the impossible burden of being the sole judge. Yetroh suggests a pyramidal structure of authority with Moses at the hub of this structure. Moses follows Yetroh's advice:

“And Moses chose able men out of all Israel, and made them heads over the people, rulers of thousands, rulers of hundreds, rulers of fifties, and rulers of tens. And they judged the people at all

seasons: the hard causes they brought unto Moses, but every small matter they judged themselves” (Exodus, 18:25-26).

Interest in hierarchical structures did not cease as history unfolded. In modern times this social structure has become a focus of theory and research. About one hundred years ago, Max Weber (e.g. 1947) argued for the desirability and benefits of hierarchical structures in organizations as he defined the “ideal type of bureaucracy”. Chief among the principles of bureaucracy is the hierarchical structure with differentiation in authority, influence, power, rewards, etc., and with instruction moving down the hierarchy and feedback moving upward. Robert Michels (1959), another classical social scientist, argued for the inevitability of the “Iron law of oligarchy”. Michels claimed that organization means oligarchic structure. More recently researchers (e.g. Tannenbaum and Cooke, 1979, Tannenbaum et al., 1974; Bartolke et al, 1985) have shown that hierarchical structures are widespread in all kinds of organizations (such as business, service, government, third sector, and military). Hierarchical structures also exist in all cultures of at least the industrial world – capitalist, socialists, and communist – although with different shapes according to the ideology and culture of the organizations studied. All of the aforementioned hierarchical structures exhibit the principles of inequality, and differentiation in power, authority, and personal rewards that positively correlate with the position one holds in the hierarchy.

From an organizational point of view there exist strong arguments in favor of adhering to the hierarchical structure, among them: It clearly defines tasks, responsibilities, roles, and positions; it decreases task redundancies; managerial control is easier; it allows a clear flow of information downward and upward; it might improve the chances to select the better members of an organization into central positions due to differential rewards; and, because leaders are symbols of their organizations, it allows for a clearer representation of the organization to the outside world. An example of a strong support for a steep hierarchical structure is offered by Jaque (1990) who came out "in praise of hierarchy" and argued: "We don't need flat organization; we need layers of accountability and skill".

At the same time research has shown that while in some ways hierarchical structures might be beneficial for organizations, they also pose threats and impede them with difficulties (e.g. Leviatan, 1978) for instance, danger of loss of information when there are too many layers of hierarchy; limitations on initiative taking outside of hierarchical lines; change in organizations is more difficult – since many layers of hierarchies make organizations less flexible; too much dependency on layers above and below; managers that stay too long in positions

stand risk of stagnation increasing the risk of organizational corruption; and decisions are made without the most accurate and timely information and knowledge.

Additionally, drawbacks for individual members of hierarchically structured organizations include: those not in higher positions lose motivation/satisfaction/commitment; too often hierarchically structured organizations narrowly define tasks resulting in lower satisfaction and negative self images of members in lower levels; they create long routes of communications up and down, and strict channels of communications create restriction on flow of ideas; and health problems (physical, mental, and wellbeing) are strongly correlated with differentials in social status (Leviatan, 1980; 1991; Adler et al., 1994; Adler et al., 1999).

All these drawbacks are supported by research. For instance, studies of the “control graph” have shown that total amount of control (which is based on a combination of the mean levels of influence that different hierarchical strata have in their organization) is positively correlated with level of organizational effectiveness; in addition, the degree of equality among the different strata of hierarchy in level of influence was found to be positively correlated with level of satisfaction with organization life. Meaning that the more differentiation there is, the less satisfied are the rank and file with their organization (Tannenbaum & Cooke, 1979, Bartolke et al, 1985). It was also shown that contribution of individuals to their organization is positively correlated with their position. Thus, individuals in the lower ranks contribute less than their potential in comparison to individuals within the higher ranks.

Another line of research from seventy years ago emphasized yet another drawback of hierarchical structures. Numerous studies showed that ill health and death rates are negatively correlated with hierarchical positions: individuals lower on the hierarchical ladder, are likely to be less healthy (both physically and mentally), their well being is lower, and their probability of death is higher (e.g. Adler et al. 1994; Adler et al., 1999).

Hierarchical structures have another special and an important drawback for organizations or communities whose members consider equality among themselves as a most central value. As explained earlier, hierarchical structure and equality among members seem to be in an inherent contradiction and conflict.

Thus, we see that hierarchical structures carry with them some advantages for organizations and are, perhaps, even inevitable. However, at the same time they also harbor many drawbacks and problems – both for an organization and for its individual members, particularly for those in the lower rungs of hierarchy.

Of course, a solution to this state of affairs should seek to conserve the advantages but dispose of the drawbacks. How should one go about it?

Before seeking a solution for this query, a more general question: Is the hierarchical structure a necessity for any and every organization? True, Michels' "Iron law of oligarchy" suggests so, but are there no exceptions? While we cannot give a definite answer to such a question we can, at least, explore some of the limits where hierarchical organizations should not be expected and make our conclusions if it nevertheless does exist there.

One way to test for the limits of where hierarchy may not be practiced is to look for a society or a culture where a hierarchical structure seems to stand in strong contradiction to its basic principles of life. For instance, we should not expect hierarchical structures in a society that cherishes equality among its members as its most important principle. Finding that hierarchy still exists in such a society would support the universality of hierarchy but at the same time might teach us, perhaps, how such a society solves for the drawbacks of hierarchy so that it still preserves equality among its members.

3. Israeli *kibbutz* (plural in Hebrew – *kibbutzim*) as a site for learning about overcoming drawbacks of hierarchy

The Israeli *Kibbutz* communities that have already existed for one hundred years (since 1909 when the first *kibbutz* was established) offer an appropriate site for testing the limits of the existence of hierarchical structures in organizations and communities (an example of a source on the *kibbutz* is the book by Leviatan, Oliver and Quarter (1998) but many other sources are also available). I start with a very short (admittedly – superficial) description of what a *kibbutz* is. Until very recently, an outsider visiting a *kibbutz* would have seen a tightly knit communal society of about 150–200 families voluntarily living alongside each other and sharing a common ideology, mutual responsibility for each other, social activities, and their means of livelihood. These families would be living in a community with almost total equality as it relates to a material standard of living and without differential salaries. These principles are formally illustrated in the preface to the *Kibbutz* By-laws (Kibbutz Artzi, 1973):

“The kibbutz is a free association of people for the purpose of the ... existence of a communal society based on principles of public ownership of property, ... equality and participation in all domains of production, consumption and education”

Although *kibbutzim* are a type of commune, they have always differed from other communes in their adoption of modern values such as pursuing scientific

knowledge for application to social and economic activities, keeping up-to-date with modern technologies, being open to innovation, and (within the boundaries of a modest life) not opposing improvements in the standard of living. Even though they were few in number and located primarily in the countryside, *kibbutz* members did not attempt to withdraw from the surrounding society but purposely involved themselves in it as an expression of their mission to both influence and serve society. Rather than staying secluded from the rest of society like most communes, *kibbutzim* have been open to visitors, the media, cultural inflows, and outsiders. In addition, *kibbutz* members were involved in society – in service in the military, as students in institutes of higher learning, in politics, in business within the Israeli economy and as community workers in Israeli needy neighborhoods.

There exist now (2010) in Israel close to 270 *kibbutzim* with a population of about 100,000 members and their dependents and another 40,000 residents who are not members. While *kibbutz* population is only about 1.6% of Israeli population, members contribute (2010) about 8% to its industrial sales, about 11% to its exports and about 35% to its farming product.

Until the recent past (the 1990s') all *kibbutzim* were very similar to each other in their governing principles of life, structure, organization, and the ideology held to by most members within each community and across communities. This has now changed in many *kibbutzim*. Currently one should refer to two different phenomena of *kibbutz*. Two different groups of communities exist who – while still bearing the same name ("*kibbutz*") – are becoming more and more dissimilar to each other. One group of *kibbutzim* which carries the characteristics of the traditional *kibbutz*, and the other has transformed basic *kibbutz* principles and values, for instance: collective and altruistic values were replaced by individual and egocentric values in determining policies and directions for the future of the *kibbutz* society; democratic, equality, solidarity and commune values were replaced by ideologies of market principles and of neo-liberal ideology. And, most relevant for the discussion of this paper, common hierarchical structures as in the general society have become much more common in the transformed *kibbutzim*. The traditional *kibbutz* ideas still (2012) rule in about 25% of all *kibbutzim* but their numbers are falling every year. In this paper when I refer to *Kibbutz*, I refer to the traditional *kibbutz* and not to the transformed *kibbutz*.

The Israeli traditional *kibbutz* is certainly a type of community that adheres to very extreme definitions of equality and also to an extreme definition of democracy (direct democracy rather than representative democracy (Pavin, 1998)). The equality principle adhered to in *kibbutzim* is named *qualitative equality*. Individual members expect their communities to take care of their unique personal needs

and expectations (within the resource capabilities of their *kibbutz* and in keeping with the norms of a relatively modest lifestyle (Gluck, 1998; Rosner & Getz, 1994). In the meantime their community expects all of its members to contribute all of their personal resources and capabilities to the community. This principle of *qualitative equality* among members is unique in that individuals do not judge its successful fulfillment by comparing themselves to *others*, rather in terms of their own needs, expectations, and capabilities. Therefore, while a society that exercises this principle of *qualitative equality* as its major distributive principle may appear to have extensive inequality among its members (because members have differing needs and different capabilities), there actually is a very high level of equality since members are able to satisfy their needs and expectations and exert efforts and use capabilities to similar personal standards (Rosner & Getz, 1994).

Qualitative equality is different from other views of equality, such as *mechanical or arithmetic equality* (as first suggested by Aristotle), where everyone is treated the same way regardless of individuals' unique differences. With *mechanical equality*, people feel that they are treated fairly only if they receive compensation, and are expected to contribute, at similar levels as significant comparable others.

Qualitative equality also differs from the principle of *equity* (Homans, 1961, Adams, 1965). Here, people expect the compensation they receive to stand in a *ratio* to their contributions (however those are measured) and that their ratio ought to be comparable to the ratio of similar others.

Thus, it seems that hierarchical structures and differentiations in rewards and need satisfaction of all kinds between managers and members of the rank and file stand in strong contradiction to the strict equality principles of *qualitative equality* among members, and also in contradiction to strong expressions of democracy. However, what about the existence of hierarchical structures within *kibbutz* communities? Research conducted since the 1950s shows that at every given point in time one finds *kibbutz* communities and their sub-organizations (their industries, their farm branches, and their service branches) to employ hierarchical structures. These hierarchical structures are usually composed of three-four layers (e.g. Rosner, 1998; Leviatan, 1978). In addition, research has also shown that similar to organizations outside the *kibbutzim*, power and control is positively correlated with hierarchical position, as is the case with social rewards (though rarely with material rewards) and also with health symptoms and indicators for well being. The major difference with organizations outside *kibbutzim* was that the correlations of outcomes with hierarchical level were not as strong as those found outside *kibbutz* communities.

How, then, did the *kibbutz* communities manage to solve the paradox of having organizations that are hierarchically structured and showing all the features of hierarchical organizations (differentials in power, rewards and well being) and yet keeping up with the principles of equality and democracy? One answer to this puzzle could be that the paradox in fact did never exist since (so the argument) the principles of equality and democracy were never there. But then, is it reasonable that *kibbutz* leaders were able to cheat the members in all *kibbutzim* for the last 100 years (and four generations of adults) without being noted? Not likely! More likely is that the *kibbutzim* exercised organizational mechanisms that allowed them to employ hierarchical structures without giving up on the strong principle of equality among their members. These mechanisms and their effects are explored in the next sections.

4. Mechanisms that overcome drawbacks of hierarchy

I will now present the different counterbalancing mechanisms to hierarchy employed by *kibbutzim*. Most of these mechanisms aim at solving potential problems of hierarchy by introducing: (1) enhancement of equality in power and need satisfaction among a larger part of membership; (2) increasing as much as possible the percentage of members who are close to the center of decision making and knowledge about the organization/community; (3) development of a wide cadre of potential leaders/managers for the community and its sub-organizations by allowing many individual members to experience and learn managerial skills; (4) eliminating as much as possible the social distance between individuals in higher and lower managerial positions.

It is important to emphasize that these mechanism did not result from deep theoretical analyses conducted by *Kibbutzim*, nor did they result from a grand research plan; they came about by looking to practical solutions that would adhere to the basic ideological principles of equality without jeopardizing the smooth functioning of their organizations.

Of course, the mechanisms described in the next few paragraphs should be viewed as descriptions of “ideal types” in the sense used by Max Weber. This means that not all *kibbutzim* use all the mechanisms listed below and those that do use the mechanism do not use them in all instances,. However, most traditional *kibbutzim* use and have been using some combinations of them in most relevant instances.

The General Assembly. In this mechanism the principle of direct democracy is taken to the extreme. *Kibbutzim* practice the institution of the General Assembly (Pavin, 1998) where members voluntarily meet almost every week for about two hours one evening. These meetings represent the ultimate sovereignty of the

community. It is the place where final resolutions that concern all major economic decisions, all major social decisions, and those related to the other institutions of the community such as services, culture or education are taken. This is also the institution where decisions that relate to individual members such as acceptance of new members or the letting go of members if they perform a major violation of *kibbutz* regulations or state laws are taken. Also, all key office holders are elected by the general assembly and all major office holders are to present their periodical reports at the meetings. Decisions are taken by majority vote (and a special majority of two thirds or three quarters is for personal issues such as acceptance or rejection of new members and the election of central office holders). In some *kibbutzim* decisions are taken at the meeting by a show of hands. However, since about two decades ago in most *kibbutzim* decisions are taken by a ballot within the week that follows the meeting. In recent years these meetings have been broadcasted by the local cable TV to all homes.

The unique feature of the General Meeting is the fact that it consists of all members, each with one vote. Since the rank and file members form the majority of the general assembly, the vote stays with the rank and file. Thus, the lowest level in community hierarchy has, in fact, the absolute influence on all important matters of the *kibbutz* (Pavin, 1998). The very same mechanism of General Assembly has been used by many *kibbutzim* in the large sub-organizations of their industrial plants (Tannenbaum et al., 1974). This mechanism expands the spread of participation in decision-making, spread of knowledge, and keeps office holder in constant check.

Managerial Rotation (Leviatan, 1978;1982). This mechanism seems to be similar to “managerial succession,” yet it is different. In “managerial succession” the old incumbents move up or out and sometimes sideways in the organization. In Managerial Rotation incumbent managers are replaced by members who come from lower levels in the hierarchy and move down, often all the way to the level of rank and file. Later on, after a certain “cool off” period in the lower rungs of hierarchy, they might be reelected into a high managerial position, again for a set in advance period. The replacement is governed by a pre-scheduled plan. This mechanism solves drawbacks of hierarchy by (a) Increasing the number of individuals who hold managerial offices within a relevant chunk of time (through two or three office periods); while at any given moment only incumbents serve in their office, over a longer period of time (which is still one relevant unit for individuals' perceptions) several individuals might serve in same office. (b) It acts against developing corruption that might appear when officers stay too long in office. (c) It increases the base of potential managers; it elevates the skill level of rank and file members (who now consist also of ex-managers).

The length of time that officers stay in office differs from one *kibbutz* to another and also differs from one office to another with a usual range of one to five years.

In order to help the execution of managerial rotation, many positions, particularly those within the social sphere, have a built-in characteristic which might be labeled “negative balance of rewards” (Leviatan, 1993): while positive rewards are inherent part from the very beginning of those offices (influence, self development, social connections, prestige, etc.) and stay so throughout the period of service, negative rewards accumulate over time. This is due to the fact that positions are held partly during free time and not in line with the development of personal careers, and because the offices deal with fellow members. Consequently, office-holders are side tracked from personal careers they may experience tensions with fellow members; they suffer time away from family and leisure pursuits. At a certain point during the office term, the negative rewards are more expressed than the positive ones or very close to their level – that is the point in time when an officer/manager wishes to terminate his/her time in office and so “managerial rotation” is made much easier.

Participative management (Palgi, 1998; Tannenbaum et al, 1974). This mechanism means that the production and service branches of the *kibbutz* are run by their teams in a participative fashion where the top person (“manager” or “director” in other cultures) is called “coordinator”. The coordinator’s role, ideally, is to coordinate the work of his or her team while major decisions (within the degrees of freedom allotted to the branch by the community as a whole) are discussed and decided by each team as a group. This mechanism expands the percentage of those in the center of the decision making realm in the community; it deepens the knowledge of all participants about the organization and involves them into its problems; it prepares individuals for future managerial positions; it helps controlling the execution of the managers’ roles; it enhances effectiveness of the unit due to the very process of participation in decision making.

Teams of leaders. Another mechanism that is used is the entrustment of leadership into teams of leaders rather than individuals. Thus, top positions in communities (e.g. General Secretary, coordinators of central sub-organizations) might be occupied by a team of two. Top office holders in production branches and central committees of the community might also be occupied by two individuals. This mechanism increases the percentage of individuals in central offices and thus spreads influence over a wider range within the community. Because two individuals have the same position, it also decreases the potential of developing corruption that comes with being a sole manager at the top. Also, it insures continuity of leadership in *kibbutzim* since individual members of the two-persons- teams are not replaced at the same time.

The rule of semiautonomous committees (Pavin, 1998). In a certain sense *kibbutz* communities might be characterized almost as “a federation of committees”. Almost each subject or topic that is of interest to the community would be entrusted to the responsibility of a committee. Those committees would be autonomous regarding that particular topic vis –a- vis the top echelons of the community. Their duty would be to report only to the General Assembly. These committees would be headed by elected “coordinators” (“heads”, “directors”, or “chairs” in other organizational cultures) and the common mode of operation would be for them to engage in a participative management approach. One might find almost forty different committees in a veteran *kibbutz*, each composed of 4-8 individuals. The range of functions would include all aspects of community life such as social, economic, education, health, leisure, and culture. Because of the exercise of the “Managerial Rotation” mechanism, over a five-year period about 60% of all members would have served for at least one year as committee members and about twenty five percent would have served as “coordinators” (Leviatan, 1978). These mechanisms offers involvement in the center of the community for a large percentage of membership, and training for future leadership positions.

Flat organizations (Melman, 1970; Tannenbaum et al, 1974). Even though *kibbutz* organizations are hierarchically structured, these hierarchies are flat (usually no more than three layers of hierarchy) compared to organizations of similar size outside *kibbutzim* with a wider span of control for those who are at the hub. This structure allows a great deal of autonomy for members at lower levels – thus increasing percentage of those with influence and knowledge of their organization.

Purposely creating “status incongruence” (Leviatan, 1982). Usually one would expect individuals to seek congruence across their various status positions (wealth, managerial, education, position in community, prestige). Sociologists call this desired state “status crystallization” (Lanski, 1956) and psychologists refer to its mirror picture as “status congruence” (Sampson, 1969). Indeed organizations and communities would often offer that kind of status congruence to their members at the top. Thus, one finds that leaders of communities are regularly in congruence within their positions on various status dimensions: those at the top of the managerial ladder in the business world of their communities are also honored by top positions in the various social and cultural institutions of their communities. Not so in *kibbutzim*. There is an intentional effort to spread the top positions of various status dimensions across a larger number of members so that, again, a larger percentage of members participate in the center of activities, are involved, and have influence. Thus, one may find that the top office holder in a community sphere (e.g. General Secretary or a coordinator of a central social

committee) might work as rank-and-file in a branch of the business sector and the opposite would be true for top managers of the business sphere. This is another instance of a mechanism that expands the numbers of those in top positions, positions that offer influence over matters in their community.

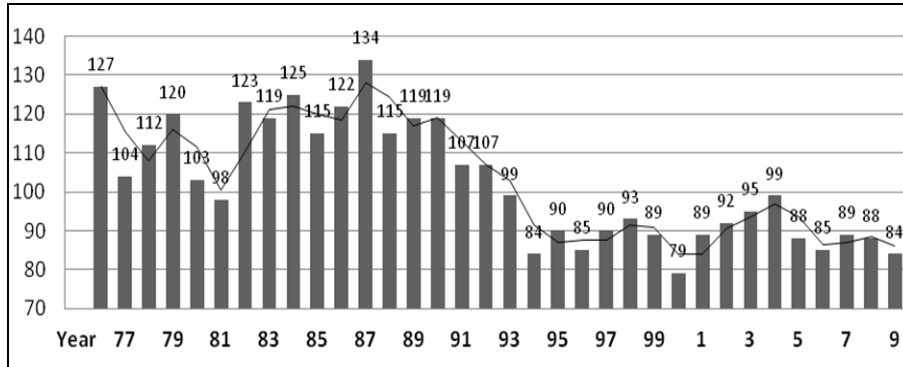
Strictly speaking, the different mechanisms that I have enumerated above are not totally independent from each other. However, they are different enough to warrant referring to them separately and in different combinations. In addition as I noted in the introductory paragraph to this section, they also have major common denominators that alleviate drawbacks of hierarchal structures and yet preserve many of the advantages of those structures.

5. Outcomes of the use of mechanisms to counterbalance ill-effects of hierarchical structures

Research supports the claim that not only do these mechanisms solve – at least partly – the problems of hierarchy but they also contribute to the economic success of the organizations where they have been employed and to the well being and health of individuals at the lower rungs of hierarchy (e.g. Leviatan et al., 1998 (several chapters); Leviatan & Rosner, 1980 (several chapters); Bartolke et al., 1985; Tannenbaum et al., 1974; Eden & Leviatan, 1974; Leviatan & Salm, 2007; Leviatan, 2009). In the studies reported in these citations one finds that (1) *kibbutz* organizations and its sub-organizations exercise hierarchical structures, and the correlates of these hierarchical structures are similar to those found in organizations outside *kibbutzim*. However, the levels of the correlations are much lower in *kibbutz* communities; (2) levels of equality among members determines members' level of health, wellbeing and satisfaction with *kibbutz* life; (3) participative management brings about higher levels of organizational commitment and also higher levels of organizational effectiveness; (4) managerial rotation and incongruence of statuses is also beneficial to organizational effectiveness; (5) due to the use of these various mechanisms, industrial *kibbutz* organizations were better functioning than their comparable organizations outside *kibbutzim* both in Israel and in other countries.

Kibbutz industrial organizations are perhaps most suitable for comparison with organizations outside the *kibbutzim*. This is because of their similar characteristics as regards technology, physical appearance, size, markets, and suppliers. Graph 1 illustrates how *kibbutz* industry surpassed Israeli industry in the index of "sales per worker" (for the years 1976 through 1992 (the years after 1992 tell a different story as explained later). The graph shows that for the 17 years (1976-1992) the *kibbutz* industries surpassed Israeli industry by an average of about 16% in the index of "sales per worker".

Graph 1: Sales per worker: kibbutz compared to Israeli industry 1976-2009
(Percentage: Israel = 100)



Source: Annual reports of Kibbutz Industrial Association (KIA).

6. Effects of structural transformation in *kibbutzim*

One way to test for the effectiveness of using the mechanisms that counterbalance ill effects of hierarchy is to exploit the changes that *kibbutzim* went through during the last two decades. Explanation of why the changes occurred is beyond the scope of this paper – it may be found in Leviatan et al., 1998. However, some of these structural changes bear directly on the topic at hand; for instance: direct democracy was replaced by representative democracy; rotation of managers was almost totally abolished; differentiation in money rewards (salaries) was added to other differentials of hierarchy; in many cases absolute power for firing or hiring was given to managers over their supervisees; hierarchical structures became very "steep" with more layers (five to seven) than before; span of control for managers has been reduced; and the number of internal autonomous committees was reduced to a bare minimum. Even the lingo changed and "coordinators" have transformed into "directors", "managers", or "chairs"; "governing committees" have changed their names into "directorates" and similar changes occurred in other spheres to conform to the lingo used outside the *kibbutz* culture.

The structural transformations' main effect is upon the level of equality among members: This is illustrated by Table 1 that relates the number of years a *kibbutz* has already adopted the differential salary arrangement (rather than equal personal or family budgets) and several indexes of equality among members (32 *kibbutzim*, 700 respondents – Leviatan, 2009).

Table 1: Correlations between number of years (0-6) since adoption of Differential Salary Arrangement and expressions of socioeconomic inequality (N=32 *kibbutzim*)

Expressions of inequality	Pearson correlation coefficient (r) with yrs. in differential arrangement
Perceived level of disparities among members ^a	.54**
Satisfaction with degree of equality in <i>kibbutz</i>	-.58**
Mean estimated relative level of family income compared to other members	-.59**

** p < .01

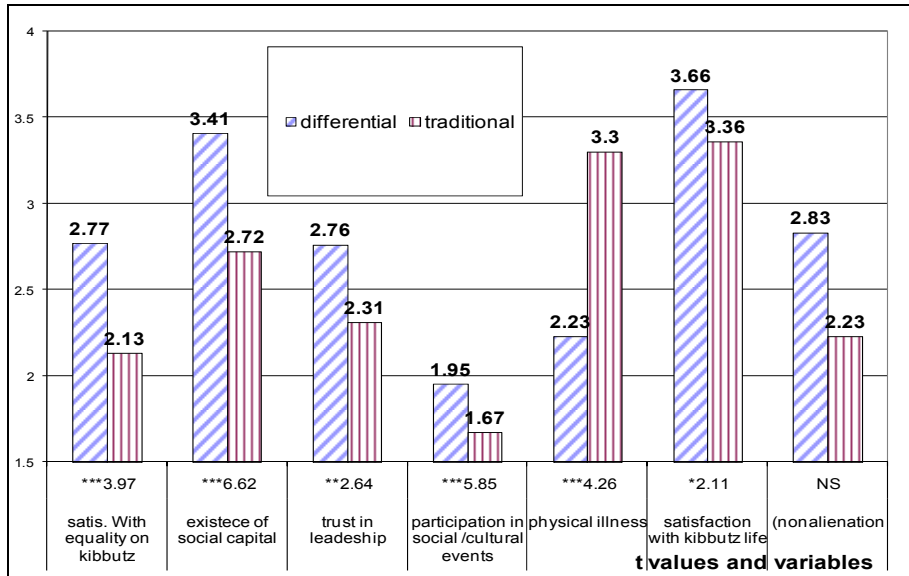
Source: Leviatan, 2009.

It is clear from Table 1 that the more years a *kibbutz* is already into the differential salary arrangement, the lower are all indices of equality.

As a result of the increase in inequality, one finds higher correlations of hierarchical position with expressions of health. For instance, in the same study as in Table 1 (Leviatan, 2009), the correlation of self reported "managerial level" with "ill health symptoms" (also self reported) was $r = .14$ ($p < .05$) for members of transformed *kibbutzim* ($n = 350$); the correlation with self reported "level of health" was $r = .22$ ($p < .001$). The same correlations did not reach statistical significance for members of traditional *kibbutzim* ($n = 250$).

The importance of equality for the well being of members is illustrated in another study (Graph 2) where members from traditional *kibbutzim* are compared to members from *kibbutzim* that transformed into "differential" *kibbutzim* (in which salary is paid on the basis of position at work and not equal to all) (Leviatan & Salm, 2007). In all measures, members from the traditional *kibbutzim* fare more positively.

Graph 2: Differences between members of Differential and Traditional kibbutzim (2 of each, 70 members in each group). Equality, social capital, health and well being (1 = most positive) (Leviatan & Salm, 2007) (1 = most positive; 5 = least positive. Physical health is in the opposite direction)



Source: Leviatan & Salm, 2007.

These structural changes in *kibbutzim* also affected their level of functioning both economically and socially. Note in Graph 1 the index of "sales per worker" for the years 1993 to 2010. On average *kibbutz* industry was 89% of Israeli industry (compared to 116% for the years 1976- 1992). The population of members and their dependents in *kibbutzim* also came down from about 129,000 in 1991 to about 100,000 in 2007.

7. Discussion and Summary

The premise of this paper was that a hierarchical structure is a common, perhaps necessary, characteristic of most if not all organizations in the industrial world. I have also stated that hierarchical structures have many advantages for the organizations that use them, yet they also have many drawbacks. A major drawback appears for societies where the values of equality among members are most central. This is because hierarchical differentiations stand in strict contradiction to the notion of equality among members. This is an important fact since the centrality of the values of equality is true, in degrees, for many societies in the industrial world. More importantly the value of equality among members

of society is spreading in the industrial world. Thus, the task at hand in this paper was to find whether it is possible for a society, community, or organization to have a hierarchical structure and still keep to the value of equality.

I have shown that the Israeli *kibbutz* communities serve as a good place to illustrate such a situation and that its example indicates a possible solution to the riddle. *Kibbutzim* indeed adhere very strongly to the value of equality among their members, and at the same time exercise hierarchical structures in their organizations. They solve for the ill-effects and the drawbacks of hierarchical structures by employing several organizational mechanisms that I have described in some detail.

The material presented in this paper teaches us that the very fact of having a hierarchical structure does not necessitate negative outcomes. The material has also shown that there exists a wide range of mechanisms that organizations could adopt to alleviate most ill effects of hierarchical structures and yet keep those structures in operation.

The fact that relatively diverse organizational mechanisms implemented to overcome the drawbacks of hierarchy allow via different routes organizations to reach similar outcomes, meaning that organizations have a choice. Each may choose the most appropriate mechanism, or mechanisms, for itself, and still have at least some of the benefits gained by *kibbutz* communities as regards battling ill effects of hierarchy.

There still remains the question of whether these mechanisms could be generalized to other cultures. I believe it is unlikely to generalize *all* the mechanisms I described. But some of them (and with various combination) could be used – in fact are already used – by organizations in other cultures. For instance: direct democracy is employed by many NGOs; managerial rotation is the practice of many academic departments in many countries where heads of departments are elected into office for a set in advance period and then go back to so called “rank and file” status in their department when replaced. The same practice often applies to other academic officers in the same universities; semi-autonomous teams are practiced in many business organizations. I suggest that the right way to go about adopting any of these mechanisms is first to decide that one wants to overcome ill effects of hierarchy and then choose what mechanism or mechanisms should be used for such a purpose.

I still need to offer an explanation as to why the deterioration of the organizational effectiveness of *kibbutz* business organizations resulted from the abandonment of the mechanisms I described in this paper. Members in the traditional *Kibbutzim* were characterized by: a high level of management skills due to the practice of managerial rotation, proven skills as intensive team workers, and a high level of motivation. This quality of human resources is the only advantage that *kibbutzim* had in their

economic activities. Other characteristics were in fact drawbacks: there were drawbacks in their being small communities; in their workers relative older age, in workers reduced physical ability (because *kibbutz* workers were older than city workers since *kibbutz* members do not retire at the same age as city workers and *kibbutz* members are never fired); in flexibility of size of the work force, and in the little mobility of their human resources; in the long distance from business centers (being situated in the periphery of the country); and in inflexibility of geographic mobility. Throwing out one's advantages and relying on one's drawbacks cannot be considered good business management.

Finally, this paper presented the full story of the ways by which *kibbutzim* struggled to preserve equality and simultaneously keep up with hierarchically structured organizations. Then, it has focused on the demise of those mechanisms in about three quarters of all *kibbutzim*. Does it mean that these alternative ways of dealing with hierarchy do not hold for long? Not necessarily! The fact is that *kibbutzim* have now survived for over one hundred years. Another fact is that even today there are more than 60 *kibbutz* communities that fully adhere to the principles that are at the base of these mechanisms. Another important fact is that these mechanisms worked well for the *kibbutzim* that utilized them. Thus, at least in my view, a negative verdict of the feasibility and viability of these organizational mechanism is not really justified.

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