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The Problem of Time in Sociology*

An overview of the literature on the state of theory and research on the ‘Sociology of Time’, 1900–82

Werner Bergmann

ABSTRACT. This survey of sociological and psychological literature deals with the problem of time, covering major areas of sociology and related disciplines (economics, cultural anthropology, psychology and history). As a preface, contributions by the classical writers on the sociology of time are discussed briefly — Durkheim, Schütz, Sorokin and Merton, G.H. Mead. Six themes in the contemporary sociology of time (up to 1982) are examined: (1) time perspective and time orientation; (2) temporal ordering and social structure: time reckoning and the social construction of time schedules; (3) the time structure of specific social systems and professions: the economy, the legal system, the family, and formal organizations; (4) the evolution of social consciousness of time; (5) social change and time; and (6) the concern with time in social theory and methodology. It is shown that sociology has much to learn from its neighbouring disciplines, that no thorough sociological treatment of time has yet been done and, above all, that there is a lack of empirical studies that are adequately grounded in theory.

* Translated from the German by Belinda Cooper.
I. Introduction

If one skims the literature on the subject of 'social time', one finds complaints everywhere about the neglect and marginality of the time problem in sociology, formulated concisely by Kurt Lüscher in the title of an essay in 1974: 'Time: A Much-Neglected Dimension in Social Theory and Research' (cf. also Schöps, 1980:6; Zerubavel, 1976:87ff.). The impression that time is not an issue in sociology also arises when one speaks on this subject in sociological circles; it is perceived as esoteric, eccentric, at best 'philosophical'. However, an attentive observer can discover a continuing growth in time literature since the mid-1970s, with a veritable boom in recent years. If one works for a while on the problem of social time, one comes, contrary to the neglect asserted everywhere, upon a quite extensive body of literature – although it is advisable to look beyond the borders of sociology and to take into account numerous works in the related disciplines of ethology, cultural anthropology, psychology and history. Given the wealth of material, the thesis that the category of 'time' has been neglected proves in part to be a protective assertion that allows many authors to begin right at the beginning without having to take note of existing studies to any great extent. Because of this 'solipsistic' approach, a look through the literature gives the impression of a very large but barely interconnected number of studies, which in turn could lend a certain plausibility to the thesis of sociology's neglect of time.

However, even more decisive, in my opinion, for the impression of marginality and neglect is the minimal theoretical basis of many of the available studies. As Schöps (1980:6) emphasized, the concept of time is used largely pre-scientifically. Many authors lose themselves entirely in the momentum of their subject by making philosophical, anthropological and everyday observations without even beginning to achieve conceptual precision and a categorization of time within a sociological theory. Thus, of course, few opportunities arise to make connections or exercise criticism, such as would set cumulative research in motion. Not until recently – apart from the pioneering work of Luhmann – have more extensive studies appeared that attempt to link the category of time with basic concepts of sociological theory, namely Srubar (1975), Schöps (1980), Bergmann (1981a, b), Elias (1982).

Because of this situation, I will not limit myself to presenting the most recent literature, but will attempt to group all the literature available up to now – with the exception of the 'classics of time-sociology'11 – and to bring it into one context. This will ensure that, on the one hand, older
studies are not simply forgotten and thus need to be repeated; and, on
the other hand, by situating the existing literature it will lay a foundation
for more directed, cumulative research. The limited theoretical basis and
the many different ways with which the time theme is handled in soci-
ology make it difficult to bring the available material into a systematic
order that could be integrated into sociological categories. In particular,
it is often difficult to assign many studies to one single aspect of research,
as they unite a number of disparate aspects and themes; clear sociological
questions and thematic focus are not always apparent. As a result, studies
will frequently reappear in the various thematic areas. The paper’s organ-
ization follows thematic foci drawn from the material itself. Other possi-
ble organizational standpoints – such as membership in particular theo-
retical approaches or traditions, or subdivision according to traditional
sociological research fields – would have permitted no consistent order,
so that many studies would have had to be omitted.

Durkheim laid the first theoretical basis of a sociology of time in the
introduction to his *Elementary Forms of the Religious Life* as long ago
as 1912: it was passed on in part by his students Mauss, Hubert, and
Halbwachs who had a major effect on ethnology, and on sociology (cf.
Goody, 1968:31). By accepting society as an independent set of social
facts whose phenomena were not reducible to those of individual con-
sciousness, he had also to postulate a *social time* whose constitution had
to be seen as social. If one wants to understand a society’s concept of
time, one must consider not the individual’s nature or consciousness, but
the ‘nature of society’ (Durkheim, 1915), its collective concepts and
symbols. Social time is collective in character; thus it lies ‘outside’ the
individual consciousness, not in the sense of spatial but of ‘transcendental
perspectives’ (König, 1976:41), to the extent that it exercises an *external
compulsion* on the individual. Social time reckoning is an expression of
a collective’s rhythm of activity (festivals, rites, etc.). Thus Durkheim
succeeds in justifying the independence of social time as well as revealing
its sociocultural determination and variability. In France, Durkheim’s
approach was taken up and further developed – in addition to the stu-
dents already mentioned – primarily by the historians involved with the
historical journal *Annales* (Febvre, Bloch, Braudel)² and by the sociolo-
gists Gurvitch (1964, 1973) and Bourdieu (1963, 1968).³

Mead (1964, 1969) in his late works puts forward a little-known outline
of a theory of action in which time and society are among the essential
constituents of every action. Human acts are understood not as move-
ments in an already existing time, but as emerging events that first
constitute a present with a past and future horizon (Mead, 1969:264). In
the present phase of every action – in which the action is stopped and reflection begins – not only is the present constituted together with its time horizons, but the personal identity of the actor is on the one hand constituted over time, and on the other hand, through interaction of the actors’ perspectives and above all through acceptance of the perspective of the ‘generalized other’, the construction of a common social time becomes possible. Hardly any attempts have been made up to now to take up Mead’s theory of time, even in symbolic interactionist circles (except by Joas, 1980, ch. 8; and Bergmann, 1981a, b).

For Schütz (1960, 1979) as well, an action first gains meaning when, as a unit of internal time consciousness, it is lifted reflexively out of the stream of experience and integrated with the total context of experience (Schütz, 1960:10, 72). In this situation prior contexts of meaning also determine present experience and future expectation, so that a temporally-structured reality arises. The temporal structure of this life-world determines the outermost limits in which experiences can occur and obtain meaning (cf. Srubar, 1975:64). In order for this approach to become relevant for sociological action theory, Schütz had to show how this subjective meaning could be applied to others, how the intersubjectivity is grounded in a common time consciousness. He postulated here his general thesis of the alter ego, which essentially said two things: (1) ‘that the You also has consciousness, that it lasts, that its stream of experience reveals the same prototypes as mine’ (1960:107); that is, it reveals the same temporal structures; (2) that the stream of experience of the alter ego proceeds simultaneously with one’s own (1960:112f.). The life-worlds of ego and alter thus possess the same temporal structure, so that, based on this time parallelism, both can be meaningfully applied to one another in an intersubjective world.

On the other hand, the social world’s time must always necessarily be coordinated intersubjectively. This coordination is the second component of the life-world’s temporal structure: world time. In outlining a daily schedule and a further-reaching life schedule, subjective and world-time elements intersect (Schütz, 1979: 63). Thus the temporal structure of the world is formulated with greater complexity than Durkheim’s social time, and therefore offers a better starting point for complex sociological time analyses that take account of system/environment connections. Except for Srubar (1975) and Weigert (1981), and other studies by ‘phenomenological sociologists’, this potential for the sociological analysis of temporality has hardly been exploited.

Sorokin and Merton wrote their influential work ‘Social Time’ (1937) with the clear intention of reclaiming time as a legitimate subject for
sociology by proving its sociocultural character. It was not of foremost importance to them to work out a theory of sociological time, but — following Durkheim — to reveal the category of time as a specific social fact (1937:618). These proofs also serve in their analyses of time reckoning units such as weeks, months, years etc. which they show to be social constructs and not natural units. Sorokin (1943) goes even further by assigning to each science its own form of time. He emphasizes that the social sciences are not served by a physical, mathematical, biological or psychological time, but rather need an ‘adequate conception of sociocultural time as one of their main referential principles’ (1943:158f.). Its main characteristics would be the use of purely sociocultural reference points, intercultural variability and unequal time flow, quality and effect in contrast to empty flow. The programmatical works of Sorokin and Merton do not, however, prove to be the hoped-for catalysts for an increased interest in time in sociology. Not until the 1960s would the time theme be taken up again by Moore (1963a, b) and Gurvitch (1964), though their work developed from other sources.

II. The Time Dimension in Current Sociology

1. Time perspectives — time orientation

The classical focus of sociological attention to the time problem is on investigations of the temporal perspectives or time horizons of individuals in their dependence on social conditions. The early establishment of this research focus and its strong empirical orientation can be explained on the one hand by cooperation with psychology, and on the other by proximity to investigations in ethnology that were further advanced in their concern with questions of perception and conceptualization than was sociology. The development of psychological conceptions of temporal perspectives need not be described here, as appropriate overviews are available: Wallace and Rabin (1960), Mönks (1967), Feuchter (1976). Sociology is not interested in the structure and the psychological functions of temporal perspectives as such, but in the relationship between temporal perspectives and social roles, social classes, certain other social groups, specific cultural and social types, social planning, and so on. This short overview already shows that various fields of sociological research converge under the title of ‘temporal perspectives’, fields that are best dealt with separately. Therefore I have grouped the available material as follows: (1) Future perspectives and social structure; (2) Future per-
spectives and social planning; (3) Intercultural comparison of time orientation; (4) Perspectives of the past in social systems.

1.1 Future perspectives and social structure
Future orientation is the aspect of temporal perspectives to which sociologists have mainly devoted themselves because of its importance for social action and decision-making. The assumption of a positive relationship between the future perspective and the capacity for deferred gratification, which is in turn seen as a prerequisite for social success and advancement, has – since LeShan’s pioneering work on ‘Time Orientation and Social Class’ – not been disproved to this day by the chain of empirical studies on the influence of social origin, sex, age and delinquency on temporal perspective and thus indirectly on people’s social success (cf. Lamm, Schmidt and Trommsdorff, 1976:317). LeShan’s study showed that the social classes’ ‘collective-ego-space-time’ differs with regard to the extent of the future perspective, tolerance of frustration and behavioural orientation: lower-class children tend to be present-oriented and have a shorter time horizon than more future-oriented middle-class children. Schneider and Lysgaard (1953) find a normative behavioural pattern responsible for these differences in the extent of the future perspective and in the capacity to postpone immediate, in favour of future, gratification of needs; they call this ‘deferred gratification pattern’ (DGP).

This behavioural pattern applies to the middle class and functions for advancement to or for remaining in this class. It makes possible the development of achievement orientation and acceptance of a longer development period through the deferral of economic independence, consumption, immediate release of aggression, sexual satisfaction and a far-reaching future time perspective. In contrast the authors develop the negative image for the lower class that is also described as ‘non-DGP’ by Miller, Riessman and Seagull (1966). This non-DGP also contains normative elements, even though it appears nearly norm-less in contrast to the middle-class pattern as in the example of impulsive physical violence or the wish for independence and freer sexual activity. This concept of the DGP, which Schneider and Lysgaard intended only as a research-directing suggestion, was subsequently taken over by other authors and in part worked out, in part modified; but it also experienced harsh criticism, directed in particular at its very narrow empirical basis, the interpretation of the data thus obtained, and the logical inconsistency of the DGP (cf. Lüscher, 1974:115).

The studies supporting LeShan’s and Schneider and Lysgaard’s results
include Barndt and Johnson's comparison of temporal perspectives of delinquent and non-delinquent boys (1955), Brim and Forer's (1956) study of life planning in which they found that children from the middle class plan further into the future than children from lower classes, and recently also the study by Lamm et al. (1976), which revealed a difference between junior high school pupils and high school students in the extent and depth of their future orientation. In contrast, Stein, Sarbin and Kulik (1968) found little relationship between status and future orientation when comparing delinquents with their control group. Straus (1962) achieved negative results in the relationship between socioeconomic status and DGP. In his opinion, 'deferred gratification' correlates not with the behavioural pattern of a social class, but with people's orientation to achievement. This correlation is also found in Rosen (1956), while Jesser et al. (1968) could not find any significant connection between social origin, deferral orientation and temporal perspective.

The studies of LeShan and Schneider and Lysgaard became for many years the subject of criticism, of content as well as methodology (cf. Ellis et al. 1955; Beilin, 1956; Greene and Roberts, 1961; Lamm et al., 1976; Miller et al., 1965; Judson and Tuttle, 1966; Kendall and Sibley, 1970; O'Rand and Ellis, 1974; in Germany, Kasakos, 1971; Feuchter, 1976:28–30; Lüscher, 1974). These critics give a number of reasons why no clear outcomes on the connection between class and temporal perspective are available to this day.

1. The studies that have found class-specific differences in future time perspectives lack methodological clarity and precision, while other, precise, studies lead to inconsistent results, as they choose methods unsuitable for the research subject (O'Rand and Ellis, 1974:53).

2. It is wrongly assumed that the structure of a person's future time perspective is the same in all areas of his or her life. But Frank (1939:298) assumed that people could develop differentiated future time perspectives of various extents in their various roles (Lamm et al., 1976:318). This objection is aimed at the assumption that future orientation involves a consistently applicable class-specific pattern. Feuchter (1976:29) and Bergius (1957) see tolerance of frustration and future orientation as determined more by individual needs and demands, while Miller et al. see the DGP not as a fixed social or personal behavioural pattern, but as a variable way of reacting to specific situations. Caro (1965) emphasizes even more strongly the personal and situational frame of reference in which decisions for or against the deferring of gratification are made. In order that 'deferred gratification' can be discussed meaningfully in the first place, the deferring person must find him or herself in a specific
time conflict between near and distant goals. Caro (1965:339) investigated the time conflict regarding the decision to go to college or begin working, and came to the conclusion that the DGP concept is better suited to explaining differing social mobility in the lower classes than to explaining class-specific behaviour. In this case, the extent of the future horizon would be less a class-specific difference than a characteristic of people (in all classes) who are achievement-oriented and directed towards unfamiliar ‘goal regions’.

3. The theoretical concept of the future time perspective itself has generally been inadequately differentiated. Thus, for a long time, only one aspect dominated the investigations: the extension of the time horizon. Since then, following on the suggestions of Kastenbaum (1961:206), several dimensions of the future time perspective are differentiated: its extension, its coherence, its density and its directedness. Furthermore, ‘qualitative shading’ (Heckhausen, 1963) and the extent to which the fulfilment of expectations and hopes is determined by internal or external factors are being investigated today. This differentiation of the concept should contribute to explaining or eliminating the inconsistencies appearing in investigations to date, or to reaching more complex conclusions.

4. Following Wallace (1956:240), the temporal extent and order of future time perspective have always been measured in the form of calendar units. Yet in their statements on future occurrences, research subjects do not generally give exact time references, but orient themselves according to sequences of social occurrences (for example, the phases of the life cycle). Therefore, following the work of Sorokin and Merton, (1937) in which time is treated as a social category, O’Rand and Ellis developed the concept of a ‘social time perspective’ (1974:53): the future perspective is no longer understood as the ‘timing and ordering of personalized future events’ (Wallace, 1956:240), but as ‘a temporal arrangement of future social events meaningful to the individual as a member of a given social unit’ (O’Rand and Ellis, 1974:54).

5. While Feuchter (1976), Bergius (1957) and Miller et al. (1965) emphasized the personal and situational frame of reference of time perspective as against its over-emphasized class-specific connection, Lüscher (1974:105f.) raises a general, sociologically sound objection against too strong an individualization and psychologization of future time perspective that neglects the influence of times in surrounding social systems. Events occurring in the unity of a personal future time perspective have at the same time an objective and a subjective aspect; the objective aspect consists of the knowledge of the usual causal and temporal contexts of events, the subjective in the expectation of experiencing these events in
the future. That is, the individual time perspective is embedded in a social context so that the variety of time perspectives originates not in the individual, but in his or her social environment. Lüscher mentions, for example, the hospital or the ghetto, where the structure of future time perspectives is very clearly determined by the events occurring there and by their interpretation as time markers. Lüscher thus advocates a strong sociological approach to the concept of the ‘time perspective’, in which, in addition to very general social determinants like class, age and sex, concrete social roles and systems would have to be considered.9

Out of his overview of research studies on the correlation between class and future time perspectives, Doob (1971:246) draws the negative conclusion that clear and consistent differences cannot be shown: first, because the differences may be very small as the variables investigated are connected with others, and second because non-sensitive methods of measurement may have been used. The extensive theoretical and methodological investigations have not yet led to the development of a theory (cf. Fuchsle et al., 1980:186). Despite this discouraging summary of thirty years of research, the correlation is still pursued, even though the research into DGP specifically has ‘died out’ or flowed into the mainstream of research (O’Rand and Ellis, 1974; Kreutz, 1975; Nuttin and Grommen, 1975). In recent years, numerous studies have appeared within the framework of the project ‘Social Determinants of Future Orientation’ (in particular in the Sonderforschungsbereich 24 of the University of Mannheim, directed by Trommsdorff), on the correlation between future orientation and the ‘classic’ variables, class membership, sex roles, educational level, age and delinquency. Based on numerous preliminary studies, Fuchsle et al. (1980:192) have developed a theoretically and methodologically sound questionnaire on future orientation (FO) that allows differentiated recording and analysis of its individual dimensions.10 In long-term investigations, the influence of changes in personal and social environment, on future orientation, especially those associated with entering the world of work, could also be considered (Fuchsle and Trommsdorff, 1980; Trommsdorff et al., 1979).

The discussion in this section has shown that the common sociological assumption of class-specific differences in the awareness of time has far less theoretical and empirical support than is generally believed. The same is true for other variables such as age and sex. I agree with the conclusions which argue that characteristics such as educational level and class membership remain too crude a measure to record differences in future orientation. One must, instead, assume greater inter- and intra-individual variance in people’s future orientation, depending on the social
area involved and on historically variable situational definitions. For example, the present state of the labour market will decisively affect future time perspectives in the working life of all classes. Thus research must on the one hand be more ‘sociologized’, in other words, it needs to consider the influence of the time structures of the social systems in which people act; on the other hand, it must also be ‘historicized’, which must include covering biographical and historical changes.

1.2 Future time perspectives and social planning
Future orientation first appeared with the beginning of the modern era in the 17th and 18th centuries; only then did the open future become a problem. This fact, and its social-structural prerequisites and consequences, have been brought to the surface in sociology in particular by Kaufmann (1970), Luhmann (1976) and Rammstedt (1975). With the change in time awareness to the ‘open future’, the future became a socially dependent quantity. Today it is understood as feasible, capable of being planned, and dependent on present decisions. Thus strategies must be developed in society and its subsystems with which the openness and thus the uncertainty (cf. Kaufmann, 1970:175) of the future can be faced. Up to now, sociologists have concentrated on the strategies of utopianism, planning, social policy and revolution.

1. Utopianism. In his essay ‘The Future Cannot Begin’, Luhmann (1976) proposes categorizing future and past, following the phenomenological horizon concept, as time horizons that always have their starting points in the present. From this conceptualization, corresponding to the unreachability of horizons, it follows that the future cannot begin, but travels together with the present (1976:139f.). In utopian blueprints, the present future is used as a field for projecting hopes and fears. Thus these blueprints serve as a constant criticism of what exists, from the viewpoint of the desired future (Luhmann, 1976:143).11 At the beginning of the 1970s, there were attempts in the USA to draft ‘images of the future’ (Polak, 1961; Bell and Mau, 1970, 1971; Huber, 1972) in the social sciences within the framework of a theory of social change, which would not be based upon a simple extension of trends that could presently be discerned. Because of the limitations of social science methods that force the future into the narrow borders of the present, Huber (1972:31) urges us not to rely on forecasts but to create the future: ‘This means defining a new set of long-range goals to orient present action as well as futurology’. This conceptualization of a radically different future should not be the concern of scientists alone but of all citizens. Huber
(1972:38) assumes that discrepancies will arise between the today’s future outlined in this way and the reality of what will have happened in the future present, but ‘creating the future is [also] an ongoing affair’, so that differences can be criticized and new futures outlined. Bell and Mau (1970:218) build ‘images of the future’ into a cybernetic decision model of social change; this plays an important part in the choice between alternative futures. They also assume more or less great differences between the ‘images’ and the ‘actual future’ (1970:223). Since then, the futurological impetus and utopian orientation have disappeared from the social sciences or turned into a negative discussion of crisis manifestations. At any rate, the social scientist no longer sees herself or himself as a ‘maker of the future’ (Bell and Mau, 1970:232), and thus the intensity of research in this field has decreased greatly.\(^\text{12}\)

2. Technology and planning. Technology and planning are oriented not toward the present future but toward future presents from which they draw causal or stochastic connections to the present, seen in this perspective as the past of the future present (Luhmann, 1976:143f.). In this way, the future is ‘de-futurized’, that is, deprived of its openness and uncertainty. To this thematic context of de-futurization belongs all the sociological literature on the subject of planning, since one can see planning as a negation of the future’s openness (cf. Rammstedt n.d., p. 4). That is, planning leads to unusual reversals of time perspectives; the goal of planning is thought of as the future present, and thus negated as a true, open future. From this future, ‘looking back’ in the present mode, all previous time periods can be faked as the past that served only to make possible the planned future present (cf. Bergmann, 1981a: ch. 7; Shackle, 1969; Willms, 1969; Luhmann, 1975d).

3. Social Policy. An important attempt to de-futurize the future is represented by social security policy, which Kaufmann (1970) analysed in his book *Sicherheit als soziologisches und sozialpolitisches Problem* (Security as a Sociological and Sociopolitical Problem). For Kaufmann (1970:174) the norm of securing the future has achieved the status of a central idea or value in our society, one followed more and more by technology, law, policy and insurance. This great appreciation of security results from, or presupposes, development of the modern awareness of an open future, for which the ‘future’ becomes ‘insecurity itself’ (1970:175).\(^\text{13}\) If the future is experienced as an open horizon, it can at first count as a dimension of freedom for the active person, as long as security is provided by expectation-stabilizing factors analogous to
4. Revolution. For Rammstedt, revolution is a case of social planning – in turn, therefore, a form of de-futurization – in which, through the determination of decision premises, the openness of the future is reduced; however, this decision determination is connected with risks and insecurity (Rammstedt n.d., p. 2). In contrast to normal, system-conforming planning processes that fall back on the system’s reduction mechanisms, one can speak of revolutionary planning when during ‘planning, decision premises are established that seek a state lying within the range of possibilities for the system, however outside the area supplied by intra-system reductive means’ (Rammstedt n.d., p. 6). Existing social structures must be dissolved in a revolutionary process and replaced by new ones, as the negation of competing, system-conforming decision premises is not enough by itself to lead the system to circumvent its existing reductive mechanisms.

In comparison to the future time perspectives on the level of persons and roles, which have already been very thoroughly investigated, studies of overall future orientation of society are dealing with purely theoretical, in some cases even very speculative, concepts for which empirical research is still lacking to a great extent. In the sociology of time, there are almost no studies on the middle level of social systems between the level of role (age and sex roles, social origin) and the level of society: utopianism, planning, revolution. Like the work of Moore (1963a, b), the study by Bergmann (1981a) forms an exception. It compares temporal structures (including future orientation) of legal and economic systems with one another (1981:198ff.) and it analyses the temporal structures of simple social systems and organizations (1981:254ff.).

1.3 Intercultural comparison of time orientation
Until recently only a few sociologists (Sorokin and Merton, 1937; Sorokin, 1943; Hall, 1959; Coser and Coser, 1963; Rezsohazy, 1970) have dealt with the temporal orientation of entire societies which can be viewed as a central element in a social value system to which individuals gear their temporal orientation.
Whether entire societies or larger subgroups are more likely to orient their behaviour to the past, present or future has been investigated by anthropologists and cultural psychologists using mainly primitive societies as examples (Hallowell, 1937; Kluckhohn, 1963; Smith, 1952). Despite numerous case studies, as Doob (1978:57) has critically ascertained, there has been to date no satisfactory intercultural comparison in anthropology or cultural psychology on the aspect of time perspectives. Earlier studies (such as Bogoras, 1925) start with the unacceptable assumption of a specific primitive concept of time in archaic cultures which is theorized in sharp contrast to modern western thought. Other researchers, such as Evans-Pritchard (1940) with his work on the Nuer, Bohannan (1967) on the Tiv in Nigeria and Bourdieu (1963) in North Africa, produced detailed studies on time but these insights are only correlated with social structure and culture in the context of the specific societies, and not used for intercultural comparisons. When such comparisons are made, they often work with overdrawn generalizations, supported by illustrations from a very limited number of societies based more on speculation and impressions than on empirical investigations (cf. Doob, 1978:57). Some crucial points can be mentioned that prevent precise, supportable intercultural comparisons of time orientation:

1. The first point is the rash generalization of our common threefold division of time into past, present and future. Although one can agree with Kluckhohn and Strodtbeck (1961:14) that every society deals with all three dimensions of time, ethnological research on time awareness has shown that there exist types of time awareness that do not fit simply into the schema P-P-F. Leach (1966:395) described a type of time experience in which the course of time is perceived as an oscillation between opposites — for example, day and night or birth and death. Time is not ordered in a linear way according to P-P-F, but according to Now and not-Now, so that time is not experienced as duration, but as contrast.14

Barden (1973), in a very differentiated study of the time concepts of Australian Aborigines, confirmed and at the same time modified Leach's assumptions. Using the 'kinship system', which in his opinion is not only the social organization of tribal members but also an ordering of experience of time duration, he could show that 'in the desert system there is no time at all; duration is overcome by the constant repetition of the pattern' (1973:333). For example, the fact that mention of the dead is avoided, that the name of a living person is changed if he or she bears the name of a dead person, and that the term for the grandparent and grandchild relationship is the same, make it clear how past and
future, apparently barely differentiated, are suppressed in favour of a timeless present. Geertz (1966) also observed this phenomenon of the negation of time and of the timelessness of the present on Bali. According to the schema P-P-F, one could say that Australian Aborigines are clearly present-oriented; but according to the contrast between Now and not-Now mentioned above, the present cannot be contrasted here with future/past. Instead, the contrast is between an ordinary present and a mythical time, existing however as a special state within ordinary time, as 'dream-time' (Barden, 1973:337f.). Thus Aborigines are extremely present-oriented in their daily life, but they do not interpret this present as a temporal contrast to the past and future, but as a state in contrast to holiness. Thus intercultural comparisons require differentiated conceptual tools to record such complicated time orientations; the simple P-P-F framework is not sufficient. Few suggestions for this have been drafted as yet (exceptions are Maltz, 1968; Rammstedt, 1975; Bergmann, 1981a).

2. Instead of detailed empirical research on time orientation, one generally finds a stereotyped comparison of social forms – traditional vs. modern, or agrarian vs. industrial societies (for example Doob, 1971; Nowotny, 1975; Reszohazy, 1970; Hallowell, 1937), or categorization by cultural differences – according to the great religions of the world (Brandon, 1965), cultural groups (Smith, 1952), or the dichotomy mythical vs. historical (Gunnell, 1968). Using this schematization, one achieves only very rough and stereotyped characterizations that modern societies are more future-oriented, while primitive societies are determined more by tradition and, some believe, also more present-oriented (cf. Reszohazy, 1970:42). Nowotny (1975:329) warns rightly against hurried, unjustified judgments and conclusions because, in addition to the likelihood that differences in time orientation exist among so-called primitive societies, this viewpoint also completely ignores the complexity of highly cultured and modern societies.

3. The methods and results of anthropological research on time orientation in primitive societies cannot, as Coser and Coser (1963:640) correctly saw, be taken over automatically by sociological research on modern societies.

The pitfalls of such a practice are obvious: while it might be possible to make valid statements about the time perspective of a non-literate culture as a whole, such an approach tends to be most hazardous when applied to differentiated and heterogeneous contemporary societies. To state that Western culture . . . is future-oriented . . . seems of little help if we realize
that, within such societies, important groups may be oriented toward goals which are not shared by other groups, that some may adhere to their particular code of values and be governed by a time perspective considerably at variance with that of the dominant culture. (1963:640)

Coser and Coser (1963) and Kluckhohn and Strodtbeck (1961) carry out an intercultural comparison of various subcultures in the USA. In their study of ethnic groups in the USA, Kluckhohn and Strodtbeck (1961:15) found very different time orientations, measured according to the hierarchical structuring of future, present and past. Thus Americans of Spanish origin were found to be significantly more present-oriented, as were the Navajo and Zuni Indians, for whom however the past took second place; while the Chinese population was significantly more past-oriented. For white North Americans, in contrast to the English, for example, future orientation dominated and traditionalism was least important. Despite the differences revealed in the USA and between the USA and England, Coser and Coser (1963:641) stress that in western cultures, an active, individualistic orientation towards the future dominates. Other social time orientations can then only be understood as ‘divergent’ or ‘variant’ (Kluckhohn and Strodtbeck, 1961:13), that is, as subcultural deviations.

Following Kluckhohn (1963), Coser and Coser (1963) construct four main types of dominant and deviant time orientations in American society by connecting time perspectives with other orientation types, namely collective vs. individualistic and active vs. passive orientation:

Type I: Individualistic and active – conformist, dominant time perspective, oriented towards individual success.
Type II: Collective and active – here there are two subtypes: oriented to an individual future, the orientation of voluntary interest groups (unions); oriented to a collective future – a utopian time perspective.
Type III: Collective and passive – chiliastic time perspective, which does not depend on active behaviour to change conditions, but hopes for external changes.
Type IV: Individualistic and passive – hedonistic time perspective, orientation to the here and now without connections to social groups.

Selection of one of these perspectives depends on the position of the group, the class or the individual in the social structure, on the degree of closeness to or alienation from the dominant cultural value orientation, and on the feeling of social power and significance (Coser and Coser, 1963:646). An empirical review of these types has not taken place to my
knowledge, but Coser and Coser have to their credit linked an investigation of time orientation with sociological theory, and thus posed sociological questions in a larger framework. If the two studies revealed the variety of time orientations within a society, Green (1970:571) did the opposite, showing the similarity of these orientations in four Negro subcultures that live in very different social environments, but share common roots in West African culture. Green traces the similarity in ‘temporal attitudes’ of West African, Brazilian, Caribbean and North American Negro subcultures back to a common traditional West African cosmology, to religious practices, to the prevailing communal orientation and the form of child education. For intercultural comparisons of time orientations, this means that one must expect differences within a society, especially when its members come from different cultural groups, as well as similarities among segments of various societies.

In addition to the development of a differentiated concept of time, the creation of an appropriate methodological instrument is very urgent for the investigation of societies’ time orientations. Because time orientation is not accessible through direct observation, one must fall back on indirect measurement methods whose validity is usually quite doubtful (cf. Doob 1978:57). Determining which time orientation actually prevails with the help of analyses of philosophy, vocabulary, grammar or proverbs and stories is impossible as long as one does not know how the members of the society themselves interpret these philosophies and stories (cf. Doob, 1978:58, 1971: addendum 3.5; Bourdieu, 1963), and what status they have in daily life. To my knowledge, there has been no development in this area; thus sociologists of time must seek elsewhere in sociology for suitable investigatory instruments.

1.4 Perspectives on the past – historical consciousness
Sociology as a science of modern society has devoted its main attention to future time perspectives, leaving research into the structure and function of perspectives on the past to ethnologists who have investigated it in archaic societies (Kirchner, 1954; Mohr, 1963; Schott, 1968). Only within the framework of deferred gratification pattern has the past orientation been considered in passing, as an orientation mode of the upper class (cf. LeShan, 1952:589).

Luhmann (1975d) was the first to point out clearly the significance of history and tradition for the decisions that personal and social systems must make in the present. For the sociologist is not, like the historian, interested in the content of the past, but in its contribution to the structuring of present and future selections. Schott (1968:187) worked
out this functional significance of historical awareness for the past-orientation of preliterate peoples for whom history is not left behind as unimportant but where the ‘historical purpose . . . of oral tradition is always more-or-less united with or subordinate to other goals – political, religious, ethical, aesthetic, etc.’ The formation of tradition in tribes and clans takes the form of genealogies, and shows itself in action as ancestor worship, the intensity of which is limited to two or three ancestral generations (Kirchner, 1954:12). However, these genealogies are kept alive in memory not for reasons of piety but, according to Goody and Watt, to serve as ‘mnemonics for systems of social relations’ (1963:308f.). This is also supported by the fact that during social changes, these genealogies are adapted to the new conditions. Evans-Pritchard (1940:108) had already found a link between history and time reckoning and the interest in a clearly defined relationship of descent and kinship among the Nuer, who emphasize the past perspective, since kinship relations and thus social relations can only be determined through tradition.

Because of insignificant social differentiation and the oral form of tradition, the past horizon of these societies remains limited. Luhmann (1975a:117) showed that these societies and the structurally similar ‘simple social systems’ of modern societies gain their identity from present interactions and from the immediate past, and not in contrast to a different, independent past or future. Thus the literature generally also speaks of the present orientation of these societies (for example Lapointe 1976:99); this does not contradict the dominance of tradition also acknowledged, as reports of past events serve as a kind of ‘basic law’, a charter for organizing present social relations. In the process, history is used very selectively. Barnes (1947:52) speaks of ‘structural amnesia’ and Schott (1967:185) points to the common roots of legal and historical awareness (also Kirchner, 1954:16; Luhmann, 1970:180). They claim normative power in the present that achieves a ‘detemporalization of the future’ (Luhmann, 1972a:343). Thus, while for primitive societies the structure of historical and mythical awareness of the past, and its function in the social structure, have been empirically well researched, there is a lack of comparable sociological studies on very advanced civilizations and modern societies.16

It is primarily historians who have dealt with the function of past orientation in modern societies, above all Koselleck (1967, 1979). As Voegelin (1966:83f.) shows, history provides examples, and thus the power of selection, only in conditions of ‘static time perception’; that is, only when past and future are in the end equal can history serve as a model for the future, as ‘magistra vitae’ (Koselleck, 1967). According to
Koselleck (1979), in the course of the social differentiation process in the 18th century came a dissolution of existing temporal structures; time became dynamic, history became temporal and thus lost its model character (Koselleck, 1967:206). A re-evaluation of time horizons occurs, the past loses its orienting power in favour of the future. According to Luhmann (1975d), history can thus gain another function: it opens the horizons of possibility of past presents, and thus a reserve of not yet realized, but realizable possibilities. History becomes a variation mechanism.

Luhmann (especially 1975d) and Bergmann (1981a) are to date the only sociologists to have analysed the past horizon of time in its general significance for the creation and preservation of social systems. System-history should in this view be understood not as a ‘simple compilation of facts that the system leaves behind as the residue of its processes’, but as a ‘history of selections that are produced and kept present in their selectivity. They include not only the chosen, but also the not-chosen’ (Luhmann, 1975a:26). History thus ensures preselections for the superseding experiences and actions. To what extent history can produce these structural achievements depends on the type of system – simple social system, organization, society – and on the form of social differentiation (cf. Luhmann, 1975b:86, 1975a:26f.).

Luhmann’s theory of evolution with regard to social differentiation is that, with the transformation of differentiation from stratified to functional differentiation, orientation towards one’s own system-history as structure is no longer sufficient; therefore, relatively context-free, abstract time horizons must be developed that permit the various system-histories to refer to one another. An abstract world time must be established that can function as the ‘coordinating generalization’ (1975d; 111) of all system times. Thus system-history loses its function of upholding the structure; modern ‘historical awareness’, thus unburdened, can achieve a new relationship to the past, in which it temporalizes the past through differentiation of present pasts and past presents, each of which possesses its own past horizon (1975d:113). With this telescoping of time determinations, which Luhmann (1975d:112) calls ‘reflexive modalization’, an important aspect of a sociological concept of time has been found: the reflexiveness of time itself.

A detailed, empirically sound study of social systems’ past horizons has until now barely been attempted by sociologists; yet this dimension is especially important for an understanding of simple social systems and social groups. In order to carry out such research, sociology could fall back on the preliminary works in ethnology and history.
2. Temporal ordering and social structure

Time's ordering character for social life does not arise from the passage of time or the temporal duration of social systems, but from its normative effect on the structure and coordination of behaviour. As Schöps (1980:45), following Geiger's (1968) model of a system of 'Ordnungsgefügen' (ordering structures) showed recently, time must be seen as an organizing principle *sui generis*, whose manifestations must be represented as social facts. 'The normative content of time, that is expressed in the establishment of social temporal norms, affects the formation of social structures' (1980:47). The reverse is also true: the time structures of social systems are conditioned by the other social structures of the system involved, as well as by the physical, biological, psychic and social structures of the environmental systems. Sociology has been aware of the interdependence of social and time structures since Durkheim, though it has not included temporal norms in the analysis of social systems. The temporal order of social systems is expressed on the one hand in their *time reckoning*, that is in the choice of temporal reference points and use of instruments to measure time; on the other hand, in their *timetables*, the temporal standardization of social behaviour through provision of tempo, sequence, duration and so on. This complex includes the problems of *synchronization* and the *control of time*, which prevents deviance from time norms.

2.1 Time reckoning

Measuring time is an activity in which specific behaviour is connected with a regularly repeated event (Khare, 1967:49) that serves as a reference point. The socio-cultural variability of time-reckoning systems arises from the absence of universally valid reference points with which time could be structured. Essentially, every natural and social event, to the extent it recurs regularly, could be used as a reference point. Which 'time indicators' (Khare, 1967:48) are in fact chosen depends on general social values, on economic, political and religious structures, and is closely connected with the prevailing view of the nature of time. Nowotny (1975:325) formulated this connection between time reckoning and concept of time thus: 'If we alter the scales and dimensions with which we measure, we seem to alter the nature of that which is being measured, as well.' Methodologically, this means that one can infer the time concepts and value systems of societies from their types of time measurement. Nowotny (1975:338) used these methods by connecting the development of time measurement with changes in views of time,
such as the introduction of the mechanical clock with making time a commodity.

Sociology has made little effort in the direction of anthropological theories of time reckoning. Maxwell (1972:47) comes to a negative conclusion in his overview ‘Anthropological Perspectives’, despite the wealth of available field studies and concepts on this subject: ‘Anthropological theorizing about . . . time reckoning systems is still in a formative stage’. This is still the case even though Nilsson revealed in 1920 the scope of intercultural variation in the construction of time-reckoning systems, based on extensive ethnographic material. Nilsson comes to the conclusion that a few natural cyclical processes (movement of the heavenly bodies and phases in the natural environment) form the basis of all time-reckoning systems, which does not permit any number of combinations. Societies then design their temporal orders, which are more or less well synchronized with the natural cycles, on this basis; that is, social systems behave selectively with respect to natural processes (cf. Pocock, 1964:20; Zerubavel, 1977:869). Sorokin (1943:171ff.) finds the opposing position of purely socially determined time reckoning; he recognizes no natural processes and only accepts social reference points (similarly, Hallowell, 1937; Malinowski, 1927:23). Maltz (1968) and Bergmann (1981a) take an intermediate position on this issue.

Following Evans-Pritchard’s significant work on the time reckoning of the Nuer, Maltz (1968) interprets time-reckoning systems as symbolic systems whose function consists in bringing social norms and needs into accord with natural experience, as these often conflict with each other. ‘Ecological experience and socio-cultural time notions are not simple reflections of one another; they are, however, always tied together in some way. Keeping experience and idea integrated is the basic problem of a symbolic system’ (1968:90). Time-reckoning systems, such as calendars, must thus (apart from the coordination of natural cycles among themselves) synchronize the experiences of natural sequences of events – year, seasons, months, days, times of day – with recurring social events such as yearly festivals, markets, days of rest and bring them into an ideational form (1968:101). Following the system/environment model, Bergmann (1981a: ch. 5) uses systems theory to reformulate Maltz’s reflections by differentiating between social system time and natural, psychological and social environmental time; they must be brought together in the time-reckoning system, which can be determined more exactly using the scheme of system/environmental relationships. As the environment of social systems does not consist only of external nature, other environments and their rhythms must be considered in time-
reckoning systems; for example, the rhythm of the human organism, the psychological time of the personal environment, and the social time of the social environmental systems. Time-reckoning systems must constantly take account of these numerous references; thus one can assume that, with increasing complexity of systems and their environments, the degree of generalization and precision of the coordination of time-reckoning systems must become greater and greater—an assumption that is shared by Sorokin (1943:188f.) and Luhmann (1975d). The presupposition of a development of time reckoning from relatively concrete, only locally useful systems (cf. Hallowell, 1937:669) in small, archaic societies to ever more abstract and more widespread systems is found throughout anthropology and sociology (Zerubavel, 1982a:19ff.). However, while anthropologists have analysed the time-reckoning systems of numerous archaic societies in detail in their relationships to social structures, value systems and natural environments (cf. for example the literature in Maltz, 1968), few comparable works by sociologists on modern societies are available.

In his essay on ‘Time, Work Discipline and Industrial Capitalism’, Thompson (1967) showed the effects of restructuring working relationships on the precision of time measurement during transition to a developed industrial society which led to the general introduction of the clock. The division of time in agrarian society according to tasks gave way to work according to the clock, since the need for synchronization in industrial work demands greater precision and abstraction. Using large New England factories at the beginning of the 19th century as an example, Debozy (1979) analyses the organization and codification of industrial time and workers’ resistance and slow adaptation to the new time regime. Using calendrical reforms as an example, in which the social implications of time reckoning are especially clear, Zerubavel analysed the structure and function of time-reckoning systems in three cases. In his essay ‘The Standardization of Time: A Sociohistorical Perspective’, Zerubavel (1982a) investigates the social process of the introduction of the modern international standard-time system (Greenwich Mean Time and Standard-Time), which he sees in connection with the erection of national and international communication networks (railroad, telegraph) as well as modern rationalism. The pressure for worldwide synchronization released time reckoning from its local context, coordinated with the course of the sun, and turned it into a purely social construction (Zerubavel, 1982a:13).

This artificial character of a discontinuous standard time detached from nature can be traced back to rationalism, according to Zerubavel. He,
too, sees in the development of time-reckoning systems an evolution from ‘natural time to rational time’ (1982a:19). To what extent our modern time reckoning is based on social conventions is shown by Zerubavel (1977) in his case study on the French Republican calendrical reform of 1793. In this reform, conventional time reckoning was completely changed; the traditional Christian era was replaced by the Republican, a new beginning of the year chosen, the lengths of months standardized and a ten-day week introduced. This total ‘symbolic transformation’ (1977:871) was to emphasize the complete discontinuity of the old and new time, in that the new values of secularity, nature and rationality found expression in the construction of the calendar. The failure of this reform probably has to do with its excessive radicalism, with its spatial limitation and also the failure to estimate the strength of religious resistance (1977:874f.). Calendar reforms can be used not only as a symbolic segregation of an old and a new era, they can also be called upon to establish social borders and to build up a group identity, as Zerubavel (1982b:288) describes using the example of the segregation of the Christian Easter festival from the Passover festival. ‘Calendar contrasts are essentially a symbolic reflection of social contrast and, therefore, express the group’s need to dissociate from other groups’.

Conversely, Schütz (1973) and Luhmann (1975d) in particular have revealed in their theories the necessity for comprehensive time ordering systems, using the concept of ‘world time’, which encroaches on the time of the ego and of social groups. Here Luhmann (1975d:110) links the rise of cultural abstractions – such as a system-independent time-reckoning system – with the evolution of social systems. Standard time systems thus represent highly abstract ‘coordinating generalizations’ that allow modern societies to reconcile system histories on an abstract ‘yardstick’. According to Luhmann (1975d:111), this world time must guarantee four things: (1) homogeneity, that is, independence of particular movements and their speed; (2) reversibility, that is, intellectual/mental reversibility despite irreversible physical processes; (3) determinability through dating and causality; (4) transitivity as a condition of the comparison of various stretches of time.

In addition to the cyclical time order, a temporal ordering system must exist that includes the irreversible course of macrot ime as it appears in the human ageing process and in the course of generations. Anthropology differentiates, following Leach (1966), Lévi-Strauss (1967) and Horton (1967), between societies with a static, cyclical concept of time and those that emphasize irreversible process and change. Primitive societies negate the irreversible course of time (cf. Barden, 1973: ch. 1); thus Lévi-Strauss
speaks of them as ‘cold cultures’ and Horton characterizes their concept as ‘close predicament’, in contrast to which modern societies, with their emphasis on historicity and change, are ‘hot cultures’ with an ‘open predicament’. For primitive societies, anthropology has broadly researched the ‘time scales’ of the respective macrotimes, their local limits, genealogical character and attachment to the ‘age-set system’, and connected them with the societies’ sociocultural characteristics (for example Evans-Pritchard, 1940; Middleton, 1967; Horton, 1967; Barden, 1973; Eickelman, 1977). The sociology of time has ignored this problem area until now, although historical material on modern time-reckoning systems is available. Recently, sociological research on the human life cycle has begun to concern itself with the cultural construction of ‘biographical time’, which also involves the temporal ordering of an irreversible process (cf. Leitner, 1982).

2.2 Social construction of timetables

While time reckoning in the narrow sense has received little attention from sociology until now, the essential structures and processes that organize social life temporally have been quite broadly researched under the titles ‘timetables’ (Roth, 1963; Zerubavel, 1976), ‘time tracks’ (Lyman and Scott, 1970), ‘temporal ordering’ (Moore, 1963a) and ‘scheduling’ (Glaser and Strauss, 1965, 1971; Zerubavel, 1976, 1979, 1982). Unlike time-budget research, in which only the factual temporal duration and allocation of particular activities is ascertained, here the issue is the normative, conventional aspect of temporal ordering in the social world, as it is usually devised by the participants themselves. The concept ‘timetables’ here describes the structural, static aspect, while the dynamic aspect of the negotiation of timetables is described as ‘scheduling’ (Zerubavel, 1976:93).

In a theoretical essay Zerubavel (1976) worked out the structure of timetables and the central factors in the negotiation of these schedules. The basic parameters of timetables are: (a) the duration of social events and actions, (b) their sequence, (c) their localization in objective time (timing), (d) their tempo and (e) their linear or cyclical order (1976:88f.). In negotiating timetables the self-control/environmental constraints factor has the greatest sociological significance. Personal and social systems are not free to establish their time schedules; they are subject to certain limitations by the natural and social environment. Thus, Zerubavel (1976:91) argues, schedules contain three relevant components: ‘a totally self-determined part, a totally environmentally determined part, and a socially negotiable part in between’. Schedules are
not always provided or planned through to the end, so that 'scheduling' can be analysed as an interaction process in which schedules are formulated and altered. Problems arise, however, through the use of various memory markers (time measures) that make temporal synchronization more difficult. In this essay, Zerubavel provided a summary and systematization of the conclusions of empirical studies and theoretical reflections that began in the 1960s in the USA.

In 1963, Moore had written, in his broad, and therefore somewhat superficial, book *Man, Time and Society*, about the social organization of time, and above all how it appears in the organization of labour processes (1963a:27ff.). The complexity of labour organization and the scarcity of the time resource make the 'timing problems' of synchronization, sequence, duration and tempo of activity particularly noticeable in this area. But these 'timing problems' also exist in temporal organization of the lives of people, families and voluntary associations (1963a:43); the difference lies only in the higher degree of precision of temporal coordination and time allocation in organizational systems (Moore, 1963b:166). The basic work on timetables comes from Roth (1963), who researched the process of designing and bargaining in great detail in an empirical study of hospitalized tuberculosis patients.20 The patients, oriented towards the familiar course of illness of 'advanced' fellow patients, design a timetable for the course of their illness that often conflicts with the doctor's concept of that course, because he or she categorizes the illness differently (1963:35ff.). Roth describes bargaining for a common timetable as a dialectical process, in which each party must integrate the reactions and expectations of the opposing side in their own perspective.

This interactionist approach makes the normative aspect of social time especially clear by revealing conflicts of norms and emphasizing bargaining for common norms. Following Roth (1963) and Glaser and Strauss (1966), is the work of Calkins (1970) on time perspectives, time budgeting, and 'styles of time usage' of patients in a rehabilitation centre. An abundance of time, combined with limited opportunities for choice and a lack of strict institutional 'timetables', raises for the patients the problem of temporal structuring of their time. Depending on the form of time perspective and time budgeting, various styles of behaviour towards time appear: for example, 'passing time', 'waiting', 'doing time', 'making time', 'filling time', 'killing time' (Calkins, 1970:494ff.) which, according to Calkins, can also be found in other social institutions such as the army or old people's homes.

The studies by Glaser and Strauss are also in the interactionist tra-
dition; they researched the temporal structure of status passages empirically (1965) and theoretically (1971). Using the example of dying, in which the outcome is given but not the time schedule, they analyse the problem of the legitimacy of defining temporal dimensions of the status passage, and the announcement and coordination of the passage that results from the various time perspectives and schedules of all participants. In the passage from one social status to another, during which the person crossing the border is located in a specific transitional status, the character of social time can be studied particularly well (1965:57; 1971:47ff.). In their book *Status Passage*, Glaser and Strauss provide a theoretical analysis of all possible forms of status passage according to their temporal structures (1971: ch. 3). Following Roth and Glaser and Strauss, Bergmann (1981a:128ff.) analysed status passage as a specific form of the border-crossing process, in which people are led from one system to another. This transitory phase possesses its own time structure that serves as a substitute orientation for this interim phase.

Following Roth’s ‘Timetables’, Lyman and Scott (1970:211) developed their concept of ‘time tracks’, according to which all social behaviour follows particular temporal paths. ‘Time tracks are products of cultural definitions; they conceive of life as divided into temporally specific, qualitatively different event activities.’ These ‘time tracks’ can be divided along two basic dimensions: (1) along the self-determination/other-determination dimension: the ‘humanistic–fatalistic dimension’; (2) along the continuity/discontinuity dimension: the continuous/episodic dimension (1970:191). The temporal structure of a love affair can thus be characterized as self-determined and episodic; that of military service, other-determined and continuous. Movement along these time tracks begins and ends with specific ceremonies or information (1970:199). In between, there are many opportunities to deviate from the prescribed time tracks (‘sidetracking’): *waiting, time out* and *withdrawal*. To understand the behaviour of actors and their temporal expectations, one must know the time tracks on which they are located, as these shape and subdivide life into specific ‘feeling-activity states’ (1970:212) differing in regard to time horizons, tempi, and so on. The concept of the ‘time track’ leans heavily on Roth’s concept of ‘career’ and is also reminiscent of Glaser and Strauss’s ‘schedule’ concept. However, despite their equally interactionist tendency, Lyman and Scott emphasize more heavily the institutional character of time tracks, rather than the process of bargaining for common timetables.

In addition to these studies with a systematic intent, there is a series of works which deal more *descriptively* with the temporal organisation
of social life, describing the temporal course of human life (life cycle or human cycle) and/or the social activities connected with the cosmic course of time (cosmic cycle).

(a) Smith et al. (1961), in an intercultural comparison, clearly showed the variety of life cycles in various cultures. It became apparent that age phases were of different length and character, that their significance varied from culture to culture, and that there is a connection between life cycle and the overall time concept of each culture. In the end, however, the authors emphasize that insights on age-groups, their separation, their individual interpretation as well as on time concepts are still very incomplete, so that the 'links between the codification of time and the life cycle remain unclear' (1961:111). Moore (1963a:54ff.) points above all to the problem of separation in the concepts of age-groups and generations, especially because in modern societies transitions and rites of passage have become unclear. Chronological age and social age can deviate more or less from one another, so that stages of development and age affiliation must be decoupled if 'strains' are to be avoided (Goody, 1968:37; Elkin, 1960:54). Elkin (1960:53f.) thus differentiates between 'life-cycle time', which for him describes the biological time in the maturing process, and 'social time', which determines age affiliation and supplies its social significance. In his Sociology of Everyday Life Weigert (1981:215) describes ageing as 'the universal experience of time marching on'. Long-term bodily changes thus form the basis of the interpretation of life as a process characterized by direction, irreversibility and phase structure. Ageing stages and their sequence are socially and psychologically defined biographical stages. 'Biographical time' is structured by the individual's change in status and identity (1981:200). Here, biographical time meets the prescribed timetables of 'careers' in Roth's sense, since in the concept of 'career', the phases of the individual life cycle are linked with socially institutionalized status passages. For Weigert (1981:225), the fundamental dialectic of daily life appears in this relation of biographical time to social 'timetables':

Time is produced and perceived by individual actors, but the temporal structures which are produced and the sequences which are perceived are socially real; they act back upon individuals by structuring their lives and the meaning they find in their biographies.

How differently the 'cultural construction of time' in people's biographies or, more generally, in their self-identification can turn out is shown by Leitner (1982) in a culture-comparative analysis of the close
connection between social time orientations, cultural world views, and the temporal construction of a biography. The important conclusion of this analysis consists of the fact that only the modern, abstractly empty concept of time makes possible a subjectivization of time, and thus the construction of a unique, individual 'history': the (auto)biography. Brose (1982:385–7), in an essay on industrial sociology, also questions the 'mediation of social and biographical time structures'. This is achieved through a vocational and biographical construction of time, in which the development of working conditions is synchronized with individual, personal and family developments.

(b) Days, weeks, seasons and years are not to be interpreted by sociology as purely natural cycles with the help of which time can be measured, but as significant social time orders to which specific routines and activities can be assigned. Sorokin (1943) especially emphasized that these natural cycles are, in the end, only sociologically relevant in connection with the regular activities linked to them. The alternation of light and dark is not only connected to the alternation between waking and sleep, but also provides the framework for many other social activities. According to Goody (1968:32), night is connected with evil, with witches and crime, but also with dreams and sexuality; whereas day is the time for productive activities that follow a particular timetable. Weigert (1981:204ff.) has outlined the routines of daily life connected with the day, the week and the seasons. In his opinion, only when all members of a society follow these timetables can modern societies function. 'The structure of society can be seen as the intricate joining of millions of individual daily rounds into a massive daily round of society itself' (1981:205). The orientation is ensured in part by time measuring instruments such as clocks and calendars, in part by rites of passage such as vacation periods, public holidays and harvest thanksgivings (Goody 1968:36f.; Weigert 1981:211ff.).

Each individual is thus part of numerous temporal orders, some self-determined, some imposed, some possessing linear structures, such as biography and career or the surrounding world time, and some having cyclical structures, such as 'daily rounds'. Only a minimal number of these 'timetables' have as yet been researched by sociologists (see section 3.2).

2.3 Synchronization problems among 'timetables'
If all social behaviour were embedded in one single time order, as is the approximate case in primitive, less differentiated societies, there would be no problem of temporal synchronization; the flow of time would
unobtrusively accompany the course of behaviour. Only when, through social differentiation, individual and social time must be distributed among various areas of behaviour do problems of coordination arise. The results of this lack of synchronization are the scarcity of time, waiting time and ‘time out’.

2.3.1 Scarcity of time. Balla’s (1978:50) statement that a ‘comprehensive sociological way of looking at time scarcity, oriented towards the understanding of social contexts across areas of scarcity and consequences of individual and collective time economies’ is still lacking is certainly true; however, there are a series of studies that deal with this problem within the more narrow framework of ‘time sociology’.

The most important work on time scarcity is that of Luhmann (1968). Unlike Moore (1963a) and later again Balla (1978), who assume an ‘ultimate scarcity of time’, probably oriented towards the limited lifetime of human beings, Luhmann maintains that time in social systems is not scarce ‘in itself’, so that one must first question the conditions of scarcity. His thesis is that scarcity in the time dimension results from complexity and from problems in the practical and social dimensions of experience (1968:5). The impression of scarcity arises from the difference between world complexity, the horizon of the possible, and the capacity of the system to assimilate. Thus time scarcity proves to be a variable that takes on greater value in the course of social evolution. This is confirmed by Nowotny (1975:329f.) and Elias (1976:337f.), who point to the connection between greater differentiation and scarcity, precision, acceleration and greater regard for time (cf. also Schöps, 1980:155ff.; Zerubavel 1976:92). In his essay, Luhmann (1968:7) additionally makes clear the problems that arise from time scarcity and from the urgency of what is restricted in the practical dimension (for example, the quality of decisions), and in the social dimension (consensus building), what release functions these time limitations simultaneously perform for the system, and which timesaving institutions can relieve time pressure. Bergmann (1981a:166 ff.) follows Luhmann, but expands the range of environmental systems that can make temporal demands of social systems to include the personal and natural systems. Time scarcity can then also arise from the desynchronization of psychological, physiological or biological-physical environmental time, and social time.

Nowotny (1975) inquired into the connections between the value of time, the experience of time scarcity, and socio-structural conditions. A comparison of traditional and modern societies shows that a lesser appreciation of time arises from the experience of a time surplus, as can
be observed for example in the case of unemployment. Time gained its high value in industrial societies because of the economic and technical developments that made it a factor in productivity (1975:330). Thus time became a scarce commodity first in the economy, then in other areas of society as well. For Heinemann and Ludes (1978), too, time is a scarce commodity as a result of sociocultural conditions; however, they do not inquiere into the conditions of scarcity, but into ‘how individuals “manage” scarce time and what consequences such varied consciousness of time scarcity has’ (1978:227).

The authors work out three reduction mechanisms that relieve the personality system of the need to make decisions on alternative possibilities of use: (1) restriction of personal time to the ‘social agenda’; (2) structuring of alternatives through moral assessment of various forms of time usage; (3) relief through individual habit and the ritualization of time usage. Using unemployment as an example, Heinemann and Ludes show how attitudes towards and perception of time change when these reduction mechanisms no longer work because a surplus of time suddenly exists. The experience of time scarcity is thus not necessarily inherent in time consciousness, but varies with the supply of behavioural alternatives. On the other hand, Balla (1978:26–31), who also deals briefly with time scarcity within the framework of his Sociology of Scarcity, views time scarcity as ‘ubiquitous’ and ‘permanent’. This classification of scarcity is probably connected with its link to satisfaction of needs. Balla (1978:26) assumes that a ‘deficit between the time necessary to satisfy needs and realize goals on the one hand, and the actually available time on the other’ constantly exists. Thus time becomes an ‘endless bottleneck’ in individual and collective activity, and time scarcity is the basis of all material scarcity problems. ‘Economies of time’ thus achieve fundamental significance in fighting scarcity, as they are then the ‘most general, the most decisively structured type of social behaviour’ (Balla 1978:27). Because of its fundamental character, a ‘sociology of time scarcity’, which is still in its early stages, permits a varied treatment of recognized sociological questions, such as the connection between time and power, inequality, conflict and cooperation.

2.3.2 Waiting. The phenomenon of waiting, which has so far been treated above all in social psychology, economics (queueing theory), and in existential and phenomenological philosophy (Husserl, 1969) can, complementarily to time scarcity, be understood to result from a lack of time; shortage of time in one system is comparable to the need to wait in another. The sociology of time has barely dealt with this problem.
The most important work to date is that of Schwartz (1974), who not only outlines an abstract model of waiting, but also investigates the social distribution of waiting time. His main thesis is that distribution of waiting time is connected with the distribution of power. Schwartz (1974:842) sees waiting as the result of a disproportion between supply and demand, that is, as an output bottleneck on the part of the supplier. Waiting time creates costs for the one who waits, while the supplier can use his time in ‘profit-maximizing’ fashion. The power to make people wait depends on the availability of alternative suppliers and the demanders’ possession of certain resources, such as power and money. Waiting is thus only in part the expression of objective, unalterable temporal failures to synchronize; it is just as much a ritualized expression of asymmetric social connections, in that it symbolizes status boundaries or serves as a measure of social sanction (Schwartz, 1974:860ff.). Bergmann (1981a) reformulates Schwartz’s model by describing waiting as a desynchronization of input/output relations and by expanding the concept of power to include such other media of exchange as money, love, or influence – which can reduce waiting time just as money can. However, waiting time does not only arise from contact between social systems. Here, Bergmann (1981a:170) expands the range of environmental systems and shows that waiting time in social systems can also be caused by chains of events running asynchronously in natural or psychological environmental systems: the Kaffeeeklatsch cannot begin until the coffee is ready.

Using this very example, Weigert (1981) hopes to show within the framework of his sociology of everyday life that the need to wait is an objective social characteristic of various times that determine everyday life. He, too, recognizes – following Schwartz – the unequal distribution of waiting times, but emphasizes more heavily waiting in social situations in which it is indispensable: allowing others to finish speaking during a conversation, waiting for a favourable moment, or where waiting is part of the social occasion itself as, for example, during a banquet (1981:227f.). Weigert also points out that waiting can be highly valued and later socially rewarded, for example in deferring behaviour (see above, deferred gratification pattern); that is, it need not always be perceived as boring and demeaning. Within the framework of their ‘time track’ concept, Lyman and Scott (1970) treat waiting as a type of ‘sidetracking’. Aside from the differentiation between cyclical and linear forms of waiting time, waiting is not further analysed sociologically; the authors limit themselves to listing examples.

2.3.3 Time Out. Lyman and Scott (1970:204) treat the phenomenon of
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'time out' – an interruption or pause within a time track – as another type of 'sidetracking'. 'Times out' are formal or informal interruptions of the existing time order, in which the rules and role distributions are lifted. They have a dual function as relaxation periods and transition situations. Weigert (1981:231) has a somewhat different understanding of 'time out'. In addition to the phenomenon of pauses and interruptions, he also includes entire situations as 'times out' in his term 'antitime'. Thus, for example, he understands play situations, vacations and illness as interruptions of the normal time of everyday life: 'The principal effect of time out is that it interrupts the flow of mundane time' (1981:233). Only by assuming an all-encompassing everyday time, from which these situations can be seen as deviations, is the concept of 'time out' plausible. This assumption seems to me to be problematic; thus I consider Lyman and Scott's concept of 'time out' to be more useful, as it includes a particular, characteristic element within a time order.

2.4 Time as a means of social control

In the phenomena of time pressure and of making others wait, the normative, even compulsory\textsuperscript{21} aspect of temporal ordering mechanisms has become apparent. In skimming through the literature, it is striking that imposed time organization as an instrument of social control and social compulsion is generally treated critically by authors who are not sociologists, but social historians and literary critics, for example. The reason for this may be that they take greater account than sociologists of the historical development of consciousness of time and time ordering.

As Thompson (1967), Laermann (1977) and Huber (1977) make clear, time first gained its disciplinary character in the transition to industrial capitalism, where task-oriented time division gave way to work according to the clock. Industrial workers can no longer determine the rhythm of their work and life; a separation occurs between 'individual time' and the employer's time (Thompson, 1967). Because working time is reduced to its monetary value, the employers must make optimal use of their employees' time, so that no time is wasted. Thompson clearly shows, through the difficulties created in instituting a rational consciousness of time, that this new form of time measurement and time discipline was perceived as compulsion. Numerous control institutions (church, school, overseer) attempted, through external compulsion and normative pressure, to break the people's resistance to the new time norms (1978:94ff.). In his analysis of everyday time as the 'least obvious form of social compulsion', Laermann (1977:87) comes to an assessment similar to that of Thompson. With the general use of pocket watches, measured time
becomes binding on everyone; it becomes everyday time. The change from task-oriented time (workday) to clock time (everyday) with its linearity, homogeneity, predictability, purchasability, and divisability, ensures the synchronization of activity at any time. Using timetables, pressure to cooperate and punctuality norms, intersubjective compulsion is exercised indirectly. In addition, there are more direct forms of external determination through limitation, sequencing and division of other people’s time (Laermann, 1977:98). Huber (1977:20) also emphasizes the compulsion expressed in everyday urgency and the optimization of time use. He judges this as a loss of individual time and action perspectives.

Within sociology, norms and sanctions connected with the ordering mechanisms of time are usually viewed factually and are not critically assessed. Heinemann and Ludes (1978:229) describe how the individual’s freedom of disposition is constrained by external behavioural compulsions, such as the ‘social agenda’ and moral judgement on various forms of time usage. Social time structures thus serve as normative, moral guides to the use, division and localization of activities. Schöps (1980), following Geiger’s (1968) ‘sociological ordering theory’, investigated in great detail time norms, norm structures of time, and forms of ordering control.

Every time norm includes four elements: the norm core, which assigns times and corresponding behaviour to one another; the norm addressee; the person in whose favour the time norm works; and the binding quality of the norm, which depends upon the sanctions against violating the norm. Schöps (1980:104) distinguishes two basic forms of time sanctions: (1) the implicit time sanction, in which the norm violators in the end sanction themselves by missing deadlines and chances; (2) interpersonal time control, in which sanctions are clearly attributable to social instances. The particular characteristic of the ordering mechanism ‘time’ is discernible in the concept of ‘implicit time sanctions’ where the reason for the validity of time controls and sanctions is already located in the irreversibility of the passage of time. Even if Schöps makes the modern consciousness of the irreversibility of time into an absolute, her conceptual and theoretical formulations on the concept of time norms provide a very good basis for future work on the question of the normative character of social time and social control through time.
3. The time structure of specific social systems

The sociology of time and its analyses have up to now operated, mainly implicitly, on the level of the entire society, or have not emphasized any special social system. The underdeveloped state of time sociology is indicated by the fact that up to now few studies exist on separate areas of life, although the existence of system-specific 'Eigenzeiten' is generally seen. Empirical material is especially lacking. A glance at the existing studies shows a clear concentration on social systems with a high degree of formalization of social relations, namely on formal organizations and on the vocational and economic system, and on the opposing pole of highly informal relations such as family and 'street life'. For systems lying between these extremes, such as political education, religion or art there exists to my knowledge no thorough analysis.

3.1 The time structure of professions

In *Man, Time and Society*, Moore (1963a:25ff.) deals very generally with 'workers' time', characterized by detailed time planning and great time discipline. However, he also sees that the leeway for temporal autonomy in professions can vary greatly, so that, for example, less rigid time orders apply to artistic and freelance professions. All in all, Moore's descriptions remain so sketchy and general that the particularity of work in comparison with other time structures in industrial society does not become clear.

In contrast Cottrell, as early as 1939, investigated extremely thoroughly the temporal organization of the highly time-determined profession of the railway worker. The technical procedures, high speeds and 'time penalties' in cases of lateness demand a routine that is exact to the second. If this high demand for precision leads to heavy time pressure at work, the continual train traffic additionally makes this pressure long term: 'For the railroader, the split-second timing never ceases; he is always on call' (1939:194f.). Cottrell can show clearly how all private time plans remain uncertain because of the shift-work time arrangement, which in turn has an effect on the possibility of participation in public and private life.

The potentially negative social, psychological and physical results of shift work are being discussed again today; the sociology of time could make an important contribution to that discussion. Where for railroad workers the great demand for synchronization leads to heavy time pressure and high time sensitivity, these are, as Schlesinger (1977) writes in his 'Newsmen and Their Time-Machine', called forth in radio and tele-
vision news editors by the pressure to be up to date. Individual daily programmes form the temporal horizons of a constantly repeated cycle of production in which the news must constantly be brought up to date (1977:339). Because these cycles are quite short, work occurs under acute time pressure. The editors' time concept, in which currency, speed, 'action' and surprise are central elements is, however, according to Schlesinger (1977:349), more than a reflection of specific working conditions and professional knowledge; it also counts as proof of one's own professionalism: 'Immediacy is to be embraced as a true virtue. It has a kind of fetishistic character.' This example shows that it is not enough, in analysing professional time structures, to investigate only the factual, observable time order; rather, professional values and professional knowledge must be taken into account, in terms of their effect on the construction of 'professional time'.

In Chapter 3 of his book Les temps de la vie quotidienne, Grossin (1974) sets out a comparison of the time structures of four professional branches that is supported in part by empirical material. He compares workers, employees (banks and administration), farmers (wine-growers), and secondary-school teachers, on the one hand, with regard to the temporal limits and distribution of their work ('la géométrie'), on the other regarding the content ('la substance') of the activity. According to his analysis, the workers' time, parcelled into very small time units, with the return per time unit exactly determined, and work time strictly separated from free time, is opposed to the secondary school teachers' time, which includes very varied time structures where return is open and where work and free time merge into one another. Grossin (1974:128) suggests that one cannot speak of the time structure of a profession in the singular if it includes a series of very different activities; thus, for the teacher, he also speaks of 'kaleidoscopic time' (p. 123ff.). This interesting view, in which each type of professional activity is immediately assigned its own time structure, leaves unconsidered the levels of both time consciousness and professional values, which cross over individual activities and possibly work towards a standardized 'professional time structure.'

Brose (1982:386) touched upon a connection between professions and time different from the daily time routine: the 'professional biographical time structure', which he sees as essentially determined by the two normatively supported ideas of lifelong profession and professional career. According to Brose (1982:387), this time structure of the (professional) biography mediates between subjective and social time structures, whose synchronization remains constantly 'precarious'. This
mediation could be eased if new, more differentiated structures of working time would lead to a ‘flexibilization of professional-biographical time-structures’.

Despite the interesting studies by Cottrell, Schlesinger and Grossin, the ‘time sociology of professions’ has not yet progressed very far; it lacks a wide basis of empirical case studies with which comprehensive theoretical and practical conclusions would be reached. Moore’s (1963) general theses remain in limbo.

3.2 The time structures of individual social subsystems

The temporal structure of the economic system has received the most attention up to now. This may be due on the one hand to the fact that the economy most clearly embodies modern temporal consciousness, characterized essentially economically, and on the other hand that the economy’s formal organizational structure offers a favourable field of study that has, in addition, already been ‘worked through’ in its temporal dimension by the economic sciences.

In his essay ‘Die Zeit in der Wirtschaft’ (Time in the Economy) in 1924, Voegelin worked out the fundamental time rhythm of the economic system, which was based on the rhythm of current and delayed consumption. That is, every economy must be able to ensure, at the same time and in variable sequence, the satisfaction of present and future desires (for example, through investment and by sacrificing present satisfaction). As Luhmann (1971), Nowotny (1975) and Bergmann (1981a) show, with the differentiation of a special economic system in modern times, the economy’s focus shifts to the future dimension; while in simple societies, ensuring present subsistence dominates. Nowotny (1975:330) analyses the modern connection between economy and time under the title ‘The Extension of the Social Present’. This expansion of the present into the future means borrowing time, but also guaranteeing the future in the present in the form of economic security. Bergmann (1981a:215ff.), following Luhmann’s system theory, investigates the temporal structure of the economic system by studying the social function as well as the output of the economy for the other subsystems in their temporal aspect.

The social function is determined in the temporal sense as ‘extension of the time horizon into the future’, which is guaranteed by a secure economy. This guarantee of the future is made possible by economic mechanisms such as money, credit, accumulation of capital and planning. The market and money mechanisms reconcile time differences in relations with other subsystems. Moore (1963a:132) defines economic time purely quantitatively as economically available ‘man-hours’, so that
workers represent the 'supply of time'. In this view, unemployment, illness and training time mean loss of time. Moore sees the essential time problems in market-style economic coordination, in the 'time-lag' between production and sale, as well as in the modernization problem, that is, in the speed and flexibility dimensions. Moore treats time as a given in which the economic process takes place; this ignores the specific temporal character of economic structures and processes. Similarly, Miller (1959) treats time as only a dimension of internal differentiation of productive systems. Subsystem formation in the time dimension then means 'shift work'. Brose (1982:394) gives less of an analysis of existing time structures than suggestions and indicators for a 'change of social time structures in the area of the economy'. Such indicators are for Brose (1982:394ff.) reflections on the development of new forms of enterprise planning and the institutionalization of market-reactive, flexible forms of business organization such as decentralization and part-time work. Linder's (1971) thesis on the commodification of time in all areas of life belongs only marginally in the economic field, that is, in connection with work and leisure. Here time becomes the medium of production in all social systems; per time unit, more must be consumed, more read, more sports played, and so on. The characteristics of economic time such as time scarcity, thrift, future orientation and progress apply throughout the society. 23

In contrast to the economy, Bergmann (1981a: ch. 6) investigated the time structure of the legal system. In the whole of society, law fulfils a double temporal function: it ensures the validity of expectations in the present, and at the same time creates security of expectations for the future, which it thus deprives of its temporal character. The legal system focuses on the past in its relation to other subsystems because it is conditionally programmed. Thus, as a borderline system between the legal system and the environment, legal proceedings produce a common procedural present. Bergmann limits himself entirely to working out the basic structure, so that the concrete time structures of individual institutions are not considered. To my knowledge, there have not yet been any sociological studies on the topic. 24

On the relationship between family and time, there exist studies by Moore (1963a) – supported in part by empirical data from de Grazia (1962) – and Schöps (1978). Both authors begin with the family's historical loss of function, which brings it into temporal competition with, and dependence on, other social systems. Schöps (1978:162) concentrates entirely on 'analysing social time... as a central element in the structural transformation of the family'. Thus, according to the theory of
social differentiation, the family has to coordinate familial time with the
time demands of external systems, as well as within the family (p. 165).
Moore (1963a:74–8) describes ‘family time inventories’ that have become
small but flexible, according to their forms of use and including their
points of synchronization. In a further step, he goes beyond a description
of the daily routine to analyse the ‘historical’ time order of the family,
that is, the family cycle. Here, ‘time sociology’ could certainly learn a
great deal from the prospering social history of the family and from the
newer sociology of the family.

This discussion of time structures, specific to social subsystems, is
concluded by an example of a subculturally deviant time orientation that
has mainly been focused upon in comparative studies of ethnic differ-
ences. Horton’s (1967) study ‘Time and Cool People’ stands out from
the more global analyses of Strodtbeck (1961) and Green (1970). In it,
Horton (1967:8) investigates the structure of ‘street time’ as it exists in
the street culture of the American inner city. This time is not structured
by time plans and clock time, but by the results of events on the street,
that is, through the sequence of high and low points; if nothing happens,
it is ‘dead time’. Horton is mainly interested in showing the specific
rationality of time behaviour in this environment, which one cannot
interpret – as occurred, for example, in the discussion of ‘deferred grati-
fication patterns’ – as a deficient mode of temporal orientation. Using
studies of this sort, it can be made clear that time must be viewed as a
variable in social systems that varies with particular interaction and
environmental forms, and whose rationality can only be judged correctly
in relation to these.

3.3 The time structure of organizations
While the temporal structures of simple social systems, groups and large-

scale, complex societies have not been analysed at all until now, or only
in passing (cf. Luhmann, 1975a, c; Bergmann, 1981a, ch. 8), there are
two works by Moore (1963a, b) on organizations, and one by Bergmann
(1981a, ch. 8), which can probably be explained by the greater ease of
comprehension of formal structures. Thus Moore (1963b:164) emphasi-
izes that, with the availability of a specific inventory of ‘person-time
units’ or ‘man-hours’, the temporal limits for the organization as well as
for its members are clearly marked. This requires a great deal of time
discipline for both sides, because the organization’s temporal flexibility
is low and great precision of temporal coordination is thus necessary
(Moore 1963a:87). These aspects – flexibility and its limits, the sequential
order of activities, and ‘timing’ – form the centre of Moore’s studies. In
both, he compares the administrative form of organization with voluntary organizations whose time inventory is less precisely fixed and where the members themselves determine their 'time allocation', so that, in general, time-active centres and passive peripheries are formed. These associations must compete with other social systems for their members' time; this leads to the quest for optimal time demands made on members, since excessive demands for time, as well as too small demands, endanger the existence of the organization (1963b:168).

Bergmann recognizes the temporal limitation of the organization's demands on its members, but also describes strategies for widening these demands. Conversely, organizations can escape, or can better adapt to, their environment's temporal demands by internal differentiation and the establishment of systems to control limits than can simple social systems. Following a concept of Lawrence and Lorsch (1967), Bergmann (1981a:267) analyses the 'time orientation' of these organizational sub-systems which varies very clearly with the specific area of responsibility. Moore did not take into account this aspect of internal differentiation, nor the differentiation of the environmental systems. The work described here remains at a very abstract structural level of analysis. There is a lack of case studies and empirical research that could permit a differentiated conception to emerge of how time is dealt with in organizations. It is possible that studies in the sociology of organizations could provide material that would help 'time sociologists' arrive at a more exact conception of the time structure of organizations.

4. On the evolution of social time awareness

Although most studies on the subject of time either work with a comparison of archaic time and modern time awareness (for example Hallowell, 1937; Sorokin, 1943; Rezsohazy, 1970; Nowotny, 1975), or discuss specific transformation processes as, for example, the transition from the early to the late middle ages (Leclercq, 1974; LeGoff, 1960) or the transition to industrial capitalism (Thompson, 1967), they generally work without a reconstruction based in evolutionary theory. Not until the revival of evolutionary theory and the theory of developmental logic in the sociology of the 1970s did ideas of evolution gain entry into the sociology of time as well.

Luhmann understands evolution not as a causal process but as the historical connection of those structural changes that are set in motion through the interplay of the differentiating functions of variation, selection and retention. An increase in the complexity of social systems
thus results in the course of social evolution. Accordingly, Luhmann (1975:107), with regard to time, believes 'that more complex social systems form wider, more abstract, internally more differentiated time horizons than simple societies. Thus they achieve greater world complexity, with more opportunities making possible the achievement of greater selectivity in experience and action'. However, one cannot assume a relationship which increases linearly between the complexity of society and the form of time structure. In later writings, Luhmann (1979, 1980) precisely traced the transformation of time awareness in the course of the development of modern society, based on the changing semantics of the concept of time. Although he follows Luhmann's ideas, Rammstedt (1975:49; n.d., p. 1) wants nothing to do with a development in forms of time comprehension in the sense of a higher development or generalization. Nevertheless, he sees the forms of time comprehension as an 'evolutionary achievement' (n.d., p. 1), and he also speaks of evolutionary 'overtaken comprehension' of time that can survive in social niches (1975:59). Rammstedt seems to see evolution as a volatile, aimless change in which, historically, completely new forms of time comprehension arise constantly that cannot be derived from the previous forms. From this starting point, Rammstedt (1975:50) distinguishes four independent forms of time comprehension:

1. occasional time awareness: now/not now
2. cyclical time awareness: before/after
3. linear time with closed future: past-present-future
4. linear time with open future: continual movement/acceleration

Like Luhmann, Rammstedt draws parallels between the differentiating forms in societies (undifferentiated, segmented, stratified, functionally differentiated systems), their evolutionary manifestations (archaic, ancient, medieval and modern society) and the four types of time comprehension described. Although certain developmental lines thus appear, for example, the increasing separation of time and event, or the abstraction of natural processes, Rammstedt holds to his thesis of the incompatibility of forms of time comprehension.

There has been little elaboration up to now of attempts to reconstruct time awareness in the framework of an evolutionarily logical construction of worldviews. Gunnell (1968:23) assumes that space and time are very insecure concepts among primitive peoples, and only become fixed in the course of humankind's intellectual development. Formation of time awareness and the appearance of conceptual thinking, especially the introduction of measurement are, he argues, aspects of the same form
of experience. According to Gunnell, the development of a concept of time on the individual level reveals great similarity to the evolution of social and cultural comprehension of time, so that one could use the findings of developmental psychology to reconstruct the social evolution of time awareness. Gunnell hardly develops the potential of parallelism, but Piaget's work provides the opportunity to test this thesis confronting ethnological and historical findings. Eder (1976) follows Piaget with his concept of cognitive developmental logic in social evolution. In his concept of the gradual evolution of worldviews, Eder (1976:55) also dealt marginally with reorganization of temporal schematization. Thus, for example, a consequence of the technological innovations of the Neolithic revolution is the formation of a historical, cosmogonical time that replaces 'precausal, magical structuring of time', so-called 'dream time'. Further transformation of worldviews – the transition from mythical to rational thinking and from speculatively rational to empirically rational thinking – also led to an evolution in time awareness.

Other authors, such as Zerubavel (1982) and Reszohazy (1970), do not list evolutionary types of time awareness, but formulate dimensions of development. Zerubavel, for example, sees in the introduction of standard time at the end of the 19th century a development from 'local time' to world time (generalization) and an increasing separation of time reckoning from natural processes (abstraction, socialization). Reszohazy (1970:23–5) sees at least five forms of the relationship between social time and society, from which one can read the degree of development; 'la précision de la rencontre: l'étallement des activités; la prévision; le sens du progrès; le temps comme valeur en soi' (exact meeting times; dovetailing activities; foresight; a sense of progress; time as a value in itself). His thesis is that a society is more developed the higher the level of the temporal dimension named. The findings of the research introduced here establish the validity of the assumption of an evolution in time awareness connected with the development of social systems. Elias (1982:998), too, recommends an 'evolutionary' perspective for the study of social time.

5. Social change and time

Time always plays a central role in theories of social change. However, as Giddens (1979, 1980) shows, one must neither connect time with the change and dynamics of social systems in sociological theory, as in his opinion functionalism and structuralism do, nor represent synchronic structural analysis as timeless snapshots of social systems. Giddens
(1979:198) considers it a fundamental error of these theories 'that time is identified with social change' since time is both obviously and logically a component of stability as well as of change. Thus, studies that view 'time' as a necessary component of the processes of change will be excluded from this review, for social time cannot be equated with social process; it means the normative and symbolic order of movement, and not the movement itself. In contrast, only works will be considered whose theme is the concept of time or time structures in their influence on social change or on theories of social change.

Heirich (1964:387ff.) investigates the way in which time is used as a central factor in models of social change. He found four distinct ways of use: (1) time as a social factor, that is, either in the sense of a scarce social resource or as the carrier of particular social meaning; (2) as a causal link between other variables in the sense of a time setting (configuration) or a temporal sequence; (3) as a measure for quantitative changes in relationships; (4) as a qualitative measure for qualitative changes in social structures. In the second part of his essay, Heirich reviews evolutionist, diffusionist social history as well as marxist and history of philosophy theories of social change to find out how and to what extent the points mentioned were considered and what deficits arise in the theories as a result of neglecting individual points.

While Heirich remains entirely focused on theories of change, the essays by Apostle (1966), Bell and Mau (1970), Wallis (1970), and Noyes (1980) deal with the influence of a temporal orientation on the dynamic of change itself, that is, we switch from the level of theory to that of the subject. Apostle (1966:263ff.) constructs three 'ideal types' of society, each possessing a specific time orientation – one future-oriented, one present-oriented and one past-oriented society – and assigns each type a different degree of dynamism. His construction shows that the types named cannot appear in pure form, but must create mixed forms. It is, in my opinion, not possible to do much with such typologies in this general form, especially when only one dimension of time is singled out and considered in isolation from other social conditions. For Bell and Mau (1970:209) one form of future orientation, which they call 'images of the future', is a key variable in the theory of social change, because these images orient individual and collective behaviour. 'The behaviour is viewed as largely the result of decisions . . . which are essentially choices among alternative futures . . . Images of the future are of critical importance in influencing which of the alternative futures is chosen' (p. 218).

The 'images of the future' thus drive social change forward and at the same time give it direction. However, social change can be delayed or
can face resistance if blueprints for the future or time horizons differ. Noyes (1980:67) proposed the theory that social reformers have a wider time horizon than their contemporaries, and that the ‘temporal discalibration’ that thus emerges is a major obstacle to the execution of their plans. Utopian blueprints that reach far into the future remain ‘unrealistic’ until, in the course of time, they come within the society’s narrower time horizon and then, under changed conditions, appear realizable. Planning for social change must thus reckon with a delay factor that can only be reduced if the planner adapts his time horizon to the social horizon, or through ‘educational measures’ expands the social future horizon. That political behaviour and decisions are influenced by temporal orientation was shown by Wallis (1970:106) who included the connection between time perspectives and political behaviour under the concept of ‘chronopolitics’. Thus, for example, a very limited time perspective (tempocentrism) leads to extremist political action; if the present is seen as a time of fundamental decisions, this leads to a ‘politics of crisis’ (p. 102). Such monocausal tracing of political forms of behaviour back to time perspectives seems to me to overestimate the importance of temporal orientation.

Waldmann (1971:692) analyses ‘time and change as basic elements of social systems’ from a more methodological point of view. In a critical examination of two important methods of measuring social change – balance analysis and cross-section comparison – he comes to the conclusion that the effects of the processes of change are recorded but that the process of change itself as a structured phenomenon does not come into view. As a consequence, Waldmann introduces time as a system dimension. This changes the methodological relation between time and change that has prevailed until now, in which time plays the role of measure, and changes the role of the object to be measured.

A logically and systematically satisfying solution to the relationship between time and change, in the sense of the priority of one of the two quantities is hardly possible. One will have to be satisfied with the attempt to comprehend this relationship as precisely as possible and to make it transparent. (Waldmann 1971: 700)

In fact, the relationship between time and change becomes more complicated when time is not seen as a fixed ontological parameter, but as a variable whose expression influences the process and the interpretation of social change. If one separates movement or process from time as construction of social reality and from chronology, as Luhmann (1976: 135ff.) also suggests, then time can no longer function simply as a stan-
dard for social change; rather, the chronology then offers the comparative scheme with which differing movements can be measured. The theory of social change will have to take account of this difference between time and chronology, just as it may not conflate time and the process of change.

6. Taking account of time in sociological theory and methodology

If time is a constituent part of the object of sociology, and not just a condition of the recognition of this object, then sociological theory must integrate the category of time adequately into its set of terms. Luhmann (1980:32–3) sees the reason for its very limited occurrence in the fact that ‘the question of time’ touches ‘fundamental dispositions of sociological theory’. It is possible that fundamental theoretical decisions on the concepts of action and system decide ‘with what depth of focus sociological theory sees the phenomenon of time’. A series of works exist that have sounded out various sociological authors and theories on the extent to which they ‘take time seriously’ (Apostle, 1966; Giddens, 1979, 1980; Kolaja, 1969; Martins, 1974). As we have already seen above, Giddens accuses functionalism and structuralism of excluding time from synchronic structural analyses by identifying time with change. This exclusion is, according to Giddens (1979:199), impossible for two reasons: (1) the study of social activity includes the lapse of time, just as the observed behaviour itself does; (2) even stability means nothing other than stability over time. ‘For social systems only have structural properties in and through their “functioning” over time; the “patterning” of social relations is inseparable from their continual reproduction across time’ (1980:91). With this, Giddens simply repeats the old accusation against the static nature of functionalism. With his concept of structuration which is expected to solve the connection between behaviour and structure, Giddens (1979:200) hopes to achieve a temporalization of structures, so to speak, but in the end, time remains just an external space in which changes happen:25 ‘Time elapses in a sequential way in all societies’.

Martins (1974) comments ironically on the accusation against functionalism, repeated ad nauseam, that it was incapable of sufficiently considering the element of time. In his opinion, these accusations overlooked two important points: (1) the development of functionalism towards an inclusion of time and change, for example in the revision of the structural functionalist concept itself, in the theory of evolution and in such theoretical developments as counter-rotating processes and asynchronization; (2) successor theories such as ethnomethodology,
symbolic interactionism, phenomenological sociology, behaviour theory, structuralism and the Goffman approach have brought little progress with regard to time and change (1974:246ff.). Martins then analyses the theories, looking at their consideration of the aspects of time and historicity. In this connection, he makes an important distinction between two forms in which ‘time’ can appear in theory: on the one hand, temporality, social time and historicity can appear as a theme or problem, even if the theory does not even consider time in its fundamentals (thematic temporalism); on the other hand, time, change and diachrony can be viewed as elements with methodological priority, or as ontological bases of sociocultural life (substantive temporalism).

While Martins assesses almost all sociological theories negatively for ‘substantive temporalism’, for ‘thematic temporalism’ things do not look as bad. Contrary to Giddens’ assessment, Martins (1974:350) ranks structuralism most highly, followed by symbolic interactionism and phenomenological sociology. Ethnomethodology and Goffman’s theory are at the bottom; they also come out the worst with regard to ‘substantive temporalism’. According to Martins (1974:253), accusations about the neglect of time and change categories can also be upheld for post-functionalist theories, although all theorists maintain otherwise. Other authors, such as Apostle (1966) and Kolaja (1969) study the classics of sociology – Durkheim, Halbwachs, Weber, Sorokin, Parsons – looking at the extent to which these writers built the element of time and change into their theories and corresponding methodologies. However, in their short treatments they generally remain very much on the surface, and thus cannot match Martins’s more precise analysis.

In recent years research has been published which attempts to move time to a central position in sociological theory (Srubar, 1975; Luhmann, 1979, 1980; Schöps, 1980; Bergmann, 1981a, b). Only a very brief description is possible here.

Following Husserl’s phenomenology of inner time consciousness and Schütz’s concept of life-world, Srubar (1975:10) sees an ontological double character in time. Correspondingly, in determining social time, two ‘origins of time’ (p. 227) must be distinguished: the subjective constitution of time and the objective time production in the actual development of the social structure (p. 21). Srubar then sketches the outline of a model with which the interconnections between both types of time, and the effects of these interconnections on social behaviour, can be shown. This model includes three levels: the level of subjective, inner time-consciousness, which creates consciousness of time between subjects, from which the time structure of the social world arises; the level
of social processes that structure the concept of time; and the level of
the comprehensive historical context (1975:22).

Schöps (1980) develops her theoretical approach by going back to
Geiger's 'theory of social order', in which he assumes that social pro-
cesses and relationships are based on numerous independent normative
ordering principles. According to this model of a 'system of ordering
structures', time is revealed as an independent normative ordering prin-
ciple that on the one hand has all the characteristics of an ordering
system (time norms, control mechanisms, sanctioning procedures), and
on the other possesses its own ordering mechanism. This analytical order-
ing model of time is then 'applied' by Schöps (1980:151ff.) within the
framework of system theory.

Luhmann (1979, 1980) and Bergmann (1981a, b) who connects
Luhmann's reflections with Mead's reflections on time theory, approach
the concept of action by understanding the relationship between action
and time as going beyond the usual ends/means scheme. Luhmann
(1979:63) hopes to replace the subject/action scheme implied in the
ends/means scheme with a 'time/action scheme', by viewing actions not
as processes but as events that constitute the present. Questions then
arise concerning the novelty of events, the connections between present
occurrences and the past and future, and the attribution of action. Berg-
mann (1981b) hopes to show that the social act and time have already
been connected in similar fashion in Mead's (1959) 'theory of sociality'.
Mead sees human behaviour as specific forms of events that do not
happen in time, but themselves first constitute a present with past and
future horizons. Because of the particular structure of human behaviour
(reflection phase), it is possible to take on others' time perspectives, and
thus to constitute a social time (Bergmann, 1981b: 362).26

The theoretical approaches described here are still quite isolated from
one another; mutual criticism, acknowledgement and further cumulative
work have barely begun. However, with Luhmann at the forefront, a
'time-sociological' focus in system theory has begun to emerge that bor-
rows from other theoretical traditions, especially from phenomenological
sociology (Bergmann, 1981a, b; Schöps, 1980).

III. Concluding Remarks

In its wide historical and disciplinary range, this report on the literature
shows the wide variety of thematical and theoretical aspects and
approaches in 'time sociology' and its related disciplines; it demonstrates
the continuity and (especially) the discontinuity in the treatment of the various thematic areas; and finally, it reveals the 'blank areas' where nothing at all has been done up to now. The element of discontinuity became particularly clear in the treatment of the theoretical and methodological problems. Following the attempts by Durkheim, Mead, Schütz and Sorokin and Merton in the first third of this century to determine the sociological position of time, the 'tradition' broke for almost 40 years (Gurvitch being an exception) and has only recently been resumed. Meanwhile, general descriptions were interspersed with a few isolated studies while consistent empirical research concentrated mainly on the problem of time perspectives, probably conditioned by the cooperation of psychology and a strongly empirical orientation. Here we have already arrived at the 'blank areas', because 'time sociology' lacks above all empirical studies in which the time aspect is the main theme. Empirical material is essentially only available where related disciplines such as psychology or ethnology have developed it. As Schlesinger (1977:337) observed correctly, social time has only been investigated in 'primitive' societies, but not in modern societies, for the analysis of which sociologists lack the empirical material. In addition to investigations of entire societies, which would certainly be very difficult given the complexity of modern societies, there is also a lack of investigations of the temporal structures of social subsystems and subcultures that could support analyses of entire societies from the viewpoint of the sociology of time. In addition to theoretical explanations of the concept of time and empirical studies, the study of the time structures of social subsystems is among the most urgent tasks of a sociology of time.

As a challenge to continue, and to cushion against disappointments in the treatment of the subject of time, I close with a quotation: 'For the social scientist, time adopts the somewhat discourteous practice of wearing different hats which are seldom raised to greet the unwary researcher with an unambiguous meaning. However, time appears to be no more eager to reveal its true identity to the physical scientist, so take courage' (Carlstein et al., 1977:2).

Notes

NOTES

1. Section I was originally intended as a description of the category of time in several ‘classics’ of sociology; however, I abstained from this in order to prevent the report on the literature from becoming too long. Instead, I have limited myself in this introduction to a few extremely condensed references to the central statements on the sociology of time propounded in these ‘classics’. Literature on this aspect: Kolaja (1969); Lüscher (1974); Srubar (1975); Joas (1980); Schöps (1980); Bergmann (1981a, b).

2. A good description of the ‘space–time theory’ in the *Annales* with corresponding literary references is found in Wüstemeyer (1967, 1975).

3. The concept of time in particular is at the centre of the debate between the historian Braudel and the sociologist Gurvitch on the relationship between history and sociology in the newly forming discourse in the social sciences after the second world war. Cf. Wüstemeyer (1967:31ff.; 1975:570ff.) for this debate and the corresponding references.

4. For a more detailed criticism of Sorokin’s exaggerated concept of ‘social time’, see Kolaja (1969:27) and Bergmann (1981a:141ff.).

5. Gurvitch’s extensive work on the ‘multiplicity of social times’ has proved to be the ‘dead hand’ of time sociology until now, which may be put down to its specific sociological approach namely its ‘discontinuous typological method’ (Gurvitch 1973:174). Criticism in Reszohazy (1970:21), Lüscher (1974:107), and Bergmann (1981a:16).

6. Although Hulett Jr.’s work: ‘The Person’s Time Perspective and the Social Role’ (1944/45) appeared earlier, it had no stimulating effect on the discussion.

7. Thus Lüscher (1974:104) criticized ‘simple measurement techniques accompanied by doubtful sampling procedures,’ while Kasakos (1971:30f.) found fault with the combination of fantasy and reality levels.


9. Kasakos aims in the same direction; she also considers the plurality of social times to have been neglected.

10. This questionnaire included the following components as characteristics of future-orientation: (a) cognitive structuredness; (b) causal attribution (internal vs. external causation assignment and stability of causal factors over time); (c) optimism/pessimism as indications of the likelihood of occurrence; (d) desirability; (e) importance of prescribed future events (Füchsle et al., 1980:187f.)

11. On the relationship between utopian proposals and present reality, see also Noyes (1980) and section 2.5 of this paper.

12. Cf. also Luhmann (1976), who notes no new works on this complex since 1971.

13. Luhmann (1980:273), too, points out this new development ‘that time creates fear’.


15. One can gain a sense of the complexity of temporal viewpoints in particular from Bourdieu’s work on the Kabyle, cf. for example the difference between
future perspectives in a close and a distant horizon, each with a different reality character (1968:61ff.).


17. Khare reveals this connection using Hindu time reckoning as an example.


19. However, Eickelman (1977:39ff.) correctly points out that, in the investigation of only putatively 'closed societies,' the influence of modern civilization on their view of time has been neglected. He himself provides an example of this cultural mixing in his investigation of a Moroccan tribe. Bourdieu (1968:55 footnote) has a similar opinion.

20. See also Zerubavel (1979).

21. Cf. for example the concept of 'calendar compulsion' that Pross (1978) used in a newspaper article.

22. A chapter on the time structure of modern art may be found in Wendorff (1980:573ff.).


24. To my knowledge, only Peters (1966), in his essay 'Der Zeitfaktor im Strafrecht' (The Time Factor in Criminal Law), has taken as his subject the significance of time in the emergence, fighting and punishment of crime.

25. Margaret Archer has recently criticized Giddens's approach in her lecture 'Structuration vs. Morphogenesis,' which she gave at the 10th World Congress on Sociology, Mexico City, 1982 (British Journal of Sociology, vol. 33, 4:455–83).

26. Bergmann (1981a, ch. 3) pursues yet another conception: he tries to draft the 'outline of a sociological concept of time', based on a connection of the theories of Husserl, Mead and Luhmann.

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