

<Part V WHITHER TIME?>Time and Space in the Farming Village : A Time Geographical Approach

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Time and Space in the Farming Village: A Time Geographical Approach

ARAI Yoshio

1 INTRODUCTION

The way in which modern people relate to time is often thought to go back to the Industrial Revolution with the large-factory style of production it introduced. The American geographer Allan Pred has described an American city in the mid-nineteenth century in which systems of mass production employed large numbers of workers in huge factories. These began to replace the home-workshop, craftsman-like model of production that had predominated until then. He delineates a process wherein the flow of time that had once been in the hands of the individual and the family was now reorganized under “time rules” that were based on the time cycles of factory machines.¹ Prior to the Industrial Revolution, people’s use of time was solely determined by the movement of the sun and family preferences. With the spread of the large factory model of production, people were required to adhere strictly to production time schedules set by the company. To run a production process smoothly involving a large number of workers, the personal situation of individuals and families was disregarded; only proper adherence to a regulated, uniform timetable held any value. Once this value system became established, rules governing time began to extend beyond the production floor to society at large, reaching schools and homes. The device that played the greatest role in this process of the modernization of time was the clock, which enabled time scheduling, a subject covered in the essays in this volume by Suzuki Jun and Uchida Hoshimi.

It is also well known that changes in the system of production brought on by the Industrial Revolution expedited the development of modern cities. The large factory system requires a large number of workers to assemble in a single location. A society that adopts this model of production makes it difficult for the urban craftsman’s style of living, where the home and workplace are very near, to survive. Housing for workers is built at a certain distance from the workplace, and a residential area is formed there. Basic infrastructure that is needed, such as a railway network, is built, giving rise to the activity known as “commuting”—the roundtrip travel between home and workplace. Up to this point, urban space has consisted of a hodgepodge of places for both production and consumption, all within walking distance. Now, “space rules” are brought in that call for the separation of home and workplace and the refinement of space by specific use.

Thus, the Industrial Revolution brought rules to society for both time and space.²

Hence, we talk about the “modernization of time” within the context of urbanization. An international project carried out in the mid-1960s under the leadership of the Hungarian sociologist Alexander Szalai is considered a landmark empirical study on time use. His paper is entitled “The Use of Time: Daily Activities of Urban and Suburban Populations in Twelve Countries.”³ As will be described in the following pages, my research team and I conducted a survey to elucidate the actual daily activities of citizens in different parts of Japan in terms of time and space. We focused the survey on urban populations because we believe that the problem of “time” in the world today is most intense in urban settings.⁴

Cities, however, do not comprise all of society. Although the percentage of the population living in rural districts has declined, rural towns and villages still exist. Certainly improvements in transportation and media access, and above all the urbanization of the labor process, with farmers and others taking on second jobs, have wrought major changes to village life. Even with such changes, rural districts have not become as homogenized as cities. No matter how advanced technologies become, for the most part farming cannot be done without closely following the movement of the sun, and the various constraints on mobility imposed by rural communities may also lead to uses of time that differ from urban settings. By examining “time” in detail as it is used in village life today (I should add at the outset that this examination is limited to Japan), where traditional farming and modern industry coexist side by side, we may be able to come up with an idea of people’s perception of time and the changes it has gone through.

In this chapter, I present a time geographical approach to daily activities in the lives of people in one farming village with attention to this issue. The village in question is Kiyomi-mura in Ono-gun, Gifu prefecture. Kiyomi-mura is located west of the city of Takayama in Gifu prefecture, and has a population of less than 3,000. Farming is its primary industry. The discussion here is based on data that my research team and I collected in 1994 through a survey of the daily activities in the lives of the village’s inhabitants.

2 THE TIME GEOGRAPHY OF DAILY ACTIVITIES

A. What is Time Geography?

The exploration being attempted in this chapter is based on an approach known as “time geography.” This term may be unfamiliar to the general reader. Geography is a science that concerns the study of regions, or the study of space, and attempts to form an understanding of various phenomena in the world within the framework of the expanse of the planet’s surface. Time geography is, as it sounds, a field in which various phenomena are analyzed in terms of both space and time.

Time geography was first put forward in the 1970s by the Swedish geographer

Torsten Hägerstrand and later became a widely used approach in the West. Time geography emphasizes the importance of time in society and the importance of explaining the organization of people's lives in terms of both time and space, in order to understand rural communities and the people who live there. "People's lives" is an extremely vague term that encompasses many activities such as working, consuming, recreation, and relaxing. Hägerstrand asserts that an analysis of only individual aspects of people's lives, such as work or consuming (shopping), fails to address the underlying issues, and that these myriad activities must be ordered and accommodated within the context of space and time that is daily life—which itself should be the object of the study.⁵ Hägerstrand proposes many analytical concepts such as "activity paths," "constraints," and "prisms," but we will not concern ourselves with those here.

B. Survey of Daily Activities

The time geographical approach itself is actually quite easy to understand. To combine it with an empirical analysis based on actual data, though, is quite difficult. The biggest problem is the collection of data. If one is to perform an empirical analysis within the framework of time geography, it is not enough to rely solely on existing data from such sources as NHK's National Time Use Survey, the Time Use Survey conducted by the Ministry of Public Management, Home Affairs, Post and Telecommunications, or the Person Trip Survey conducted for the purpose of transportation planning and policy-making. It is necessary to carry out one's own daily activity survey. In this endeavor, my research team and I sampled household units of residents in designated localities, using a questionnaire form known as an "activity diary." People were asked to mark down all the activities that they had engaged in on specified days without omitting anything. This survey, carried out in several localities, produced the basic set of data for this study. As noted above, the bulk of the survey localities were urban areas (specifically Shimosuwa-cho, Nagano-ken in 1988, Nisshin-cho (now Nisshin-shi), Aichi-ken in 1990, and Kawagoe-shi, Saitama-ken in 1990). Only working households were targeted, as a rule. The Kiyomi survey carried out in 1994, however, was conducted in a purely rural district, differing from the others in that it included a large number of full-time and part-time farmers.

Kiyomi-mura is located in the western part of the Hida Basin. At the time of the survey its population was around 2,600, in 700 households. Mikkamachi, the hamlet where the local government offices are located, is near the city of Takayama, with rice paddies dominating the flat farmland area. Further southwest, most of the villages are nestled in the mountains and display the characteristics of mountain villages. Data was collected on daily activities (for a specific Sunday and Monday) from families in 71 households in these locales from which the Kiyomi-mura town office draws its support. The data for husbands and wives—the core of these families—was then analyzed. (Where two or more generations of couples lived in one household, the younger couple is hereafter

referred to as the husband and wife.)

3 TIME IN THE FARMING VILLAGE

First, the data from the Kiyomi survey was compared to the data from urban areas to confirm the features of daily activities in the farming village. All behavior such as sleeping, eating, household chores, and entertainment is referred to as “daily activities” and naturally includes those activities done inside the home. The main interest of time geography, however, is the spatial dimension of people’s activities carried out in the locality. Therefore, activities done outside the home have been singled out in particular. These are referred to as “outside activities.”

A. Village Community Events

Table 1. Basic Indicators for Outside Activities

| (Monday) | | | | | | | | |
|---------------------------|---------|------------|---------|----------|--------|------------|---------|----------|
| | Husband | | | | Wife | | | |
| | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe |
| Number of activities | 3.25 | 1.8 | 1.59 | 1.57 | 4.23 | 3.02 | 3.19 | 3.3 |
| Number of trips | 5.48 | 3.25 | 2.7 | 2.66 | 6.79 | 5.18 | 5.31 | 5.33 |
| Number of cycles | 2.25 | 1.57 | 1.11 | 1.09 | 2.61 | 2.18 | 2.12 | 2.03 |
| Avg. activity time (min.) | 636.8 | 671.7 | 656.8 | 624.4 | 352.2 | 302.9 | 306.8 | 308.5 |
| Outside ratio (percent) | 97.0 | 100.0 | 100.0 | 97.8 | 95.8 | 93.0 | 97.3 | 97.5 |
| Number of people | 67 | 51 | 170 | 186 | 71 | 57 | 182 | 203 |
| (Sunday) | | | | | | | | |
| | Husband | | | | Wife | | | |
| | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe |
| Number of activities | 3.93 | 2.21 | 2.83 | 2.28 | 3.63 | 2.52 | 2.9 | 2.84 |
| Number of trips | 6.57 | 3.75 | 4.56 | 3.88 | 6.21 | 4.19 | 4.57 | 4.69 |
| Number of cycles | 2.66 | --- | 1.73 | 1.6 | 2.61 | --- | 1.67 | 1.85 |
| Avg. activity time(min.) | 648.0 | 352.3 | 541.3 | 265.5 | 345.2 | 208.7 | 189.5 | 193.9 |
| Outside ratio (percent) | 97.0 | 92.9 | 95.2 | 94.5 | 95.8 | 93.1 | 94.4 | 5.0 |
| Number of people | 67 | 56 | 166 | 182 | 71 | 56 | 178 | 201 |

Table 1 consolidates the basic indicators for outside activities from the surveys carried out in each locality. Among the surveyed localities listed in the charts, Nisshin and Kawagoe displayed the characteristics of residential suburbs of a large city, while Shimosuwa had the character of a small- or medium-sized provincial city. The surveys done in these areas as a rule were limited to working households, and do not include

farming families or the self-employed. Similarly, taking only working households in urban areas, there was very little regional difference in indicators, while the disparity between men and women and days of the week was pronounced, as previously confirmed.⁶

Significant differences were found in Kiyomi, a genuine farming village. The outside ratio (percentage of people among the total population who went out at least once on that day) was in all cases over 90 percent, indicating hardly any disparity. Also, no major differences were found based on locality in average activity time (not including moving from place to place)—an average value for time spent in one day on outside activities—for Monday, a weekday. However, Sunday in Kiyomi-mura was vastly different, with especially long activity time for both husband and wife. For the wife, the difference was about two-and-a-half hours; for the husband the difference was five to six hours. To find out the reasons for this, we tallied activity time by type, revealing a marked length of time spent on social interaction. This explains by and large the disparity with other localities for both husband and wife (Table 2).

Table 2. Average Activity Time by Type of Activity (Sunday)

| Type of activity | Husband | | | | Wife | | | |
|----------------------|---------|------------|---------|----------|--------|------------|---------|----------|
| | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe |
| Work (minutes) | 194.6 | 125.4 | 55.3 | 71.3 | 140.6 | 24.5 | 27.4 | 28.0 |
| Shopping/service | 9.3 | 23.1 | 58.7 | 39.1 | 25.6 | 36.7 | 69.0 | 60.9 |
| Dining out | 29.5 | 13.2 | 14.3 | 12.5 | 4.2 | 7.6 | 14.4 | 10.6 |
| Recreation | 26.8 | 71.8 | 40.6 | 83.0 | 15.8 | 21.8 | 14.9 | 28.5 |
| Meeting/sending off | 1.0 | 1.1 | 2.0 | 0.2 | 8.4 | 2.6 | 2.2 | 1.0 |
| Social interaction | 365.3 | 53.4 | 11.6 | 35.1 | 118.8 | 48.2 | 7.6 | 38.1 |
| Personal interaction | 4.6 | 16.9 | 35.6 | 15.2 | 9.3 | 27.2 | 34.1 | 14.0 |
| Other | 17.0 | 80.7 | 23.3 | 9.1 | 22.7 | 41.9 | 19.8 | 12.8 |
| Special activities | --- | 14.6 | --- | --- | --- | 14.6 | --- | --- |
| Number of people | 67 | 56 | 166 | 182 | 71 | 58 | 178 | 201 |

Actually, on the day of the survey, Kiyomi-mura was holding a firefighting skills festival at a village playing field. Since Kiyomi-mura has no permanent fire department, most men in their prime years are volunteer firefighters, and many of the husbands surveyed participated in this festival. Moreover, this festival is a major event in the village, and a great many families went to watch. The festival ended in the afternoon, but afterwards banquets were held in various districts under the guise of “evaluation meetings,” so this festival and its related events continued throughout the day.

There is little doubt that this event had much to do with the differences found in the activity indicators, but it is also distinctly apparent that such an event is a feature of the activities in village life. In an urban area, even if the same kind of event were held, ordinarily activity indicators (as average values) would not change so sharply. On non-work-

ing days in urban areas, there is great diversity in the activities of residents, and the rate of participation in a single event would remain relatively low. The effect of an event on the average activity time is determined by the sum of the length of activity time and the participation rate, thus even with an event that runs for a long time, if the participation rate is low, the average activity time is not greatly affected. With the firefighters' festival in Kiyomi-mura, however, the participation rate by people in this single event was extremely high, giving rise to a marked bias. The actual figures for the festival were 36 husbands participating, and a participation rate of 53 percent.

Richard L. Meier, who advocates focusing on time in life as a measure of the urbanization of a society, talks about the diversity of daily activities as an indicator.⁷ To borrow his expression, Kiyomi-mura embodies "rurality," a lack of diversity in daily activities. On a non-working day, when there should be a rise in the diversity of activities, to have the kind of relationships that make it possible to bring the entire village together is textbook evidence of a "village society."

B. Short Excursions

Another feature of the Kiyomi data is the very high values compared to other areas for number of activities, trips, and cycles. Table 1 shows figures for Kiyomi that are higher than in other areas: 1.5 more activities, 2-3 more trips and about 2 more cycles. Here, the number of activities refers to literally how many activities are engaged in, indicating essentially the number of destinations to which a person goes in one day. Number of trips refers to how many times a person travels from the home to the destination or between destinations; and number of cycles refers to how many trip cycles (leaving the home to go to one or more destinations and returning to the home) are performed. From these definitions it becomes clear that when these indicators are high it means that people are making short excursions to many different places.

It is evident from the Kiyomi data that excursions in the village tend to be shorter and more numerous than in the other three areas. What is the reason for this?

Table 3. Basic Excursion Indicators (Kiyomi survey)

| | | | Number of activities | Number of trips | Number of cycles | Number of people |
|--------|---------|----------------------|----------------------|-----------------|------------------|------------------|
| Monday | Husband | Full-time farmer | 4.80 | 9.10 | 4.30 | 10 |
| | | Non-full-time farmer | 2.98 | 4.84 | 1.89 | 57 |
| | Wife | Full-time farmer | 4.82 | 8.73 | 4.00 | 11 |
| | | Non-full-time farmer | 4.12 | 6.43 | 2.35 | 60 |
| Sunday | Husband | Full-time farmer | 5.30 | 9.40 | 4.10 | 10 |
| | | Non-full-time farmer | 3.68 | 6.07 | 2.40 | 57 |
| | Wife | Full-time farmer | 4.55 | 8.18 | 3.64 | 11 |
| | | Non-full-time farmer | 3.47 | 5.85 | 2.42 | 60 |

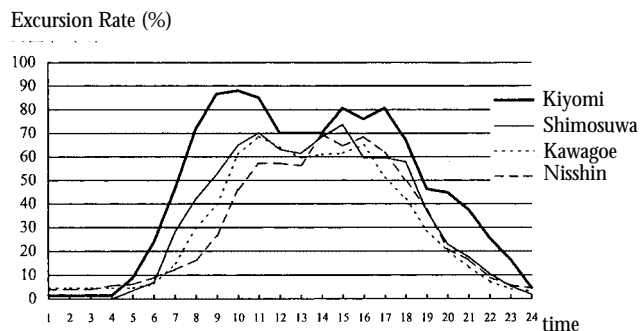
At face value, the regionality of the village is affected by the very fact that agriculture

evening toward night. This rhythm roughly repeats itself on weekdays, but on non-working days the pattern shifts somewhat. When a graph is drawn from actual data, a very clear pattern can be seen. Graph 1 shows the excursion rate for each area on Monday. In the three urban areas, a large difference between the husband and wife is observed, compared to only a slight difference from area to area. Furthermore, the patterns of the husband are extremely consistent. As noted earlier, the survey in these three areas targeted working households as a rule, so on weekdays nearly all husbands left the home to go to work. The work time pattern was also very similar, with little disparity from area to area. In a system where everyone works at the same time according to a fixed time schedule, society-wide time rules are clearly at work.

The Kiyomi data is not vastly different from that of the other three localities, but upon closer examination one finds a break in the time pattern. First, in the other areas, the daily excursion rate for husbands was nearly 100 percent, with the men being out almost entirely from 9 a.m. to 6 p.m. In contrast, in Kiyomi this rate hovered at around 90 percent, indicating that a few husbands were not working outside the home during the day on weekdays. A review of the data finds these to be self-employed carpenter-craftsmen, and workers in construction, forestry, and other areas. In the case of self-employed craftsmen, precisely as Pred stated, it is the craftsman-like model of production (and in the latter case the dependence on an outdoor worksite) with its inherently erratic work conditions that makes working hours fluctuate more widely than office or factory hours. As a result, the uniformity of working hours that is seen in urban areas is not as rigid in farming villages where the major occupation is not necessarily office worker or factory worker. This can be considered proof that the modern rules of time have not completely taken root in the farming village.

Another area where the Kiyomi data differs from that of the other localities is in the drop seen around noontime. This reflects how full-time farming husbands all return to their homes for lunch at the same time. It is known that the custom of eating lunch at home is hardly ever seen in urban areas where the separation of workplace and residence is advanced, and in fact this does not appear at all in the data from the three urban areas surveyed. For wives, even in urban areas, where most are either full-time housewives or work part-time, this drop at lunchtime is observed, but the Kiyomi data shows this pattern quite distinctly among both husbands and wives. For a full-time farmer, having lunch at home is a natural thing to do, so this pattern can be expected to some degree, but behind such a precipitous drop is the issue of an unusu-

Graph 2 . Excursion Rate by Time (Sunday, husbands)



ally uniform use of time by full-time farmers. This shall be explained in more detail later. The Sunday excursion rate was strongly affected by the firefighting event described earlier. It also shows clearly in Graph 2 for husbands that the excursion rate rose sharply in the early morning, and did not drop until late at night. As with average activity time, an event that can bring the entire village together gives rise to an extreme pattern like this and is symbolic of village society.

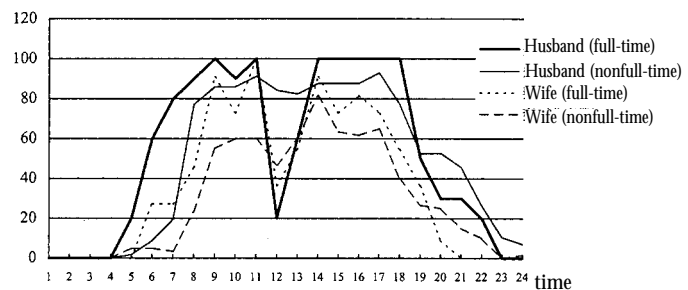
4 THE TIME OF FULL-TIME FARMERS

Few would dispute that our perception of time has been definitively changed by the penetration of so-called company employment time rules into our lives in modern times. In Japan today, the farming village has been affected by the urbanization of occupations, as clearly a large number of part-time farmers are engaged in non-farming (mostly "urbanized") occupations. Full-time farmers can even be considered the minority, and should be looked at closely as they fundamentally do not lead lives under the time constraints imposed by company employment. Let us then focus on the use of time among full-time farmers and look at its particular features.

A. The Working Hours of Full-time Farmers

First, in order to establish the features of daily time use overall for full-time farmers, let us look at their time use pattern for excursions as examined earlier. Graph 3 compares the excursion rates of full-time and non-full-time farmers for Monday by hour of the day. Naturally, in farming

Graph 3. Excursion Rates among Farmers (Kiyomi, Monday)
Excursion Rate (%)



households there is a difference between husband and wife, but the excursion pattern of both shows similarities. First of all, the excursion rate for full-time farmers starts to rise earlier than for non-full-time farmers, almost two hours earlier for the husband and about one hour earlier for the wife. Second, the difference in the time that the excursion rate drops in the evening is not pronounced as it is in the morning, but it does begin slightly earlier for non-full-time farmers, getting overtaken at around 7 p.m. This indicates that the excursions of full-time farmers tend not to extend very far into the evening. Third, the dropoff is very sharp at around 12 noon for both husbands and wives who are full-time farmers. A similar drop is also observed among the wives of non-full-time farm-

ers, but it is not nearly as steep.

Needless to say, this kind of excursion pattern among full-time farmers strongly reflects their allocation of time to farming tasks. Although omitted from the graph, the work actor rate transition by hour of the day for the full-time farmer is very close to the excursion rate transition, and we can see that most of the time spent during the day by both husband and wife is applied to farming tasks. Though no systematic constraints apply, the time use of the full-time farmer plainly demonstrates a regularity in its composition, centered around the schedule for farmwork.

Table 4. Working Hours (Monday, Husband)

| | Full-time farmwork | Non-full-time farmwork | Non-farmwork |
|-----------------------|--------------------|------------------------|--------------|
| Average working hours | 10:15 | 9:47 | 9:34 |
| Average starting time | 6:08 | 7:51 | 8:04 |
| Average ending time | 18:33 | 18:36 | 18:23 |

Excludes non-full-time farmers who finish work before 4 p.m. and non-full-time farmers who do only farmwork that day.

In this way, the cause of the relative monotony of farmwork in the day of a full-time farmer may be found in the length of the working hours. Table 4 shows that on a weekday the husband who is a full-time farmer works on average about thirty minutes longer than the non-full-time farmer. Included within the category of non-full-time farmer is the farmer who holds another job, so if we exclude the farmwork they engage in, the difference is over forty minutes. According to this calculation, the worker's lunch time on the job is considered part of his working hours, while the time spent by the full-time farmer returning home to eat lunch is not included, so in effect there is an additional difference of about one hour, for a total difference of nearly two hours. Even if all the hours spent at an ordinary job in a company for a single day were allotted to farmwork, it would not be enough.

To get in those extra hours, full-time farmers allot the early morning hours to farmwork. If we look at the average starting time for work in a day, we see that the husband who is a full-time farmer gets started two hours earlier than the non-full-time farmer. The ending time for work is roughly the same on average, so the full-time farmer works about two hours longer, just in the early morning.

Why this scheduling of farmwork is only lengthened at the start of the day can be attributed to the time schedule of nature—sunrise and sunset. Sunset on the day of the survey was 7:40 p.m. Considering the time it takes to get all of the work done, an appropriate time to return home after the end of the farming day is between 6:00 and 7:00 p.m. If this is the case, it will be difficult to extend the hours beyond normal working hours. Upon closer examination, we find that in some cases work such as preparation for shipment is done indoors after sundown, but this is the exception. Sunrise, however, on

this day was at 3:59 a.m., leaving plenty of time to start work early. At the earliest, farmers begin working before 5:00 a.m., and even at this hour it has been light for over one hour, so daylight presents no problem.

Of course, this kind of schedule is adapted to the sunrise and sunset times of the season, and will fluctuate depending on the season. Even today, the time of full-time farmers seems to tick according to an ancient clock, when time was blocked out according to the number of daylight hours, varying from season to season.

B. Mealtimes for Full-time Farmers

Table 5. Meal Starting Times

| | | Breakfast | | Lunch | | Dinner | |
|---------------------|----------------------|-----------|------|---------|-------|---------|-------|
| | | Husband | Wife | Husband | Wife | Husband | Wife |
| Average time of day | Full-time farmer | 7:12 | 7:14 | 12:10 | 12:10 | 19:17 | 19:13 |
| | Non-full-time farmer | 6:55 | 6:59 | 12:18 | 12:05 | 19:29 | 19:07 |
| Standard deviation* | Full-time farmer | 43.5 | 39.7 | 10.9 | 10.9 | 21.9 | 22.4 |
| | Non-full-time farmer | 31.4 | 26.9 | 33.1 | 21.7 | 58.2 | 43.6 |
| Number of people | Full-time farmer | 10 | 10 | 10 | 10 | 8 | 11 |
| | Non-full-time farmer | 52 | 59 | 14 | 38 | 46 | 55 |

*In minutes.

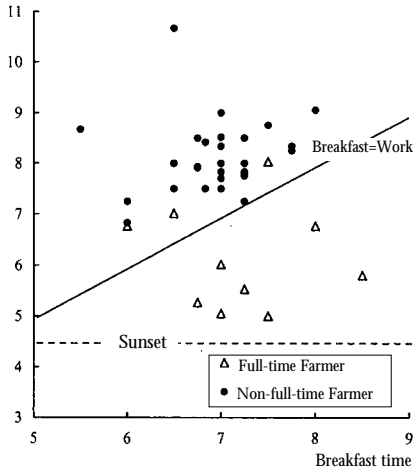
Excludes non-full-time farming households where the husband goes to work or does farming irregularly.

Is it really proper to consider the full-time farmer's time the vestige of an ancient system? If such were the case, then the lives of full-time farmers would not be affected by time rules based on office hour rhythms. The answer lies in their mealtimes.

Table 5 identifies the average time schedule and standard deviation for the starting time of meals taken at home on Monday. For lunch and dinner, a comparison of the average time schedule for full-time and non-full-time farmers shows the relationship between husband and wife reversed, but with no major differences. Breakfast, however, the full-time farmer begins eating much later. A more significant trend, as shown by the standard deviation, is the irregularity of the meal schedule, which was very large for the breakfast of full-time farmers but small for lunch and dinner. In contrast, for the non-full-time farmer, the least irregularity was at breakfast and the most at dinner. The expression "morning rush" is often used to describe the mood in the home of a salaried worker before he leaves for work in the morning, which does not appear to be the case at breakfast for a full-time farmer. Conversely, lunch and dinner times are surprisingly uniform. Even when there is a great deal of farmwork to be done, the time to accomplish those tasks can be allocated rather freely, so depending on how those tasks are arranged it would seem fine to have meals at varying times, but that is in fact not done.

So, what factors determine the hour at which a meal is taken? Graph 4 has points

Graph 4 . Times for Breakfast and Starting Work
(Monday, husbands)



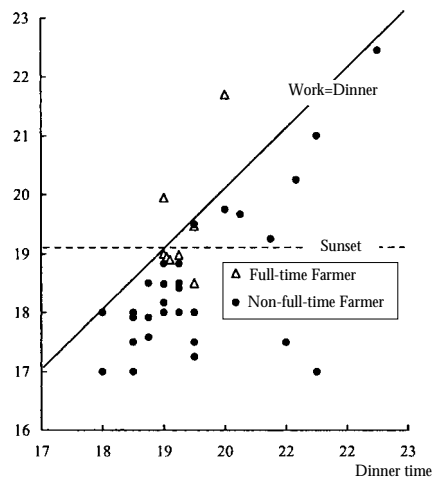
plotted for husbands on Monday showing the relationship between the starting times of breakfast and work. To simplify the discussion the graph excludes part-time farmers who did farmwork on that day. As expected, for non-full-time farmers all points are above the straight line representing the same breakfast and work starting time, indicating that their work starts after breakfast. Moreover, the distribution of points extends parallel to the straight line, showing how work starts early if breakfast is taken early and late if breakfast starts late. From the point of view of company employment time rules, it is highly unlikely that breakfast time would determine the starting time of work. The

data is more likely to be showing that breakfast time is set to correspond to the starting time of work.

Most full-time farmers, however, work before they sit down for breakfast. Their work starting time is about one hour after sunrise, between 5:00 and 6:00 a.m. This practice of starting work a short while after it becomes light can be seen as a highly traditional way of determining time. But even when starting work early in the morning, their breakfast time is not fixed. At the earliest, full-time farmers start eating breakfast at 7:00 a.m. and at the latest past 8:30 a.m. This is a wide disparity, and it shows no clear relationship with work starting time, either. This phenomenon can be interpreted in two ways. One interpretation is that breakfast time is determined without regard to work time. The other is that the time to start eating in the morning is adjusted according to conditions brought about by the farmwork engaged in immediately prior to eating, for which reason the disparity in breakfast times arises. Although this data does not provide irrefutable evidence, in comparing lunch and dinner, the latter interpretation seems more natural.

Graph 5 shows the relationship between work ending time and dinner starting time. Here too, as expected, all non-full-time farmers eat dinner after fin-

Graph 5. Times for Dinner and Ending Work
(Monday, husbands)



ishing their work. The relationship between dinner starting time and work ending time is similar to that between breakfast starting time and work starting time. For non-full-time farmers, all points are above the 'Work=Dinner' line, indicating that work ends after dinner. The distribution of points extends parallel to the diagonal line, showing that work ends early if dinner is eaten early and late if dinner is eaten late. This suggests that dinner time is also not determined by work ending time.

ishing work. Compared to breakfast, the disparity in starting times is quite large, but from the point distribution a clear pattern emerges that shows that dinner time is adjusted to the time that husbands arrive home after work. Full-time farmers eat dinner in a comparatively narrow time slot from 7:00 to 7:30, showing hardly any relationship to the time that they finish working. As would be expected, most full-time farmers finish work before sundown, but there is some variation in the actual time, and some continue working indoors after it becomes dark. There has always been some discrepancy in working hours even with work that is often dictated by the sun and seasons, yet the mealtimes reported are unrelated to work times and are incredibly uniform.

As with the evening meal, a narrow, fixed time for lunch is a feature of the schedule of the full-time farmer. From the numerical values in Table 5 we can see that 70 percent begin eating lunch between 12:00 and 12:20 p.m.

C. Floating-Time Work, Fixed-Time Meals

The mealtimes of full-time farmers seem a bit strange. Except for breakfast, they are concentrated in a very narrow range. Moreover, 12:00-12:30 p.m. for lunch and 7:00-7:30 for dinner are exceedingly stereotypical time slots for meals. One thing that comes to mind immediately about these times is the television time schedule.

As is commonly known, television programs (at least until relatively recently) have been keyed to mealtimes three times a day, morning, noon, and evening. These times, when a large portion of the public are watching, are known as "golden hours," symbolizing their function as a social device to spread a uniform standard of time throughout the country. It could well be considered that these golden hours give rise to the perception that programs are "built around every family sitting down to eat together at the same time" or that they should be. This is, so to speak, "synchronization of mealtimes." Broadcasting is the ultimate representation of a fixed or standard time system, so it would not be unusual for mealtimes to be concentrated around a time schedule that is easy to understand, that is synchronized to television broadcasts.

If that is the case, a genuine incongruity exists in the time perception of full-time farmers. Their work time is affected by the sun and the seasons, forcing them to use a floating-time system, while mealtimes follow a fixed time schedule that is the same across the country. If it were not for full-time farmers, we would not encounter such an incongruity. Because working hours are themselves based on a fixed time schedule and mealtimes are adjusted according to circumstances related to work there is diversity in mealtimes. Full-time farmers are not directly affected by the work time cycles of the rest of society, with few behavioral constraints coming into play. To a certain extent they are able to manage time at their own discretion. Still, it seems they choose to arrange their schedule in accordance with society's uniform time patterns.

If seen as one expression of the time consciousness of Japanese people today, a day in

the life of a full-time farmer is undoubtedly a vestige of the traditional sense of time that uses floating work hours. On the other hand, their fixed mealtimes at a highly standardized, uniform hour are almost a caricature of modern time consciousness. This dual perspective might be considered symbolic of a conflict between the traditional and the modern deep within us.

5 DOES THE FARMING VILLAGE SLEEP?

To examine the modernization of time solely from the angle of work time would be unbalanced. Certainly, mealtimes and work times are highly subject to biological and social constraints, so that for many people they are fixed and form the framework for the day's activities. For this very reason they illustrate how modern time rules have taken hold. Because these rules have become so closely tied to the structure of industrialized society, it is not easy to change them in short order. In comparison, individual activities that are not work-related, such as shopping or recreation, are far removed from labor-related time regulation. As these follow the flow of modern times, they change more easily. Might it be possible to interpret such subtle changes as changes in people's sense of time, similarly following the flow of modern times? Here I would like to address, as a prime example, the oft-neglected issue of going out at night.

A. Does the Big City Not Sleep?

"The city that never sleeps" is by now a quite familiar phrase to us. In the central business districts of major cities, lights can be seen on in offices at any hour of the day or night. Perhaps a reflection of economic globalization, in these trade and international finance centers of the world the lights never go out completely. Some offices even start to get busy with workers as the clock rounds midnight. The city's activities are going non-stop, twenty-four hours a day. And this image of the city that never sleeps is in fact a symbol of urban prosperity in our collective consciousness.

But does the big city really not sleep? In examining the data from the National Time Use Survey that NHK conducts periodically, we find that the nighttime excursion ratio for major cities is not exceptionally high. For example, the excursion ratio at 1:00 a.m. in the Tokyo area is 2.9 percent, lower than the national average of 3.0 percent. Furthermore, it is a full ten percent lower than the average of 3.2 percent for cities of 500,000 or more people outside of Tokyo and Osaka. This shows a trend of people retiring earlier in major cities. (Data from 1990 survey.) In other words, the city does sleep.

This phenomenon is certainly surprising, but not difficult to explain. Since the large city is reliant upon public transportation systems such as train lines, the schedule for returning to one's home is determined by the time of the last train. In provincial areas, whether a small or medium-sized city or farming village, the only option if one becomes

late is to travel by privately owned car or taxi. In other words, the concept of “the last train” does not exist. In a large city, public transportation timetables create time rules, but in areas where those rules do not exist, the night can go on without end.

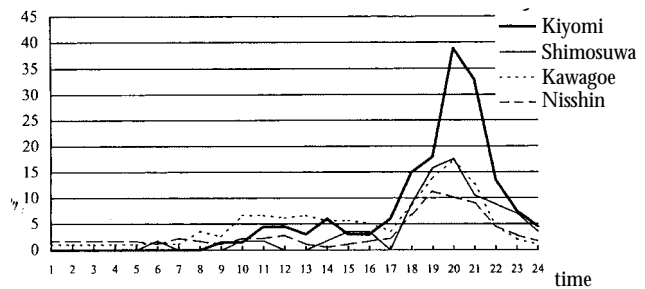
Of course, those time rules determined by public transportation are not the final determining factor in every large city. For example, it is well known that New York City’s subway system runs twenty-four hours a day. But in the large cities of Japan, the time schedules for the last train are quite standardized. That people consider such time rules justifiable is itself symbolic of the Japanese people’s perception of time.

B. Evening in Provincial Cities and Farming Villages

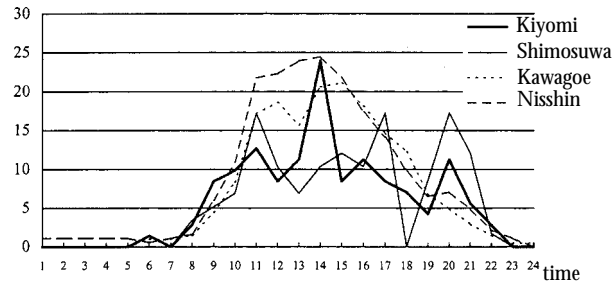
If one accepts that people in non-major cities and farming villages sleep less than their counterparts living in major cities, how are they spending their evenings? The notion that night descends quickly upon the countryside is prevalent, that everyone falls fast asleep at the end of the day as a flame being extinguished. Yet we do not see this in reality. Let’s take a look at the real situation from data on daily activities.

Graph 6 compares by area how many husbands engaged in non-work-related activities outside of the home (actor ratio) on Monday for each hour of the day. Since it is a weekday, most of the husbands are at work during the day, and very few other activities are engaged in during that time. Non-work-related activities increase after 6:00 p.m., peaking at around 8:00 p.m. This time pattern does not vary much from area to area, but as can be seen at a glance, the peak at 8:00 p.m. for Kiyomi is conspicuously high, showing extremely brisk evening activity. In Kawagoe and Nisshin, the actor ratio drops sharply after 10:00 p.m., but in Kiyomi and Shimosuwa, it stays comparatively high level. It seems that people are up and about later in countryside areas, after all. It also appears that evening activities are especially vigorous in the purely rural district.

Graph 6. Non-work Activities (Monday, husbands)
Percentage of those Active (%)



Graph 7. Non-work Activities (Monday, wives)
Percentage of those Active (%)



How about women’s activ-

ities? Since not all wives hold jobs or do farmwork during the day, to a certain degree they go out for non-work-related activities prior to 6:00 p.m. (See graph 7.) In Kawagoe and Nisshin, the actor ratio continues to stay high after this hour, but in Kiyomi and Shimosuwa it rises again in the evening and peaks at 8:00 p.m., as with husbands. Among wives as well, evening activities are more vigorous in the countryside areas.

Table 6. Activities Engaged in at 8:00 p.m. (Monday)

(Actor ratio, in percent)

| Type of activity* | Husband | | | | Wife | | | |
|----------------------|---------|------------|---------|----------|--------|------------|---------|----------|
| | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe | Kiyomi | Shimo-suwa | Nisshin | Kawa-goe |
| Work | 7.5 | 28.1 | 29.2 | 24.5 | 7.0 | 5.2 | 2.2 | 1.5 |
| Shopping/services | 3.0 | --- | --- | --- | --- | --- | --- | --- |
| Dining out | 11.9 | --- | 2.8 | 13.8 | 1.4 | --- | 1.6 | 1.5 |
| Recreation | 7.5 | 3.5 | 3.9 | 1.5 | 5.6 | 12.1 | 0.0 | 1.5 |
| Meeting/sending off | 1.5 | --- | --- | --- | --- | --- | 1.1 | --- |
| Social interaction | 11.9 | 12.3 | 2.2 | 1.0 | 1.4 | 5.2 | 1.1 | 1.5 |
| Personal interaction | 1.5 | --- | --- | --- | 2.8 | --- | 1.1 | --- |
| Other | 1.5 | 1.8 | 0.6 | 0.5 | --- | --- | --- | --- |
| All activities** | 46.3 | 45.6 | 39.3 | 41.8 | 18.3 | 22.4 | 9.2 | 6.4 |

* Excluding activities with an actor ratio of 1.0% or less

** Including unidentified activities

What specific kinds of activities are people engaging in at night, then? Table 6 presents the actor ratio for both wives and husbands for evening activities at the peak hour of 8:00 p.m. by type of activity. The activities that stand out most for the husbands are “dining out” and “social interaction.” Dining out at this time usually means drinking alcohol, and social interaction often involves a local meeting of some sort, so the husband’s evening means getting a drink at a bar or meeting with other people. In Kawagoe, men dined out the most; in Shimosuwa, social interaction was most frequent; and in Kiyomi, both were engaged in in equal proportions. In Kiyomi few husbands were still at work at this hour. Instead they were engaged in various activities, including recreation and shopping. Wives participated in recreation far more than other activities, specifically women’s volleyball, among other things.

C. Commuting and Evening Activities

The discrepancies found in these evening activities, especially for husbands, are often caused by differences in the commuting situation. Table 7 presents the average arrival time at home among those who went to work as usual on the day of the survey. It shows this time to be around 7:30 p.m. for Kiyomi and Shimosuwa, but almost an hour later for Nisshin and Kawagoe. This discrepancy can be attributed quite naturally to the long-

distance commute in major cities. By excluding the influence of stopping off on the way home, and comparing the ending time for work and the time of arrival at home, we see that it takes about one hour to return home in the Nisshin and Kawagoe areas, whereas the commute is less than twenty minutes in Shimosuwa. In Kiyomi it is somewhat long at forty-five minutes, but this is offset by the early work ending time. As a result, husbands returning home directly from work in Kiyomi and Shimosuwa arrive at around 7:00 p.m., while those in Nisshin and Kawagoe arrive at 8:00 or later.

Table 7. Ending of Work and Average Time of Arrival at Home from Workplace (Average time of day (p.m.); Monday; husband)

| | Kiyomi | Shimosuwa | Nisshin | Kawagoe |
|--|--------|-----------|---------|---------|
| Work ending time | 6:11 | 6:53 | 7:07 | 7:06 |
| Overall average arrival time | 7:29 | 7:34 | 8:12 | 8:45 |
| Time of arrival when returning directly from the workplace | 6:56 | 7:11 | 8:00 | 8:22 |

Excludes those who finished work at 4:00 p.m. or earlier.

Keeping in mind that the peak evening activity time is 8:00, this difference in arrival time is critical. For if it is possible to return home from work at around 7:00 p.m., it is easy to go out again later to do something. Even local area meetings, for example, can be arranged for the 7:30 to 8:30 time slot. Beyond this point it becomes troublesome to go out again. It is also unrealistic to call a meeting of several people for past 9:00 p.m.

Consequently, in the residential neighborhoods of large cities, it is rare for people to go out again once they return home. We separated the activities that people engaged in on the way home from work from those engaged in after once returning home then going out again. The comparison by actor ratio is shown in Table 8 where we see a clear difference between major cities and outlying regions in the category of going out after once returning home. It is also easy to see the greater tendency in large cities to stop off on the way home instead of going out again later.

Table 8. After-Work Activities (Monday; husband. Unit: percent)

| | On the way home | After returning home |
|-----------|-----------------|----------------------|
| Kiyomi | 21.1 | 34.2 |
| Shimosuwa | 10.2 | 30.6 |
| Nisshin | 21.3 | 6.1 |
| Kawagoe | 23.6 | 4.8 |

Excludes those who finished work at 4:00 p.m. or earlier.

D. Places for Evening Activities

In the final analysis, it is not the amusement districts of large cities that quiet down

earlier than expected—it is the suburban residential neighborhoods in which the husbands and wives live. In other words, the typical evening activities of residents of major cities are quiet. One can actually observe how suburban residential neighborhoods quiet down at the end of the day. Many lights go out in people's homes, and knowing that everyone is home but the streets are empty creates an eerie feeling.

This gap between people's presence and their low level of activity is created by a disjuncture in the activity space available in large cities, which is an issue of urban spatial structure. In large cities, where the separation of workplace and residence is very advanced, the spatial dimensions where shopping, recreation, meetings and other activities located close to residences are carried out are very different from the spatial dimensions for work. In large cities, commuting distance is from thirty to fifty kilometers, while non-work activity locations are within a range of no more than seven or eight kilometers from the home.⁸ This kind of discordance in activity spaces makes it difficult to coordinate the scheduling of one's various activities, including work, shopping and social interaction. At the same time that people coordinate their activity time, they also need to coordinate those activities in space. This where the principles of time geography come into play. The non-urgent activities that cannot be coordinated according to the time rules of company employment are neglected, and places where people can engage in evening activities lose their vitality.

On the other hand, in areas where the separation between home and workplace is not as pronounced, there is no disjuncture between two types of activity spaces. Rather, they neatly overlap. Since various kinds of activities—work, shopping, and social interaction—are packed into a smaller area, time coordination is simple and it becomes easy to create places outside the home where people can go at night.

Even among full-time housewives, who are not always directly bound by the time rules of company employment, there is a gap between evening activities in large cities and in more rural areas. For this reason, the separation of home and workplace does not suffice as a complete explanation. We have to also consider the spatial density of social networks. In provincial areas, evening activities are dominated by "social interaction," which is comprised mainly of community activities. These include neighborhood association or village meetings, nursery school PTA meetings, women's volleyball, and even Noh dance practices. So many aspects of daily life are based in the local community that the spatial sphere of the local community becomes people's entire activity space. The places for potential activity opportunities are not scattered widely, but remain within a compact local community area, so the spatial density is high. For this reason, spatial contradictions in activity coordination are avoided, and even in the short evening time period a variety of activities is possible. In contrast, in large cities few activities are based on the local community, and people's social networks are dispersed across a wide expanse of urban space. Of course, the size of the big city produces diversity in activity opportunities, but the spatial density is low, no matter how one sees it, making it difficult both spatially and time-wise to coordinate activities, and the evening time slot stops function-

ing as a free-time window.

In Section 3 of this chapter it was pointed out how events that bring an entire farming village together on a non-working day symbolize “rurality,” a lack of diversity in daily activities. However, in regard to evening activities, large cities have far less diversity. Meier’s hypothesis that urbanization increases the diversity of activity opportunities lacked the perspective emphasized by time geography of the time and spatial coordination of activities. If the diversification of activity is considered a manifestation of a change in time consciousness, then it may not be possible to understand time consciousness from the one-track perspective of “an evolution from farming village to city.”

6 THE URBANIZATION OF TIME CONSCIOUSNESS

As noted at the beginning, the overlay of time and urbanization is widely recognized. Modern Japan has experienced an uninterrupted flow toward urbanization for a century, so it is quite natural to attempt to examine the perception of time of the Japanese people within the context of urbanization. However, as has been argued up to this point, by no means did Japanese people’s view of time derive from a monistic process of urbanization. Let us now take a dualistic approach to changes in the time consciousness of modern Japan through “occupational urbanization” and “space urbanization.”

Occupational urbanization, as its name suggests, is a process of conversion from a society of farmers and craftsmen to one of “urbanized” factory workers and office workers. Urban-style labor, symbolized by the large factory system, requires that people’s time be synchronized, and out of this arises urban time regulation based on fixed hours (*teijihō*). Once these time rules have been established, they become in themselves a logical value system so that even schools that should focus on educating children to become upstanding citizens instead focus on enforcing these arbitrary factory-based time rules.

The most loyal servant to these time rules now pervading society in general is the broadcast media. The time signals and programs—standardized cues—that these media can broadcast throughout the country in a flash help to standardize and synchronize people’s daily rhythms according to a fixed timetable. Such synchronized daily rhythms come to serve as the standard by which to conform, resulting in a situation, as with full-time farmers, where even people who have nothing to gain from living according to an occupation-based fixed timetable still live by those cycles. Furthermore, the occupational urbanization brought on by these fixed time rules has reached every corner of society.

The large factory system of production that made its appearance with the Industrial Revolution required also that rules of space be put into place separating the home from the workplace. The urbanization of space ranges from the physical space of land and buildings to the space of people’s activities and perceptions. It now extends far beyond the original form of a factory surrounded by workers’ housing. Major cities today have swollen to immense proportions on the premise that transportation infrastructure can be

rapidly developed. Rural districts and small provincial cities create a different kind of urban environment.

At least in the major cities of Japan, the urban sprawl is supported by the railway system. Nothing rivals the railway as a mode of urban transportation in terms of moving masses of people and adhering to a fixed timetable. The ability for so many people to live in Japan's major cities and to commute such long distances every day is the result of the early implementation of a railway network linking suburban trains and the subway system. The drawback to such an efficient system, however, is limited flexibility. Suburban residential areas, which sprang up because the railway networks made it possible to commute by train, are extremely inconvenient for any kind of movement besides commuting. Husbands have grown tired of long daily commutes and neither housewives or children go anywhere in the evening. These represent contradictions in the activity space of the large city. As the social networks of inhabitants of large cities become spread all over the city, it becomes more difficult to coordinate activities both time-wise and space-wise, in the end reducing the diversity of their activities. Daily life rhythms built upon "train route maps and timetables" are at the root of the perception of time held by residents of big cities. This is truly the time consciousness of a train-based culture.

Needless to say, the formation of large cities is not the only type of urbanization of space. Smaller cities themselves have achieved growth; and backing the dramatic advancement of occupational urbanization in rural districts, where farmers take on other work, motorization has enabled people to overcome space constraints. Private car ownership, which achieved exponential growth in Japan's period of rapid economic advancement, changed life completely in outlying regions of the country. Previously activity space in these areas was based on limited transportation, primarily buses, and walking. People's opportunities for activity were much more limited than if they were living in a city. But once people began to use automobiles, they became freed from the shackles of route maps and timetables. Assuming a private car household ownership rate of over 100 percent, improved road networks, and a low traffic density where traffic jams are never a concern, the level of freedom to pursue activities both space-wise and time-wise becomes very high. In provincial areas, the local community still plays an important role in people's lives today, and is the basis for many kinds of activities. For this reason, people's activity opportunities are kept within a small spatial range and those activities are more diverse than in a big city. The abundant evening activities of the provincial town and farming village tell the same story. The reality felt by residents of the small towns and villages of Japan today is one of variety, based on the freedoms afforded by owning a private car, hence the time consciousness of a car-based culture.

The simultaneous urbanization of both occupations and space unmistakably culminates in the train rush hour. Uniform work starting times, overconcentration in the downtown district, and various other factors make commuting one big headache. Recently, however, the commuter rush seems to have eased. This is due in part to transportation infrastructure improvements made through huge construction investments,

but is also due to the introduction of flex-time systems, off-peak commuting and other forms of time flexibility that seem to have started to gain social value and legitimacy.

For a long time we have heard calls for deindustrialization, but we have yet to progress beyond the “industrialization” phase in the modernization of time brought on by the Industrial Revolution. When the rigid time rules of industrialized society are reevaluated and a perception of time based on the keyword of “flexibility” catches hold, we may then catch a glimmer of the move toward deindustrialization.

NOTES

- ¹ A. Pred, “Production, Family and Free-Time Projects: A Time-Geographic Perspective on the Individual and Societal Change in Nineteenth-Century U.S. Cities,” *Journal of Historical Geography*, 7 (1981), pp. 3-36 (translated in Arai Yoshio, Kawaguchi Tarō 川口太郎, Okamoto Kōhei 岡本耕平, and Kamiya Hiroo 神谷浩夫, eds., *Seikatsu no kūkan, toshi no jikan* (Kokon Shoin, 1989), pp. 127-173).
- ² Okamoto Kōhei, “Daitoshiken kōgai jūmin no nichijō katsudō to toshi no deirii rizumu: Saitama-ken Kawagoe-shi oyobi Aichi-ken Nisshin-shi no jirei,” *Chirigaku hyōron*, 68A, 1995, pp. 1-26.
- ³ A. Szalai, ed., *The Use of Time: Daily Activities of Urban and Suburban Populations in Twelve Countries* (Paris: Mouton, 1972).
- ⁴ Arai Yoshio, Okamoto Kōhei, Kamiya Hiroo, Kawaguchi Tarō, *Toshi no kūkan to jikan: seikatsu katsudō no jikan chirigaku* (Kokon Shoin, 1996).
- ⁵ T. Hägerstrand, “What about People in Regional Science?” *Papers and Proceedings of Regional Science Association*, 22 (1970), pp. 7-21, translated in Arai, et al., *Seikatsu no kūkan, toshi no jikan*, pp. 5-27.
- ⁶ Arai, et al., *Toshi no kūkan to jikan: seikatsu katsudō no jikan chirigaku*.
- ⁷ R. L. Meier, *A Communication Theory of Urban Growth* (Cambridge: MIT Press, 1962).
- ⁸ Arai, et al., *Toshi no kūkan to jikan: seikatsu katsudō no jikan chirigaku*.