

Organization and
Ideology: Kibbutzim and
Hired Labor, 1951–1965

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In this paper, we examine how conflicting ideologies affect organizational practice. We theorize that the basic relationship between ideology and organization is moderated by social pressures and economic incentives that result from differences between the organization and its environment on issues of ideology. Using data from Israeli kibbutzim for 1951–1965, we examine how the ideology of a set of socialist organizations affects the practices they employ and how the influence of socialist ideology is moderated by an environment that is governed by capitalism. We assess the change in the extent to which kibbutzim employed hired labor, a practice that is incompatible with kibbutzim socialist-Zionist ideology. We find that ideological organizing principles are affected by resource dependence pressures, particularly from banks, and economic incentives for organizations to change their form. These external influences combined with internal influences, such as kibbutz size, age, and industrialization, to account for kibbutzim's transition to hired labor. The results indicate how interaction with the environment can lead to the forfeiture of ideological organizing principles. •

Ideology is a set of beliefs about how the social world operates, including ideas about what outcomes are desirable and how they can best be achieved. Organizations are infused with ideology, but in organizational theory the role of ideology in determining organizational form has received little attention. Observations of ideological influence are common in case histories of organizations, but there is no systematic understanding of the relationship between ideologies and organizations. Ideology fundamentally affects organizational behavior, however, as it does all other types of human agency: the decisions that organizational actors make regarding organizational practice reflect a comprehensive belief system molded by the interaction between the individual's subjectivity and the relevant organizational, societal, and cultural systems. Additionally, organizations are critical mechanisms for the diffusion and influence of ideologies. Organizations attempt to exercise their ideologies in their own organizational practices and by influencing the practices of others that have conflicting ideologies. Ideology, therefore, is a key factor in both organizational decision making and inter-organizational influence.

Beyer (1981: fig. 1) distinguished between ideologies at the organizational, societal, and cultural levels. At the cultural level are the ideologies that transcend the boundaries of nations; the focus at the societal level is on ideologies of countries and their political and economic systems; and at the organizational level are ideologies manufactured within organizations from materials created within them or imported from other levels. With a few exceptions (e.g., Tannenbaum et al., 1977; Rothschild-Whitt, 1979), ideology in organizational research has primarily been studied at the organizational level, treated in terms of members' organization-centered ideologies and philosophies (e.g., Beyer, 1981; Dunbar, Dutton, and Torbert, 1982) or has been restricted to views on managerial authority relationships (e.g., Bendix, 1956; Barley and Kunda, 1992; Miles and Creed, 1995). Here, we

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expand the focus from organizational-level ideologies and managerial ideologies to examine the effect of societal- and cultural-level ideology on organizations. Societal- and cultural-level ideologies are sometimes referred to as political ideologies. Capitalism and socialism, the ideologies that are the subject of the empirical part of this paper, are choice examples of political ideologies.¹ For convenience we will refer simply to "ideology" in the remainder of this paper, but "political ideology" could in every instance be substituted without changing our intended meaning.

Ideology affects organizations primarily through decisions on how to organize, which depend on how actors think the world works and what their goals and objectives are. These are determined by ideology. Ideology is the basic belief about how the political or economic system works, so it generates a set of first-order organizing principles. We begin by discussing the processes by which a given ideology comes to dominate in an organization and the effect of a dominant ideology on the organization through the organizing principles inherent in the ideology. The organizations we studied, kibbutzim, are prime examples of organizations whose organizing principles have been informed by ideology. Kibbutzim are Israeli cooperatives, and they were exemplary socialist organizations in an environment that became increasingly dominated by capitalist ideology over their history (Kellerman, 1993). They originally focused on agriculture but more recently have engaged in both agriculture and many types of industry. The first kibbutz, Degania on the shores of Lake Galilee, was established in 1910. The principle of self-labor, holding that kibbutzim should rely only on the labor of their members and should not hire outside workers, was originally central to these organizations (Daniel, 1975; Near, 1992). Today, the application of that principle has eroded, and the majority of kibbutzim employ outside labor and have done so for years (Maron, 1988). We examine the transition in this ideologically charged component of the kibbutz organizational form with data on the population of kibbutzim from 1951 to 1965.

ORGANIZATION AND IDEOLOGY

For us, it is most important that a definition of ideology reflect that ideology is the link between belief and action (Apter, 1964). Wilson's (1973: 91–92) definition captured this link through reliance on ideology's sensemaking and outcome-valuing components:

... a set of beliefs about the social world and how it operates, containing statements about the rightness of certain social arrangements and what actions would be undertaken in the light of those statements. An ideology is both a cognitive map of sets of expectations and a scale of values in which standards and imperatives are proclaimed. Ideology thus serves both as a clue to understanding and as a guide to action, developing in the minds of its adherents an image of the process by which desired changes can best be achieved.

Using Wilson's definition, we first consider how an ideology comes to influence and dominate in an organization.

The surest, although not the only basis of an ideology's dominance in an organization is homogeneity of the organiza-

1

The term political ideology as used in this paper also includes societal and cultural ideologies that are based in religion. As Apter (1964: 17) observed, any ideology can become political.

It is obvious that all organizations do not work equally hard at selection and socialization for ideological homogeneity. General Motors, for instance, does not appear to go to great lengths to inculcate capitalist ideology in its U.S. workers. What sets General Motors apart from Koor, the law cooperative, or even the British military academy is not just that General Motors is a capitalist organization but that it is a capitalist organization in a capitalist society. As such, it can rely at least partially on broader institutions for ideological socialization. The idea that ideologies that are dominant in a society operate through institutions to socialize and control the population is referred to as "ideological hegemony" (Miliband, 1969; Gramsci, 1971). For example, citizens in capitalist countries may be indoctrinated with capitalist ideology through the education system (Henry, 1965; Miliband, 1969). If socialization to a society's dominant ideology takes place through mass institutions, organizations subscribing to that ideology will have little trouble finding participants with the dominant ideology and need not make large efforts at socialization. Organizations that subscribe to the ideologies that are dominant in their societies are thus in a qualitatively different position than those that do not.

Whether the source of homogeneity among an organization's participants is ideological hegemony or selection and socialization by the organization, the result is that an ideology can be said to be dominant in the organization. Even when there is no ideological homogeneity among organizational participants, however, it is possible for an ideology to be dominant in the organization. Just as complete consensus is not necessary for an organization to set and act on a goal (Cyert and March, 1963), complete ideological homogeneity is not necessary for an organization to be influenced by an ideology. Power and authority may allow proponents of an ideology to make organizational decisions in accordance with that ideology even when significant ideological heterogeneity exists in the organization. The capacity for proponents to exercise power in an organization on behalf of an ideology depends partly on the ideology (Rothschild and Whitt, 1986). Egalitarian ideologies are generally inconsistent with authority relationships within an organization and therefore require a relatively high degree of homogeneity to dominate an organization. In contrast, capitalism sanctions monetary incentives to induce the cooperation of reluctant organizational participants and may therefore require less homogeneity among participants to dominate an organization. In the rest of this paper, we refer to the ideology that dominates an organization as the organization's ideology.²

2

By asserting that organizations can generally be seen as having ideologies, we do not intend to obscure or trivialize the many instances in which no ideology is clearly dominant in the organization. Sometimes there is sufficient ideological conflict within an organization that it does not make sense to view the organization as having a dominant ideology and, while such conflict has an important role in the relationship between organization and ideology, it is not the focus of this paper.

The effect of an organization's ideology in its practice is evident from the definition of ideology as beliefs and values that guide action. Attention to ideology suggests a simple theory of action: actors will pursue the ends their ideology values using means derived from their ideology. In this way, ideologies provide a set of first-order organizing principles. Ideologies held by the designers of organizations are the primary source of the goals those designers have for their organizations. Ideologies also suggest which organizational configurations will be effective in attaining these goals. So, before other influences and considerations, ideology pro-

tion's participants in allegiance to the ideology. If all, or almost all, members of an organization subscribe to a particular ideology, the principles of that ideology will fundamentally influence the organization. Selection is one process that operates to promote homogeneity of ideology among an organization's participants. Beginning with the selection of the second participant by the organization's founder, there is a tendency to select new participants on the basis of similarity of ideology to those who already participate in the organization. Rothschild and Whitt (1986) found that a cooperative law clinic selected new members on the basis of their past political work and basic political assumptions. Capitalist organizations also select members to promote ideological homogeneity (Kanter, 1977). As Rothschild and Whitt (1986: 55) observed, "a person who eagerly reads the *Wall Street Journal* would be as suspect in applying for a position at the Law Collective as a person who avidly reads the *New Left Review* would be at General Motors." Further, it is not only the organization that selects participants for their correspondence on ideology; the potential participant that selects the organization does the same. In evidence of this, Butler and Holmes (1984) found that U.S. army enlisted men were more likely to express an intention to stay in the service for an extended time if their own ideology corresponded to that of the army with respect to equality and integration among the races. Hochner and Granrose (1985) found that Philadelphia supermarket-chain employees who decided to establish and join a worker cooperative expressed stronger adherence to the ideology of worker participation than those who did not. Self-selection of participants also operates on the kibbutz (Schwartz, 1957).

A second process that leads to ideological homogeneity is socialization. Even if some participants enter the organization without subscribing to its dominant ideology, they may be influenced after joining the organization. In a study of French workers, Hamilton (1967) found that the likelihood of supporting the Communist Party depended on the extent to which the worker was exposed to influences from the Communist Party at work. The Mondragon cooperatives in Spain maintained their own schools, which taught cooperative values as well as technical skills (Johnson and Whyte, 1977). Koor, Israel's worker-owned conglomerate also has a system of education for managers and workers that combines vocational and professional training with political and ideological education (Bar-Hayim and Berman, 1991). Socialization in the Histadrut, Israel's General Federation of Labor, is evident in a positive relationship between the strength of workers' expressions of labor movement ideology and the length of time their organizations have been part of the Histadrut. Ideological socialization mechanisms are also informal, as illustrated by Garnier's (1972) study of ideological homogeneity in a British military academy that maintained substantial ideological homogeneity despite a shift in the socioeconomic backgrounds of recruits. Garnier attributed the persistent homogeneity partly to socialization—boys from elite backgrounds were held up as role models and were more likely to have leadership positions—and partly to selection—boys from elite backgrounds were much more likely to be accepted to the school.

vides a blueprint for organization. An example is the organizational practice that is the subject of our study, whether or not to hire labor. The socialist-Zionist ideology of the founding members of the kibbutz movement prohibited exploitation of others and prescribed that kibbutzim be self-reliant, resulting operationally in disallowing the use of hired labor. In contrast, capitalist ideology encourages the use of hired labor in organizations.

A variant to the claim that ideology provides a blueprint for organization is the idea that rather than always leading action, ideology sometimes follows it, arising as a justification for previous behaviors (Perrow, 1986). Although we agree that there is a reciprocal relationship between ideology and action, ideology as a guide to action is a useful working assumption, subject to empirical confirmation. The experience of kibbutzim is illustrative. These organizations have faced many tough hurdles in the last ninety years, including the challenge of converting swamps into farmland, wars, a tumultuous Israeli economy, and the strains unique to a cooperative structure. As a result, there has been some ideological change. Some practices that were adopted for practical reasons were eventually justified with ideology, and some impractical practices eventually lost their ideological sanction. Still, it is undeniable that the core ideology of these organizations has persisted. Ideological changes have been slow and occurred at the margins. As Saltman (1983: 126) put it, "the pragmatic needs of the time have been constantly measured against the yardstick of ideological positions, and the latter have tended to adapt to the requirements of the former without radically changing its basic premise." Recognizing the adjustment of ideology to behavior necessitated by other influences is fundamental to understanding the evolution of organizations' ideologies, however, and we therefore return to this issue in the discussion section.

The key to understanding the effect of ideology on the practices employed by an organization are the other influences that moderate the effect of ideology on the organization. These influences are both internal and external to the organization. Internal influences inhibiting the implementation of organizing principles of an ideology tend to be interactions between the principles and other characteristics of the organization, as in Michels' (1962) account of the incompatibility of internal democracy and organizational growth in the German Socialist Democratic Party. These interactions are idiosyncratic to the ideology. For instance, large organizational size appears to inhibit the implementation of egalitarian organizing principles but is fully compatible with capitalist organizing principles. Because the internal influences against implementing an ideology's organizing principles depend on the ideology and the principles, we give them full treatment in the analysis of the implementation of the principle of self-labor. Our focus in the hypotheses is on external influences.

Unlike internal influences, some external influences seem likely to be in effect regardless of which ideology dominates the organization. The external influences we focus on occur because, even with ideological hegemony, there is always some variance in the ideologies that dominate different organizations in a society. Organizations are open systems and

Kibbutzim and Hired Labor

interact with their environment, so as long as all actors (individuals and organizations) in the environment are not dominated by the same ideology, an organization may interact with actors who hold different ideologies. Such interactions influence the relationship between ideology and organizational practice because they cause organizations to be evaluated by actors in their environment who have different basic assumptions about how the world does or should work. These actors may use ideology as a criterion for providing or withholding resources to the focal organization. Further, the presence of actors with differing ideologies makes salient at least some of the alternatives for organizing and forces an explicit comparison of the value of different ideologies.

Ideological Differences and Interorganizational Influence

Resource dependence theory provides an explanation for the dynamics of exchange between organizations, which can affect an organization's ideology and practice. An organization's resource dependency on another can result in asymmetric power relations (Pfeffer and Salancik, 1978: 53). The more dependent the focal organization is on the other organization, the more power the latter will have. The powerful organization can then use this imbalance to force the focal organization to conform to a variety of demands. When the exchange parties subscribe to different ideologies, their respective goals and practices are dissimilar, thus providing the substance for these demands. Ideology, as the source of an actor's perceptions of the propriety and utility of a particular behavior, also provides the criteria for evaluating exchange partners. So, the organization with more relative power in an exchange relationship may be in a position to force the dependent organization into an "ideological conversion." By ideological conversion, we do not mean that the ideology of the affected organizations' members changes in the short run. Ideologies do not change easily, but the organizational manifestations of ideology can be changed (Kamens, 1977). A focal organization's resource dependence on an organization with a different ideology may therefore result in its doing something that is not fully consistent with its own ideology: "We don't like this practice, but the union (bank, government, customer) forces us to use it." This incongruence between actors' true ideologies and practice in their organizations may ultimately lead to a change in ideology such that it will become congruent with organizational practice (Near, 1992).

A parallel argument from institutional theory is that a powerful actor can exert formal or informal pressures on another organization to alter some of its practices to become more like the powerful actor. The concept of coercive isomorphism (DiMaggio and Powell, 1983: 54) uses the power imbalance created by resource dependency to explain why organizations adopt practices that may be inefficient or irrational: "The greater the dependence of an organization on another organization, the more similar it will become to that organization in structure, climate, and behavioral focus." Isomorphic pressure can be particularly severe when an organization's ideology is different not only from that of a few particular organizations, but from all or most of the organizations in the environment (Ben-Ner, 1984). In her dis-

cussion of the relationship between collectivist organizations and other social systems Kanter (1972: 153) referred to isomorphic pressures as partially stemming from the fact that organizations find it easier to deal with other organizations if they are similarly organized: "A certain amount of similarity to external systems is necessary for an organization to have dealings with other social systems, for being different in a cultural sense poses a threat to other systems at the most, and at the least hampers outstanding and public relations." Kanter's position, which was generated by considering collectivist organizations, including kibbutzim, illuminates the resource acquisition problem facing organizations that have different ideologies from the society around them. Such organizations have little or no alternative to exchange with those who do not share their ideologies and therefore face a persistent difficulty of acquiring resources.

There are numerous examples in organizational case histories of ideological organizing principles changing because of dependence on organizations with different ideologies. Mintz and Schwartz (1985: 106) described the transformation of U.S. farm co-ops into capitalist enterprises because of their dependence on banks. Rothschild and Whitt (1986) described a free high school that had to create bureaucratic offices to handle government relations and a free clinic that had to temper the information it provided to clients in order to pacify granting agencies. Community Action Programs engaged in the War on Poverty adopted more moderate policies in response to pressure from state and local political groups (Benson, 1971). Statistical evidence for the idea that dependence relationships lead to ideological isomorphism comes from Mizruchi's (1990) study of the ideological similarity of political contributions of large U.S. manufacturers, in which he found that dependence between two organizations, operationalized by resource flows between the organizations' industries, increased the ideological similarity of the organizations' contributions. The above arguments lead to the following hypothesis:

Hypothesis 1: The greater the dependence of one organization on another, the more likely the organization's practices will reflect the ideology of the other.

Economics and Ideology

In economics, the view of ideology shifts to a comparison of its cost relative to the many other sources of utility available to an actor. North (1990: 22) summarized this position as a trade-off between ideology and wealth: "where the price to individuals of being able to express their own values and interests is low, they will loom large in the choices made; but where the price one pays for expressing one's own ideology, or norms, or preferences is extremely high, they will account much less for human behavior." The economic view of ideology is illustrated in the context of kibbutzim and hired labor by Barkai (1977a: 56-59), who called the income that a kibbutz loses by not hiring labor the "cost of ideology." This cost is a function of the revenue that hired labor would generate for the kibbutz and the wage that would have to be paid to the hired employees. By holding to the ideological principle of not hiring labor, kibbutzim incur economic costs:

Kibbutzim and Hired Labor

“The principle of self-labour, meaning in fact the repudiation of hired labour in situations when residents’ labour is in shortage, has led to one of the most intensively debated conflicts between economic efficiency and ideology” (Don, 1988: 24). Barkai (1977a: 59) claimed that during the 1950s the economic cost of not hiring labor increased and that ideology was sacrificed to material income.

The trade-off between material gain and other values is likely to be more relevant when there are differences of ideology between the organization and its environment. If all other organizations shared the focal organization’s ideology, alternatives for organizing would be less salient and less feasible. If the environment is dominated by a different ideology, however, incentives will favor organizational practices that are consistent with that ideology, and these alternatives for organizing will be salient to the nonconforming organization. The cost in material wealth of an ideology is relative to the next cheapest ideological alternative, and information about the material implications of ideological alternatives comes from the organization’s environment.

The best empirical evidence relating ideology and economic interests to action is at the level of individual behavior, in the literature on voting, where a number of studies have considered both economic and ideological influences on voting behavior in the U.S. Congress and found that both matter (Kalt and Zupan, 1984; Kau and Rubin, 1979). Poole and Rosenthal (1996: chap. 6) tackled the relative significance of ideology and economic interests, showing that the importance of ideology declines somewhat when variables representing the legislator’s economic interests are included in regressions but that, overall, ideology explained more of the variance in voting behavior than economic interests. The voting literature, however, recognizes the difficulty of properly measuring economic interest (Kalt and Zupan, 1984; Poole and Rosenthal, 1996).

Whether organizations display behavior similar to that of individual legislators when faced with conflicting economic and ideological influences remains largely unstudied. We expect that, generally, economic incentives to compromise an organization’s ideology will tempt the same people who are responsible for the ideology being dominant in the organization. Thus, for organizations as well as individuals, the economic cost of an ideology will decrease its application. There may be circumstances, however, in which economic incentives and ideological constraints operate on different participants of the organization. The outcome of the tension between ideology and economic incentive in these circumstances is difficult to predict, but it is likely that conflict, and perhaps even malfeasance, will result.

The case histories that so often document the sacrifice of ideological organizing principles to coercion offer fewer examples of sacrifice to economic incentive. Complementing Barkai’s (1977a) account of the adoption of hired labor by kibbutzim, Russell (1995) argued that Israeli worker cooperatives adopted hired labor because economic incentives came to overwhelm ideological and institutional constraints. Widerkehr (1980) described a mining cooperative in Bolivia

that, despite egalitarian ideals, developed stratification among participants because of the availability of hundreds of "illegal" workers, willing to work in the mine and sell their product to members for a fraction of its worth. Such qualitative evidence is rare even though the influence of economic incentive on the exercise of organizations' ideologies is common. In cooperative organizations, which most often have organizing principles in conflict with economic incentives, material gain is not part of the legitimate vocabulary of motives (Rothschild and Whitt, 1986) and may therefore go unmentioned despite its influence. The above arguments lead to the following hypothesis:

Hypothesis 2: An organization's implementation of the tenets of its ideology is negatively related to the economic cost of that implementation.

The Role of Adherence

Within ideologies, there is some variance in the degree of adherents' acceptance of the ideology. Among individuals who could be categorized with high consensus as socialists, feminists, or economists there are some who believe more strongly in particular tenets of their ideology. We use the term "adherence" to describe the strength of an actor's devotion to an ideology. An organization's adherence to its ideology is a function of the adherence of its participants. An organization made up of radical Marxists would be expected to cling more strongly to Marxist ideology than an organization made up of moderate Marxists. Additionally, ideological heterogeneity among participants may affect an organization's adherence to its ideology. An organization in which all the participants are feminists would have stronger adherence to feminist principles than an organization in which only 80 percent of the participants were feminists, and the other 20 percent had to be bribed or coerced to accept the implementation of feminist organizing principles. The degree of an organization's adherence to its ideology should have a basic effect on the degree to which the ideology's organizing principles are implemented in the organization. Organizations with a stronger adherence to an ideology will go farther in implementing the organizing principles of that ideology:

Hypothesis 3: The degree to which an organization implements the organizing principles of an ideology is positively related to the organization's adherence to the ideology.

Adherence may also mitigate the influence of the things that make it costly to implement an organization's ideology. When coercive pressures or material temptations make it difficult to follow an ideology, those with weak adherence will be most responsive to these influences, while those with stronger adherence will be more willing to endure the costs of resistance. Empirical evidence for this explanation of the role of adherence again comes from the voting literature. Poole and Rosenthal (1996: chap. 6) found that interest group pressure operates first on legislators who are close to being indifferent on an issue. The stronger the legislator's ideological position on an issue, the more external pressure is necessary to effect a change in vote. While we expect organizations to exhibit analogous behavior, the relationship between adherence and external influence may not be the same for organizations as it is for individuals:

Kibbutzim and Hired Labor

Hypothesis 4: The greater the degree of ideological adherence of an organization, the less responsive it is to pressure resulting from dependence on organizations with different ideologies.

Hypothesis 5: The greater the degree of ideological adherence of an organization, the less responsive it is to the economic cost of maintaining its ideology.

We tested our hypotheses by examining the extent to which kibbutzim follow the principle of self-labor, one of the first-order organizing principles of their ideology. Almost all kibbutzim, during the time our data cover, were affiliated with one of three federations. These federations reflect the ideologies of their member-kibbutzim, and because we rely on federation affiliation to operationalize the ideological adherence of kibbutzim, we provide background on the ideologies of these federations.

The kibbutz movement as a whole shares a number of basic ideological tenets that have served it from the beginning of its existence in the first decade of the twentieth century: (1) Practical Zionism: Jewish nationhood could be restored only by settling the land of Israel (Near, 1992: 2). This resulted in a symbiosis between the Zionist movement, which provided money and public and political backing, and the kibbutz movement, which provided for the settlement and education of people. Kibbutzim have taken on themselves three main functions: absorption of immigrants, settlement of the land of Israel, and defense of the land of Israel. (2) The principles of the kibbutz are socialist and are clearly not consistent with the modus operandi of a market economy. (3) The kibbutz movement is guided by basic values of equality, fraternity, communitarianism, and direct democracy.

Translation of the aforementioned socialist tenets into everyday practice yielded the following operational principles that guide all kibbutzim (Barkai, 1977a: 7): (1) All kibbutz property is held in common, the legal title being in the collective. Producer goods are operated by the community, as are some consumer goods; other consumer goods are distributed for personal use. (2) The kibbutz abides by the principle of self-labor, that is, hired labor should not be employed. (3) Kibbutz manpower is at the disposal of the community. (4) The kibbutz seeks to maintain equality in the distribution of real income, which involves severing the link between an individual's contribution to production and the real income from which he or she benefits, following Marx "from each according to his ability, to each according to his needs." (5) Mothers have the right and duty to work, and it is the community's responsibility to care for its children. This is one reason that the kibbutz maintains communal child care and education.

The Ideologies of the Kibbutz Federations

Two of the major kibbutz federations, Ha-Kibbutz Ha-Meuchad (from now on, Meuchad) and Ha-Kibbutz Ha-Artzi (Artzi), were founded in 1927 and the third federation, Hever Hakvutzot, in 1932. The fact that Meuchad and Artzi were founded before Hever Hakvutzot reflects a more solidified ideology and greater consensus among the kibbutzim that belonged to Meuchad and Artzi. Kibbutzim that became members of Hever Hakvutzot, some of the first to be estab-

lished in Palestine, were averse to giving up their autonomy to a federation. Later, in 1951, the largest federation, Meuchad, split on ideological grounds. The minority, in number of kibbutzim and population, joined Hever Hakvutzot to become Ichud Hakvutzot Vehakibbutzim (Ichud). The three federations had different concepts of what a kibbutz should be—its size, its economic functions, the relationships between its members—and what a kibbutz should do—its relationships with other parts of the community and its political allegiances. Although unified on the national and practical level, the kibbutz federations were deeply divided on some political and ideological issues.

The Ichud federation had as its prototype the first kibbutz, Degania, a small, highly selective, agriculture-based community. The Ichud followed a non-Marxist moderate socialism, and its member kibbutzim saw themselves as an example to the outside world (Infield, 1946). "If the kvutza [Hebrew for group, used as a name for small kibbutz] perfected itself, in terms of standards of work and efficiency and of relationships between its members, others would recognize perfection when they saw it and do likewise" (Near, 1992: 156). Ichud emphasized the moral basis of the kvutza, objected to a class war, and maintained that the social aspects of the kvutza should be preserved even at the expense of more general goals (Rosner et al., 1989). Central to the Ichud's member kibbutzim was their autonomy vis-à-vis the federation (Ben-David, 1983).

The Meuchad fostered large open kibbutzim that were tightly organized in a centralized federation (Ben-David, 1983). The goal was to establish large and constantly expanding kibbutzim based not on agriculture alone but on industry and other production branches, a mixed economy (Rosner et al., 1989). Thus, Meuchad rejected the notion of selectivity and maintained that people change in the process of absorption. The doctrine of "constructive socialism," whose aim was to build up the Jewish society as a socialist society through socialist methods, guided them. The class war, therefore, was not an attempt to destroy the existing system but to improve it. Tabenkin, one of the Meuchad's leaders said: "We are waging a class war, in terms both of struggle and of construction. Our way of struggle is competition with the other [type of] economy for success" (Near, 1992: 157).

The Artzi federation, the most radical, proclaimed a revolutionary doctrine. Following the "theory of stages," Artzi accepted the need for a proletarian revolution, as prophesied by Marx, but postponed it until after the completion of the "constructive stage" of Zionism (Near, 1992: 391). The Artzi's conception of the kibbutz was that of the "organic" kibbutz: all kibbutz members should be prepared for the communal life through a long education period, preferably in the youth movement or in training farms, the kibbutz growing slowly and cautiously by the accretion of such groups. The result was small kibbutzim composed of close-knit groups, deeply conscious of their common background in the youth movement. Artzi demanded from its member kibbutzim complete uniformity on matters of political, social, and economic ideology (Ben-David, 1983).

Self-work as a component of kibbutz ideology. A. D. Gordon, one of the spiritual fathers of the kibbutz movement, coined the term "the religion of work." For Gordon, labor was a uniquely creative act as well as an ultimate value (Spiro, 1975: 13). This concept was shared by and influenced the actions of individual collectives and kibbutzim, the kibbutz movement, and the entire labor movement in (Palestine) Israel. Agrarian, physical labor was regarded as the spiritual link between the settler and the land (Rayman, 1981). The Jewish people would earn the right to settle and cultivate Palestine only if they did the work themselves. The religion of labor, as presented by Gordon, provided for the secular kibbutz members a sense of physical and mental unity with their community and was an essential factor in individuals' ability to overcome tough working and living conditions (Rayman, 1981).

The centrality of work expressed by the religion of work, as well as other socialist and Zionist concerns, all contributed to the development of the principle of self-labor. The socialist principle of avoiding the exploitation of others' labor and Zionist aspirations of self-fulfillment and overturning the Jewish occupational patterns in the Diaspora were major motivations for the principle of self-labor. These goals were supposed to have been implemented, initially, by becoming adept at physical labor and then by maintaining the self-labor principle in the kibbutz. Gordon (1938: 62–63) provided the following ideological explanation for the principle of self-labor:

This is also the workers' chief aspiration: to become laborers themselves, to become farmers themselves either in a Moshav-Ovdim [a farming community with private consumption but collective ownership of the means of production] or in a Kvutzah, or a similar settlement—in general, to live by the labor of their own hands. . . . Further, there must be neither the exploiter nor the exploited, only Jews who work and live by means of work.

The federations and hired labor. All the kibbutz federations supported the principle of self-labor and expressed it in their manifestos (Stern, 1965; Barkai, 1977a; Near, 1992), but hired labor was used on many kibbutzim. During the period we studied, at the annual conventions of all the federations there were repeated expressions of concern for the growing reliance on hired labor and resolutions to eliminate the use of hired labor in their kibbutzim (Stern, 1965; Daniel, 1975; Leviatan, 1980). In 1953 the Ichud presented a detailed plan to guide all its member kibbutzim in their fight against hired labor. In 1964 it repeated the call to eliminate hired labor and again offered a plan for its kibbutzim to follow. Beginning in 1949, Artzi went through a similar process in its conventions, deciding yearly or every other year, to eliminate hired labor, outlining plans and sanctions (Daniel, 1975). Meuchad was no different (Tsur, 1984). The three federations thus had a similar position on the issue of hired labor: they viewed it as contradicting their goals of a community based on equality and rejected the idea of being exploiters of other people's work. Rayman (1981: 115) quoted a kibbutz member who called the existence of hired labor in kibbutz life "the Trojan horse of capitalism."

There were, however, other differences among the federations, such as political party affiliation, that led to variations

in their interpretation of and adherence to socialist principles, including the self-labor principle (Near, 1992). On issues over which there was a conflict between Zionist and socialist principles, the Ichud tended to favor the former, especially after the establishment of the state of Israel in 1948. In part, that approach can be attributed to the fact that the political party with which Ichud was affiliated (Mapai) and its leader (Ben-Gurion) formed the government. The party leaders advocated that the federation support the government in the attainment of national goals rather than independently pursue its ideology (Rosner et al., 1989). In contrast is the position of the Meuchad, which rejected the view of the kibbutz as an instrument of government policy. The Meuchad viewed itself specifically and the kibbutz movement in general as the primary mechanisms for the attainment of the national goals: settlement, defense, and absorption of immigration. The Artzi federation has always been the most adamant in adherence to socialist principles.

Based on the differences described, we can construct an "ideological adherence scale" (Satt and Schaefer, 1994) for the self-labor principle, on which the Ichud is the most lenient, the Artzi the strictest, and the Meuchad is situated between them (Daniel, 1975; Barkai, 1977a; Rosner and Tanenbaum, 1987; Rosner et al., 1989; Satt and Schaefer, 1994). Self-labor was a first-order organizing principle of all the kibbutzim, but in adherence to the principle we would expect kibbutzim of the Artzi federation to be the strictest, kibbutzim of the Meuchad federation next, and kibbutzim of the Ichud federation to be least adherent. Importantly, this ranking of adherence is not based on observed usage of hired labor but, rather, on expressed ideology. The ranking of federations on adherence to the principle of self-labor corresponds with their ranking on adherence to other democratic work practices, such as regular rotation of central office holders in the kibbutz, as well as to nonwork practices, such as children living in separate quarters, the treatment of money received by members from external sources (e.g., payments from Germany to Holocaust survivors), and consumption (Spiro, 1975; Rosner et al., 1989).

DATA AND ANALYSIS

The data we used describe the population of kibbutzim for the period 1951–1965 (Barkai, 1977a, 1977b), which begins shortly after the birth of the State of Israel and captures both the zenith of ideological self-reflection and the growth of the use of hired labor for the kibbutz movement. The number of kibbutzim was almost constant over the period, ranging from 222 to 220. The basic sources for these data were the annual statements prepared by each kibbutz and audited by the Audit Union of the kibbutz movement. We have confidence in the accuracy of the data because the Audit Union is responsible for the accuracy of the financial reports submitted to the government by its member kibbutzim. Besides detailed financial information, the data include variables on kibbutz demographics, federation allegiance, physical size, and inputs and outputs of the productive activities of the kibbutz. All observations of 1952 and 1953 are missing, because instability in the kibbutz movement during those years caused

records to be inaccurate or missing completely. After eliminating a small number of observations with missing data, we analyzed 2,765 observations, representing 222 kibbutzim.

Dependent Variable

The dependent variable is the percentage of labor used by the kibbutz that was hired labor, which we refer to as the *percentage of hired labor*. Our data did not include a direct measure of the number of hired laborers employed by the kibbutz, so we estimated this by dividing its expenditures for outside laborers by the average wage rate in Israel over the period we studied.³ We then divided this number by the total labor used by the kibbutz to calculate the percentage of hired labor. Using the percentage of hired labor has a number of advantages. Most importantly, it is a continuous measure of the extent to which a kibbutz implemented or failed to implement a practice dictated by its ideology. Further, it has been used as a dependent variable in previous studies on kibbutzim (Rosner and Palgi, 1980; Rosner and Tannenbaum, 1987) and other cooperative organizations (e.g., Estrin and Jones, 1992; Russell, 1995), so comparison between this and previous studies is possible. In a preliminary analysis, we used an alternative dependent variable that was dichotomous, measuring whether the kibbutz used any hired labor at all. Results with the dichotomous dependent variable were comparable to those we report below.

Figure 1, which graphs the percentage of hired labor for the three kibbutz federations for the period we studied, shows a transition in the use of hired labor between 1951 and 1965. In 1951, kibbutzim used virtually no hired labor. By 1965, 33 percent of labor used by kibbutzim was hired labor. The estimates of hired labor in figure 1 fall between other estimates of hired labor in kibbutzim. Izraeli and Groll (1981) presented percentages of hired labor from the Ichud movement for 1964 and 1965 (around 17 percent) that are significantly lower than those shown in figure 1. The difference is mostly due to a different accounting of total labor on the kibbutz—we include only labor at productive activities on the kibbutz, while their calculation apparently includes work on internal kibbutz services and members' work off the kibbutz. We prefer our method of calculation because it includes only those activities in total labor for which hired labor is normally used. Our results, however, are robust to alternative methods of calculation, including the method used in Izraeli and Groll (1981). Other studies, such as Leviatan (1980) and Russell (1996), by contrast, have reported percentages of hired labor in each movement (starting in 1969) that appear high compared with the ones we report. This is because those studies reported the percent of hired labor in kibbutz factories, rather than in the whole kibbutz, which we report here. Our data do not allow us to identify hired labor used only in kibbutz factories.

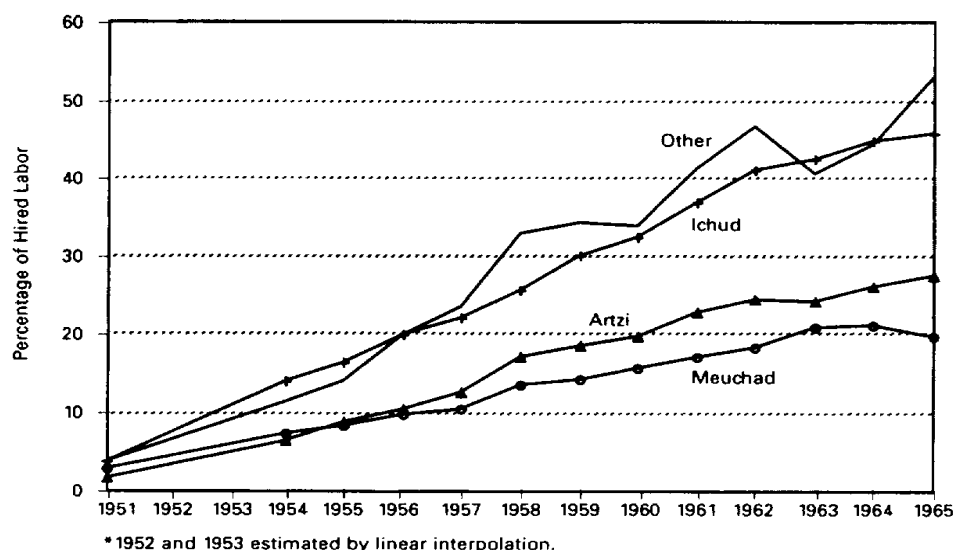
Dependence on Organizations with Different Ideologies

To operationalize dependence on organizations with different ideologies, we used debt owed to banks. Bank debt represents a critical, ideology-threatening dependence for two reasons. First, because kibbutzim have always had close relationships with banks and rely heavily on them to finance

3

The use of the average wage rate for Israeli laborers is justified because kibbutzim employed hired laborers in various, mainly unskilled jobs during the period we studied. We explored calculations of hired labor assuming higher wages (as much as twice the average wage rate), and our results were robust to these alternative assumptions.

Figure 1. Kibbutz hired labor by year.*



expenditures of all types, they are an extremely important source of resources. The fact that banks are the source of particularly powerful dependence relationships for nonfinancial organizations has been recognized in the network literature on intercorporate power (Mintz and Schwartz, 1985). Second, banks are ideal-type capitalist organizations and therefore represent a different ideology than the socialist kibbutzim. Banks have been observed in other contexts to put pressure on cooperative organizations to adopt capitalist organizing principles (Mintz and Schwartz, 1985; Rothschild and Whitt, 1986). Even though some Israeli banks had an affiliation with the labor movement, all made financial decisions based on the familiar criteria of economic soundness, traditionally interpreted as adherence to capitalist principles (Barkai, 1977a). One reason Israeli banks and other sources of financing used traditional capitalist criteria for loans to kibbutzim may be that they themselves relied on Western banks for support (Infield, 1946). So, a bank that loaned money to a kibbutz might demand that the kibbutz maintain financial records, appoint responsible financial officers, engage in productive activities that the bank deemed to be worthwhile, or hire outside labor. The dependence of the kibbutz on the bank will be different for certain types of loans. Short-term loans, which are due on demand, or in less than one year, provide the bank with the greatest amount of leverage because it is when loans are due and renewals and extensions are being negotiated that the bank's power to make credit contingent on concessions by the kibbutz is greatest. Therefore, we used the amount of short-term debt owed to banks to measure *dependence*. As suggested by hypothesis 1, we expect that kibbutzim with greater dependence will be more likely to use hired labor. As suggested by hypothesis 4, we expect the kibbutzim with greater ideological adherence (kibbutzim of the Artzi and Meuchad federations) to be less influenced by dependence.

Economic Cost of Adherence to Ideology

The economic cost of not hiring labor is the difference between the marginal revenue that an additional unit of labor

Kibbutzim and Hired Labor

would bring and the cost of that unit of labor (Barkai, 1977a). This is the “profit” that would come from hiring a worker. The higher this cost of ideology, the more likely kibbutzim should be to compromise their ideology and hire labor (hypothesis 2). Kibbutzim of the Artzi and Meuchad federations should be willing to endure a higher cost to maintain their ideologies, and therefore the economic incentive of hiring labor should have less influence on them (hypothesis 5). To calculate the economic incentive of hiring labor, we estimated the marginal product of labor (MPL) for each kibbutz in each year and subtracted from this figure the average wage rate in Israel for that year. We did this for both agriculture and industry and then calculated a weighted average of the two figures based on the proportion of the kibbutz’s revenue that came from agriculture and industry.

To estimate the MPL, we used the classic Cobb-Douglas production function, which represents revenue as a function of capital (K) and labor (L):

$$\text{Revenue} = AK^{\alpha}L^{\beta} \quad (1)$$

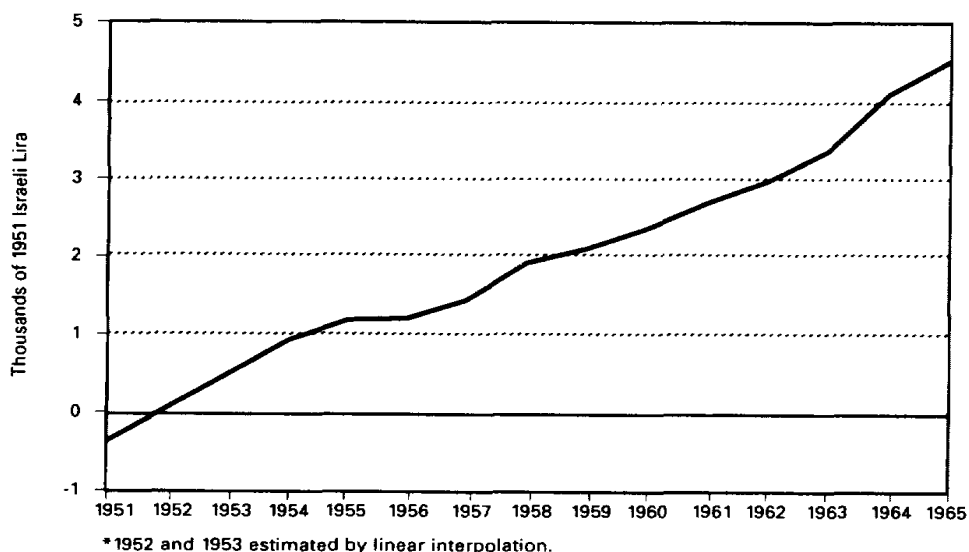
Log-linear regression was used to estimate A, α , and β for both agriculture and industry, using the revenue, investment in equipment, and amount of labor for agriculture and industry. We also used a fixed-effects estimation, which allows the intercept of the regression to vary by kibbutz and by year. The adjusted R^2 of the log-linear regressions was .95 for agriculture and .72 for industry, indicating that this simple model is effective in explaining kibbutzim revenues. To calculate the MPL for each kibbutz in each year, we took the first derivative with respect to labor in equation 1 and added in the fixed effects for the kibbutz and the year and the current levels of capital and labor for the kibbutz.

The average wage rates for workers in agriculture and industry were taken from the *Israel Year Book*. These were subtracted from the MPLs for agriculture and industry to find the economic cost of not hiring agricultural and industrial workers, and these figures were converted to constant dollars to facilitate comparability across years. *Economic cost* is an average of the kibbutz’s economic cost of not hiring workers for agriculture and industry, weighted by the relative share of the kibbutz’s revenue from agriculture and industry. Figure 2, which depicts the average economic cost for all kibbutzim from 1951 to 1965, shows that maintaining the ideological organizing principle of not hiring outside labor became progressively more expensive over the period we studied. In 1951, the year when hired labor was least common, there is even an economic disincentive to use it—on average, kibbutzim would lose money by hiring labor, since the cost of labor exceeded the marginal product of labor.

Other Variables

We operationalized the degree of ideological adherence of the kibbutz by federation affiliation. The kibbutzim of Artzi and Meuchad were stronger in their adherence to the principle of self-labor, should use less hired labor (hypothesis 3), and should be less responsive to dependence and economic cost pressures to use hired labor (hypotheses 4 and 5). Rosner and Tannenbaum (1987) found that kibbutzim of the Artzi

Figure 2. Average economic incentive to use hired labor.*



movement used less hired labor in their factories than kibbutzim of the other two movements. We included dummy variables for *Artzi* and *Meuchad* and interacted them with the dependence and economic cost variables to capture differences in hired labor as a function of adherence to ideology. The excluded category includes primarily kibbutzim of the Ichud federation but also a very small number of other kibbutzim, most of them with a religious orientation, that were also less adherent to the self-labor principle.

We controlled for a number of relevant internal influences that depend on ideology and influence practice. There are theoretical arguments and empirical evidence on the implementation of democratic work principles in general and the use of hired labor by cooperative organizations in particular. These arguments center around the size, age, industrialization, type of productive activity, and wealth of the cooperative organizations. The argument that size inhibits the implementation of democratic ideals is a very old one. Weber (1968) argued that direct democracy becomes infeasible when group size grows beyond a certain level. Studies of kibbutzim have found that direct democracy, both in the plant and the community, decreases with assembly size (Rosner and Palgi, 1980; Rosner and Tannenbaum, 1987). Russell and Hanneman (1995) found that the percentage of hired labor used by Israeli cooperatives increased with the size of the cooperative. Two cross-sectional studies of samples of kibbutzim, however, failed to find a relationship between size and the percent of hired labor used in kibbutz factories (Rosner and Palgi, 1980; Rosner and Tannenbaum, 1987). We therefore included a measure of *size*, which is the number of members of the kibbutz, in our analysis.

We measured the age of the kibbutz in years. A common observation is that generations of kibbutz members after the first tend to drift from traditional kibbutz ideology (Maron, 1994; Rosner et al., 1989: 92–99), suggesting that older kibbutzim should be more likely to use hired labor. Russell's (1985) study of taxi cooperatives and worker-owned scavenger firms, Russell and Hanneman's (1995) study of Israeli

Kibbutzim and Hired Labor

workers' cooperatives, Craig and Pencavel's (1992) study of plywood cooperatives in the Pacific Northwest, and Rosner and Palgi's (1980) study of kibbutz factories provide empirical evidence that increasing age of cooperative organizations results in increased reliance on hired labor. Batstone (1983) presented a life-cycle model of the effect of age on cooperative organizations that indicates a nonmonotonic effect: democratic ideals degenerate with age but eventually regenerate. Consistent with this model, Estrin and Jones (1992) found a nonmonotonic effect of age on the percentage of hired labor in French cooperatives, with hired labor first increasing then decreasing with age. To allow for the possibility of a nonmonotonic effect, we included both *age* and *age*² in our model.

Rosner and Tannenbaum (1987) found that the percentage of hired labor used by the kibbutz factories in their sample increased as a function of industrialization. The architects of the Zionist labor movement argued that cooperative production was inherently better suited to agriculture than to industry, reasoning that the necessity of mechanization and rationalization for success in industry was inherently anti-cooperative (Russell, 1995). At the same time kibbutzim were beginning to use hired labor they were also changing their economies from being strictly agricultural to include various industrial activities (Barkai, 1977a; Don, 1988). The move to industry is the explanation we have heard most often from current kibbutz members for increased reliance on hired labor. We operationalized *industrialization* as the total number of work days (in 1000s) spent on industry by the kibbutz.

We included *total land* (measured in 100 dunam [1,000 square meters] units) to reflect possible differences in productive activities of kibbutzim that may result in different incentives to use hired labor. Russell (1995) argued that the likelihood of cooperative organizations using hired labor depends partly on the difficulty they face supervising employees. We don't have data on the exact productive activities of each kibbutz, but the physical size of the kibbutz may provide some information on the challenge of supervision. Physically large kibbutzim may be less inclined to use hired labor because physical distance results in problems of supervision (Brickley and Dark, 1987).

Finally, we included two variables that measure the wealth of the kibbutz. Max Weber (1992) found a recognition of the risk to ideology from wealth to be manifest in the writings of the Puritans and traced the idea back to the Old Testament. More recently, Kanter (1972) identified wealth as a source of degeneration of the ideology of collective organizations. *Total assets* is the total assets of the kibbutz, and *room size* is the average size of members' living quarters. These variables test the idea that affluence and the exercise of ideology are negatively related. We expect the use of hired labor will increase with total assets and room size.

From table 1, which presents the means by federation for the variables described above, we investigated the possibility that characteristics of the kibbutz other than ideology may be associated with federation affiliation. While there are dif-

Table 1

Kibbutz Characteristics by Federation*

Federation	N	Percent hired labor	Dependence	Economic cost	Size	Age	Total land	Industrialization†	Total assets	Room size
Ichud and other	1138	.29 (.22)	369.99 (410.41)	2107.40 (1504)	331.49 (206.1)	18.78 (11.85)	61.87 (31.94)	5.39 (18.41)	2240.51 (1771)	.57 (1.02)
Meuchad	715	.13 (.14)	496.48 (510.83)	2077.67 (1435)	418.82 (304.3)	15.98 (8.931)	66.00 (35.75)	5.94 (12.43)	2421.47 (1829)	.57 (1.05)
Artzi	913	.17 (.13)	439.24 (386.59)	2346.38 (1589)	380.46 (189.3)	16.15 (9.79)	74.19 (48.37)	4.79 (6.81)	2245.12 (1594)	.64 (1.60)
Difference of means tests, within years, $p < .05$		I > A: 51,54-65 1 > M: 54-65 M > A: 51 A > M: 61, 62,65	A > I: 58-61 M > I: 57-62	I > M: 51 A > M: 51,54, 56-60,63 A > I: 56-59,63	M > I: 51, 58,59,65 A > I: 64,65	I > M: 55-57 M > I: 51 A > I: 58-60	M > I: 51 A > I: 58-60	M > I: 51, 54-59 M > A: 51 A > I: 55,59	M > A: 51 M > I: 51	I > M: 57

* Standard deviations are in parentheses.

† Difference of means tests for industrialization variable exclude nine Ichud observations with industrialization > 100.

Kibbutzim and Hired Labor

ferences in the means, the basic characteristics are comparable across federations. One surprise is that kibbutzim of the Ichud federation, which strongly favored agriculture, were between the other two federations on industrialization. This results from the very high industrialization of a single Ichud kibbutz. When nine observations of this kibbutz with industrialization values in excess of 100,000 workdays a year were omitted, Ichud had a mean industrialization of 3.94, the lowest of the three federations.

To investigate differences between the federations further, we conducted difference of means tests within years for the variables in table 1, i.e., the mean of a variable for Ichud kibbutzim for 1951 was compared with the mean of the variable for Artzi kibbutzim in 1951, and so on. The results of these tests are reported in the bottom section of table 1. As we would expect, Ichud kibbutzim tended to be smaller than kibbutzim of the other federations. Ichud kibbutzim also had lower dependence (i.e., less short-term bank debt) in a number of years. Artzi kibbutzim tended to face the highest economic cost of not using hired labor. High economic cost indicates that kibbutzim of the Marxist Artzi federation operated furthest away from the amount of labor that neoclassic economics argues to be efficient, where the marginal product of labor equals its marginal cost. Generally, the differences between the federations are consistent with our understanding of the character of each federation.

Table 2 presents basic statistics and correlations for the variables. The correlations between the explanatory variables are

Table 2

Basic Statistics and Correlation Matrix

Variable	Mean	S.D.	1	2	3	4	5	6	7
1. Percent hired labor	.21	.19							
2. Artzi	.33	.47	-.16						
3. Meuchad	.26	.44	-.23	-.41					
4. Dependence (1000 IL)	425.5	434.3	.33	.02	.10				
5. Dependence * Artzi	145.0	303.3	.01	.68	-.28	.39			
6. Dependence * Meuchad	128.3	338.6	-.03	-.27	.64	.52	-.18		
7. Economic cost/100	21.79	15.2	.32	.08	-.04	.27	.20	.07	
8. Economic cost * Artzi	7.74	14.3	-.03	.77	-.32	.12	.68	-.21	.44
9. Economic cost * Meuchad	5.37	11.7	-.13	-.32	.78	.17	-.22	.62	.27
10. Age	17.2	10.6	.37	-.07	-.07	.47	.18	.17	.32
11. Age ²	407.1	491.1	.31	-.07	-.09	.40	.13	.13	.24
12. Size	370.2	233.4	.17	.03	.12	.56	.21	.40	.04
13. Total land (100 dunam units)	67.0	39.4	-.11	.13	-.02	.03	.07	.03	.07
14. Industrialization (1000s of workdays)	5.33	14.0	.33	-.03	.03	.34	.06	.19	-.04
15. Total assets (100,000,000s IL)	22.89	17.42	.50	-.02	.04	.68	.22	.34	.56
16. Room size (in dunams)	.60	1.24	.10	.03	-.01	-.07	-.04	-.03	.20

Variable	8	9	10	11	12	13	14	15
9. Economic cost * Meuchad	-.25							
10. Age	.07	.04						
11. Age ²	.03	-.01	.96					
12. Size	.06	.06	.61	.53				
13. Total land (100 dunam units)	.15	-.03	.11	.10	.22			
14. Industrialization (1000s of workdays)	-.02	.00	.24	.21	.53	.04		
15. Total assets (100,000,000s IL)	.19	.24	.50	.42	.49	.04	.51	
16. Room size (in dunams)	.09	.08	-.09	-.08	-.20	-.12	-.06	.02

low to moderate. The few higher correlations are to be expected: those associated with the interaction terms, between the first- and second-order terms for age, between dependence and total assets, and between age and size. Preliminary analysis indicated that our results are robust to alternative specifications of the model, so there is no evidence of multicollinearity. Our expectations for the effects of the variables on the percentage of hired labor are summarized in the two columns on the right in table 3, below.

Analysis

Our goal was to estimate the percentage of hired labor used by a kibbutz in a year. The percentage of hired labor is a continuous variable, so ordinary least squares regression would appear to be an appropriate technique. There are, however, three methodological problems with ordinary least squares (OLS) regression for this analysis. First, our dependent variable is a percentage and therefore bounded on the unit interval. Such a limited dependent variable is problematic because OLS would result in predictions for the percent of hired labor that are less than zero and more than one. In response to this problem, we performed a log-odds transformation of the dependent variable (Neter and Wasserman, 1974: 332): $\ln[P_{hi} / (1 - P_{hi})]$, where P_{hi} is the percentage of hired labor.

The other two problems relate to the longitudinal and cross-sectional features of the panel data we used. The fact that we have thirteen observations from each kibbutz raises the potential of autocorrelation in the disturbance term. A Durbin-Watson test indicated that our model did have autocorrelation. If uncorrected, this would cause least squares estimates to be inefficient, although unbiased and consistent. We corrected autocorrelation with a two-step process whereby we estimated the autocorrelation coefficient and then transformed the data using this estimate. We used the Prais-Winsten method to transform the data, because it preserves the first observation for each time series and yields more accurate estimates when each time series is short (Greene, 1990: 443).

Finally, we had to consider unit effects—heterogeneity across the cross-sectional units in the data. There are two approaches to deal with unit effects, the fixed-effects model and the random-effects model. The substantive difference between the two approaches is that the random-effects model requires an assumption that the unit effects are uncorrelated with the other regressors, while the fixed-effects model does not. The disadvantage of the fixed-effects model is that it is more costly in degrees of freedom. Since we have almost three thousand observations, the cost of the fixed-effects model was a minor consideration to us, so we applied it here. In preliminary analysis we also estimated a random-effects model, and the results were comparable to those we report from the fixed-effects model. We used the simplest method to estimate the fixed-effects model, which is to include a dummy variable for each of the kibbutzim:

$$Y_{it} = \alpha_i D + \beta' X_{it} + e_{it} \quad (2)$$

where α is a vector of kibbutz-specific effects, D is matrix of

Kibbutzim and Hired Labor

kibbutz-specific dummy variables, β is a vector of coefficients, X is the matrix of covariates, and e is the error. An F -test between the model reported below and a model with all of the kibbutz-specific effects restricted to zero was significant ($6.302_{221,2528}$, $p < .01$), indicating that there are significant unit effects.

RESULTS

The first column of table 3 presents the results. As predicted by hypothesis 3, the kibbutzim of Artzi and Meuchad, the two movements that expressed stronger ideological adherence to the principle of hired labor, used less hired labor. An F -test indicates that the coefficient for Artzi is more negative than that for Meuchad ($8.07_{1,2528}$, $p < .01$). This is also as we would expect, because Artzi expressed stronger adherence to the principle of self-labor than Meuchad. As predicted by hypothesis 1, kibbutzim with greater dependence on capitalist organizations used more hired labor. As predicted by hypothesis 2, kibbutzim facing greater economic cost to apply the principle of self-labor used more hired la-

Table 3

Fixed-Effects Model of Percent Hired Labor*

Variable	Model	Expected effect	Source of expected effect
Constant	-.553 [•] (.280)		
Artzi	-2.15 ^{••} (.168)	-	Hypothesis 3
Meuchad	-1.59 ^{••} (.188)	-	Hypothesis 3
Dependence/1000	.387 ^{••} (.126)	+	Hypothesis 1
Dependence * Artzi/1000	.519 ^{••} (.177)	-	Hypothesis 4
Dependence * Meuchad/1000	-.370 [•] (.178)	-	Hypothesis 4
Economic cost	.034 ^{••} (.003)	+	Hypothesis 2
Economic cost * Artzi	-.009 ^{••} (.003)	-	Hypothesis 5
Economic cost * Meuchad	-.014 ^{••} (.004)	-	Hypothesis 5
Age	.126 ^{••} (.013)	+	Russell (1985), Rosner and Palgi (1980)
Age ²	-.002 ^{••} (.000)	-	Batstone (1983), Estrin and Jones (1992)
Size	-.002 ^{••} (.000)	+	Weber (1968), Russell and Hanneman (1994)
Total land	-.006 ^{••} (.001)	-	Russell (1995), Brickley and Dark (1987)
Industrialization	.025 ^{••} (.004)	+	Rosner and Tannenbaum (1987)
Total assets	.012 ^{••} (.002)	+	M. Weber (1992), Kanter (1972)
Room size	.083 ^{••} (.027)	+	M. Weber (1992), Kanter (1972)
Adjusted R^2	.609 ^{••}		
Observations	2765		
Degrees of freedom used by the model	236†		

• $p < .05$; •• $p < .01$.

* Standard errors are in parentheses.

† Two hundred and twenty-one kibbutz-specific dummy variables were also included in the model estimation.

bor. Consistent with hypothesis 5, both of the interactions between the adherent federations and economic cost are negative, indicating that kibbutzim with greater ideological adherence were more resistant to economic influences to give up the principle of self-labor. The support for hypothesis 4, however, is mixed. As predicted, the interaction between Meuchad and dependence is negative, but the interaction between Artzi and dependence is positive. This indicates that Artzi kibbutzim were more responsive to pressure from banks, while hypothesis 4 indicates they should have been less responsive.

Among the internal influences on the application of the self-labor principle, age has the predicted nonmonotonic effect on the use of hired labor, as indicated by the positive first-order effect and the negative second-order effect. Size decreases the use of hired labor, which is the opposite of the predicted effect. The remaining variables all work as predicted. Kibbutzim that had more land used less hired labor. Kibbutzim that were more industrialized used more hired labor. Both measures of kibbutz wealth, total assets and room size, operated to increase the use of hired labor.

DISCUSSION

In this study we theorized on and tested the relationship between organizational practice and ideology. Socialism and Zionism were the ideologies that provided the kibbutzim's founders with the blueprint for their organizations. The self-labor principle for kibbutzim is a practice that illustrates that. Because there are ideological differences between kibbutzim and the society in which they are embedded, resource dependence and economic cost both operated as isomorphic pressures on kibbutzim. The degree of kibbutzim's ideological adherence allowed us to predict which will go further to implement the self-labor principle and which will be more (or less) resistant to these isomorphic pressures.

We found that dependence on capitalist organizations affects the likelihood that kibbutzim will adopt a practice that contradicts their ideology but is compatible with capitalist ideology. Additionally, a kibbutz's ideological adherence affected the influence of dependence, although not completely, as we had predicted. This result establishes ideology as a source of substance for interorganizational demands and as an influence on the cost of compliance. An implication of this is seen in the efforts of some organizations to avoid dependence on organizations with different ideologies. The religious kibbutz federation, which started after the other federations and could therefore observe their experience, began with an explicit plan to establish kibbutzim in geographically concentrated blocs, so they could rely more on each other and less on the secular environment (Katz, 1995). Some feminist organizations, particularly in Britain and West Germany, eschew relations with the state and generally minimize interactions with the environment for fear of cooptation (Martin, 1990).

It came as a surprise that kibbutzim of the Artzi movement were more responsive to dependence on banks than other kibbutzim. One possible explanation derives from the fact

Kibbutzim and Hired Labor

that Artzi kibbutzim turned to capital-intensive ventures, as opposed to labor-intensive ventures, precisely because of the ideological objection to using hired labor. Needing capital for this transition, Artzi kibbutzim may have become more dependent on capitalist organizations and more vulnerable to bank pressure. Another explanation is that Artzi's radical ideology may have evoked particularly coercive responses from bankers. In light of this result, we realize that strong adherence indicates a greater ideological difference between the coerced and coercer, which may affect the dynamic of inter-organizational influence. This brings up a more general question that we cannot answer with our data. What are the microprocesses by which one organization coerces another over ideology? Mintz and Schwartz (1985) claimed that the coercive influence of banks is often tacit, and Rothschild and Whitt (1986) observed that coercion can operate without direct outside pressure, as participants of the coerced organization come to monitor their practice for presumed acceptability to resource suppliers. We also wonder if there are scope conditions on ideological coercion. For example, it seems more legitimate for bankers to expect concessions on the productive activities of a kibbutz than on the methods of childrearing.

Economics brings to our discussion a straightforward argument: there is a price to be paid for following one's ideology. This may have been one of the most popular, untested explanations of why kibbutzim started to employ hired labor. We found that kibbutzim were influenced by the economic incentive to hire labor. Additionally, kibbutzim of both of the federations that exhibited greater adherence to the self-labor principle were more resistant to the economic incentive to hire labor. One of the strengths of this study for illuminating the relationship between ideology and economic interest is the operationalization of economic interest. The data we used contain rare detail about the productive efforts of each organization in a population over an extended period. This enabled us to estimate the production functions of each kibbutz with high accuracy and therefore to calculate just how much income the kibbutz would get from hiring labor. The operationalization of dependence is also a strength, as it captures an important dependence on a set of organizations that have been observed to thrive at interorganizational influence and that represent a strong ideological contrast to kibbutzim.

The importance of power relations and economic incentives for influencing the basic effect of ideology on organization has implications at the social-system level. The organizing principles associated with ideologies can be seen to be competing in an evolutionary system—an ecology of ideology. The implications of this depend on whether the relationship between organization and ideology is nonrecursive. When organizations undergo a "forced conversion," or when economic incentives cause them to adopt organizing principles of other ideologies, do the ideologies of organizational participants eventually change? Results from social psychology (e.g., Fazio, Effrein, and Falender, 1981) show that people do change their self-perceptions and voluntary behavior to be consistent with behaviors that their environment induces (Weiss and Miller, 1987). Near (1992) claimed that kibbutzim

subsequently developed ideological justifications for some organizational practices that were originally adopted for reasons of convenience. Kanter (1972: 153), studying collectives, also recognized the possibility that isomorphism to capitalist organizations can lead to the loss of the collective's ideology: "For utopian communities, the sharing of symbols and media of exchange often means accepting the terms of the larger society and thereby subverting their own ideals and values." If organizational practices adopted for material reasons or as a result of coercion do eventually affect an organization's ideology, then the processes we identify here contribute not only to the dynamics of organizational form but also to the dynamics of ideology.

The internal influences on the use of hired labor represent strong evidence on the exercise of ideology by cooperative organizations. In particular, the nonmonotonic effect for age is compelling as the second result in support of Batstone's (1983) life-cycle model of cooperative ideology. The maximum of the effect of age in our analysis comes at about 27 years, while in Estrin and Jones's (1992) analysis of French worker cooperatives, the maximum effect of age comes at 45 years. We also found a strong effect of industrialization, validating a widely held belief about the rise of hired labor on the kibbutz. Two variables indicate that wealth is negatively related to the implementation of the principle of self-labor. The direction of causality is a particular question here, because hired labor is generally profitable and could lead to wealth. Starting from effectively no hired labor in 1951, however, the moderate levels of hired labor in subsequent years alone would not have generated enough profit to cause poor kibbutzim to become rich. Physically larger kibbutzim used less hired labor, consistent with the idea that they have more difficulty supervising employees.

The only unexpected result among the internal influences was size. Although theory suggests a positive relationship between size and hired labor, null results in other analyses of kibbutz hired labor indicated that size may not operate here as it does in other cooperative organizations, but the negative effect we found surprised us. One explanation is that small kibbutzim have trouble operating at an efficient scale and therefore have a greater need for hired labor. Another explanation, based on the theory of structural inertia (Hannan and Freeman, 1984) is that large kibbutzim are less likely to use hired labor because large organizations are in general less likely to change. Russell, Getz, and Rosner (1996) examined the size-inertia argument in their study of recent changes in kibbutzim but did not find support for it. Still another explanation is that large organizations are more resistant to influence over resource dependency (Pfeffer and Salancik, 1978). We tested this explanation with a supplementary analysis (not shown) in which we included an interaction between size and dependence. The coefficient for this interaction was significant and negative, indicating that large kibbutzim were more resistant to coercion from banks, but the size coefficient remained negative and significant (other coefficients were unchanged). In additional supplementary analysis we investigated a nonmonotonic effect of size and did find a positive second-order effect, but the minimum of

Kibbutzim and Hired Labor

the effect of size did not come until a size of 780 members, so for all but the largest few kibbutzim (4 percent), increases in size brought decreases in hired labor.

Studying kibbutzim and other non-capitalistic organizations has a value of its own. Rothschild-Whitt (1979: 525) noted that "it is in the conceptualization of alternative forms of organization that organizational theory has been weakest, and it is here that the experimentation of collectives will broaden our understanding." Even though the world has changed since these words were written, their basic premise is still valid. It is through the uncommon form that we sometimes are able to learn about the common one. Current environmental changes dictate a consideration of various alternatives to the hierarchical, bureaucratic organization that is a typical form for capitalism. Understanding kibbutzim's relations with the environment and the dynamics of change may contribute to conceptualization of alternative organizational forms.

While we see value in studying collectives, we believe that ideology affects all organizations. Most Western business organizations operate in an environment in which capitalism is dominant. Their exchange partners usually do not pressure them to adopt socialist principles, and the organizations they observe do not often prompt them to reevaluate their ideologies. Still, this means only that it is tougher to identify the underlying importance of ideology, not that it is absent. In evidence, Neustadtl and Clawson (1988) found that shared conservative ideology was the most important determinant of similarities in the political activity of large American corporations. Further, ideologies other than socialism and capitalism affect organizational practice. Feminism, environmentalism, and developmentalism are among the ideologies that have implications for organizational practice, and there are many others.

Outside of the Western economy, ideological differences and the resulting salience of ideology in organizing decisions is greater. Stark (1996), analyzing recombinant property in Hungary, described networks of large corporations (largely state owned) and smaller, superficially more entrepreneurial limited-liability companies that are linked by shared ownership and technological interdependence. The interdependencies of this network caused organizations within it to be subject to multiple ideological influences. Increasing international exchange and the resulting interaction between organizations with different ideologies add more complexity to the ideological mix. Western corporations operating in Eastern Europe or China will both exert and be subject to ideological influence.

CONCLUSION

Events in the kibbutz movement since 1965 reflect the continuing conflict between maintaining the kibbutz ideology and external and internal pressures to deviate from it. In the years immediately following the period we studied there was a decline in the extent to which kibbutzim used hired labor, so, for example, between 1969 and 1977 the percentage of hired labor fell from 77 to 61 in the Ichud, 35 to 23 in

the Meuchad, and 22 to 18 in the Artzi (Satt and Schaefer, 1994). The initial decline represents a conscious effort by all kibbutz federations and the kibbutzim to reduce their reliance on hired labor; thus, some called the 1970s the "Decade of Ideology" (Satt and Schaefer, 1994).⁴ That trend reversed, however, and since then, kibbutzim have continuously increased their reliance on hired labor (Ravid, 1994). Banks continue to be a major influence on kibbutzim. A recent debt crisis triggered major changes in kibbutzim and, in 1994, resulted in an agreement stipulating that certain kibbutzim are not allowed to make any expenditures without prior approval from their banks. Compelling evidence that the processes we identified continue to operate on kibbutzim comes from Russell, Getz, and Rosner's (1996) study of this recent wave of kibbutz change. Their strongest results were that kibbutzim facing particular difficulties supporting their bank debt were more likely to adopt practices counter to traditional kibbutz organizing principles, while kibbutzim of the ideologically adherent Artzi federation were less likely to adopt those new principles.⁵

Some scholars who have addressed the tension between the ideologies that we studied here, socialism and capitalism, claim that when a collectivist organizational form is embedded in a capitalist environment, it is destined, in the long run, to change and adapt to the prevailing ideology, implying that they are destined to lose their collectivist form (e.g., DiMaggio and Powell, 1983; Ben-Ner, 1984; Clegg and Redding, 1990). Kanter (1972: 142) is not that deterministic: "If a group wishes to continue, however, it must somehow deal with changes in the external society, from choosing to ignore them to incorporating them." The interesting questions are under what circumstances and time frame will such changes occur, what will be the evolving form, and what role will ideology play in the process? This provides a research agenda for the future. The kibbutzim have been undergoing dramatic changes in the last decade, facing tremendous external, environmental pressures—economic pressures, dependence, and even legitimacy. Ideology seems to continue to play a major role in their management of the crisis (O. Weber, 1992; Harell, 1993). Studying these recent changes and the continued search by kibbutzim for a coexistence in a capitalist environment while they maintain some unique form will provide answers to some of these questions.

4

Izraeli and Groll (1981) offered an alternative explanation of the decrease of hired labor after 1965. Their analysis indicates that the percentage of kibbutz-member labor was stable during this period, while hired labor was replaced by the labor of non-member volunteers.

5

On July 5, 1979 the secretariats of Ichud and Meuchad met to discuss the implementation of the unification of the two federations (Tsur, 1984). After the unification two major federations remained: Artzi and the unified federation, Takam.

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