Structural changes in kibbutzim, socioeconomic inequality, disparity in social capital and effects on health and well being[1]

(Draft)

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Introduction: What is a kibbutz? Description and its recent past

No report of research on kibbutz population can be understood without at least a superficial knowledge of what a Kibbutz is. Yet, while an answer to this question was simpler in past years, it is much more complicated at present. In the past, all *kibbutzim* (plural in Hebrew of a *Kibbutz*) 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: 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. The traditional kibbutz ideas still (2008) rule in about 30% of all kibbutzim but their numbers are falling every year.

The study I describe here shows how structural changes based on the transformed ideologies in the non-traditional kibbutzim, as compared to traditional kibbutzim, brought about negative changes in levels of social capital and in expressions of health and well being of members.

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[1] **Parts of this introduction are based on Leviatan et al, 1998, the introduction chapter; and from Leviatan & Salm, 2007**

However, I will begin with a description of the traditional kibbutz as only then would the reader understand the full range of changes that the transformed kibbutzim went through.

Characteristics of traditional kibbutzim

Until the beginning of the nineties, an outsider visiting a typical kibbutz (one of about 270) would have seen a tightly knit communal society of about 150—200 families living alongside each other and sharing a common ideology, mutual responsibility for each other, many social activities performed together with other members, and common ownership of their means of livelihood. 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 as most communes do, kibbutzim have been open to visitors, the media, cultural inflows, and outsiders.

Although the kibbutz population was always small (only about three percent of Israel's Jewish population throughout the years since independence and up to the late eighties), kibbutzim have achieved a prominence both in terms of the country's social and political life and its economy. At the same time kibbutzim sustained their ideology and internal social goals for community and individuals. For many years kibbutz society has served as a symbol of success in many domains. For example:

1. In politics, a disproportionate number of the country's leaders, including prime ministers, have had roots in the kibbutz movement.

2. Comparative research conducted from the late 1960s through the 1980s showed that kibbutz economic performance surpassed that of others both in farming and in industry (Barkai, 1977; Rabin, 1991; Melman, 1971; Don, 1988; Peleg, 1980; Leviatan, 1975). At present, the

kibbutzim are responsible for about 35 percent of Israel's agriculture sales, about 10 percent of industrial production, and about 10 percent of Israeli industrial exports. Moreover, kibbutzim have provided a good standard of living for their members.

3. During the years 1970—1985, the membership of kibbutzim increased by about 2.5 percent each year, which illustrates their attractiveness to their own youth and to youth from the outside. (About half of the new members came from outside the kibbutz.) This rate of growth, surpassing the growth of the Jewish population in Israel, was by itself a major accomplishment, as decline is the rule in modern rural communities both in Israel and abroad. At its peak, 1989, the kibbutz permanent population numbered about 129,000, almost all of them were members and their dependents. At present (2007) it numbers about 117,000 and this number includes about 16% of non-member related residents. An indication of the continued reduction in membership numbers is clear even today: in 2001 the membership of the large kibbutz federation (TAKAZ – about 250 kibbutzim) numbered 58,593 members and candidates; by the end of 2005 the number went down about 3% to 57,010. At the same time the numbers of non-member residents increased by 32.8% from 11,736 to 15,584 adults.

4. Kibbutzim introduced innovative educational, organizational, and social arrangements such as sleeping houses for children and communal education, care for the elderly and organizational solutions to potentially alienating jobs and to the ill effects of hierarchy (Leviatan and Rosner, 1980). In addition, the kibbutz movement was a prime contributor to the creation of a secular Jewish culture in Israel.

5. These and other innovative attempts at solving problems faced by other parts of industrial society have generated considerable interest in this society, including that from academic researchers. To date, there are more than six thousands research publications about the kibbutz — half in languages other than Hebrew.

6. The Israeli public has had a positive attitude toward kibbutz society, even when the general political mood turned away from the Labor ideology (which the kibbutzim spearheaded) after the political upheaval of the right in Israel in 1977. Opinion surveys during the years 1977-1985 showed that about 60 percent of the public had positive feelings for the kibbutzim and only 6-8 percent expressed negative feeling. In addition, about two-thirds held the opinion that kib-

butz life was viable and in many ways superior (including education). About half of the respondents even supported the view that kibbutzim should have an influence on Israeli politics disproportionately greater than their size.

7. Finally, the very survival of the kibbutz movement for almost a full century (the first kibbutz was established in 1910) is indicative of its success. There are few examples of non-secluded, communal societies that have survived for so long.

In addition, research has indicated that throughout the years, kibbutzim have adhered and sustained their value-based principles of conduct – equality among members, solidarity and partnership, and the emphasis on self development of their members (Leviatan et al 1998).

More importantly, and pertinent to the topic of this paper, the population of the kibbutzim demonstrated a high level of physical health, exceptional levels of wellbeing, longevity, and solid testimony to successful aging. These were evinced in many indicators. For instance, death rates of members aged over 50 years were much lower than those for the Jewish population in Israel, to the ratio of 1:2 or 2:3. Life expectancy of the kibbutz population was thus three to four years longer than that of the Jewish population in Israel. It was also longer than in most other populations in industrial societies (Leviatan et al., 1986; Leviatan, 1999; Leviatan and Cohen, 1985). Illustrative data are shown in Table 1.

Table 1: Life expectancy (LE) at birth and at age 50 of kibbutz permanent population and Israeli Jews in three years—1977, 1984, and 1995 (by gender)[a].

		LE at birth		LE at age 50	
Gender	**Year**	**Kibbutz**	**Israeli Jews**	**Kibbutz**	**Israeli Jews**
Males	1977	74.4	71.9	28.3	25.7
	1984	76.7	73.5	29.6	26.5
	1995	78.1	75.9	30.8	28.3
Females	1977	79.0	75.4	31.0	28.0
	1984	81.3	77.1	33.4	29.2
	1995	82.5	79.8	33.8	31.2

[a] Sources: Leviatan (2003); data for the Jewish population in Israel are taken from *Statistical Abstracts of Israel*, Central Bureau of Statistics (1979; 1986; 1997).

Moreover, the population, particularly the aging population, of the kibbutzim enjoyed also very positive levels of physical health and wellbeing in comparison with other populations. These were expressed in indices such as satisfaction with specific life domains, with kibbutz life, and with life in general (Leviatan et al., 1981; Carmel et al; 1995; 1996; Leviatan, 1999; Tannebaum et al., 1974).

Conditions for Past Successes

The success experienced by kibbutzim over such a wide range of domains resulted from abiding by three important principles: holding on to their defining values while constantly (and innovatively) adapting their concrete expression to changing circumstances; maintaining a dynamic balance between the values of collectivism and the values of individualism and seeking congruency among the principles of conduct exercised in the different life domains.

Constant Values and Their Dynamic Expression

The kibbutz movement has undergone many changes, particularly during the late '50s-'70s when it at first experienced an economic crisis, and later the introduction of industry, the transformation into a multi-generational society, the aging of its founding generation, a higher-education revolution, and absorption of a large membership without ideology socialization through youth movements. Yet, until the beginning of the nineties the values guiding development have remained constant. This point is extremely important because over the years there has been a tendency among outside observers of kibbutz life to view the kibbutz in static terms — as a constant (e.g., Darin-Drabkin, 1962; Leon, 1969; Blasi, 1978). It is not the kibbutz that has remained constant, but its values.

The constancy of values was upheld over the first eight decades of kibbutz existence, but their translation into practical arrangements of kibbutz life changed from one period to another. Changes included the work domain (kinds of jobs, level of technology, size of work group, organizational structure, etc.), expressions of community governance (institutions and bodies of governance, topics discussed, dynamics of decision making, etc.), and consumption (what was consumed, methods of distribution of goods and services, level of consumption, etc.). Change was

also introduced in other domains, such as education, family, culture, and leisure. However, a deeper look into the differences in practical arrangements over time would show that they were mostly on the surface. In effect, the differences, until the end of the eighties, have been expressions of the same governing values of kibbutz life: solidarity among members and unconditional responsibility for satisfying the needs of members and of their dependents, collectivity in ownership and in pursuit of goals, democracy in governing the life of the community, pursuit of the goal of maximum self-development for every member, the mission of service to the larger society, and an equality among members in rights and obligations which takes into account the uniqueness of each person's needs and abilities ('qualitative equality').

This dialectic of dynamically adapted social arrangements and constant values was key to kibbutz success.

Balanced Collectivism and Individualism

The changes introduced over the years in kibbutz life resulted not only from external pressures, but also from the reaction of the kibbutz to the constant and contrasting pulls of two of the major forces that empowered kibbutz life: collectivity for the sake of community and individuality for the sake of self-fulfillment. Although the tendency is to view the kibbutz in simplistic terms as an expression of communal and utopian ideals, kibbutzim are complex societies that, from their inception, were based on a synthesis of differing and seemingly conflictual values. On the one hand, kibbutzim were founded upon values of collectivism. For example, the means of production were owned by the community, the children had a common educational experience that included living in their own houses (rather than with their parents), and members ate their meals in a common dining hall. On the other hand, individual expression was also evident in many of the practices. For example, decisions were taken in meetings following extensive discussions by members; the goods and services of the community were allocated according to the needs of members; the educational system (which was influenced by John Dewey and the progressive tradition) emphasized art, music, and various forms of individual expression; and work assignments usually involved attempts to accommodate individual preferences (when this could

not be done, arrangements would be negotiated whereby members would do work that interested them for part of the week and work that the kibbutz required for the other part).

In the pioneer period, during which the kibbutzim were defensive settlements attempting to establish a basic level of agriculture both to support their members and, subsequently, to support a Jewish homeland in Palestine, individualism was viewed as a luxury, and the good of the community was the predominant value for making decisions. If, for example, someone wanted to go on to higher education, he or she would have to leave the kibbutz. With time, changes occurred in the life of the kibbutz that led to greater individualism, but the individualism operated within communal arrangements. In effect, the introduction of greater opportunities for individuals was viewed as a way of strengthening the communal structures and the collective values upon which they were based. Yet even though, out of necessity, collectivism was accentuated in the pioneer years, individualism was not ignored. And when it became practical to incorporate individualism into kibbutz life, it took a central role alongside collectivism — leading to a balance between them. The policy was to take both into account in decisions about practical life arrangements. Moreover, this balance between collectivism and individualism was a major component of the strength of the kibbutz in attracting members, in maintaining their commitment, and in eliciting the highest levels of motivation and identification.

Congruency among Domains

During the transformations that they experienced in their first eighty years, the kibbutzim understood what theoreticians (e.g., Katz and Kahn, 1978) have only recently come to identify as an important condition for successful functioning of social organizations: the congruence among their subparts in principles of conduct. Social systems whose parts function in a framework of incongruent principles are likely to experience inside tensions, strife, and wasted energy. And, what is particularly important in the kibbutz case, the smaller the social system, the more dangerous for it are the outcomes of incongruence.

In the past, kibbutzim avoided this danger of incongruity. They constructed all their subsystems (domains) along commensurate principles of conduct with, of course, appropriate adaptation to fit the features of specific domains. For example, work units in farming, services, edu-

cation, and even industry, were all structured along principles similar to those of committees in the public domain: Those in charge were “coordinators” rather than “managers”; the units had planned rotation in leadership and administrative positions, and they exercised direct democracy through general assemblies of workers and through decentralization into semi-autonomous work-teams; informal interactions were the rule; and even the social structure of the school community operated as a mini-kibbutz. Likewise, when industry was introduced, it was forced to adopt a management structure that complied with these kibbutz principles of management.

Crisis in mid '80s and it resulting structural changes

The successes described in the previous section were also the beginning of a new era of handling both the delicate balance between individualism and collectivism, and the relationship between values and social arrangements. These successes depended to a great extent on the ideological commitment of members, the beliefs they shared about kibbutz values, and their willingness to conserve those values. But the success in absorbing the major transformations of those years apparently reduced fear of diminishing ideological commitment and commitment to the importance of promoting it among members and youth in schools. It was believed by many that ideological commitment developed by itself among members simply because they lived on a kibbutz. This did not happen; ideology is not an infectious phenomenon that one gets by sheer exposure to it, neither is it transferred by genes from the founding parents to their children of following generations. Thus, when leadership of the individual kibbutzim and of the federations no longer regarded overt emphasis on ideology as an important focus of its functioning (as it was in earlier years), the seeds were planted for a very different reaction to the next period (mid-1980’s) of major crises.

The economic crisis and its economic effects

A major transformation in the kibbutz environment came about in the mid-1980s. It is what kibbutz lingo refers to as “the crisis.” The year 1985 signifies the onset of that crisis, which started for economic reasons and later became both social and ideological.

Detailed description of the causes of the economic crisis that Israel faced in the mid eighties and its effects on kibbutz economy is beyond the scope of this paper (see more details in "Introduction" in Leviatan et al 1998; Rosner & Getz, 1994, Rozolio, 1999 [Hebrew]). These are its high lights: resulting from governmental policies during those years (reacting to an inflation rate of 400% by freezing wages and exchange rate with the US currency, and introducing very high real interest rates – 85% for the first six months and than 25% for a year later, and 16% after another year), the financial position of kibbutzim deteriorated to the brinks of catastrophe. They could not lay off workers as many other businesses did (increasing unemployment in the country by about 33 percent), and could not "shut down" the kibbutz as was the fate of almost a sixth of all large businesses in the country.

This is to be understood by the special position of kibbutz community and members vis-à-vis their business enterprises. Kibbutz businesses had a constant need for economic growth to create additional jobs for the new members. In addition, unlike any other business enterprise, kibbutzim are both employers of their members and the community is responsible for its members’ occupation. Thus, laying off members from work is not a viable solution because the unemployment of many members could destroy the community. And this is so even without taking into account the detrimental morale problems.

As a result, even with the new economic situation in Israel, kibbutzim have had to continue borrowing money in order to create jobs for the new members and to preserve the old jobs. Remember also that in the mid-1980s, kibbutzim were at the historical peak of their growth rates — about 2.5 percent per year, which meant the addition of about fifteen hundred young members every year to their work force.

The freezing of the exchange rate also had a detrimental effect on kibbutz economy, which was export-oriented both in its industry (providing 10 percent of Israel’s industrial exports) and in most of its farm products. In addition, governmental policies of liberalizing mar-

kets to do away with central planning and subsidies for farming produce further harmed kibbutz economies, which still depended heavily on farming.

Finally, most kibbutzim have been dependent financially on loans from financial institutions (government or banks), as their enterprises were established without any capital of their own. To sustain the growth of the kibbutz population, it was necessary to continue borrowing heavily from financial institutions; but because of the superb economic performance of the kibbutzim over the years and the mutual-guarantee arrangement among all kibbutzim vis-à-vis their creditors, the banks were never reluctant to loan money. Unfortunately, these same arrangements made kibbutzim perhaps overly eager to borrow.

This combination of worsening outside conditions (hyperinflation, high interest rates, slow economic growth, worsening commerce ratio for producers between input and output, and deteriorating exports) and worsening inside conditions (the need for new jobs and expanded production together with too easy access to expensive credit) led to an economic crisis in the kibbutz movement. Within a few years, the kibbutzim developed a high level of debt, and their economic performance deteriorated. In 1988 the kibbutzim of the two major federations (TAKAM and the Kibbutz Artzi) owed their creditors about $4.4 billion (U.S.), whereas their income was only about $3.1 billion (U.S.) — a ratio of close to 1.4:1. Six years earlier, the total debt of the same kibbutzim was $1.4 billion (U.S.) against $2.7 billion of income — a ratio of about 0.5:1. In other words, the debt more than tripled during a period when there was only a small increase in income.

The creditors (the banks and the government) accepted responsibility for about a third of the debt as not legitimate. However, independent economists who analyzed the debt felt this figure was understated by half.

Social and ideological impact of the economic crisis

The financial crisis described in the previous section had a devastating impact upon the kibbutzim and their members. In 1988 (it took two or three years for the banks to understand the real gravity of the situation), lines of credit were closed and many kibbutzim experienced a sharp de-

cline in their standard of living. They also lacked investment capital to modernize their technology. But these outcomes were less serious than the devastating blow to morale and self-confidence. The outside media, and even some kibbutz leaders, blamed the principles and the values that guided the kibbutz economy and not government policies. (The analyses that pointed the blame at the excessive interest rates were published later, but by then very few people paid attention to those analyses.)

The mood among many members was to view themselves as incompetent and their way of life as inefficient. Many kibbutzim looked externally for solutions, accepting as fact that the kibbutz system was inferior. As a result, many of the offered solutions to the economic problems suggested changes in structures of kibbutz business in ways similar to any other business and based on principles of market economy and neo-liberal ideology: They emphasized individualistic values while weakening collectivist values. Thus, kibbutzim began to discuss ideas such as creating boards of directors in industry and other domains, lifting restrictions on the employment of hired workers, doing away with managerial rotation, doing away with qualitative equality by privatizing public budgets and linking contribution and remuneration, abandoning direct democracy in the control of kibbutz businesses, and removing restrictions against members working outside the kibbutz.

These ideas were to be registered in kibbutz lingo as "the changes". They were first introduced into Industry (as the major source of income producing and the domain most in contact with the outside world), and then moved into other production domains such as farming and tourism, than into community services and finally into the domain of community life. Hence, the appearance of "transformed kibbutzim".

Privatization of public budgets and differential remuneration according to work position

The most significant structural changes in community structures, and of most relevancy to our study, deal with the rejection of the principle of "qualitative equality" whereby the individual expects from community the satisfaction of his or her unique needs while the community expects from the individual to contribute to it all his or her abilities and resources. This basic principle of the traditional kibbutz life is abandoned by transformed kibbutzim who adopted the "changes" in

favor of, firstly, 'privatization of public budgets,' and, secondly, into 'differential salary arrangements' (in which remunerations are based on level of professional or managerial positions at work.)

'Privatization of public budgets' means that a public budget, such as the budget of food, or that of health services (that are not included in the national health insurance basket) which previously was distributed according to individual needs (within the capabilities of the kibbutz) have been 'privatized'. Now each member receives a food or health budgets that are equal to what other members get, without reference to any unique needs or wishes of the individual concerned. Many kibbutzim have similarly 'privatized' public budgets for other consumption domains (such as vacations, home maintenance, extracurricular education for children and adults, higher education, and more.)

The principle of privatization of public budgets eliminates the view of each individual as unique, and abolishes the principle of 'qualitative equality'. With this, the responsibility of kibbutz institutions to treat each individual member “according to his or her needs” is lifted also and so is the fate of unconditional solidarity among members. Thus, the distributive principle preserved in privatization might be labeled as ‘mechanical equality'.

The second major topic of structural changes is expressed in the differential levels of salaries members get from their kibbutz. A salary based on level of position at work. The distributive principle operating here is the 'equity' principle of remuneration. It runs counter to the principles previously exercised by kibbutzim, when personal or family consumption budgets were calculated to assure a similar standard of living for all members ('mechanical equality',) yet it also took into account the family's or the individual's unique needs ('qualitative equality').

Adoption of differential salaries usually follows in time privatization of major public budgets. It takes one more step farther away from the past definition of equality in kibbutz society. Even the 'mechanical' principle of equality is given up and the ruling principle becomes 'equity' (Homans, 1961; Adams, 1965).

Differential salary arrangements are the strongest manifestation of the ideology change in kibbutzim. It manifests also the boldest abandonment of communal values of equality and solidarity for values of individualism, market principles and the ideology of neo-liberalism. The

clearest expression of the new social structure is, of course, in what initiated it in the first place – a wish for the enactment of the ”equity” principle in remuneration. Yet, the ideologies behind it should lead kibbutzim to transform also into communities with much less solidarity, less concern for individual members and less willingness to invest into, and have expressions of, communal life.

Table 2: Percentage of kibbutzim reporting adoption of structural privatization or differential salary (1990–2003)[a]

DOMAIN // YEAR (19.. or 20..)	***'90***	***'91***	***'92***	***'93***	***'94***	***'95***	***'96***	***'97***	***'98***	***'99***	***'00***	***'01***	***'02***	***'03***
* Privatization of food budget	3	NA	6	7	16	25	38	48	60	64	69	72	80	85
*Privatization of enrichment studies for children	4	5	9	10	12	14	13	19	26	28	32	41	45	50
* Privatization of higher studies (part or whole)	1	3	3	4	7	7	10	8	11	15	21	28	48	53
* Privatization of health budget (part or whole)	NA	NA	NA	NA	NA	NA	NA	6	9	9	21	32	49	57
* Differential salary (part or whole)	NA	NA	NA	NA	1	2	6	10	16	12	31	43	50	57

[a] Source: Getz (1998-2004) Annual surveys.

The beginning of the '90 saw the first implementations of these changes – at first in few kibbutzim and then the number kept growing very fast. Table 2 shows the percentages – at different years – of kibbutzim that have privatized various domains and those adopting differential salaries as their remuneration system.

Table 2 presents a fast increase in the percentage of kibbutzim who adopt privatization of important public budgets (food, enrichment classes for children, higher education and health service). In addition it records a steep increase in the percentage of kibbutzim adopting differential remuneration for work positions. It reaches about 71% at present (end of 2007). Since no kibbutz retracted its decision for adopting these "changes", the end result is that a federation of homogeneous communities became, in effect, a federation of two dissimilar kinds of communities – differentiated according to the principle of equality they adopt: The traditional kibbutz with its commitment to "qualitative equality" among members (29%) and the transformed kibbutz with its adoption of different definitions of equality – "equity" (71%). These two differing groups of kibbutzim (which had a different distribution at the beginning of 2004, when our study was initiated -- 43% for the traditional kibbutzim; 57% for the differential kibbutzim) serve as the basis of the research described later.

The current study and its scientific background

As mentioned earlier, kibbutz population displayed very positive indicators of health and well being and a high level of life expectancy. Research focused on the following question: “What are the main determinants of the positive indices of health, wellbeing, and life expectancy for the kibbutz population in general, and for its elderly in particular?” Major findings of such research pointed to the *social and structural arrangements* that kibbutzim offered to their members as the pivotal factors explaining these positive outcomes. Underlying these arrangements were the principles already mentioned earlier: reference to each individual according to his/her unique needs and capabilities (as demanded by the guiding kibbutz principle of ‘qualitative equality’: “To each according to his/her needs, from each according to his/her capabilities”); total and unconditional

responsibility of kibbutz communities for satisfying the needs of members and those dependent upon them and for taking care of their personal development; expression of full solidarity among members; striving for ‘qualitative equality’ among members in all domains of life.

Social and structural arrangement that traditional kibbutzim offered their members corroborate theoretical writings and research findings from the general literature. For the last twenty years, studies (e.g. Wikinson,1992; 1996; , Wilkinson, 1999; Wilkinson &Pickett, 2006; Lynch & Kaplan, 1997; Kawachi et al, 1996; Robert, 1999; Robert & House, 2000; Marmot & Wilkinson, 1999; 2001) reported an important negative relationship between degree of intra-community socioeconomic inequality and health of its members. This relationship was found to be intervened by expressions of two different kinds of social capital: (1) 'Physical social capital' which indicates levels of investment of physical resources by the focal social entity such as in education and educational services, in health services, in creation of jobs, in formation of institutions for the construction of social involvement, investment in ecology, and so forth (e.g. Kaplan et al, 1996). (2) "Socio-psychological social capital" which means, for instance, the extent of social support experienced by members of the community, the extent of community members involvement in decision making and exposure to relevant information, the existence of interpersonal relations, the existence of trust and solidarity among members of community (e.g. Kawachi, 1999; Marmot & Wilkinson, 2001).

Indeed, in the past, the social and structural arrangements based on the principles of qualitative equality, solidarity and partnership, were adjusted to create 'social capital' (Leviatan et al., 1981; Cohen-Mansfield & Leviatan, 1992; Leviatan, 1999) as a resource conducive to the enhancement of health and wellbeing of kibbutz members.

The physical aspect of 'social capital' (Lynch & Kaplan, 1997) was expressed by kibbutzim, for example, in the kibbutz commitment to create appropriate jobs for members at every age and as long as they were willing to continue working (some members were found to be part of the work force of their kibbutzim even after reaching the age of 90 year). Jobs were created that took into account the particular limitations of the elderly members, and their work arrangements were adapted to their changing capabilities as regards, for instance, the reduction in number of working hours per day, per week, and per year (Leviatan, 1983). Similarly, jobs and branches of

production and services were either newly created or went through major changes to accommodate young members who graduated from institutions of higher learning so that their newly acquired skills, interests and knowledge could be expressed in their jobs. Resources were invested in the creation of appropriate possibilities for leisure activities; the material standard of living of the aged was kept equal to that of younger members in their full capacity as workers; and their special needs concerning money were shouldered by their kibbutz. Kibbutz health institutions saw themselves as responsible for members' health, and therefore had institutionalized preventive medicine, ambulatory institutions, and medical follow-ups – all financed and under institutional responsibility.

Parallel to investments in the creation of the physical form of 'social capital' came the building of 'social capital' in the social spheres. This was expressed in an emphasis on social integration of all members, and the offer of social support by community institutions (Leviatan, 1999). It was exemplified in the intensive purposeful integration of all members – aged and young -- in the civic life of their kibbutzim; in an effort to involve all members in the community's cultural and social life.

Research supported the thesis arguing for the positive effect of social arrangements on well being. For instance, older members of kibbutzim that differed in levels of supportive social arrangements, assumed to contribute to health and wellbeing, indeed displayed expected differences on these outcomes (Leviatan et al., 1981; Leviatan, 1999). Similar findings showed when kibbutzim were compared with other populations in Israel and abroad (e.g., Leviatan, 1988) and again when personal characteristics and social arrangements were contrasted for their relative strength as predictors of wellbeing and health of members (Leviatan et al., 1981) – the latter being much more important.

Thus, the two aspects of social capital are relevant to our study as they should be affected by the creation of inequalities in transformed kibbutzim that adopted differential salaries. This is because differential salaries, by definition, express inequality in socioeconomic positions within a community. It should result from the change into market principle, and the ideology of neoliberalism with its adoption of values of individualism and the giving up of solidarity and community life. It should lead to lowered investments in the physical form of social capital (such as

in health services, and services of preventive medicine that are not in the national health insurance "basket"; there should also be less investment in creation of jobs for members, and less investment into the various educational systems (e.g. Lynch & Kaplan, 1997). At the same time we should expect deterioration in the social psychological aspects of social capital such as mutual trust among members in the community, norms of solidarity and reciprocity, level of social support, level of social integration, social and civic involvement, trust in leadership, quality of work life, and the extent of community members influence of their life (e.g. Kawachi, 1999; Marmot, 1999.)

Important is to note that the effects of the reductions in social capital of these two kinds is not equal across all socioeconomic strata. With a high level of socioeconomic inequality, society – its leadership – invests little in building social capital, particularly the physical kind. But low investment in this kind of social capital does not affect all members of community in the same degree. It is likely that members who are at a low socioeconomic level will be more affected. This is why: members of society who enjoy a high socioeconomic status also owe more private resources and they can therefore invest privately and compensate the lack of investment by the public. For instance, they can afford private health services or quality private schooling for their children, or private security arrangements against crime in their neighborhoods, or private higher education, or ecological solutions within their area of residence and so forth. These compensating private investments are not available to the poorer members of society.

While the above analysis seems probable, the hypothesized importance of socioeconomic equality among members of different kibbutz communities in determining their health via the intervening variable of social capital could not be tested directly until recently, as kibbutzim showed hardly any variability in this regard. As well, a crucial test of it was missing: what would happen if the same communities give up on these unique values. Would their level of health and well being deteriorate?

This deficiency in research opportunity of past studies is now "remedied" due to the structural transformations currently experienced by many kibbutzim. The present research reported

bellow exploits this opportunity. We conducted first a pilot study and than the actual larger scale study. Both are reported here.

A pilot study

In 2002, we conducted a study about relationships between level of socioeconomic inequality and expressions of social psychological social capital and health of *elderly* members of kibbutzim (Leviatan & Salm, 2006). In that study we compared samples from two traditional kibbutzim with samples of two transformed ("differential") kibbutzim which have adopted differential salary arrangements only a year or two before data collection. The kibbutzim were selected so that each of the traditional kibbutzim had a comparable kibbutz from the "differential" group while each pair was equated on time of settlement, size of membership, economic performance, political movement affiliation, and background of the founders (all were graduates of the Shomer Hatzair movement abroad). Within each kibbutz we sampled 50 respondents 55 years of age or older. With a response rate of 70% we had 70 members from two traditional kibbutzim and 70 from two differential kibbutzim (equal distribution between the genders). We asked the participants to respond to questionnaires that tabbed their perceptions about the extent to which they considered their kibbutz to keep to equality among members, the existence of social capital (the socio-psychological aspect of it) and subjective evaluation of their own health, health symptoms and well being (measures of (non)alienation, satisfaction with kibbutz life). In addition, we analyzed (with respondents' written consent and with the help of the local medical team in each kibbutz) their medical records and also had a general medical evaluation of each respondent by the medical team (physician or nurse). Because members in the differential kibbutzim were somewhat older, we divided the samples into two age groups and compared them within each age group. Tables 3&4 summarize some of the major findings from the pilot study for two age groups: 55-70 (Mean age about 61 and 62); 71+ (Mean age about 80 years.)

Table 3: Comparison of respondents of two kibbutz types (d and t[a]): their state, perceptions, and attitudes as regards 'social capital', health, and wellbeing. age group 55-70; mean age about 62.

Variables and indices	Kibbutz type	N	Mean	SD	Student's t
Indicators of social capital					
*Satisfaction with equality on kibbutz (1-highest)	D	29	3.93	1.10	2.29*
	T	46	3.43	.78	
*Trust in leadership (1-highest) (2 items)	D	35	3.93	.94	2.18*
	T	45	3.48	.90	
*Social capital (1-highest) (5 items)	D	35	3.45	.68	5.26***
	T	48	2.72	.59	
*Members' visits to one's home (1-highest) (2 items)	D	33	3.40	1.21	NS
	T	43	3.65	.87	
*Meetings (informally) with members (1-highest)	D	35	3.33	.91	NS
	T	46	3.03	.72	
*Attending kibbutz functions (1=all; 2= none) (5 items)	D	34	1.40	.41	4.79***
	T	45	1.05	.12	
Indicators of health and wellbeing					
*Physical health (1-highest) (4 items)	D	35	2.40	1.11	NS
	T	48	2.04	.98	
*Alienation (reversed) (1-lowest) (3 items)	D	34	2.98	.95	NS
	T	46	2.96	.93	
Satisfaction with kibb. Life (1-highest)	D	35	2.83	1.01	2.22*
	T	48	2.40	.644	
*Age	D	35	62.6	5.38	NS
	T	48	61.3	4.16	

[a] D = kibbutz with differential remuneration; T = traditional kibbutz. * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4: Comparison of respondents of two kibbutz types (d and t[a]): their state, perceptions and attitudes as regards 'social capital', health, and wellbeing. age group 71 or older; mean age about 80.

Variables and indices	Kibbutz type:	N	Mean	SD	Student's t
Indicators of social capital					
*Satisfaction with equality on kibbutz (1-highest)	D	33	3.88	.74	4.68***
	T	17	2.76	.90	
*Trust in leadership (1-highest)(2 items)	D	33	3.51	1.01	3.68***
	T	17	2.47	.82	
*Social capital (1-highest) (5 items)	D	33	3.18	.56	6.54***
	T	19	2.21	.43	
*Members' visits in one's home (1-highest) (2 items)	D	32	3.66	.89	NS
	T	17	3.48	.81	
*Meetings (informally) with members (1-highest)	D	32	3.04	.81	2.14*
	T	18	2.46	.99	
*Attending kibbutz functions (1=all; 2=none)	D	30	1.28	.36	3.29**
	T	18	1.05	.14	
Indicators of health and wellbeing					
*Physical health (1-highest) (4 items)	D	34	4.30	1.11	3.64***
	T	19	2.82	.97	
*Alienation (reversed) (1-lowest) (3 items)	D	32	3.42	.81	NS
	T	19	3.28	.69	
*Satisfaction with kibb. Life (1-highest)	D	32	2.47	.88	NS
	T	19	2.21	.79	
*Age	D	34	79.9	4.93	NS
	T	19	80.32	6.84	

[a] D = kibbutz with differential remuneration; T = traditional kibbutz.

* p < .05; ** p < .01; *** p < .001

Findings in Tables 3&4 strongly support the arguments raised in the text thus far:

a. As expected, members of traditional kibbutzim report a higher level of satisfaction with equality among members
b. Traditional kibbutzim have higher levels of socio-psychological social capital (such as more meetings among members; positive social relationships; feeling of solidarity and taking into account members needs, less conflicts among members and between members and office holders).

c. Members in traditional kibbutzim report higher levels of trust in their leadership.
d. Members in traditional kibbutzim participate more in kibbutz-organized social and cultural events.

The positive state of social capital in traditional kibbutzim is then translated into several measures of physical health and wellbeing:

e. Members of traditional kibbutzim display more positive indicators of physical health (subjective evaluation, number of symptoms, evaluation by medical team, analysis of medical records).
f. Members of traditional kibbutzim are more satisfied with their life on kibbutz. So is also the case with a measure of (non)alienation (although not statistically significant).
g. Two additional measures of social encounters with other people (in respondents' homes or during leisure activities) did not render any differences between the two samples. Our interpretation was that the structural changes adopted in the differential kibbutzim have not yet affected aspects that are mostly dependent of individual discretion and not on the social system of their kibbutz.

A clear conclusion from this pilot study is that socioeconomic equality positively affects the existence of social capital and together they influence various expressions of health and well being. However, that pilot study had several limitations that needed attention in another study. Its major limitations that we tried to remedy in the current study were the following:

First, the number of kibbutzim in the study was small (only two of each kind) and therefore difficult to have statistically significant findings at the kibbutz as unit of analysis and impossible to test for the intervening position of the social capital variables.

Second, the two kibbutzim who were "differential" had adopted those structural changes only one or two years before collection of data. It was possible that the findings of differences that were interpreted as if they resulted from transformation into less equal communities are in effect expressions of difficulty in adjustments to the new structure. Those difficulties could, perhaps, disappear after few more years. Needed is, therefore, a study that consists of kibbutzim positioned at larger number of years in the transformed state.

Third, the study lacked any measure of physical expression of social capital; neither did it relate to the topic of occupation and unemployment.

Fourth, as this study focus was on aging, the youngest respondents were 55 years of age and therefore we could not know the effect on a wider age range of members of the transformation into differential salary.

The current study[2]

Our current study proposes to remedy the shortcomings of the pilot phase. We aimed to answer the following research questions:

1. To what extent is the number of years in adoption of differential salaries a valid representation of socioeconomic inequalities in the transformed kibbutzim? We expect the number of years a kibbutz adopts the differential salary arrangement to positively correlate with its level of inequality among members.
2. To what extent do kibbutzim with varying number of years since adopting differential salary arrangements also differ in levels of investment in social-psychological and in physical expressions of social capital? We expect a negative relationship so that number of years a kibbutz adopts the differential salary arrangement would negatively correlate with level of social capital.
3. How does number of years in differential salary arrangement and levels of social capital together and separately affect expressions of health? Are social capital variables the mechanisms through which inequality levels affect health? We expect a positive answer to both questions.

[2] Parts of the analyses appeared in two research reports by Adar et al, (2005) and Leviatan et al, (2006)

Methods

Findings reported here are based on two-stage study (with a focus on health services in kibbutzim) conducted by researchers in the Institute for social Research of the Kibbutz at the University of Haifa, Israel. The first stage (Adar et al, 2005) conducted in 2004 was a survey of expert informants from 131 kibbutzim (out of about 265 such communities in Israel). Tests performed on the data to compare this sample's economic and demographic data with the central tendencies and distributions for the total kibbutz movement showed very good matching on age and sex distribution, size of membership population, economic situation, and the distribution into budget arrangements (differential or traditional). The informants were interviewed about the state of health services and the budgetary arrangement for various health services.

Out of these 131 kibbutzim, we sampled 32 kibbutzim that represented various important criteria: (1) membership of thirty years or older and numbering at least eighty (which reduced the 131 number to 125); (2) a distribution along number of years adopting the differential system of remuneration ("0" was assigned to traditional kibbutzim); (3) federation with which the kibbutz is affiliated; (4) economic situation. Eventually we had 11 traditional kibbutzim, 5 kibbutzim who transformed into the differential salary arrangement 1-2 years prior to data collection, 8 kibbutzim who transformed into the differential arrangements 3-4 years prior to data collection, 8 kibbutzim who transformed 5-6 years prior to data collection. In each kibbutz we had on average 22 respondents with a range of 18-33 across all kibbutzim. Altogether we had in this stage about 700 respondents (a 44% response rate).

Instruments and variables of study

The major instrument for this study was a questionnaire sent by mail to all potential respondents. The variables measured with this questionnaire that are relevant for the current report were of several types as follows:

Demographic and biographic data (such as age, sex, family status, number of education years, number of children); Perceptions of extent of equality in kibbutz; perception about the existence of physical expressions of social capital (concerning the level of health services on kib-

butz and the way they are financed, investment in creating appropriate jobs for members, and indication of being unemployed); the existence of psycho-social social capital (such as opportunities and desirability to meet other members, opportunities and participation in social and cultural events organized by kibbutz, trust in kibbutz local leaderships and in other members, feeling of having influence and information about what happens in kibbutz, reciprocal solidarity with other members); question about level of personal budget allocated by kibbutz (for the members from traditional kibbutzim), and level of net income (after all taxes – state and local community – for members of the differential kibbutzim). Measures of health and ill health (such as subjective perception of own health, compared to others in age and sex groups, compared to five year earlier; indication to what extent a list of 16 psychosomatic symptom apply to respondent; questions of well being (satisfaction with life on kibbutz, satisfaction with life in general, and organizational commitment to kibbutz life).

Most of these measures were obtained on a Likert scale of 1-5 responses where "5" denotes the most positive response and "1" the least positive or most negative response.

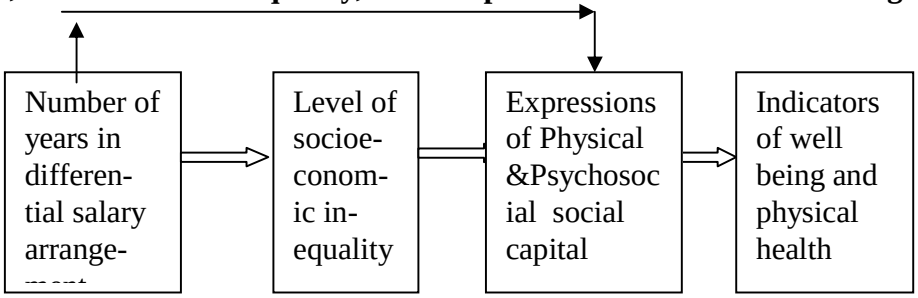
In addition we assigned each respondent the number of years in a differential arrangement ("0" indication the kibbutz is in a "traditional" arrangement) and those kibbutzim were broken into four groups: Traditional; 1-2 years in differential arrangements; 3-4 years in differential arrangements; 5-6 years in differential arrangements.

Analyses procedures

Groups of variables from same content sphere and similar standing in the causal flow model were submitted to Factor Analyses and the factors served as indices. Aggregated data of respondents from same kibbutz formed the basis for analyses at the kibbutz as a unit of analysis. Test of hypotheses, using the kibbutz as a unit of analysis, were performed by comparing groups of kibbutzim that were increasing number of years in the differential arrangement.

Chart 1 summarizes the hypothesized causal flow model of the groups of variables in the study.

Chart 1: Hypothesized causal flow model for the study: Leadership ideology, number of years in DSA, socioeconomic inequality, social capital with health and well being.



It is hypothesized that the number of years into the differential salary arrangement affects level of socioeconomic inequality in a kibbutz community and both (although years in differential salary arrangement less so) affect level of physical and socio-psychological capital. Existence of social capital, in its turn, is a major contributor to positive indicators of physical health and well being.

Findings

First, some descriptive findings – age and sex distribution within each group and across the whole sample.

Table 5: Number of kibbutzim per years in DSA, number of respondents in each group; Mean (SD) age, and percent of women.

Type of kib-butz	Number of kibbutzim	Number of respondents	Mean age (SD)	Sex (% wom-en)
Traditional	11	260	56.2 (13.48)	52.6
1-2 years as Differential	5	114	55.5 (13.69)	54.5
3-4 years as Differential	8	158	61.1 (13.55)	54.9
5-6 years as differential	8	168	58.2 (12.77)	58.5
	32	700	59.5 (13.66)	54.7
F test			3.00 ($p<.05$)	NS

Respondents from the four groups of kibbutzim do not differ in their gender composition. While the difference in age composition is statistically significant it does not seem meaningful and not any of two groups differed from each other at a statistically significant level. The four groups did not differ from each other in family status (in all – about 80% lived with a spouse); the groups did differ in a statistically significant way in having children at education age (meaning – dependent on them): 44% of members in traditional kibbutzim had at least one child; 42% of those 1-2 years in differential arrangements; only 36% in the 3-4 years; 35% in the 5-6 years.

Findings about research questions -- individual kibbutz as a unit of analysis

First research question: To what extent is the number of years since adoption of differential salaries a valid representation of socioeconomic inequalities in the transformed kibbutzim? Does the number of years a kibbutz adopts the differential salary arrangement positively correlate with its level of inequality among members?

Our research expectations were that level of socioeconomic inequality would increase with additional years in differential salary arrangement. Members from traditional kibbutzim should report more equality than members from differential kibbutzim. Among the latter, reported levels of inequality should be higher the longer the number of years a kibbutz adopts differential salaries. The answer to this research question should also test our assumption that number of years of adopting the differential budgetary arrangement serves as proxy to level of inequality. We employed four measures to test for level of socioeconomic inequality in the kibbutzim: Satisfaction with level of economic equality among members; perceived level of disparities among members in economic and material standard of living spheres; perceived relative level of income of own family compared to other members (an average perception of being relatively low indicates higher inequality); standard deviation (SD) of the former measure – the larger the SD the higher the perceived disparity in income distribution. Responses to each of these questions were aggregated across the respondents from each kibbutz. Table 6 shows the levels of

Pearson correlation coefficients of each of these measures with number of years a kibbutz is in the differential salary arrangement.

Table 6: Correlations between number of years in differential 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	.54**
Satisfaction with degree of equality in kibbutz	-.58**
Mean estimated relative level of family income compared to other members	.-59**
SD of perceived family monthly income – compared to other members in kibbutz	.45**

** p<.01;

As Table 6 shows, these four measures of income inequality correlate fairly well with the number of years since a kibbutz has adopted differential salary arrangement; but the correlations are not very high. In addition, the mean across the inter-correlations among the four variables is .55. These two characteristics hint that each of the four measures brings somewhat different perspectives on economic inequality. However, the four measures converge to one index with a reliability of .80 (Cronbach Alpha). That index (a mean across the four measures) relatively highly correlated with longevity in the differential arrangement – r=.65 for the 32 kibbutzim (p< .000). It would be a fair conclusion, therefore, to state that number of years of adopting differential salaries increases the extent of different perspective of economic inequality in a kibbutz but also that the four measures brought together cover much of the variance of inequality that is brought by longevity with differential salaries.

Looking at the distribution of responses to the question about the evaluation of extent of economic differences among members illustrates the meaning of the correlations in Table 6. 37% of respondents in the traditional kibbutzim said that disparities are large or very large while 23% perceived them to be small or very small. The corresponding numbers for members in kibbutzim

with 1-2 years of differential salaries were 49% and 6%; for those in 3-4 years of differential salaries – 62% and 3%; for the 4-5 years kibbutz members it was 58% and 2%.

Three other indicators of how longevity with the differential salary arrangements affects economic inequality strengthen the former conclusion. For the differential kibbutzim we had a measure of net family income after state and community taxes were levied; the analogous measure for the traditional kibbutzim was a question about the amount of budget they get from their kibbutz. I calculated for each group of kibbutzim (at the individual level of analysis) the correlation between net income (for the differentials) or budget (for the traditionals) with number of schooling years one had – assuming that this would serve as proxy to position or occupation. The correlations were as follows: for the traditional kibbutzim r=.011 (NS); for 1-2 years r=.22 ($p<.05$); for 3-4 years r=.34 ($p<.000$); for 4-5 year r=.34 ($p<.000$). This is another indication that as the years progress since adoption of differential arrangement, income depends more strongly on personal socioeconomic status.

The second indicator I used was to calculate the standard deviation of the reported income in each of the kibbutzim with the differential arrangement (and privately assigned budget in the traditional kibbutzim), calculate a mean of SDs across all kibbutzim in the same group and compare these means of SDs across the four groups. The results corroborated the expectation: the mean SD for the traditional kibbutzim was 954; for the 1-2 years, 2682; for the 3-4 years 3423; for the 5-6 years 3384. These results signify that disparity in income increases from traditional to 1-2 being differential, to 3-4 or more years into differential arrangements (while no differences appears for the two last groups).

A third indicator is still tentative but of interest. I compared the three groups of kibbutzim, already with differential arrangements, on the percentage of families (only respondents with spouses were included) with net income of 3500 NIS or less with percent of families with 12000 NIS or more. I found the following results: for the 1-2 years 26.6% reported income of 3500 or less while 2.5% reported income of 12000 or more; the respective figures for the 3-4 years group where 27.7% vs. 3.6%; for the 5-6 years they were 28.7% vs. 7.4%. These differences are not statistically significant but perhaps they indicate a trend of widening disparity in incomes as the years since adoption of differential salaries increase.

The four measures of Table 6 are all indicators of economic inequality. However, analysis at the individual level with all 700 individuals showed similar results for inequality on social dimensions (Leviatan, et al, 2006). For instance, while the members from traditional kibbutzim were on average highest on a scale of self reported level of management at their work and highest on a scale of "centrality" (high) or "peripherality" (low) among members of their kibbutz, their standard deviation on these dimensions were the smallest of all four groups.

All these finding point also to another conclusion: in our data there is a jump in inequality between the traditional kibbutzim and the ones who adopted differential salaries only one or two years earlier; then there is another jump between the latter group and the kibbutzim already 3-4 years in the differential arrangement. However, there were no differences or just minor ones between that last group and the one already 5-6 years in the differential arrangement. We do not know at this time whether this result signifies a temporary plateau, or perhaps that the inequalities have reached a ceiling after 3-4 years.

Given the association of the index of inequality with number of years in the differential salary arrangement (r=.65) it seems that this index overlaps to a large extent with longevity in differential arrangement. However, the index of inequality is based on responses in the questionnaire and a methodological component is therefore likely to confound its strength of relations with other variables to which it would be applied (such as the variables of social capital to be analyzed in the next section). I decided, therefore, to be satisfied with the finding that number of years in differential salary arrangement is indeed a good proxy indicator for socioeconomic inequality, yet it is a more "objective" measure that has no methodological relations to other variables in this study. The following sections will make use of this variable.

Second research question: To what extent do kibbutzim with varying number of years since adopting differential salary arrangements also differ in levels of investment in social-psychological and in physical expressions of social capital? We expect a negative relationship so that number of years a kibbutz adopts the differential salary arrangement would negatively correlate with level of social capital.

Social capital in its physical expressions as a function of number of years in differential salary arrangement

I start (Table 7) by presenting data from our survey of informants in 2004 (Adar et al, 2005) in a large number of kibbutzim about the extent to which members in their kibbutz bear "most" or "all" the cost for medical services they need. Then, Table 8 compares, across the four kibbutz groups of our focused study, the following topics: investment in higher education (by comparing mean number of years of education); perception of kibbutz commitment to invest in creating appropriate jobs for members at large and for aged members in particular; percent of members who report that they are unemployed; Satisfaction with health services offered by kibbutz to its members, amount of money privately paid by families for their medical care; satisfaction with response of kibbutz institutions to unique private requests (assuming those requests usually entail use of community financial resources uniquely diverted for individuals to use according to needs).

Table 7: Rate of kibbutzim (%) in groups being different number of yrs. in differential salary arrangement – members pay "most" or "all" for medical services (survey of informants from kibbutzim)

	Traditional Ks. N=40	Differential 1-2 yrs. N-16	Differential Ks. 3-4 yrs N=24	Differential Ks. 5-6 yrs. N=17	Differntial Ks. 7+ yrs. N=15
Medications for chronic illness	2.5	37.5	79.2	64.7	66.7
Medications not in "health basket"	16.7	56.3	92.0	88.2	86.7
Medical aid devices	0	37.5	84.6	93.8	76.9
Genetic screening	13.2	43.8	92.0	87.5%	78.6
Immuniz. shots not in "health basket"	27.0	50.0	92.3	93.3	85.7
Physiotherapy	2.5	56.3	96.2	76.5	64.3

Psychotherapy adults	2.5	37.5	76.0	73.3	85.7
Psychotherapy children	2.5	37.5	68.0	66.7	86.7

It is clear that traditional kibbutzim strongly differ from any of the differential kibbutzim. In very few of them members bear the cost ("most" or "all") of any of the medical or health services. An exception is the service of "immunization shots not in health basket", 27% of these kibbutzim leave the cost to private payment. However, even this is a much lower percentage than in any other group. Kibbutzim with 1-2 years of being in differential arrangement are second in their communities shouldering the cost of those health treatments or services. Then we see the three other groups with no major differences among them. In all three the vast majority of kibbutzim have shed off themselves the costs of those medical and health services and left it to private resources of their members. In sum, Table 7 corroborates our expectation of negatively relating years in differential salary arrangements with investment in health and medical services but leaves open the question whether any further changes occur after the fourth year.

Table 8 is based on data from the focused study of 32 kibbutzim and compares the four groups of kibbutzim on several measures of what I called 'physical social capital' with a common denominator: each of them manifests variability in levels of financial resources invested by kibbutz community for the sake of its individual members (in higher education, in maintaining and creating jobs, in response to unique private needs in health services and medications).

Table 8: Comparison, by analysis of variance and Pearson correlation coefficients, of four groups of kibbutzim on various measures of physical social capital

Social Capital variable	**Budgetary arrangement**	**Number of kibbutzim**	**Mean**	**SD**	**F & (r)**
Level of formal educa-	Traditional	11	2.33	.16	3.05*

tion by number of years 1=-12; 2=13-14; 3=15-16; 4=17+	1-2 yrs. Differ.	5	2.48	.15	(.-39*)
	3-4 yrs. Differ.	8	2.08	.35	
	5-6 yrs. Differ.	8	2.08	.39	
	Total	32	2.23	.31	
Kibbutz commitment to create appropriate jobs for its members (in general and for older members) (2 items)	Traditional	11	3.18	.57	9.21** (-.70**)
	1-2 yrs. Differ.	5	2.77	.28	
	3-4 yrs. Differ.	8	2.42	.38	
	5-6 yrs. Differ.	8	2.24	.24	
	Total	32	2.68	.56	
Percent of members reporting being unemployed	Traditional	11	8.96	8.54	2.98* (.49**)
	1-2 yrs. Differ.	5	16.83	13.87	
	3-4 yrs. Differ.	8	22.77	18.55	
	5-6 yrs. Differ.	8	23.56	11.43	
	Total	32	17.29	13.23	
Satisfaction with kibbutz institutions' response to personal unique demands and needs	Traditional	11	3.3.9	.36	4.77** (-.58**)
	1-2 yrs. Differ.	5	3.29	.32	
	3-4 yrs. Differ.	8	3.00	.32	
	5-6 yrs. Differ.	8	2.87	.22	
	Total	32	3.31	.37	
Average amount in NIS a respondent pays privately for medications	Traditional	11	14.19	11.54	22.26** (.66**)
	1-2 yrs. Differ.	5	71.57	44.89	
	3-4 yrs. Differ.	8	171.65	65.99	
	5-6 yrs. Differ.	8	109.99	39.41	
	Total	32	86.47	74.44	
Satisfaction with health services on kibbutz (an index of 16 items)	Traditional	11	3.91	.26	7.11** (-56**)
	1-2 yrs. Differ.	5	3.54	.35	
	3-4 yrs. Differ.	8	3.21	.40	
	5-6 yrs. Differ.	8	3.39	.37	
	Total	32	3.55	.43	

*p<.05; **p<.01

The answer to the first part of the second research question seems also clear. Traditional kibbutzim are always presenting the highest levels of investing in answers to their members needs. They are followed by kibbutzim of only 1-2 years in the differential arrangement and these are followed by the two other groups who are on about the same level – similar to the situation we saw with the indicators of economic inequality.

One exception to this rule seems the issue of higher education. The second group (1-2 years into differential salaries) shows somewhat higher scores. However, the difference is not

statistically significant and we also should keep in mind that average level of years of schooling in a population summarizes an accumulation from the past when these kibbutzim were traditional. The kibbutzim which are already more years into the differential arrangements show already the effects of privatizing the domain of higher education so that it is not seen any more under the responsibility of community.

In addition, Table 8 shows that in the differential kibbutzim, members bear privately much higher costs of health and medication; their kibbutz is not considering theses costs as belonging to the public domain. Also, because members in differential kibbutzim are not considered as unique any more, these communities do not respond to unique demands of their members as the traditional kibbutzim do. The differential communities are not perceived by their members as committed to invest in creation of appropriate jobs for their members which results in higher levels of unemployment. This is a very important finding because previous research outside the kibbutz and also prior research with kibbutz population (Leviatan et al, 1981; Leviatan, 1999) had shown the worker role to be very central in determining health and even survival probability.

'Socio-psychological social capital' as a function of years in differential salary arrangement

Our study employed a wide array of variables and indices to test for the relationship of longevity in the differential salary arrangement with perceived levels of socio-psychological social capital as follows: Satisfaction with home feeling and belonging to kibbutz; improvement or deterioration in social situation of kibbutz compared to two years earlier; frequency of participation in social and cultural events on kibbutz; satisfaction with social relations on kibbutz; satisfaction with influence and information one has in kibbutz; social support on kibbutz; frequency of organized social events on kibbutz; frequency of meeting other members at work and the dining hall; trust in kibbutz leadership and in other members; ways of decision making on kibbutz; frequency of meeting other members at home or in private leisure activities. These are analyzed in Table 9.

Table 9: Analysis of variance (F) and Pearson coefficients of correlations (r) to relate expressions of social capital with length of time adopting the differential salary arrangement. Four groups of kibbutzim.

Social Capital :	Budgetary arrangement	Number of kibbutzim	Mean	SD	F (r)
Satisfaction with home feeling and belonging to kibbutz	Traditional	11	3.82	.41	3.05* (-.413*)
	1-2 yrs. Differ.	5	3.56	.22	
	3-4 yrs. Differ.	8	3.34	.31	
	5-6 yrs. Differ.	8	3.48	.38	
	Total	32	3.58	.39	
Improvement (5) or deterioration(1) in social situation of kibbutz compared to two years earlier	Traditional	11	2.70	.43	3.79* (-.53**)
	1-2 yrs. Differ.	5	2.47	.12	
	3-4 yrs. Differ.	8	2.33	.23	
	5-6 yrs. Differ.	8	2.22	.31	
	Total	32	2.45	.36	
Frequency of participation in social and cultural events on kibbutz (5- very frequent). (7 items)	Traditional	11	2.75	.21	11.01** (-.70**)
	1-2 yrs. Differ.	5	2.66	.22	
	3-4 yrs. Differ.	8	2.18	.33	
	5-6 yrs. Differ.	8	2.15	.32	
	Total	32	2.44	.38	
Satisfaction with social relations on kibbutz (4 items)	Traditional	11	3.31	.43	6.29** (-.61**)
	1-2 yrs. Differ.	5	3.03	.21	
	3-4 yrs. Differ.	8	2.73	.16	
	5-6 yrs. Differ.	8	2.72	.40	
	Total	32	2.97	.42	
Satisfaction with influence and information one has in kibbutz (4 items)	Traditional	11	3.09	.35	4.65** (-.48**)
	1-2 yrs. Differ.	5	3.03	.10	
	3-4 yrs. Differ.	8	2.61	.33	
	5-6 yrs. Differ.	8	2.76	.26	
	Total	32	2.87	.35	
Social support on kibbutz (2 items)	Traditional	11	3.44	.56	5.36** (-.63**)
	1-2 yrs. Differ.	5	3.22	.27	
	3-4 yrs. Differ.	8	2.65	.24	
	5-6 yrs. Differ.	8	2.90	.57	
	Total	32	3.10	.54	
Frequency of organized social events on kibbutz (4 items)	Traditional	11	2.38	.38	3.99* (-.45**)
	1-2 yrs. Differ.	5	2.16	.28	
	3-4 yrs. Differ.	8	1.79	.46	
	5-6 yrs. Differ.	8	1.98	.33	

	Total	32	2.10	.43	
Frequency of meeting other members at work and the dining hall (2 items)	Traditional	11	3.56	.78	7.28** (-.77**)
	1-2 yrs. Differ.	5	3.42	.31	
	3-4 yrs. Differ.	8	2.53	.29	
	5-6 yrs. Differ.	8	2.74	.50	
	Total	32	3.12	.70	
Trust in kibbutz leadership (2 items)	Traditional	11	3.27	.49	4.32* (-.46**)
	1-2 yrs. Differ.	5	3.17	.40	
	3-4 yrs. Differ.	8	2.68	.39	
	5-6 yrs. Differ.	8	2.83	.25	
	Total	32	3.02	.46	
Trust in other members of kibbutz	Traditional	11	3.33	.28	4.90** (-.54**)
	1-2 yrs. Differ.	5	3.16	.26	
	3-4 yrs. Differ.	8	2.89	.26	
	5-6 yrs. Differ.	8	2.99	.30	
	Total	32	3.10	.33	
Ways of decision making on kibbutz (5- most members participate; 1- just few make all decisions	Traditional	11	2.75	.47	5.13** (-.51**)
	1-2 yrs. Differ.	5	2.60	.42	
	3-4 yrs. Differ.	8	2.12	.32	
	5-6 yrs. Differ.	8	2.29	.15	
	Total	32	2.45	.44	

*p<.05; **p<.01

Results in Table 9 are unequivocally supportive of the expectations we had about the second part of the second research question. Again, as in previous tables, the groups of kibbutzim are ordered so that the traditional kibbutzim show most positive indications of social capital; they are followed by a sharp decrease for the kibbutzim 1-2 years into the differential arrangement, and than another sharp decrease for kibbutzim that are three or more years in this arrangement. This indicates that deterioration in level of social capital takes time and does not occur immediately after the move for differential salary arrangements. There seems to be a similarity among the two latter groups – like in previous comparisons – no difference was found between the groups of 3-4 years and 5-6 years.

The relationship of level of social capital with years in the differential salary arrangement is true for social participation, for social support, for trust in leadership and in other members, for level of influence and having information, ways of decision making, for social relations, for feelings at home on kibbutz and for perceptions about positive changes in the social domain.

Another interesting result in the analysis (not shown in the table) was that there were no differences among the four groups of kibbutzim on reported social activities that were *privately initiated* (rather than by community) such as meeting other members at home or within the family, or at privately initiated leisure activities. Thus, reduction in social activity is not due to changes in the individuals concerned but rather the result of the community not active in creating opportunities for such interactions among members.

A clear summary of the last two sections and the findings presented here, would be that the longer the number of years a kibbutz grows with differential salary structures the weaker are the social arrangements and perceptions of social capital in all their manifestations. This is true for those aspects of social capital that express financial investments by community for the benefit of their members, it is true for how members perceive their social environments, it is true for the extent of expressions of community life and interpersonal interaction, and it is true as to the extent of members involvement in civic and public activity.

Summary statistics show the mean Pearson correlation coefficient across all 17 expressions of social capital with longevity in the differential salary arrangement to be r=-.56 and the Median is r_{md}=-.54. I also reduced the data from 17 variables expressing various aspects of social capital (as shown in Tables 8 and 9) to one index. That index was formed by averaging across 16 items (due to its unique characteristics, I did not include in the combined index the variable denoting amount of money paid monthly for medications). This index, named General Social Capital (GSC) had a reliability of alpha=.95. Its correlation with longevity in the differential salary arrangement was r=-.79 ($p<.001$).

Incidentally, when I tested the correlations of the index of inequality with the 17 measures of social capital the Mean correlation coefficient was indeed higher that for the longevity in differential salary arrangement and so was the level of the Medial correlation (r=-.67 and r_{md}=-.69 respectively) but it would be difficult to tease out the component of variance explained that is due to the method factor.

The third research question. This research question aimed to find how do levels of socioeconomic inequality (as expressed by years into differential salary arrangement), and social capital affect health and well being. Also, whether social capital is the mechanisms through which inequality levels affect health? We expected the answers to both questions to be positive.

For this analysis I use two indicators of physical health and three expressions of well being: The first measure of physical health is an index composed of answers to three questions: subjective evaluation of own health, current health vs. that five years earlier, own vs. that of same age and gender members. The second measure of physical health was a response indicating how many, out of 16, psychosomatic symptoms one "always" experiences (the final score was transformed in direction to have a high score showing few symptoms). General well being was measures by (a) one question asking about satisfaction with life in general; (b) one question asking about satisfaction with kibbutz life in general; (c) and index of three items to measure level of organizational commitment to kibbutz life (assuming that commitment of members is an indicator of adjustment to their life, which is an important aspect of well being) – choosing kibbutz life again, recommending it to a young loved one, selecting kibbutz life over other forms of living in Israel.

I analyzed the relationship of the five indicators of physical health and well being with the indices of social capital (for the sake of simplicity I used only the combined index – GSC – to represent social capital) and number of years in differential salary arrangement: both as correlation coefficients at the first order and then as partial correlations when social capital is held constant for the relationship of years in differential salary arrangement with measures of physical health and well being and also holding constant longevity in differential salary arrangement for a partial correlation of GSC with physical health and well being. Table 10 brings results of these analyses.

Table 10: Relationships (simple Pearson correlation coefficients (r) and partial correlations (rp)) of social capital and longevity in differential salary arrangement with indicators of physical health and well being.

Physical health and well being:	General Social Capital. Correlations (r), and partial correlations (rp), with longevity in differential salary held constant. With…		Longevity in differential salary. Correlations(r), and partial correlations (rp), with GSC held constant. With…	
	r	rp	r	rp
Satisfaction with life in general	.749***[a]	.669***	-.477**	--[b]
Satisfaction with kibbutz life	.781***	.716***	-.478**	--
Organizational Commitment to kibbutz life	.663***	.453**	-.559***	--
(No) Psychosomatic symptoms	.287 (p=.11)	--	-.364*	--
Subjective evaluations of health	--	--	--	--

[a] Indicates level of significance (2-tailed); [b] Not statistically significant;
*p<.05; **p<.01; ***p<.001

Results shown in Table 10 partly support our theoretical expectations. The general index of social capital (GSC) is strongly associated (r in a range of .663-.781) with the indicators of well being (satisfaction with life, satisfaction with life on kibbutz, and organizational commitment to kibbutz life). The two indicators of physical health were not, however, associated to an accepted statistically significant level (although the direction of association was as expected). Longevity into the differential salary arrangement also correlated highly with the three measures of well being (though less than the GSC index; r in a range of -.477-- -.559). However, this variable also correlated with the index of (lack of) psychosomatic symptoms (r=-.364). Yet, these strong relationships totally disappeared when they were tested again while the index of GSC was held constant. The most probable interpretation for such a finding is that GSC serves as an intervening variable between length of adopting the social structure of differential salary and indica-

tors of well being. Alternative interpretations (such that adoption of differential salary comes as a result of deterioration in social capital and then it affects well being, or that deterioration in social capital brings about a decision to move into the arrangements of differential salary and also affects well being) is much less likely since when longevity in the adoption of differential salary is held constant it affects little the relationship of GSC with indicators of well being (rs drop to a range of .453-.716). Also, a test run of regressing each of the well being indicators on both the GSC and longevity in differential arrangement (to allow a possible check for unique contributions of each) failed to bring any result beyond what was arrived at by the simple correlation coefficients.

An additional interesting finding revealed itself here that is different from what we found with the measures of inequality and social capital. On all three expressions of well being, members of the fourth group (5-6 years in differential arrangement) show less favorable indicators than the third group (3-4 years in differential arrangements). The differences among the three differential groups is not statistically significant (while the traditional group differs significantly from each of them), However, this result (that is strongest for the measure of "commitment"), might indicate that the ceiling of ill health and low well being has not yet been reached after three years in the differential arrangement. Table 11 shows the results of the analysis.

Table 11: Comparison of means (analysis of variance) among the four kibbutz groups on three indicators of well being.

Well being:	**Budgetary arrangement**	**Number of kibbutzim**	**Mean**	**SD**	**F**
Satisfaction with life in general	Traditional	11	3.90	.23	3.01*
	1-2 yrs. Differ.	5	3.76	.25	
	3-4 yrs. Differ.	8	3.63	.23	
	5-6 yrs. Differ.	8	3.61	.24	
	Total	32	3.74	.26	
Satisfaction with kibbutz life	Traditional	11	3.85	.24	3.13*
	1-2 yrs. Differ.	5	3.61	.30	

	3-4 yrs. Differ.	8	3.57	.27	
	5-6 yrs. Differ.	8	3.50	.28	
	Total	32	3.66	.29	
Organizational Commitment to kibbutz life	Traditional	11	3.42	.42	6.04**
	1-2 yrs. Differ.	5	2.86	.26	
	3-4 yrs. Differ.	8	2.94	.28	
	5-6 yrs. Differ.	8	2.78	.39	
	Total	32	3.05	.44	

***p<.05; **p<.01**

There still remains the question: Why did the findings not support the expected association of social capital with physical health? The answer to this question must be still speculative but a speculation with hints in the data. I am thinking in four directions:

(1)The data at the aggregated level show a weak relationship of "satisfaction with life in general" with (no) symptoms (r=.37, p=.038, 2-tailed) and with subjective health (r=.30, p=.092, 2-tailed). It is possible that first causalities of inequality and the ensuing deterioration in social capital are general indicators of well being and only then – physical health is affected.

(2) Stressors and pressures in the environment to affect physical health such as ill symptoms or self evaluation of health may require time to build up (see, for instance, Singer & Ryff, 1999). It is possible that the reason these indicators do not show yet is because not enough time has elapsed for the deterioration in level of social capital.

(3) The measure of GSC is very robust as it is an average across 16 specific expressions of social capital (see Tables 8 & 9). When I checked into the same associations for each of the individual items or indices, I found two measures that were strongly associated (and statistically significant) with report of physical ill health – "when only few individuals make all important decisions on kibbutz"; "when percentage of unemployed is high". Thus, it is possible that the effects on health of various expressions of social capital do not show in unison at the same time -- some may take longer to show effect and some take a shorter time.

(4) Many of the expressions of social capital are in effect expressions at the individual level since they hinge on individual perceptions. The mechanism suggested for their effect on

health is through individuals' reactions (see for instance Adler and Rostove, 1999). If this is correct, then analyses at the individual level should be more sensitive in discovering associations of social capital measures with expressions of physical health. Indeed, this is what we found at the individual level of analysis: self reported health was positively associated with number of school years, with being a worker (rather than unemployed), with satisfaction with health services; satisfaction with response of kibbutz institutions to unique personal demands; satisfaction with feeling at home and belonging; with satisfaction with level of social support one gets; with participation in social and cultural events; with meeting others at work or the dining hall. The range of the correlations in these associations was between r=.10 to r=.27; all were in the expected direction and statistically significant at least to the $p<.05$ level with about 650 respondents. Also, at the individual level of analysis respectable relationships appear between "satisfaction with life in general" and the index of symptoms and the index of subjective health (r=.15, r=.26 with 650 respondents, for both $p<.000$).

Thus, it is permissible to conclude that the answer to the third research question is also in the expected direction and social capital affects not only the "softer" indicators of well being but also indicators of physical health.

Summary, discussion and conclusions

I have presented the findings of this research as answers to research questions; hence, I summarize it now by relating again to the research questions posed at the beginning of the report.

The essence of this study is dealing with the question of how does the structural change in kibbutzim, the adoption of differential salary arrangements, affects factors that contribute to expressions of physical health and well being.

First, a reminder. While the study upon which this report is based dealt with both the perspective of individual kibbutzim as a units of analysis and the perspective of the individual member as a unit of analysis, the current report focused on the first perspective only and as such the focus was upon differences among kibbutzim in number of years in differential salary ar-

rangement and level of socioeconomic inequality and how it translated into levels of social capital and aggregated expressions of well being and physical health.

In response to the first research question, we found support for our assumption that longevity in the differential salary arrangement indeed represents level of socioeconomic inequality (although with an emphasis on economic inequality). The combined index of inequality that was based on four separate measures correlated at the level of r=.65 with longevity in the differential salary arrangement. Hence, these two measures are viewed as reasonably overlapping and I preferred the use of number of years in differential salary for further analyses because it was based on "objective" phenomenon rather than on a softer measure (as inequality was) based on responses to a questionnaire. Yet, the findings also showed that the relation was not totally linear: level of inequality "advances" in leaps: the first leap occurs immediately after becoming "differential" (during the first two years), and the second major rise in inequality happens at the third year. Thereafter we found no noticeable increase in inequality, at least not with the current data where the longest time in "differential salary arrangement" was six years after adoption of this structure.

Several interpretations for this finding (that was also repeated with the analyses of social capital) are possible. One possibility is that after the third year, kibbutzim reach a plateau of inequality to be left for further increase at some unknown time after the sixth year. Another is that the level of inequality arrived at already the maximum to be reached. A third possible speculation is that it is a temporary level of inequality because the leadership of these kibbutzim are still the product of the former, "traditional", kibbutz structure and culture, and therefore not able (perhaps, emotionally) to introduce stronger expressions of inequality. If this is the reason, it would change once leadership moves to another generation who do no have roots in the norms of traditional kibbutz.

The second research question aimed to find whether longevity in the differential salary arrangement was translated into negative expressions of social capital. Social capital was viewed as having two kinds – the "physical" kind where investment of the financial resources of the community are required (in education, in job creation, in health services and medications, and in catering to unique personal needs of members), and the "socio-psychological" kind (social partic-

ipation and involvement, social relations, trust and solidarity, feeling at home). Findings strongly supported the expectation that such relationship exists. Kibbutzim who were longer into the differential salary arrangement displayed lesser expressions of social capital of both kinds. However, here too as earlier with the measure of inequality, the relationship is not linear and can be summarized as before – one level of increase right after leaving the "traditional" system, then another increase into the third year of differential salary arrangement, and then it more or less levels off. I offer the same possible interpretations as earlier: a possible temporary plateau, a possible reach of a ceiling or leadership that is still partly adhering to previous norms of the traditional kibbutz.

An important part of this last finding is the strong relationship between longevity in differential salary arrangement and perceived commitment of a kibbutz to create jobs for its members. It is important because work was found in previous research to be the most central domain to contribute to well being of kibbutz older members (Leviatan, 1983; 1999) (who are most likely to be unemployed if their community does not purposely invest in creating and sustaining work places for its elder members) and even for their survival (Leviatan, 1999).

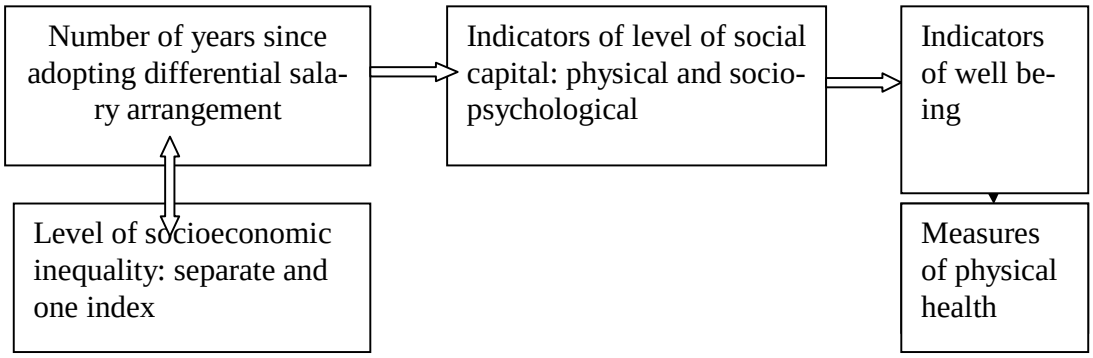
Our theoretical model suggests that indicators of social capital strongly explain variance in expressions of well being and physical health. It also suggests that social capital indicators serve as intervening variables between longevity of being within the differential salary arrangement and indicators of physical health and well being. Both these theoretical expectations are fulfilled in the data but only in regard to the measures of well being (satisfaction with life in general, with kibbutz life, and commitment to kibbutz life). Table 10 had shown a strong relationship of GSC with the three indicators of well being and also its role as an intervening variable so that the direct relationship of length in differential salary arrangement totally loses its association with well being when GSC is held constant. However, an interesting finding was presented in the analysis of variance of Table 11. Different from the pattern of findings in most entries of Tables 8 and 9, the relationship is much more linear so that there appears to be a difference between the groups of kibbutzim that are 3-4 years into the differential salary arrangement and those 5-6 years. Members of the latter group show a somewhat lower level of well being, particularly as it appears in the variable of "commitment to kibbutz life". True, the differences between the two

groups are not statistically significant; however, perhaps they indicate that as the stressors emanated from social and economic inequality continue to accumulate, well being deteriorates.

The findings did not render support to the expected relationship of GSC with the two physical health measures. I suggested several speculative interpretations for this, including the interpretation that it is first of all the well being that is affected by low level of social capital and inequality and then well being affects state of physical health. The test of these speculative interpretations should wait for more time to elapse with the differential salary arrangements and for research designs that would directly deal with the suggestion of the possible effect of change of generation in individual kibbutz leadership and the causal relationship of well being upon physical health in the kibbutz situation.

In summary, I conclude that the theoretical causal flow model suggested at the beginning of this report has almost entirely been supported but with some modifications. It could be depicted as the following drawing in chart 2.

<u>Chart 2:</u> Causal flow model of the groups of variables in the current study. Number of years in differential salary arrangement; level of economic inequality; social capital; and well being & physical health.



"Number of years in adopting differential salary arrangements", stands as a proxy to experienced and perceived level of socioeconomic inequality. They strongly interrelate. Years in differential salary structure affects expressions of social capital of the two kinds. Social capital level, in its turn, explains variance in indicators of well being (and perhaps also physical health).

Social capital serves an intervening role between level of socioeconomic inequality and indicators of well being. It absorbs all the common variance of these two groups of variables. This means that years of adopting differential salary does not have an independent contribution to well being or health over what is transmitted via expressions of social capital. Variance of aggregated physical health (in the current data) is partly (signified by the thin arrow) explained by level of well being but not directly by social capital or inequality. The resultant model differs from the one suggested in the introduction to this report in three ways.

Another important summary point is in relating to the question whether the differences between traditional and differential kibbutzim could be explained by the argument of "needed time for adjustment", rather than seeing them resulting from the differences in level of inequality and what it brings with it. The findings support the latter conclusion because deterioration in level of inequality, in social capital and in well being continues after the second year. Had it been a question of adjustment, the indicators should have rebounded to level with the traditional kibbutzim. That did not happen.

Comparison with the findings of the pilot study. The current research findings corroborate all the findings of the earlier study reported here as the pilot study (Leviatan & Salm, 2006) and therefore add strong support to the conclusion we reached then and now. The present research had responded to the major methodological weaknesses of the earlier research – size of sample (individuals and kibbutzim), representation of population, extended range of years in differential salary arrangement, additional dimensions of social capital, the addition of physical expressions of social capital, in particular the importance of investment (or not investment) in creation of jobs.

Theoretical, methodological and practical significance. This study and its findings has important meanings at the theoretical and methodological levels but also at the practical policy making level.

On the theoretical level, the results of this study offer strong support to the research model offered by Wilkinson (1996) and others. We were able to equate between the traditional and the differential communities on all variables that could play a confounding role in the relationship between socioeconomic inequality and social capital and between the latter and physical health and well being: economic and demographic states, as well as cultural and social background. Yet results came out as expected by the model.

We have seen that social capital on its two dimensions serves an intervening role between level of economic inequality and well being and possibly physical health. In fact it absorbs all the shared variance between inequality level and the indicators of well being. This suggests, theoretically at least, that societies and communities could, perhaps, build social capital in its various expressions – even while keeping to their high level of inequality – and thus bring about positive expressions of well being. Unfortunately, this possibility seems to be only theoretical. Kibbutzim may serve as an extreme test case – where else could one expect communities to keep high levels of social capital not only because of their past but also due to formal demands. Those kibbutzim that transformed into the differential salary arrangement had to formally commit themselves to keep to principles of solidarity and mutual responsibility for their members (as dictated by state regulations if they wanted to preserve their status as kibbutz). And yet the results are as shown in this study. What are the chances, therefore, for societies that never wanted to build social capital for their members?

Our study demonstrates the independent importance of both physical social capital and the socio-psychological expressions of it. Their contributions to well being add up to and therefore societies or communities should aim to develop both.

I have pointed out in the theoretical introduction that earlier research demonstrated that the high level of life expectancy and health indicators of the kibbutz population resulted from social arrangements and were not due to this population being unique in a biological or a genetic sense. The findings of this study support that conclusion: only few years passed since the transformed kibbutzim adopted the social structures that are based on inequality, and already we recognize deterioration in their social capital (of which social arrangements are its concrete expressions) and in expressions of well being and perhaps also in physical health. These are seen in

comparison with kibbutzim which remained within the traditional arrangements even though the two groups are similar in their human composition and history.

Kibbutz future. The findings of our study cast a heavy shadow on the future of kibbutzim. They suggest the kibbutzim are fast approaching levels of the general population as regards health. There exists even a likelihood of being even lower than society at large on indicators of wellbein. I suggest this likelihood because in kibbutzim who adopted differential salary arrangement there are fewer rights for the rank and file level than outside the kibbutz. For instance, there is no workers' union to watch for their rights as workers but work roles are so central for life.

Why does the kibbutz leadership, both at the federation and at the individual kibbutz levels, allows this process and outcomes to happen, in fact even encourages this process and outcomes to happen? Why is this happening after so many years of accumulated positive experience that show how health and well being for individuals could be achieved by social arrangements based on equality? How is it that kibbutz leadership acted, and still acts, so contrary to what Wilkinson advocates: "*As research on the socioeconomic determinants of health progresses, and public understanding of the issues increase, the demand for social reform will become unstoppable. Growing knowledge changes both the morality and the rationality of the status qua. It turns official inaction into culpable negligence."* (Wilkinson, 1996 p.25).

Answering this question is still speculative. My personal view was expressed in the introduction to this report – the prime importance I attached to commitment to values of equality, partnership and solidarity. I suggest that a focused study is needed on differences in such commitments among leaderships in "traditional" and "differential" kibbutzim.

Size of community; cooperatives. Two additional points are important it regards to generalizing from the findings in this study.

First, the size of the relevant social unit. the literature on the topic of extent of inequality in society and its effects is not clear about the boundaries of the social entity that one should refer to when expecting inequality within it to affect social capital, health and well being. Research has been conducted at the level of whole societies, at the level of states (US), provinces, counties,

and neighborhoods. The general view is that the social entity in question should not be too big (so that it does not include several economies; e.g. Judge et al, 1998). But also that the units should not be too small because then they would not be in a position to enact social capital. Also, they may not be able to offer significant relevant comparative others to affect relative deprivation among the "have not" (e.g. Wilkinson, 1997). Our study demonstrates that the theoretical model appears to hold in very small social entities (kibbutzim that range in size between 100-300 families).

What matters, I suggest, is not the size per se of the social unit that serves in the focus of analysis but rather its standing on several dimensions: its perceived and actual ability to autonomously decide about investment in physical social capital; its perceived and actual ability to autonomously develop opportunities and institutions for socio-psychological social capital; the closeness of members and their mutual knowledge of each other so that they serve, for each other, as significant comparisons; when most, and important, roles of individuals are carried out within the boundaries of the same social unit, so that individuals cannot (psychologically) escape to seek comparisons into other social units; (perhaps also) a basic belief in equality or, at least, residuals of former personal belief in equality among people as being the right state. I suggest that the effect of inequality within the kibbutzim that adopted differential salaries was so immediate and strong because they answer at once to all these criteria at once.

This brings forth the second point. To what kind of society or community (besides kibbutzim) are the findings of this study most applicable? The answer to this question seems immediate. Small cooperative! Cooperatives as social units seem to embody almost all the previous conditions and therefore are given to all the outcomes that were demonstrated with the kibbutzim. Of course this suggestion has a status of a research hypothesis as I am not aware of any similar study done among cooperatives or cooperative members. However, it should be tested.

Last summary point. I want to end with a positive note. Findings of this study demonstrated that while inequality is purposely created, it has negative effects. However, the opposite is also true: the study also shows the positive effects for individuals and community when community sustains socioeconomic equality. The lesson for policy makers interested in individuals' well be-

ing and health is clear: develop and sustain socioeconomic equality in your society -- individuals and society should both benefit from it.

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