Faculty of Human Sciences, Osaka University, March. 1988
Annals of Human Sciences, Vol.9, pp.1- . 28

The Psycological and Economic Effects of Traditional and of Economically Peripheral Job Settings in Japan

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In this paper we examine how working in a traditional industry and an economically peripheral sector of the economy affect Japanese workers' attitudes towards their place in the socio-economic system, their broader psychological functioning and their income. Earlier, we found that the characteristics of the work organization and of the individual's position in it seem to be linked to the worker's acceptance of traditional orientations (Naoi and Schooler 1985). In Japan, but not in the United States, ownership, bureaucratization and high hierarchical level all lead to more authoritarian conservatism. High hierarchical level also results in more idea conformity and a more legalistic less personally responsible morality.

A major aim of this paper is to further pursue the relationship in Japan between work setting, traditionalism, and psychological functioning. Our related goals are to examine how the sector of the economy of the workplace—which has long been seen as vitally important to Japanese workers—affects them, and to expand the range of effects considered to include workers' earnings and their orientations towards their place in the socio-economic structure.

Traditionalism of industry and centrality of the sector of the economy of the firm are particularly relevant characteristics of the work setting in Japan. Traditionalism of industry is especially germane because, even before the mass importation of western technology and business practices in the mid-nineteenth century, Japan had developed its own ways of manufacturing consumer goods of widely varying technological complexity and an elaborate commercial system that distributed both these goods and agricultural products. Furthermore, many of these traditional businesses, products, and modes of operation continued, albeit not necessarily in unchanged form, through the modernization period. Thus, it has been estimated that "in 1955 approximately one half of total consumer

expenditures was made for traditional commodities" (Ohkawa and Rosovsky 1973).

The hypothesis that working in a traditional industry would affect an individual's psychological orientations and functioning, particularly in terms of their assessment of their integration into the socio-economic system is well grounded in sociological theory. Thus, if we accept the implications of Durkheim's (1954) reasoning that affiliation with traditional organizations not only enhances traditional orientations but also protects people from anomie and self-doubt, we would expect that those working for firms in the traditional sector of the economy might be more traditional in their values and orientations, less alienated and self-deprecatory, more self-confident and more likely to view themselves in positive terms.

Japan is also a particularly appropriate place to examine the psychological effects of a segmented labor market on workers, since the dual labor market was first observed in Japan, and is still seen as very characteristic of that country. Thus, in the late 1970's "Japanese scholars were mildly amused to learn that many American scholars had just discovered the applicability to the American situation of 'dual labor market theory' and 'segmented labor markets'". (Cole 1979, pp. 8-9). "In Japan, the dual structure theory of the economy emerged after 1955 when the country took off toward rapid economic growth ... The central thesis of this theory is that the labor market is divided into the large enterprise sector characterized by capital intensive large scale production, on the one hand, and the self-employed, medium sized, and small enterprise sector, on the other". (Imada and Imada 1982).

From the Japanese worker's vantage point the most salient aspect of the large-scale sector of the economy is the predominance of intra-firm (internal) labor markets (Ujihara 1966). This is true not only of white-, but also of blue-collar workers. Koike (1983 a) finds that the career patterns of Japanese blue-collar workers in large companies are not only more internalized than their counterparts in other countries, but that as their careers progress such workers' value to their companies increase as a result of on-the-job training, the high degree of autonomy granted to work teams, and the skills they develop through frequent and flexible transfer within a broad-range cluster of jobs organized along extended career promotion lines.

These "institutional and organizational arrangements" are not an unplanned by-product of Japanese culture. "What strikes the observer in reading an historical account of the development of permanent employment is the way it has changed in accordance with economic needs ... Although there are some aspects of an unconsious persistence of custom in the evolution of permanent employment, for the most part it represents a conscious act

of institution building" (Cole 1979, p.24).

Since the early research of Vogel (1963), being employed by a large corporation in the central sector of the economy has been seen as leading to a high level of loyalty and identification with the firm and to a willingness to work hard for its benefit. Thus, after studying a sample of such firms, Kōshiro (1983) concluded that "(i)nstitutional and organizational arrangements in large Japanese firms not only keep workers' motivation and productivity at high levels, but at the same time provide them with a high degree of satisfaction and sense of security (p.356). "[1] Lincoln and Kalleberg's (1985) findings with a sample of Japanese workers from the Atsugi region of Kanagawa prefecture are also "consistent with the dual economy hypothesis that commitment is more readilly achieved in large firms (p.752)."

In examining the career patterns of those in the peripheral sector, Koike (1983 b) finds that despite dual-market theory, the wage profiles and career patterns of white collar workers in small firms are substantially the same as those of blue-collar workers in large firms. He sees the flatter age/wage profiles of small company blue-collar workers, compared to those working in large firms, as the result of their skill formation and career structure being less internalized within a single firm. On the other hand, he discerns a career pattern in which a single firm. On the other hand, he discerns a career pattern in which a sizeable number of blue-collar workers in small firms embark on careers as owners of small workshops. Thus, the careers of those working in the periphery of the economy tend to be less secure and certain than the careers of those working in the central sector. Workers in the peripheral sector are more at the mercy of both general and local economic conditions and have few formal and informal protections from arbitrary actions of their employers. Their uncertainty, however, also includes the possibility of becoming one's own boss. Thus, if they are not members of the owning family, workers in the periphery sector might be less committed, less loyal to, and less identified with their firms than workers in the central sector.

In the present paper we examine how both sector of the economy of the firm and traditionalism of the industry affect worker's orientations, attitudes and psychological functioning in a model that includes, and thus controls, the effects of a wide variety of occupational conditions, including occupational self-direction. Doing so permits us to test whether the job settings of sector of the economy of the firm and traditionalism of the industry have direct psychological effects, independent of those they have by affecting other occupational conditions.

In our earlier paper (Naoi and Schooler 1985) we replicated in Japan the cen-

tral result of an American study (Kohn and Schooler 1983) that concluded that occupational self-direction leads to ideational flexibility and a self-direction orientation to self and society. Our other findings centered on the relationships in Japan between position in the work organization and psychological functioning, which are more widespread than in the United States: ownership, high hierarchical level, and bureaucratization all increase self-esteem and authoritarian conservatism in Japan but not in the United States. The question remains of whether these findings will be sustained in causal models that include the psychological effects of traditional and of economically peripheral job setting.

Finally, it has frequently been reported that working in the central, rather than in the peripheral sector of the economy, increases income (Lockwood 1968, Ohkawa and Rosovsky 1973, Cummings and Naoi 1974). As we have seen, Koike maintains that such differences generally resilt from the greater skill level of blue-collar workers in the central sector (Koike 1983 a). Our data, which contain information, not only on job settings, but also on the substantive complexity, closeness of supervision, and routinization of the work, as well as on other occupational conditions and on income, permit us to test this hypothesis by examining which occupational conditions and settings lead to higher income. Thus we are in a position to test whether the work settings of the sector of the economy of the firm and the traditionalism of its industry affect both the Japanese worker's income and his psychological functioning. We can also now examine how these job settings, as well as the occupational conditions whose causal connection to intellectual flexibility, self-directness of orientation and psychological distress we have previously investigated (Naoi and Schooler, 1985) affect Japanese worker's feelings of integration into their workplace and into the socio-economic structure of their society.

In order to test all of these hypotheses we enlarge the scope of our previous examination (Naoi and Schooler 1985) of the effect of occupational conditions on Japanese workers in three ways. In the first place, we expand the characteristics of work organizations whose psychological effects are explored by adding to our earlier model of the causal connection between occupational conditions and psychological functioning indices of two characteristics of the setting of the work place—how traditional is the industry and how economically central is the firm. Secondly, we increase the range of psychological functions investigated by including measures that directly reflect the respondents' views of their psychological integration into their specific work setting and the general economic system. These new measures are their job satisfaction, the pride they take in their firm, their occupational commitment, their levels of alienation, and the social strata and social classes with which they identify. In the third place, we examine the effects of both of

these job settings, sector of the economy and traditionalism, as well as of occupational conditions, on income.

Sample

The respondents were drawn through a random probability sample of employed males between 26 and 65 years of age in the Kanto district of Japan. This area, which is one of the principal segments into which the country has traditionally been divided, includes Tokyo and six other prefectures in the north central part of Japan. The Kanto contains a mix of urban, suburban, and rural areas. The survey was carried out during the summer of 1979 and the spring of 1980. The 629 respondents represent a 74.6% completion rate of the original sample.

Interviewing was carried out by graduate students in the sociology departments of Tokyo, Yokohama, and Ibaraki National Universities. The interview consists primarily of questions translated from the original American survey (Kohn 1969, Appendix C). Extensive pretesting was carried out to insure the meaningfulness and cultural appropriateness of the items. To assure accuracy, the interview was back-translated into English by someone who was not familiar with the original instrument. (See Naoi and Schooler, 1985 for more detail).

MEASURES

Occupational Settings

The two measures of occupational setting are the traditionalism of the industry and centrality in the national economy of the workplace. An industry's traditionalism is measured on a three-point scale developed in conjunction with Prof. Ken'ichi Tominaga of the Department of Sociology of the University of Tokyo (See Appendix A). Industries in the Japanese Industrial Code are rated as most traditional if they manufacture products or provide services of a type that existed in Japan before the Meiji restoration in 1868. Industries are rated as least traditional if they manufacture products or provide services that did not exist in the pre-Meiji Tokogawa era. Industries are rated as intermediate if they provide a mix of products and provide services of both the pre-and post-Meiji eras.[2]

The measure of the degree to which the place of employment is in the center, opposed to the periphery, of the economy consists of five categories: 1) Core—about 724 companies, those that have capitalization of over 40 billions yen and major banks, major insurance companies and national newspapers, as well as the central goverment; 2) Outer

Core—1482 companies, those whose stock is sold in the primary stock market, also smaller banks and insurance companies, as well as prefectural and large city governments; 3) Inner Periphery—businesses of more than 5 persons without public stock, local village governments; 4) Periphery—businesses with 1-4 workers; 5) farmers.

Occupational Conditions

The occupational conditions in the model are the same as those in the original Naoi and Schooler model (1985): substantive complexity,closeness of supervision, and routinezation of work constitute a single concept—occupational self-direction. In addition, the effects of frequency of time pressure, ownership, hierarchical level, and bureaucratization are also examined.

Substantive complexity of work is defined as the degree to which performance of the work requires thought and independent judgment. It is measured through a detailed inquiry about precisily what people do when working with data, with things, and with people. Since workers cannot exercise occupational self-direction if they are closely supervised, closeness of supervision is also a condition that limits occupational self-direction. It is measured by the worker's assessment of how closely he is supervised, his freedom to disagree with his supervisor, and the extent to which his supervisor gives him direct orders. Routinization, which limits occupational self-direction by restricting possibilities for initiative, thought and judgment, is measured by the respodent's rating of his job along a single dimension that goes from the work being invariably repetitive to being unpredictable and requiring doing different things in different ways. Since these three principal determinants of occupational self-direction—substantive complexity, closeness of supervision, and routinization—are theoretically interrelated, and since we have multiple indicators of two of them, their measurement is based on a single well-fitting confirmatory factor analysis measurement model that encompasses all three (the chi square/df ratio=1.19 for more detail see Naoi and Schooler 1985, p.734).

Of the three aspects of a man's position in the organizational structure we model, bureaucratization of the firm or organization in which he is employed is indexed on the basis of the munber of formal levels of supervision and size of organization (see Kohn 1971;Kohn and Schooler 1983, Chapter 2); ownership/nonownership is based on his self-report; and position in the supervisory hierarchy is measured in terms of the number of people over whom he says he has direct or indirect supervisory authority. The job pressure we examine—frequency of time pressure—is measured by the respondent's self-rating on a five-point scale.

Psychological Measures

This study investigates the effects of occupational conditions and settings on a set of variables that may be broadly seen as reflecting the Japanese respondents' views of their place in the country's economic system. Of thease variables, job satisfaction, pride in the firm, class identification and social strata identification are each based on single items, These questions are presented in Appendix I. Two other variables are indexed through linear structual-equation derived measurement models. One of these models—the one for alienation, developed by Roberts and presented in Appendix II, succesfully replicates in Japan a second order model of alienation that Roberts developed for the U.S. (1982). It is based on the five aspects of alienation described by Seeman (1959) —powerlessness, self-estrangement, normlessness, cultural estrangement, and meaninglessness. The other measurement model is for occupational commitment. It is presented in Appendix III and represents a successful replication with Japanese men of a measurement model developed by Miller et al. (1983) for American women.

A second set of psychological variables are those whose relationships with occupational conditions were examined in our previous paper (Naoi and Schooler 1985), but whose causal connection with occupational settings are examined for the first time in this paper. All of these measures are based on confirmatory factor analysis measurement models. All are more fully described in the earlier paper and its appendix. These psychological variables are ideational flexiblity, and nine social orientations and self conceptions: 1) Authoritarian-conservatism, 2) Personally responsible standards of morality, 3) Fatalism, 4) Receptivity to change, 5) Self-confidence, 6) Self-deprecation, 7) Idea-conformity, 8) Anxiety, and 9) Trust.

The measure of ideational flexibility is based on a wide variety of indicators. These include the respondents' solutions to seemingly simple but revealing cognitive problems involving well-known issues, their performance on the Embedded Figures Test (Witkins, et al. 1962), their propensity to agree when asked agree-disagree questions, and the impressions they made on the interviewers during a long sessions that required a great deal of thought and reflection.

The social orientations and self-conceptions are based on a battery of 57 questions, mainly of the "agree-disagree" and "how often" type. Principal-components factor analysis was initially used to examine the factor structure and establish its general similarity to that found with similar items in the U.S. Confirmatory factor analysis was then used to develop measures of self-conceptions and orientation purged of measurement

error.[3]

MODELNG THE CAUSAL RELATIONSHIPS AMONG OCCUPATIONAL SETTINGS, OCCUPATIONAL CONDITIONS, AND PSYCHOLOGICAL FUNCTIONING IN JAPAN

A problem arises in modeling the causal relationships among occupational settings, occupational conditions, and psychological functioning. The traditionalism of the industry and the centrality of the economic sector of the individual's workplace cannot by definition be affected by any contemporaneous variable, in that a change in job setting would by definition (Kohn and Schooler 1981) mean a change in job. However, in Japan as in the U.S., any model that includes an examination of the psychological effects of occupational conditions must take into account the possibility of reciprocal effects between various job conditions and psychological functioning. We cannot on *a priori* grounds rule out the possibility that the individual's personality affects his job through processes such as occupational selection or job molding. Furthermore, there is empirical evidence that in the U.S. not only do job conditions affect personality, but personality affects job conditions (Kohn and Schooler 1982; 1983,Chapter 6). It is therefore necessary to test our hypothesis with models that include the reciprocal effects of occupational conditions and psychological functioning.

As in the U.S. studies, causal models involving reciprocal effects are estimated through linear-structural equation modeling using the MILS program. Information on earlier jobs is acquired through retrospective questioning (Naoi and Schooler 1985). Instrumentation is provided by assuming that the earlier state of an occupational condition or setting affects the later state of the same condition or setting directly but affects later states of other occupational conditions or settings and psychological functioning only indirectly. Further instrumintation is gained by postulating that characteristics of the individual's family of origin directly affect the individual's contemporaneous psychological functioning and his earlier jobs, but not his present job. Such a restriction is consonant with previous research findings which indicate that in Japan the direct effects of social background are indeed limited to the first job (Naoi 1985).

The social background characteristics in the analyses are age, respondent's education, parents' education, father's occupation, rural background, and number of children in family of origin. Evidence suggests that such background conditions have similar effects on values and orientations in Japan and the U.S. (Schooler and Smith 1978; Smith and Schooler 1978; Schooler 1972). In both countries, social characteristics that in-

crease environmental complexity appear to produce individualistic values.

An examination of the model that is depicted in Figure 1 reveals more specific details. Data are included for three jobs: first job, job held ten years ago, and present job. As noted above, no cross-lagged effects among job conditions or settings are permitted (e.g., a given characteristic of the first job is modeled as affecting the same characteristic of the job held ten years ago and of the present job; a given characteristic of the job held ten years ago affects the same characteristic of the present job).

The occupational conditions in the model are the same as in the earlier Naoi and Schooler (1985) paper; substantive complexity, closeness of supervision, routinization, frequency of time pressure, ownership, hierarchical level, and bureaucratization. The occupational settings are traditionalism and sector of the economy. In order to eliminate statistical anomalies which come about because of multicollinearity among their respective indicators, substantive complexity, closeness of supervision, and routinization are modeled as indices of a single construct—occupational self-direction. Similarly, mother's education, father's education, the status of father's job, the urbanness, and number of children in the respondent's family of origin are also modeled as a single construct—social background. So defined, social background is postulated to directly affect current psychological functioning and the conditions of both earlier jobs, but only to indirectly affect the conditions of the present job. Age and education, on the other hand, are postulated to affect both current job conditions and psychological functioning.

As described above, both measures of occupational setting are modeled as affecting, but not being effected by, psychological functioning. All of the occupational conditions are also modeled as affecting psychological functioning, but psychological functioning is modeled as affecting only occupational self-direction and frequency of time pressure. Because they cannot by definition be affected by any contemporaneous variable (Kohn and Schooler 1981)—in that a change in organizational position would mean a change in job—ownership, hierarchical level, and bureaucratization, as well as traditionalism and economic sector—are not modeled as being affected by either other job conditions or by psychological functioning. In the modeling of the present job conditions, ownership, hierarchical level, and bureaucratization, as well as traditionalism of industry and sector of the economy affect time pressure and occupational self-direction. Time pressure and occupational self-direction are reciprocally related. Since traditionalism, sector of the economy, ownership, bureaucratization and hierarchical level are not modeled as affecting each other, their residuals are allowed to correlate.

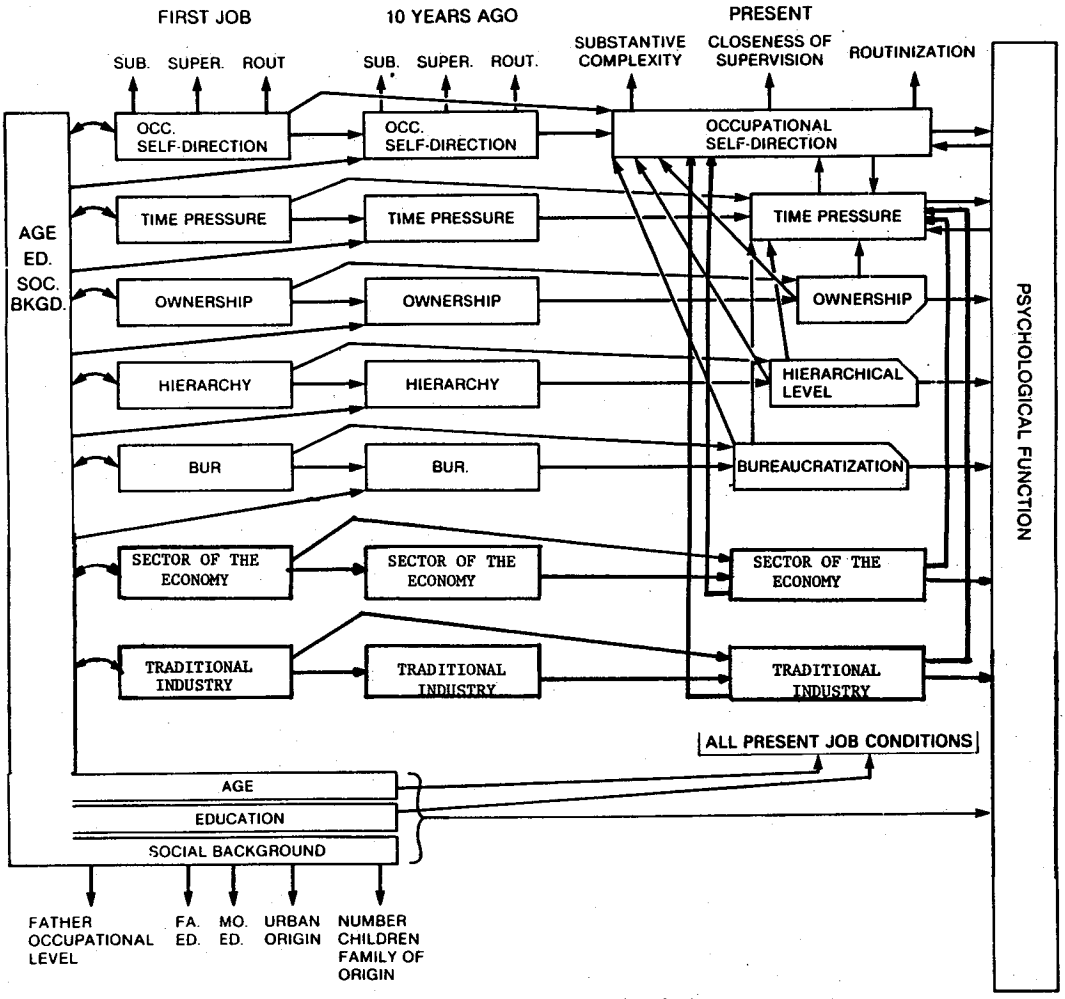
RESULTS

Separate analyses of the psychological variables confirm many of the hypotheses about the effects of working in a traditional industry. (See Table 1) As hypothesized, working in such an industry leads to less alienation (Beta=-.13), more self-confidence (.11), less self-deprecation (-.13) and a self-identification with a relatively high stratum (.14). All of these findings suggest that working in a traditional industry increases the individual's feelings of comfort both with the larger social system and with himself. Working in a traditional industry also results in less personally-responsible and more externally-directed moral values (-.13). This de-emphasis on the importance of the individual and emphasis on external social controls has often been described as a basic characteristic of traditional Japanese culture (Caudill 1973).

Working in a traditional industry does seem to have one anomalous effect; it apparently increases receptivety to change (Beta=.10). Two things should be borne in mind in evaluating this result. On the one hand, the correlation between working in a traditional industry and receptivity to change is negative (r=-.07), and it is only when the occupational conditions are included in the model that a positive relationship appears. Thus the positive relationship may, in fact, only be an artifact of modeling. On the other hand, traditional Japanese industries have been remarkably receptive to change. This has been true both in their adoption of new tools and techniques (e.g. specialized electric tools for making traditional Japanese rooms or fixing ancient temple roofs) and their adjustment to modern commercial practices (e.g. the Kikkoman Company; Fruin 1983). The ready acceptance of change may well be a true characteristic of traditional Japanese industries and their workers.

The psychological effects of the other work setting examined—sector of the economy—are different from those of traditionalism of industry. Sector of the economy has no significant direct effect on alienation. Workers in the peripheral sector are, however, more likely to identify with the working and the lower classes than are those in the central sector (-.16).

Most strikingly, working in the peripheral sector of the economy seems to result in a lower level of ideational flexiblity (-.26), even when the effects of occupational self-direction and the other occupational conditions are controlled. Furthermore, work in the peripheral sector of the economy is less self-directed than work in the central sector. Working in the peripheral sector of the economy thus not only has a direct negative effect on ideational flexibility, but also an indirect one—working in the peripheral sector de-



The residual errors of time pressure, ownership, hierarchical level, bureaucratization, sector of the economy and traditional industry are correlated.

FIGURE RECIPROCAL CONTEMPORANEOUS EFFECTS MODEL

Table 1

Reciprocal Effects of Work Settings and Job Conditions on Social Integration and Psychological Functioning; Effects of Work Settings and Job Conditions on Income[1)]

	Job Conditions Psychological Functioning and Income					Work Settings on Psych. Variables			Psych. Variables on Job Conditions	
FROM TO	Occ. Self-Direction	Ownership	Hierarchical Level	Bureaucratization	Time Pressure	Peripheral Sector	Traditional Sector	TO FROM	Occ. Self-Direction	Time Pressure
A. New Social Integration Variables										
Alienation	−.24	—	—	(−.14)	.20	−.13	−.18		—	—
Parent Value Self-Direction.	.54	−.17	−.18	—	(.11)	(.11)	—		(.11)	—
Strata Identification.	.36	—	—	(.12)	—	—	.14		—	—
Class Identification.	(.18)	.15	—	—	—	−.16	—		—	—
Overall Job Satisfaction	(.20)	—	—	—	—	—	—		.18	—
Pride in Firm	—	.20	.21	.21	—	—	—		.11	—
Occupational Commitment	.25	—	—	(−.11)	(−.10)	—	—		.16	—
B. Psychological Functioning										
Intellectual Flexibility	.22	—	—	—	—	−.26	—		.09	—
Authoritarian/Conserv.	−.55	.12	.28	.13	−.15	—	—		—	—
Pers. Resp. Morality	.27	.13	−.17	.25	(−.10)	.15	−.13		.09	.11
Fatalism	−.52	—	(.12)	—	—	—	—		—	−.23
Self-Confidence	—	(.12)	.23	.17	—	—	.11		—	—
Self-Deprecation	−.40	−.12	—	—	(.10)	—	−.13		—	—
Ideational Conformity	−.45	—	.25	—	(−.10)	−.19	—		—	—
Anxiety	(−.13)	—	—	−.17	(.17)	(−.13)	—		—	—
Trust	.39	—	—	(.11)	—	—	(.12)		—	—
Change	.56	—	—	—	.41	—	.10		.30	−.29
C. Income	.53	—	—	(.10)	—	—	—		—	—

1) All significant Betas Betas $>$. 10; Betas that are not significant at $p <$. 05 in parenthses

creases ideational flexibility. On the other hand, working in the peripheral sector of the economy leads to more personally responsible morality (.15) and less idea conformity (-.19), psychological characteristics which previous analyses, both in the U.S. (Kohn and Schooler 1983) and Japan (Naoi and Schooler 1985) have shown to be increased by occupational self-direction.

Neither characteristic of job setting introduced in this paper affects the workers' attitude towards their work; neither economic sector of the firm nor traditionalism of industry changes the Japanese workers' job satisfaction, occupational commitment, or the pride that they take in their place of employment. On the other hand, the psychological variables introduced in this paper are not only affected by, but also affect, occupational conditions. (Table 1A) Occupational commitment (.16), job satisfaction (.18) and pride in firm each result in greater occupational self-direction. Thus, not only does occupational self-direction lead to positive attitudes towards work, but positive attitudes towards work reciprocally promote occupational self-direction.

When, using the present model, we examine the psychological effects of the occupational conditions reported on in the earlier paper (Naoi and Schooler 1985) in which the effects of sector of the economy and traditionalism of industry were not included, we find that the effects of these occupational conditions remain essentially unchanged. (Table 1B) Even when the effects of traditionalism of the industry and centrality in the economy of the firm are controlled, in Japan occupational self-direction leads to ideational flexibility and self-directed orientations to self and society, while high hierarchical level and bureaucratization increase self-esteem and authoritarian conservatism.

What were not evident earlier, were the ways in which occupational conditions also affect workers' psychological integration into the general economic system and their attitudes towards their specific work place. Occupational self-direction promotes general social integration and positive attitudes towards one's occupation by leading to much less alienation (-.22), a closer identification with higher social strata (.36), and a higher level of occupational commitment (.25). Absence of time pressure also results in less alienation (.17). Attitudes towards one's particular work place are affected by ownership (.20), high hierarchical level (.21) and working in a bureaucracy (.21), all of which increase pride in one's own firm. Thus the organizational locus of the indivedual's work affects his attitudes towards his place of employment, while the nature of his work affects his attitudes towards the socio-economic system and towards his occupation itself.

Our final, but perhaps most surprising finding is that neither working in the central sector of the economy nor, for that matter, in a traditional industry affects income.

(Table 1C) These findings are the result of an analysis that parallels those on the effects of occupational conditions and settings on psychological functioning, except that no path is included from income to any occupational characteristic (i.e., income is not allowed to affect occupational conditions or settings). Such a model examines the effect of each of the occupational conditions and settings on income, while controlling the effects of the others. The results indicate that occupational self-direction is the only occupational condition or setting that has a significant effect on income, this effect, however, is a very substantial one (.53). Even ownership does not affect income. These results would seem to contradict the expectations of both the Neo-marxist and dual economy theorists. On the other hand, they are congruent with Koike's (1983 b) finding that the relatively lower wages of blue collar workers in smaller firms reflect the lesser degree of skill development occurring in their careers.

DISCUSSION

Our results are relevant to several lines of inquiry. Our finding that those who work in traditional industries not only have more traditional moral values, but are less alienated and more comfortable with themselves and their position in society than those who work in industries started after the Meiji restoration has broad implications. Although we have no evidence of actual cultural transmission, these findings are quite congruent with the possibility that different types of industries maintain different subcultures and that these subcultures affect the psychological functioning of their employees. In any case, the nature of the psychological effects of working in traditional, as opposed to modern, industries suggests that there is some core of truth in the beliefs of Durkheim and Marx that modern industry leads to anomie and alienation. It is, of course, possible that these differences merely reflect the ways in which Japanese society views those who work in these different types of industry, but there is no evidence that those who work in traditional industries are more respected than those who do not.

Our findings also shed light on the question of the determinants of income in Japan by showing that income is primarily a function of the nature of the work done on the job, particularly its level of self-direction. Furthermore, when the effects of occupational conditions and demands are controlled, work setting, whether considered in the more usual terms of centrality of the sector of the economy, or from the more unusual vantage point of traditionalism of industry, has no effect on income. Thus, although centrality of the sector of the economy has some indirect effect on income through its effect on level of

occupational self-direction, neither it nor traditionalism of industry directly affect income. Income, rather, is determined primarily by the nature of the work done. Thus, these results run counter to the beliefs of the dual economy theorists. They provide instead, strong support for Koike's (1983 b) belief that wage differences between sectors of the economy are a reflection of differences in employee skill levels.

More difficult to explain is a striking psychological result of working in the periphery of the economy—the negative effect that such a sectoral location has on ideational flexibility. As we have noted, part of the substantial total negative effect (-.31) comes about indirectly, because working in the peripheral sector reduces occupational self-direction and low levels of occupational self-direction lead in turn to poor ideational flexibility. However, over 85% of the total effect of sector of the economy on ideational flexibility is direct (-.26). The mechanisms through which this direct effect occurs are unknown. What we do know is that this substantial direct negative effect is not a function of the extensive sets of occupational and background conditions that are also included in the model.

Making the finding even more puzzling, is that working in the peripheral sector of the economy also leads to more personally responsible morality and to less idea conformity. These latter two trends, like that towards greater ideational flexibility, are part of a cluster that are generally increased by occupational self-direction (Kohn and Schooler 1983, Naoi and Schooler 1985). Nevertheless, working in the peripheral sector of the economy in Japan affects ideational flexibility in a manner opposite to, and morality and idea conformity in a manner similar to occupational self-direction.

The greater belief in personally responsible morality of those working in the peripheral sector may be a result of business relationships in that sector. Dore (1983) describes in detaid the complex web of interrelationships that exist among small specialized production units and between such units and firms in the central sector of the economy. It may well be that the demands placed on employees of such small units by "obligated relational contracting", where "long-term trading relations in which goodwill 'give and take' is expected to temper the pursuit of self interest", (p. 459) increase the salience and importance of personally responsible morality.

The lesser degree of idea conformity of those working in the peripheral sector of the economy may come about because they see themselves and their lives as different from those in the core sector of the economy, whose lives views and attitudes are frequently presented by the media as typical of Japanese. In fact, the social class identification of Japanese working on the periphery of the economy clearly differs from that of the rest of

the population. The overwhelming majority of Japanese (89%) consider themselves to belong to the middle strata (Kokumin Seikatsu Shingikai 1970). Those in the economic periphery, however, are more likely to identify with the working class.

An unanticipated finding regarding work settings is that neither sector of the economy nor traditionalism of industry affects workers' attitudes towards their work or workplace. Instead, it would appear that the organizational locus of the individual's work affects his views of his place of employment, while the work he does affects his views of his place of employment, while the work he does affects his general social attitudes and his view of his particular occupation. Thus the favored occupational loci of ownership, bureaucracy, and high hierachical level lead to positive views of the workplace. On the other hand, commitment to one's occupation is increased by occupational self-direction. Lincoln and Kalleberg (1985) report similar findings in their study of Japanese and American worker; holding an authority position produces favorable attitudes towards the firm, job complexity leads to greater occupational commitment and job satisfaction.

Occupational self-direction, even in a model such as ours, which includes sector of the economy and traditionalism of industry, replicates its previously demonstrated effects of increasing ideational flexibility and leading to a self-directed orientation to self and society. Occupational self-direction also strongly decreases alienation and increases identification with higher social strata. Occupational self-direction is in turn increased by positive attitudes towards one's work.

Occupational self-direction thus has even more wide-spread effects than previously reported—it affects the individual's sense of integration into the socio-economic system. We have also demonstrated that other aspects of this system—traditionalism of the industry and centrality of the sector of the economy of the firm—affect a wide range of psychological functions and that positive attitudes towards work, in turn, increase occupational self-direction. Our findings would seem to demonstrate still further the complexity of the web of interrelationships between the functioning of individuals and that of their social systems.

Footnotes

(1) The actual level of job satisfaction among Japanese workers is open to question. Cross-national studies have repeatedly shown that, although Japanese workers, particularly those in central-sector firms, are more likely than American workers to express feelings of loyalty and pride toward their employers and are even more likely to express

their intentions to stay with their present employers (Lincoln and Kalleberg 1985),U.S. workers repeatedly report themselves as being more satisfied with their work (See p. 742 in Naoi and Schooler 1985 for review). There is also evidence that American workers say they are more willing to work harder to help their companies succeed and are more likely to accept their companies goals as their own than are Japanese workers. (Lincoln and Kalleberg 1985). Cole (1979) explains such findings by hypothesizing that "(b)ecause Japanese workers are so highly committed to finding fulfillment in their work, they expect a good deal more from their work and are therefore likely to display greater dissatisfaction when their expectations are not met (p.238)." Thus "Japanese employees have unusually strong identification with the company, but not necessarily high job satisfaction or strong commitment to the performance of specific job tasks (p.241)".

Although Cole's evidence and reasoning are both quite convincing, data from several other studies do raise some questions. Lincoln, Hanada and Olson (1981) found that the inclusion of a set of variables indexing employees' paternalistic expectations did not serve to reduce the significantly greater degree of job-dissatisfaction of Japanese compared to American employees of Japanese firms in the United States. Although there are obviously a multitude of reasons why Japanese working in America may be particularly dissatisfied, there findings are contrary to what might be expected on the basis of Cole's hypothesis.

Another somewhat troublesome finding, from the point of view of both Cole and of those who see life-time employment as a key source of Japanese worker loyalty, is the finding of a Japan Youth Research Institute (1984) survey that "the most important condition as a factor for 'loyalty to the organization they work for' is the existence of opportunities to participate in decision making. 'Security of employment' is not very closely connected with 'loyalty to the organization'. It seems that the life-tenure employment system in Japan is not essential as a source for 'loyalty to the organization' as is commonly thought. (p.9)" This finding is particularly interesting given that Japanese workers report having less freedom (Lincoln and Kalleberg 1985) and being more closely supervised by their bosses (Naoi and Schooler 1985) than Americans.

(2) A generally similar division is made by Ohkawa and Rosovsky (1973). They distinguish "(t)hree quite distinct types of industries ... Group I industries are dominated by food processing and kindred activities. These are forms of production whose traditional character has remained pronounced, and whose techniques are generally of low capital intensity. Group II industries represent textile products, and contain the first modern industry, cotton. Group III production largely consists of chemicals, metals, and

machines. Generally these activities are of a "more modern character and are representative of what might perhaps be calld 'post textile' technology." (p.82).

(3) It should be noted that of the 57 individual items word to made up the nine social orientations and self-conceptions, 15 were used by Roberts(1982) in a different combination to construct the first order factors he used to measure the five aspects of alienation described by Seeman (1959).

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Acknowledgement

We acknowledge the support of the Japan Society for tht Promotion of Science in pursuing this inguiry.

Appendix I

Social Integration Questions

A-Single item indices:

STRATA: Suppose you were going to divide present Japanese society into five strata. Where do you think you would fit in?
(5) Upper; (4) Upper–middle; (3) Lower–middle; (2) Upper–low (1) Lower–low

CLASS: Suppose you were going to divide present Japanese society into four classes. Where do you think you would fit in?
(4) Upper class; (3) Middle class; (2) Working class (1) Lower class

PRIDE IN FIRM : How proud are you of your present place at work?
(4) Very proud; (3) Fairly proud; (2) Not very proud, but not disappointed either; (1) Disappointed, (ashamed)

JOB SATISFACTION: Are you satisfied in general in your present work?
(4) Very satisfied; (3) Fairly satisfied; (2) more dissatisfied than not; (1) Very dissatisefed

Appendix II
Japanese Alienation Model
(Based on Roderts 1982)

Ist order concepts	paths: 2nd order alienation to Ist order concepts	Indicators-Ist order concepts	Paths: Ist order concepts to indicators
Powerlessness	0.8076		
		Feel powerless to get what out of life	0.8380
		Most things that happen result from own decisions	-.0318 ns
		When make plans will be able to carry them out	-.2031
Normlessness	0.1631		
		All right to get around law	0.5231
		All right to do whatever law allows	0.1629
		All right to anything as long as stay out of trouble	0.3952
		If something works, doesn' matter whether right or wrong	0.4679
Self Estrangement	0.8543		
		Often feel bored with eveything	0.6142
		At times think I'm no good at all	0.3942
		Take life as it comes/no goal	-.1555
		Isn't much purpose to being alive	0.4423
Cultural-Estrangement	0.4775	Ideas differ from those of same religious background	0.6531
		Ideas differ from those of friends	0.7342
		Ideas differ from those of most people in country	0.5082
		Ideas differ from those of relatives	0.5540
Meaninglessness	0.4382		
		World isn't understandable	1.00 (fixed)

Appendix III
Occupational Commitment

NOT WILLING TO CHANGE

There are some people who find so much meaning in their jobs that they would never consider changing to another job, and there are some who are ready to change there jobs at this moment. How about you?

4. Never consider change
3. Don't consider change very much
2. If possible want to change
1. Very much like to change

STAY IF INHERITANCE

Suppose you inherited property that would let you live comfortably for the rest of your life, would you continue your present job, start a different job or quit work?

5. Continue present work
4. Continue the present work, with some changes (Ask how he would change, write in detail)
3. Continue in the same line of work but start my own business
2. Start some other work (Ask what he would start, write in detail)
1. Quit working

WORK IS ACCOMPLISHMENT

Do you find your present work a real accomplishment?

4. Very much
3. To some degree
2. Not particularly
1. Not at all

BENEFITS MANKIND

How much do you think your present work is contributing to the world?

5. Very much
4. Somewhat
3. Not much
2. Does not contribute but doesn't cause trouble either
1. Causes trouble

LOADINGS FOR OCCUPATIONAL COMMITMENT (High score = Committed)

Chi-square/df ratio = 4.95

1. NOT WILLING TO CHANGE	0.8164
2. STAY IF INHERITANCE	0.5512*
3. WORK IS ACCOMPLISHMENT	0.5508*
4. BENEFITS MANKIND	0.1883*

Appendix A
Traditionalism of Japanese Industry

Japanese Industrial Code	Traditionality code 1)	
01	1	Government work national
02	1	Government work local
04	3	Agricultural
05	3	Agricultural service
06	3	Forestry
07	3	Hunting
08	2	Fishing
09	1	Fish Farming-agriculture
10	2	Mining-metal
11	1	Mining-coal
12	1	Oil & gas drilling
13	1	Nonmetal mining
15	2	Construction
16	2	Specialized construction
17	2	Equipment-factory construction
18	2	Food manufacturing
19	2	Tobacco
20	2	Textile manfacturing
21	2	Manufacture of Apparel
22	2	Wood & Wood products manufacture
23	2	Furniture & Interior decoration
24	1	Pulp, paper
25	1	Publishing, printing, etc
26	1	Chemical industry
27	1	Petroleum & coal products
28	1	Rubber products
29	2	Leather & fur products
30	3	Ceramics
31	2	Iron & steel industry
32	2	Non-ferrous metal industry
33	2	Metal products manufacture
34	1	General machine & tool manufacture
35	1	Electric machine & appliance manufacture
36	1	Transport machine & appliance manufacture
37	1	Precision machinery & appliance manufacture
38	2	Weapon machinery & appliance manufacture
39	2	Other machinery & appliance manufacture

40	2	Wholesale
42	2	Sales agents & brokers (non-stock)
43	2	Miscellaneous retail-various
44	2	Retail clothes/dry goods
45	2	Retail food & drink
46	2	Restaurant/food service
47	1	Auto-bicycle retail
48	2	Retail furniture, utensils, hardware
49	2	Other retail
50	1	Bank & trust
51	2	Finance miscellaneous agricultural
52	2	Small loan industry insurance
53	2	Auxilliary finance
54	1	Investment
55	1	Security & bond dealer
56	1	Insurance companies
57	1	Insurance agents, sales & service
59	1	Real estate
60	1	Railway
61	2	Road passenger transport
62	2	Road freight transport
63	2	Shipping
64	1	Aviation transport
65	2	Warehouse, storage
66	2	Transportation related service
67	1	Communication industry
70	1	Electrical (power) utilities
71	1	Gas (power) utilities
72	1	Water utilities
73	1	Heat providing
74	2	Rental of goods
75	2	Hotels, other lodgings
76	3	Domestic service
77	3	Laundries, barber and beauty shops, bath houses
78	3	Other personal service
79	1	Cinema, movie
80	2	Entertainment, theatres
81	1	Broadcasting-TV
82	1	Auto repair, parking
83	2	Other repair
84	1	Cooperatives-not listed elsewhere
85	1	Advertising and information service
86	1	Other business service
87	1	Professional service not classified elsewhere

88	1	Medicine
89	1	Health & sanitary
90	2	Religion
91	1	Education
92	1	Social security & welfare
93	1	Academic research institute
94	1	Political, economic and cultural associations
95	1	Other service

1) 1-modern; 2-intermediate mixed; 3-traditional