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WHAT IS SOCIAL ACCELERATION?

1. PRELIMINARY CONSIDERATIONS: ACCELERATION AND ESCALATION

In view of the notorious lack of clarity regarding the concept of acceleration in the contemporary social science literature, the introduction of an analytically adequate and empirically useful definition of acceleration stands first and foremost as a desideratum for any social theory.¹ Of course, one problem that immediately arises is that there are quite heterogeneous acceleration phenomena in different areas of society that are both difficult to bring together under a single concept and at first glance not clearly connected to one another. For instance, what do the following facts have to do with each other: that speed records in sports are broken with increasing regularity (which can partly be traced to improved technology, partly to more precise measurement of minuscule time intervals); that new computer models increase their processing speed every couple of months; that in modern Western societies the average time spent sleeping and eating seems to steadily decrease while, on average (statistically), change of intimate partners, place of residence, and membership in civil society associations as well as fashion and product cycles occur faster and faster?²

If one searches for a definition of acceleration that can encompass all these phenomena, one thing that quickly proves unhelpful is a recourse to conventional definitions from high school physics that measure acceleration in terms of the amount of distance traveled, e.g., $a = v/t$ or $a = \Delta s/t^2$. In fact, this would only cover the first kind of phenomenon mentioned. The inappropriateness of such a narrow physical definition can be seen clearly, for instance, in Helga Nowotny's definition of acceleration. She first claims that "acceleration does

not just mean . . . increased speed of all [!] social processes,” yet then surprisingly in the next sentence she appears to reduce it to the faster traversal of distances when she continues, “it conditions a temporal norm of generally increased mobility which is the result of both technologically and economically mediated processes for the transportation of goods, human beings, energy and information *that have to overcome spatio-temporal distances*.”³ Just after this, however, she indicates that acceleration or mobility has become a general social norm: “goods, human beings, energy, money and information should change their locations *with increasing frequency* in order to circulate in a comprehensive sense, both economically and culturally.”⁴ Contrary to the misleading association with distance traveled, an accelerated changeover in place of residence cannot be captured by that physical formula. In this case there is no question of distances that are covered *faster*. Rather, they are covered *more frequently*, a distinction that makes a decisive difference.

Nowotny’s reflections make clear that the articulation of a workable definition of social acceleration should involve a strict analytical distinction between two basic forms of acceleration. Numerous phenomena can be described as forms of 1. an *intentional* and *goal-directed* and therefore in the widest sense “technical” acceleration of particular processes (e.g., enhancements of performance in sports, transportation, or computer technology). To be distinguished from this form of technological-teleological acceleration are 2. increased social *rates of change*, that is, for instance, the acceleration of changeover in jobs, political party preferences, intimate partners, and membership in voluntary associations or of change per unit of time in occupational and family structures, artistic styles, etc., i.e., the acceleration of social changes that are not inherently goal directed.⁵

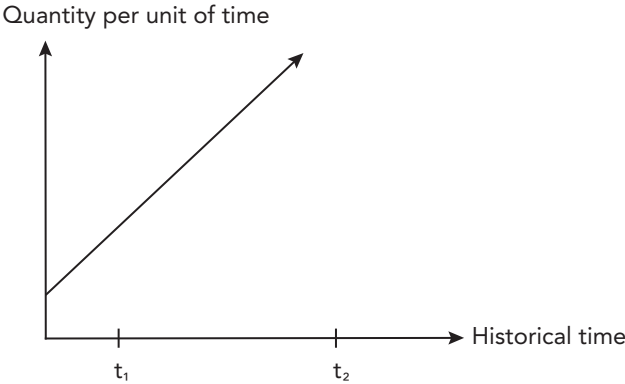
If you consider the list of acceleration phenomena you will very quickly discover that these two specifications of the concept of acceleration still do not cover all the relevant phenomena: the attempt to save time through fast food, speed dating, power naps, or multitasking, i.e., by shortening or condensing episodes of action, represents a reaction to a *scarcity of time* that can be classified under the heading neither of accelerated social change nor of technical acceleration. In view of the manifold types of technological acceleration, the fact that time becomes scarce is actually in itself a paradox that requires explanation. For this reason, there can be no doubt that 3. the *heightening of the pace of life through an increase of episodes of action and/or experience per unit of time* that is linked with a scarcity of temporal resources and the resulting

“lack of time” constitutes an independent third category of social acceleration in modern society.

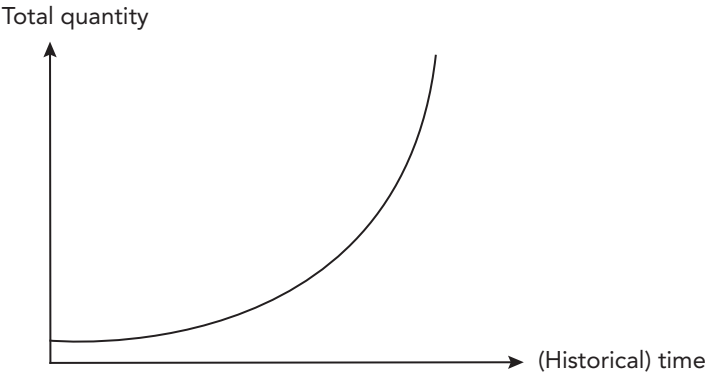
In almost all the studies done on the theme of acceleration, *one* of these three forms or spheres of social acceleration is, for the most part unreflectively, placed front and center while phenomena in the other domains are falsely subsumed under the chosen category. Thus the work of Paul Virilio, for instance, circles around the phenomena of technological acceleration, while Hermann Lübbe or Matthias Eberling concentrate on the acceleration of social change, and Georg Simmel or Robert Levine occupy themselves with the acceleration of the pace of life. Doubtless the most interesting question, however, concerns the *internal connection* between these categories of acceleration. Before we can pursue this matter further, we should first take up the question whether the concept of acceleration can be defined in such a way that it can simultaneously capture the relevant phenomena in these three analytically independent domains and thereby allow us to determine their *logical* relation to one another and thus help guide research on their *empirical* interconnection.

The recourse to Newtonian physics is more helpful if one replaces the distances contained in the given equations with an abstract quantitative variable. Acceleration can then be defined as *an increase in quantity per unit of time* (or, logically equivalent, as a reduction of the amount of time per fixed quantity). Various things may serve as the quantity measured: distance traveled, total number of communicated messages, amount of goods produced (category 1) or the number of jobs per working lifetime or change in intimate partners per year (category 2) or action episodes per unit of time (category 3; see figure 2.1).

Now to understand the relationship between technical acceleration and acceleration of the pace of life it is of decisive importance to get the exact connection between quantitative growth and acceleration into view. If it is a matter of processes of continuous (i.e., uninterruptedly advancing) “production,” then acceleration results in exponential growth (cf. figure 2.2). A paradigm example of this kind of growth curve is, for instance, the increase in world population during the last three hundred years.⁶ Similar acceleration curves are found in, say, the rampant growth of cancer cells and also in the increase in the diffusion of commodities or technological innovations: for example in the amount of scientific publications or the number of Internet connections or e-mails sent per year.⁷

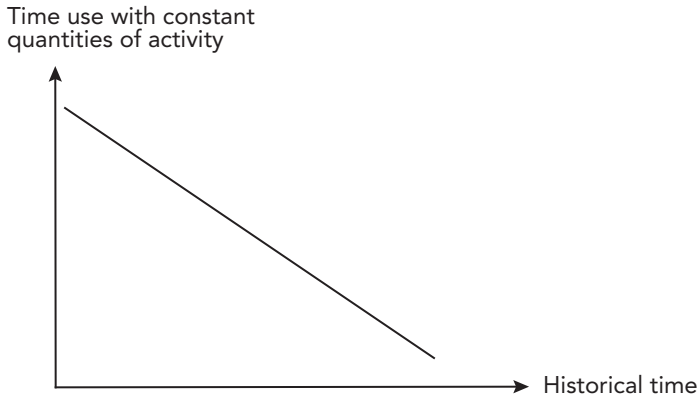


2.1. Acceleration as Increase in Quantity Per Unit of Time



2.2. Exponential Growth as a Result of Acceleration of Continuous Processes

However, it is of crucial significance that processes of transportation, production, and communication, which constitute the focal points of technological acceleration, are all *noncontinuous* and therefore display no intrinsic tendencies of growth. The fact that today it is possible to cover the distance from A to B in a shorter time neither logically nor causally implies that we do (or should) cover these distances more frequently or control larger expanses, and, likewise, the possibility of communicating a certain quantity of signs in less time (across a certain distance) neither logically nor causally brings with it the duty or even the tendency to communicate larger quantities or more often. In itself the capability of producing a given quantity of goods faster is independent of any *escalation of production*. Yet if the quantity transported,



2.3. Time Use with Constant Quantity of Activities in an Age of Technological Acceleration

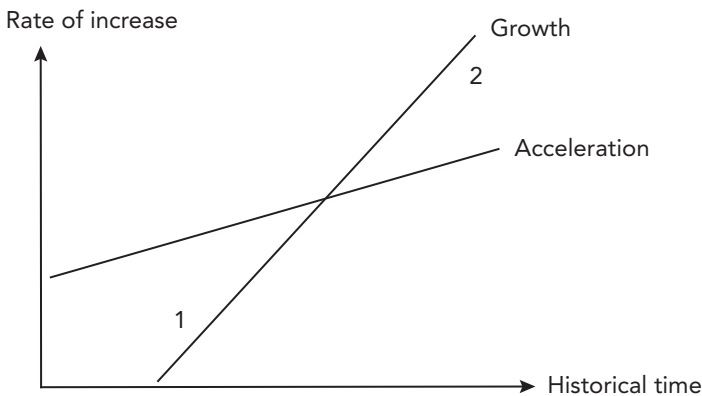
communicated, or produced remains constant, the “pace of life” decreases rather than increases as a logical consequence of technological acceleration, since the time needed for the fulfillment of a given task shrinks: “free time” arises in the sense of a freeing up of formerly tied-down time resources (cf. figure 2.3). Under these conditions the problem of time scarcity progressively slackens.

So if the subjective phenomena of stress, hecticness, and lack of time are traced back over and over again in pop science literature to the immense *technical acceleration* of numerous processes, which at first glance appear to be the most powerful drivers of a ubiquitous social and cultural acceleration, then this is a result of the unreflective assertion that in modernity more or less “everything” becomes faster. This fallacy is as blatant as it is widespread. The dynamics and the temporal compulsions of social and psychic life in industrial and postindustrial society cannot be derived from achievements in technologically supported acceleration, since in fact the latter stand in direct logical contradiction to the former. The heightening of the “pace of life,” the temporal scarcity of modernity, arise not *because* but rather *even though* enormous gains in time through acceleration have been registered in almost all areas of social life.

On the basis of this insight it is clear the acceleration of the pace of life or the growing scarcity of time is a consequence of a quantitative increase that has to be logically independent from the processes of technical acceleration: we produce, communicate, and transport not just faster but also *more* than ear-

lier social epochs. For a progressive shortfall in time resources can in principle only arise if either more time is needed to tackle a given task, i.e., in cases of technical deceleration, or if the *growth rate* (of production of goods and services, of the number of transmitted communications, of distances covered, of activities to be completed) outpaces the *rate of acceleration* of the corresponding processes. Only in the latter case do technical acceleration and the acceleration of the pace of life appear simultaneously. This case occurs where, for instance, the quantity of distance to be covered (of goods to be produced, of communications) at an initial point in time t_1 triples at a later point in time t_2 while the speed of movement (of production, of communication) has only doubled. The more strongly the rates of acceleration lag behind the rates of growth, the greater the shortage of time will be; on the other hand, the more the former exceed the latter, the more time resources will be set free, i.e., the less scarce time will become. If the two rates of increase are identical, then the pace of life or the shortage (or excess) of time will not change, regardless of how high or low the rates of technical acceleration may be (figure 2.4).⁸

Thus the guiding hypothesis of this work runs as follows: *modern society can be understood as an “acceleration society” in the sense that it displays a highly conditioned (voraussetzungsreiche) structural and cultural linkage of both forms of acceleration—technical acceleration and an increase in the pace of life due to chronic shortage of time resources—and therefore also a strong linkage of acceleration and growth. This implies that the average rate*



2.4. “Free Time” and “Time Scarcity” as Consequences of the Relation of the Rates of Growth and Acceleration. (1)=Decreasing, (2)=Increasing pace of life. When the rates are identical the pace of life does not change.

of growth (defined as increase of the total quantity of things produced, communicated, distances covered, etc.) *exceeds* the average rate of acceleration.⁹

And in fact there is now sufficient empirical evidence for the claim that the temporal resources “gained” or set free by technological acceleration, for instance, in the household by means of washing machines, microwaves, vacuum cleaners, etc., are simply tied up once again through corresponding quantitative increases in activity. Thus investigations from the 1960s and ’70s indicate that the time spent at home surprisingly tends to increase rather than fall with the number of household appliances. According to an extensive countrywide American study of time use from 1975 involving 2,406 respondents, owners of dishwashing machines spent on average one minute and owners of laundry machines four minutes *more* at home each day than adults without these appliances, and the vacuum cleaner saved only one minute.¹⁰ From this, John Robinson and Geoffrey Godbey conclude, in agreement with the hypothesis developed here, that “what likely occurred with other technology is happening with the microwave oven: potential time savings are turned into increased output or improved quality.”¹¹

This pattern is also confirmed by the effects of the automobile on time resources: the possession of a passenger car did change the amount of time spent underway, but not in the direction of less. Instead, the acceleration-induced gain in time is invested in more frequent or longer travels so that in time budgets the time allotted for transportation seems to be invariant relative to the speed of movement.¹²

From the observation that the usage of time in particular fields of activity like the household and transportation remains relatively stable, i.e., behaves largely neutral with respect to technological innovations, Robinson and Godbey conclude that growth and acceleration rates develop in parallel, hence that gains in time from technology and losses in time from qualitative and quantitative intensification stay in balance. According to the definition we have developed, congruent rates of growth and acceleration are neutral with respect to the pace of life, although Robinson and Godbey as well as those questioned by them assert an *acceleration* of the pace of life (one the authors find inexplicable). If one assumes that it is not *merely* a question of an objectively unjustified phenomenon resulting from distorted subjective perception,¹³ then two mutually supplementary possible explanations present themselves, both of which are difficult to operationalize in time use studies: first, relative constancy in the time resources devoted to a particular kind of activity does not in any way confirm an agreement in rates of growth and acceleration

since higher growth rates can be balanced out by a condensation (or thickening) of episodes of action or by “multitasking.”¹⁴ For instance if the speed of movement doubles through technological innovation, but the distance to be covered triples, then one way of keeping the transport time constant is to reduce time spent resting. Similarly, if the increase in the quantity of tasks outpaces technological acceleration, then the time spent at home can be held constant by, say, cooking and vacuuming *at the same time* where these activities were previously done *in succession*.¹⁵ In such cases the growth rate exceeds the rate of acceleration and, as a consequence, the pace of life quickens, since formerly free microtemporal resources *within* the time dedicated to a given field of activity now become tied up.

A second explanation for the quickening of the pace of life can be found in a specific “side effect” of new technologies: the opening up of new fields and new possibilities of action. Making use of these often requires additional time resources (one thinks for instance of the time use effects of the video recorder), and this may even lead to a net loss of *free* time resources. I will come back to this later. However, we can already conjecture at this point that the multiplication of options and contingencies is among the main causes of the acceleration of the pace of life.¹⁶ The former is nevertheless in no way a simple consequence of technological innovations. Indeed it is not even in general derivable from them without further assumptions (e.g., regarding why the complete exhaustion of new options or the opening up of new fields of action appears attractive in the first place). As will be shown later, it can only be more precisely understood in the context of the phenomena that have been classified here under the category of the acceleration of social change.

Taken as a whole, then, these preliminary considerations make clear that the various acceleration phenomena can in fact be grasped with a unified concept, although they show at the same time that there is no direct logical or causal connection between the three designated domains of acceleration. So what results is a new desideratum for research, namely, to answer the question regarding the more complex *empirical* links between the partial dimensions of social acceleration: what drives forward the process or, better, the processes of acceleration, and what structural and/or cultural linkages can be found between the quantitative logic of escalation (*Steigerung*) and the acceleration dynamic of modernity? Before I try to give this question a systematic answer in part 3, we must first make more precise both the definitions of the three dimensions of acceleration and also their delimitation from one another (chapter 2.2). This will facilitate the investigation of their empiri-

cal manifestations and their structural and cultural consequences in part 2. In the meantime, however, what follows is a categorial specification of the phenomena and social domains that withdraw from or oppose the identified accelerative tendencies of modernity, that is, a categorial definition of forms of social deceleration (chapter 2.3), and then an empirically supported analysis of the relation between the accelerating and decelerating tendencies of modern society (2.4). The verdict that modern society is an acceleration society can only be justified if it can be shown that in modernity the forces of movement systematically outweigh the forces of inertia.

2. THREE DIMENSIONS OF SOCIAL ACCELERATION

The conceptual proposal I have made suggests that for the purposes of a systematic study of social acceleration and its constitutive role in modernity, we must distinguish between three types of phenomena that are analytically distinct but interconnected, logically irreducible to each other, and empirically related in complex and partly paradoxical ways. These three forms of acceleration, which will now be precisely defined and delimited from each other, are technical acceleration, the acceleration of social change, and the acceleration of the pace of life.

A) TECHNICAL ACCELERATION

The most evident and consequential shape that modern acceleration takes is the *intentional, technical, and above all technological (i.e., machine-based) acceleration of goal-directed processes*. Paradigmatic examples are processes of transportation, communication, and production (of goods and services). This is the form of acceleration that can be most easily measured and demonstrated (despite all the problems confronting an exact establishment of average velocities).

The history of the acceleration of movement from premodern and preindustrial society to the present, and hence from travel on foot, horse riding, and the steamship to the railway, the automobile, and finally to the airplane and the spaceship is familiar to everyone and well documented, so it requires no repetition. In its course top speeds multiplied from roughly 15 to well over 1,000 kilometers per hour, or, if one takes into account space travel, to several thousand kilometers per hour, therefore at least by a factor of 102.¹⁷ Leaving

aside the absolute top speed, the speed limits of the particular modes of transport also climbed at the same time: cars, ships, locomotives, airplanes, space shuttles, and even bicycles today achieve much higher speeds than when they were introduced, although we are approaching the limits of the possible (and reasonable).

For the thesis of a general mobilization and dynamization of society, however, the increase in *average* speeds is far more important than top speeds. Even though there can be no doubt that here too there have been tremendous increases since the industrial revolution, it is much more difficult to establish precise values. The most exact measure for the form of social acceleration connected to the acceleration of transport would be the quantity of goods and persons that can be transported per unit of time and their average velocity.¹⁸ As we will see in the next section, these two values sometimes stand in a negative relationship to each other: the more persons that simultaneously wish to move, the lower their average speed if congestion effects occur as a result of overloaded infrastructures. This explains why the average speed of several forms of transport (for instance, urban traffic) seems to sink rather than climb.

Increases in the speed of transportation lie at the root of the pervasive modern experience of a “shrinkage” or “compression” of space. The experience of space is to a great extent a function of the length of time it takes to traverse it. (“How far is it from Berlin to Paris?” — “10 hours by car or one hour by plane.”) While in the eighteenth century it took several weeks to get from Europe to America, today the journey only requires around six hours by plane. As a consequence the world seems to have shrunk to something like a sixtieth of its original size. Accelerating innovations in transportation are therefore mostly responsible for what can be described, following David Harvey and others, as “the annihilation of space by time.”¹⁹

While the inversion of the priority of space into a priority of time has been caused by the acceleration of movement, the acceleration of information transmission has been just as influential. The narrative of acceleration in this case is also well-documented and familiar: from “marathon runners” through horse-riding messengers, smoke signals, and mail pigeons to telegraphs and telephones and finally to the, in the truest sense of the word, u-topian, spaceless Internet, where pieces of information lose their location and can be transmitted at the speed of light. In the course of this development it was not just the speed of message transmission but also the quantity transmittable per unit of time (in a particular medium) that continuously grew. This “transmission

revolution” comes a bit later chronologically than the “transport revolution” and appears to be in various respects a reaction to the latter.²⁰ According to Karlheinz Geißler’s estimate, in the twentieth century alone the speed of communication increased by a factor of 107; Francis Heylighen even calculates the increase during the last two hundred years to be a factor of 1010.²¹ Presumably, however, what is decisive for the character of interpersonal communication is less the quantity of data that machines can make available worldwide at the speed of light than the fact that both asynchronous (i.e., through e-mail or answering machine) and synchronous communicative interactions are possible at any time independent of the respective location of the conversation partners.

Technical acceleration designates not only the faster movement of humans, goods, messages, and (as Virilio emphatically points out) military projectiles across the earth but also the more rapid production of goods, the speedier conversion of matter and energy, and, though in lesser measure, the acceleration of services.²² As James Beniger thus correctly remarks, “by far the greatest effect of industrialization . . . was to speed up a society’s entire material processing system.”²³ The story of acceleration to be told here describes the path from the steam engine to the utilization of hydraulic power and the combustion engine, on down to electricity and the technologies of industrial mass production and the assembly line, arriving finally at the microtechnologies of the computer age.²⁴

The industrial revolution, interpreted by Virilio as a “dromological” revolution, is therefore in the first instance also a revolution of production speeds, one that continues in the “digital revolution” during the transition to the twenty-first century. As Gundolf Freyermuth writes, “the replacement of physical processes by virtual ones promises the desired acceleration of reaction times and cycle times in the direction of real time. While under analogous circumstances it often required weeks to recognize and satisfy a change in demand, this can occur many times faster through a complete networking of all members of the chain of supply and distribution, from the suppliers and the participants in the actual production and distribution process down to the final customers.”²⁵

So acceleration is achieved either by the immediate virtualization and digitization of once material processes (for example, in the development of a model), which indeed allows an acceleration to the speed of light in some areas, or rather by building digital information transmission into analog ones, i.e., material processes and chains of action, which thereby fall under further

pressure to accelerate. In fact, in the new possibilities of virtualization and digitization the three predominant forms of technological acceleration overlap: the conventional transport of goods like recording media or books is replaced through digitization by a form of pure information transmission, and similarly material processes of production (for instance, the development of designs or architectural models) can be transformed into information processing procedures through virtualization. The speed of data processing also rose by a factor of around 106 in the twentieth century.²⁶ Yet this does not mean, as Geißler supposes, that the end of the acceleration process has been reached because the speed of light represents a final limit. Data can be *transferred*, but not *generated*, at the speed of light, and the pressure to accelerate at material interfaces has grown immensely as a direct result of the possibilities of digitization.²⁷

In the capitalist economic system, however, the continually rising speed of production necessarily goes hand in hand with the escalation of speeds in distribution and consumption, which are in turn driven by technological innovations and thus share responsibility for the fact that the material structures of modern society are reproduced and altered in ever shorter periods of time. Yet a precondition of this was and is that modernization, beyond these basic forms of *technological* acceleration, is simultaneously characterized by an acceleration of processes of organization, decision, administration, and control—for example, in modern bureaucracies and ministries—that falls into the category of *technical* acceleration in the wider sense (i.e., intentional acceleration of goal-directed processes through innovative techniques).²⁸

B) THE ACCELERATION OF SOCIAL CHANGE

If one takes a closer look at the way technical innovations affect social institutions and practices it becomes clear that social change and technological innovation can be analytically distinguished even though they naturally often go hand in hand empirically and historically. I have defined technological acceleration as the *intentional acceleration of goal-directed processes*, whereas the acceleration of social change relates to the tempo of change in, on the one hand, practices and action orientations and, on the other, associational structures and patterns of relationship. An accompanying postulate is that the *rates of change themselves change*, i.e., they accelerate. So, for instance, the replacement of an early capitalist organization of labor by a Taylorist labor regime represents at once a form of social change and a phenomenon

of technical acceleration, but taken by itself it is not at all an example of the *acceleration* of social change. Only a reorganization of the labor process that appears at ever shorter intervals could be so understood. Conversely the replacement of party platforms with a four-year term by a two-year term represents an example of accelerated social change that contains no element of technical acceleration. The difference can also be illustrated with an example from the history of innovation diffusion: the period from the invention of the radio at the end of the nineteenth century to its distribution to 50 million listeners lasted 38 years; the television, introduced a quarter of a century later, needed only 13 years to achieve this, while the Internet went from the first to the 50-millionth connection in barely 4. In view of this finding, Thomas H. Eriksen asks rhetorically, “is anybody still in doubt as to whether [social — H. R.] change accelerated during the twentieth century?”²⁹ F. Heylighen presents a similar numbers game when he lays out how the period from the invention of the typewriter in 1714 to successful diffusion through marketization lasted 174 years, for inventions like the freezer and the vacuum cleaner at the beginning of the twentieth century around 30–40 years, for new technologies like the CD player or video recorder, in contrast, only a decade until their mass diffusion.³⁰

What is decisive here is the fact that the tempo of the social implementation of new technologies, i.e., the spatial extension of alterations in practices and action orientations, is neither logically nor causally reducible to technological acceleration itself (leaving aside, naturally, infrastructural preconditions). Insofar as, for example, the sheer increase of processor speeds in computers is accompanied by neither a significant alteration of action orientations nor a shift in social patterns of association, it has an entirely neutral relationship to social change (not to deny that, empirically speaking, technical innovations often have changes in practices and/or patterns of relationship as consequences).

Contrary to the widespread assertion that society today is being transformed at historically unprecedented speeds,³¹ Eriksen’s rhetorically intended question cannot be as easily brushed aside as he believes because there is no agreement in the sociological literature about how *social change* as such can be precisely defined, what its indicators are, and which innovations are to count as fundamental ones—consequently the assertion of its acceleration is also not on solid ground.³² Thus Marie Jahoda remarks, “while there is much talk about . . . the increasing rate of change in complex societies, how to define *rate of change* is an as yet unsolved problem in the social sciences,”³³ while

the historian Peter Laslett distinguishes between nineteen (!) types of social change divided into four categories of speed, in an elaborate and overcomplex system of classification (political change and the tempo of life are said to be the fastest, while changes in the relations of production and social structure occur most slowly; in between these are technical and economic change and the alteration of attitudes and mentalities), yet then observes in regard to the question of acceleration that despite numerous evidences of it research is still compelled to rely on intuitions and impressions.³⁴

In view of this situation, I would like to propose that we define the acceleration of social change using the concept of the *contraction of the present* introduced by Lübbe and also suggested by Luhmann's systems theory. With Lübbe we can define the *present* as a time period (*Zeitraum*) of stability in which, in Reinhart Koselleck's terms, the space of experience and the horizon of expectations are unchanged and thus congruent. Only within such time periods can conclusions about the present and the future be drawn from previous experiences, and only in them do experiences and learning processes have an action-orienting power, because expectations find a certain measure of security.³⁵ From this perspective, then, the past characterizes everything that *is no longer valid*, whereas, in contrast, the future encompasses that which *is not yet valid*.³⁶

This definition allows a differentiation or pluralization of the past into various realms of value, function, and action and thereby the introduction of the idea of the *noncontemporaneity of the contemporaneous*³⁷: what is still valid within one geographical or social realm has already lost its validity in another; what is already realized here, still lies in the horizon of the future there. In the context of this definition, Lübbe's conjecture is that modern societies experience an ongoing contraction of the present as the result of an increasing social and cultural "rate of obsolescence" or a growing sociocultural "compression of innovation."³⁸ This conjecture is strengthened by Koselleck's observation that the perception of such a compression in the form of a historical experience of acceleration has really defined modernity from the very beginning.³⁹

The acceleration of social change can thus be defined as an increase of the rate of decay of action-orienting experiences and expectations and as a contraction of the time periods that determine the present of respective functional, value, and action spheres. Such a standard of stability and change can be applied to social and cultural institutions and practices of any kind: the thesis of a general acceleration of social change states that the "present" contracts as much in politics as in the economy, science, and art, in work relations as much as

in family arrangements, and just as much in moral as in practical everyday orientations. Hence the present contracts from both a cultural as well as a structural perspective. Armin Nassehi, drawing on Luhmann, finds the same: “the present, the concrete, eventual now of social situations, is exposed to a new situation in comparison with earlier social forms: it is becoming ever smaller and more limited and falls under the pressure of earlier events and above all of those expected in the future.”⁴⁰ Where that is the case, one can rightly speak of an acceleration *of* society, whereas the phenomena of technical enhancements of speed falling under the first category of acceleration are to be understood rather as accelerations of this or that phenomenon *within* society. Of course it is also conceivable that this process of contraction occurs at differing speeds in the various spheres and that in particular realms of society a standstill or, conversely, even an “expansion of the present” may arise, which might lead to phenomena of increased social desynchronization. Therefore an acceleration-theoretical diagnosis of the times cannot avoid scrupulously examining the society being investigated for evidence of the developments just described. In the next section I will attempt to develop the categorial apparatus necessary for this.

While the acceleration of social change is defined in the first place by Lübbe in an action-theoretical way, it finds a surprising correspondence and confirmation in the systems-theoretical reflections of Niklas Luhmann. For Luhmann “the present” is, in the first instance, constitutive for each system operation insofar as it continually redifferentiates past and future; where the past appears as determined, the future, on the other hand, as (still) undetermined. In a further sense, however, he understands it also as a time period within which (from the perspective of a system) the time horizons of the past and future, and consequently the basis for expectations and decisions (or selections), remain stable, and he leaves no doubt that modernity is characterized by a progressive shortening of these time periods.⁴¹

From this point of view, “contraction of the present” or social acceleration means that past and future must be rewritten in the various areas of society at ever shorter intervals.⁴² For Luhmann it is not so much actual social change that becomes a problem in modern society as it is the growing instability of time horizons and bases of selection produced by the ongoing revision of expectations and reconstructed experiences.⁴³ I will come back to the difference between instability and change in chapter 4, where the manifestations and side effects of, as well as the empirical evidence for, this second form of social acceleration, which is on the whole far less evident than in the case

of technical acceleration, will be discussed. However, at this point let me already suggest that altering time horizons and expectations are themselves to be grasped as manifestations of social change.⁴⁴ Their stability can then be made into a measure of the acceleration or slowdown of social change.

C) THE ACCELERATION OF THE PACE OF LIFE

As I already tried to show in chapter 2.1, the heightening of the tempo of life, understood as an increase in episodes of action or experience per unit of time, cannot simply be derived from the acceleration of social change, even if, of course, it represents an obvious (although not necessary) reaction to the latter development.⁴⁵ On the contrary, the shortage of time resources and the consequent “lack of time” (*Zeitnot*) stand in a directly paradoxical relation to the category of technical acceleration. Therefore, the escalation of the pace of life that is particularly central to popular science diagnoses of acceleration and gives the strongest impulse to the call for deceleration constitutes an analytically independent third category of social acceleration.

This third kind of acceleration can be defined by means of an objective and/or a subjective component. *Objectively*, the acceleration of the tempo of life involves a shortening or condensation of episodes of action that can be identified in principle by, for instance, time budget studies, as presented by, among others, Manfred Garhammer, Jonathan Gershuny, and Robinson and Godbey. What is meant by this are, for example, the shortening of mealtimes or amounts of sleep or of the average time spent communicating in the family, but also attempts to reduce the total duration—i.e., the stretch of time between the ending of a previous activity and the beginning of the next one—of a trip to the cinema, a feast, a burial, etc. This can be achieved, on the one hand, by a direct increase in the speed of action (*eat or pray faster*) or, on the other hand, by a decrease in rests and empty times between activities, which may also be described as a “condensation” of action episodes.⁴⁶ As we have already seen, however, this condensation and thus increase of action episodes per unit of time may be reached not only by a direct acceleration but also by stacking them up, i.e., by simultaneously performing several activities (*multi-tasking*), which may lead to a de facto diminishment of the speed of individual activities but nevertheless make possible a faster completion of a set of actions taken as a whole.⁴⁷ If such temporal transformations form a consistent pattern, they lead cumulatively to an increase in the number of episodes of action or

experience per unit of time that can be objectively verified by the methods of empirical social research.⁴⁸

Since the heightening of the pace of life should be understood as a result of the scarcity of time resources, which means that the increase of the quantity of actions exceeds the technical enhancement of the speed of performance (cf. figure 2.5), *subjectively* it is expressed in the growing sense that one lacks time or is pressed for time and in a stressful compulsion to accelerate as well as in anxiety about “not keeping up.” The acceleration and condensation of action episodes then represents an obvious reaction to these perceptions. Moreover, the scarcity of time resources presumably constitutes here (alongside the experience of a contraction of the present) the main cause for the *feeling* that time itself is going by faster. In fact, such experiences of time have in the meantime been quite well confirmed in highly industrialized societies. The inhabitants of rich industrial states do indeed feel themselves increasingly pressed for time (which speaks in favor of an exponential acceleration or at least for the encroachment of a new wave of acceleration), and they complain on a massive scale about the scarcity of time.⁴⁹ Yet the fact that this experience of time has accompanied modern society in continually repeated waves since at least the eighteenth century does not prove that the pace of life in modernity has always been high, but rather strongly indicates that it *constantly accelerates*: it is a result of ever more scarce time resources. Strictly speaking, it says nothing at all about the “absolute” tempo of life.

This is not the place, however, to argue about the causes, manifestations, and consequences of the acceleration of the tempo of life, since I will come back to these in chapter 5. In the context of this categorial explication of the basic framework of my theory of social acceleration, I would simply like to point out a problem of demarcation regarding the first and the third of the suggested dimensions of social acceleration. In many cases the shortening of episodes of action is directly connected to the introduction of new techniques, that is, with technical acceleration. When, for instance, a long-distance runner covers a ten-thousand-meter distance in a shorter time because of the development of new breathing and running techniques, then according to the definitions so far developed it seems to be a form of technical acceleration (i.e., the intentional acceleration of a goal-directed process through the utilization of a new technique) as well as a phenomenon of accelerated life tempo (i.e., the acceleration of an episode of action). The latter definition, however, appears to be counterintuitive in the context of this example, if not absolutely

absurd: to interpret the improvement of running time as a heightening of the pace of life is more a light-hearted jest than an enlightening academic (non-)achievement. This indicates that, first, one must proceed with caution when defining action episodes: not the run itself but rather participation in the entire corresponding event should be understood as a completed episode of action. Episodes are not just determined through one's own activity but also through the given context. The shortening of track and field competitions from six to four hours, for example, by running the hammer throw and the long-distance run at the same time, would in fact constitute an example of the heightening of the tempo of life. Second, however, this example makes clear that the shortening of particular episodes of experience or action taken by itself does not suffice to verify an acceleration of the pace of life: the freeing up of time resources (through technological acceleration or by foregoing activities) per se, i.e., without new commitments, is in fact an indicator of an abatement of the tempo of life, as I have shown. Only the increase of action episodes per unit of time (e.g., day, week, or year) satisfies the definition given. That requires, to stick with our example, that our runner uses the gain in time to, say, get to the cinema earlier, which could then indeed be interpreted as a heightening of the pace of life.

Beyond the measurable and objective definition proposed here, the prevailing sense of the scarcity of time and the quickness of social life in modern societies is an extraordinarily complex social-psychological phenomenon that cannot be adequately understood and explained without a systematic incorporation of *cultural* factors. One result of their analysis in chapter 5 will be that the experience of an acceleration of the pace of life in modernity encompasses both an increase of the *speed of action* and a structurally induced alteration of the *experience of time* in everyday life.

3. FIVE CATEGORIES OF INERTIA

In view of the danger of following a simple logic of subsumption and interpreting *all* regions and phenomena of social life as determined by the acceleration dynamic along the three analytically distinguished dimensions, it is essential to undertake an exact characterization of the forms, function, and status of those processes and phenomena that evade a dynamization or even actively resist it by either not being acceleratable or by having tendencies to slow down. In both cases they serve as a “brake” or “decelerator” in accelerating

social environments. Only when we can determine their relation to the forces of acceleration will we be in a position to say in exactly what sense one can speak of an acceleration *of society*. Analytically, one can distinguish here five categories of deceleration or inertia that, as it were, cut across the three identified dimensions of acceleration.⁵⁰

A) NATURAL LIMITS TO SPEED

First, there are quite evident (geo-)physical, biological, and anthropological limits to speed, i.e., processes whose duration and velocity absolutely cannot be manipulated or can be only at the price of a massive qualitative transformation of the process accelerated. To this class belong, for instance, the speed limits of the brain (e.g., perception, stimulus processing, and reaction as well as regeneration times) and the body (one thinks of processes of growth or the overcoming of sicknesses),⁵¹ but also of the tempo of reproduction for natural raw materials, for example, the conversion of ocean deposits into oil. Beyond this, perhaps one of the most momentous limits to speed is represented by the capacity of the ecosystems of the earth to process toxic substances and waste materials.⁵² The seasons and days also cannot be accelerated, although their effects can now be manipulated and simulated: for instance, by altering the temperature with heating systems and turning night into day with artificial light. In agriculture there have been several cases in which the natural speed limits of biological processes, for example, the egg laying of hens, were successfully augmented by shortening the daily alternation of light and dark to twenty-three hours using artificial lights. The same is true of growth processes through the use of breeding: trees planted using the so-called tall spindle system, for instance, bear fruit after only four to five years while conventional tree varieties need fifteen or more years for this. However, they also become fruitless in a shorter period of time. They are, in a certain way, disposable trees.

Wherever the acceleration of social processes is hindered by natural speed limits attempts are made to push these back, and these efforts are often astonishingly successful. Therefore caution is warranted when postulating absolute limits to speed. In particular one has to be on guard against rashly viewing the insecurities and psychic or even physical irritations that result from a massive surge of acceleration as insurmountable or even anthropologically grounded barriers. This can be impressively illustrated with the history of railroad travel. In his brilliant reconstruction of the transformation of our consciousness of space and time in the wake of the institutionalization of the

railroad, Wolfgang Schivelbusch demonstrates that the “annihilation of space and time” (or the annihilation of space by time), which is even today stylized as the central characteristic of late modernity, already dominated the early discourse about the railroad in the first half of the nineteenth century.⁵³ However, the first railroad travelers did not just feel that space and time were apparently being annihilated. They also imagined themselves to be at the limits of what the human body can cope with and the senses process: the “panoramic gaze,” which is directed into the distance and not fixed on things and is thus capable of perceiving and enjoying the passing landscape even while moving at high speeds, had to be at first gradually developed and practiced. Early passengers often became physically ill as a result of their exposure to the rapid change of impressions, persons and landscapes while looking out of the railcar window.⁵⁴ As Schivelbusch shows, the technological innovations of the railroad gradually brought about a new relationship to space and time that incorporated mobility as a constitutive factor, and little by little new modes of perception and behavior developed that were adapted to the accelerated tempo and transformed something that at first appeared to be frankly pathological into a new form of normality that even became an unavoidable social demand.⁵⁵

The displacement of the limits to speed and the related changes in the perception of quickness and slowness are revealed in the fact that the railroad counts today as a slow and peaceful mode of transportation, one that is, compared to the highways and airplane travel, even a paradigmatic medium of “Slow Time” (Eriksen), while it appeared to the eighteenth century to be inconceivably fast and damaging to human health (and meanwhile has reached much higher velocities).⁵⁶ Quite similarly, today certain forms of jazz music that, at the time of their emergence in the first half of the twentieth century, were experienced as breathless, hectic, exceedingly fast, machine-like, and stupefyingly chaotic—and thus as fitting reflections of their era—are touted as “music for tranquil hours” or “jazz for a peaceful afternoon.”⁵⁷

In view of such phenomena and drawing on Sigmund Freud, Norbert Elias, and Walter Benjamin in a train of thought reminiscent of Simmel’s reflections on the metropolis, Schivelbusch conjectures that the civilizing acceleration of social life exposes moderns to an ever denser sequence of new and aggressive stimuli that have disturbing and irritating effects so long as the psyche of the affected does not respond with a (consciousness- and perception-altering) reinforcement of the “stimulus defense mechanism.”⁵⁸ Therefore it is an empirically open question whether the rise in anxieties observed in the

discourse of late modernity in the face of a further round of acceleration actually represents a reflexlike repetition of a well-known cultural reaction to a new surge of acceleration before the formation of appropriate new modes of perception and behavior or in fact signals the arrival at more massive social, ecological, and perhaps anthropological limits, the exceeding of which could cause the structural and cultural arrangements of modernity to collapse. In the fourth part of this inquiry I will consider and attempt to systematically link together several signs that point in the latter direction. With respect to the surmountability of physiological-anthropological limits to speed, one has to take into account the new possibilities that loom in genetic technology and its fusion with computer technology, something Virilio sees as the beginning of a “transplant revolution” that may bring with it yet another revolutionary overcoming of previously immutable barriers.⁵⁹ The requirements of cultural and structural reproduction may therefore constitute weightier limits to speed than biophysical processes.

B) ISLANDS OF DECELERATION

Further, one naturally finds both territorial and social niches or oases of deceleration that have until now been partly or entirely left out of the accelerating processes of modernization. In these places, in these groups (e.g., in certain sects like the Amish communities in Ohio or in socially excluded groups) or these contexts of practice,⁶⁰ it literally appears that “time stood still”: this customary figure of speech indicates a social form that is resistant to such processes, one that becomes increasingly anachronistic in comparison with the surrounding temporally dynamic social systems. Sticking with the metaphor, the clocks run there “as they did a hundred years ago.” Such oases of deceleration fall under strong territorial, cultural, and economic pressures of erosion. The temporal distance to their readily and willingly accelerating environments becomes ever greater and thus more costly, while at the same time the braking effect they have at the interfaces to the accelerated social world increases. Of course, places and forms of practice that have been consciously created or preserved as islands of deceleration (for instance, “wellness oases”) are excluded from this erosion and fall under the fourth category of deceleration identified here. As Helga Nowotny and Hermann Lübke remark, these acceleration-immune phenomena gain “nostalgic” value and make more enticing promises the rarer they become.⁶¹

C) SLOWDOWN AS DYSFUNCTIONAL SIDE EFFECT

Slowdown and stoppage are appearing in modern society ever more frequently and in increasingly severer forms as *unintended consequences* of acceleration processes. Dysfunctional deceleration phenomena and pathological forms of slowdown belong here. Without a doubt, the most well-known example of dysfunctional deceleration is the traffic jam: for instance, for several years the average speed of traffic in American urban centers has been sinking as a result of the continuous rise in traffic levels. With respect to pathological slowdowns, recent research yields increasing support for the notion that depression and related disorders may appear as a pathological reaction to and withdrawal from the social pressure to accelerate. In phases of depression it often seems to the sick person that time stands still or turns into a toughened mass.⁶² One can also include in this category the exclusion of employees from the labor force insofar as its structural ground lies in escalations of tempo (and hence productivity) in the production process, something that often results in the inability of those affected to keep up with the high speed of work and innovation demanded, leading to extreme deceleration in the form of undesired unemployment.⁶³ Economic recessions, characterized in English-speaking regions precisely as “slowdowns,” can themselves also presumably be interpreted as dysfunctional side effects of the successful acceleration of the production process.⁶⁴

However, slowdown does not only emerge as an immediate side effect of processes of acceleration. It is also, to a far greater extent, a sideeffect of (acceleration-induced) desynchronization phenomena, e.g., in the form of waiting times. In functionally differentiated societies, wherever goings-on must be synchronized with one another or temporally geared to each other, a temporal change like the acceleration of processes leads to potential friction problems at the synchronization points. This is especially problematic and immediately detectable where highly accelerated processes impact upon “backward” systems: that which can go faster is, over and over again, slowed down or stopped by that which goes slower.⁶⁵ In some situations this desynchronization leads (temporarily) to massive real slowdowns, as when complicated chains of work fall so far out of step that blockages occur. The *impression* of delay, however, can also generally arise where different speeds encounter each other, even if no actual braking effect is observed. For instance, the unbearable impatience that sets in when the Internet search engine becomes torturously slow in delivering results seems to represent an interesting example of this.

Even here one is dealing in the end with a synchronization problem. The computer “simulates” a dialogue and answers questions, but with continual delays that lie well beyond the frame of the conversationally tolerable three-second window of attention. Thus the feeling emerges that one is being “held up” by the computer, although it is precisely the computer that achieves immense time savings in comparison to previous methods of obtaining information.⁶⁶

Finally, beyond this slowdown and delay can also set in as dysfunctional side effects of (as a rule temporally concentrated) events like accidents, natural catastrophes, or wars (these last are also sometimes used to delay developments in hostile countries, in which case they fall under the next category).

D) TWO FORMS OF INTENTIONAL DECELERATION

Intentional efforts and often ideologically justified movements toward conscious deceleration and social slowdown must be strictly distinguished from phenomena of unintended and dysfunctional deceleration. They can be further subdivided into genuine (ideological) decelerating movements, which often appear as a basically oppositional force with decidedly antimodern features, and slowdown efforts that aim at maintaining or even promoting functional and accelerative capabilities (whether individual or social) and thus actually represent, in the end, strategies of acceleration.

DECELERATION AS IDEOLOGY As is clearly shown in the examples of resistance to new technologies like the mechanical loom, the railroad, or the telegraph, the call for decisive or radical deceleration has constantly accompanied surges of acceleration in the history of the modern era up to the present day, and it often blends together with a fundamental critique of modernity and principled protest against (further) modernization.⁶⁷ This is not at all strange if the thesis of this work is valid, namely, that the modernization process is best understood as, in the first instance, a process of acceleration. The longing for a lost world of calm, stability, and leisure that is almost constitutive of modernity is borne by fantasy images of premodernity that become connected in social protest movements to the ideas of a decelerated post- or countermodernity. So it can hardly be surprising that the fundamentalist demand for radical slowdown, which is becoming louder in industrial societies as a result of the previously diagnosed waves of acceleration caused by the digital and political revolutions at the end of the twentieth century, often appears in the garb of a radical criticism of modern culture and society.⁶⁸ In fact, political radicalism

in the twenty-first century is increasingly directed against continual change and aims at preservation of and stasis for the status quo. This leads Peter Glotz to surmise that at the moment deceleration is becoming “the aggressive ideology of a currently emerging and rapidly growing class (or social stratum) of victims of modernization” and is, moreover, on the verge of replacing socialist conceptions as an ideological model (*Leitbild*).⁶⁹ The goal of this ideology is to bring the acceleration process of modernity to a halt in the name of a better society and form of life. It is nourished from very different sources, including religious, ultraconservative, or anarchistic ones as well as the deep ecology movement.⁷⁰

The slowdown movement promises “a new well-being through deceleration”⁷¹ and is organized partly in intellectual, partly in grassroots associations like the “Union for the Slowing Down of Time” or the “Happy Unemployed” who celebrate themselves as “leisure gangsters”⁷² and thus place themselves in a tradition that includes Paul Lafargue and Bertrand Russell.⁷³ Although the widespread representations and fantasies of radical slowdown in this milieu have strong currency on the plane of ideas, that is, in lectures, conferences, and publications, they only seldom reach the structure-relevant plane of action.⁷⁴ This can be accounted for in part by the fact that the price of individual slowdown in postindustrial societies is very high: whoever withdraws herself from the pressure of an accelerated tempo (for instance by joining a sect, taking over an ecofarm, or plunging into a time-forgetful drug culture) risks missing the boat and finding no chance for readmission. When after several years she is ready to return to mainstream society, her resources are hopelessly obsolete. It remains to be seen whether initiatives like the slow food or the voluntary simplicity movements can spread to such an extent that they actually achieve relevance for society as a whole.⁷⁵ Furthermore, in the end many, if not in fact most, of the desires for deceleration are not directed against modern society as such, but rather against particular consequences of it, e.g., the hurried workplace, the speed of traffic in the neighborhood. However, precisely on account of their particular nature, they are often incongruent. Many of our everyday needs for deceleration are so selective that they contain their own negation: we wish, for instance, that we would finally have time for ourselves, for family, for hobbies, etc., and precisely in order to achieve this we simultaneously desire and demand that *everyone else* hurry up: the cashier in the supermarket, the official in the tax ministry, etc. Even the traffic light should turn green and the tramcar go faster. Therefore selective deceleration in complex and networked societies is only possible to a very limited degree.

Nevertheless that does not provide an absolute objection to the effort to establish, as it were, protected spaces in the sense of the aforementioned islands of deceleration that enable other, i.e., slower experiences of time. To be counted among this form of intentional deceleration are also, for instance, forms of “aesthetic-artistic” slowdown through scene setting in the arts, which can not only enable the enduring presence (*Präsenhalten*) of other experiences of time but also help bring about a transformed perception of the temporal structures of late modernity.⁷⁶ Interestingly, such experiences of deceleration also occur sometimes precisely as a consequence of higher speeds: for instance, when people can relax during high-speed rides on the highway (or the rollercoaster) through the externalization of unrest.⁷⁷ They thereby attain deceleration through acceleration. With this we have already arrived at those forms of intentional deceleration that are not directed *against* the time structures of the “acceleration society,” but may rather be entirely *functional* for it.

SLOWDOWN AS A STRATEGY OF ACCELERATION Of exceptional significance for the functional capacity of modern societies are processes and institutions of purposeful partial and temporary deceleration that must not be confused with the efforts of the ideological countermovement against the acceleration dynamic. These strategies of slowdown may be indispensable pre-suppositions for the further acceleration of *other* processes. They are implemented by both individual actors and social organizations.

On the level of the individual, one can count retreats at monasteries or courses in meditation, yoga techniques, and so on as belonging in this category insofar as they are meant in the end to serve the goal of coping with the swift-paced life of the workplace, relationships, or everyday routine even more successfully, i.e., faster, afterward.⁷⁸ They represent oases of deceleration where one goes to “refuel” and “get going again.” In addition, attempts to, for instance, assimilate more learning material in a shorter time through the conscious slowing down of particular learning processes or to heighten innovativeness and creativity through deliberate breaks for rest unmistakably constitute strategies of acceleration-through-slowdown.⁷⁹

On the collective level, various forms of moratoria are developed and implemented in a similar way, above all in politics, in order to make time for the solution of fundamental technical, social, legal, or even environmental problems that appear to be an obstacle to further endeavors to accelerate or modernize.⁸⁰ From this standpoint, an important insight into the interconnection

of stability and dynamization in modern societies presents itself. Namely, given the fact that the call for deceleration can be nourished by both these very distinct motives—an antimodern and, so to speak, a “functionalist” one—it is clear that Glotz makes it too simple for himself when he simply brands deceleration as an ideology of the victims of modernization. In so doing he overlooks the fact that *acceleration by means of institutional pausing and the guaranteed maintenance of background conditions* is a basic principle of the modern history of acceleration and an essential reason for its success as well. In central areas acceleration is made possible precisely by the fact that authoritative institutions like law, political steering mechanisms, and the stable industrial work(time) regime, together with leading abstract cultural orientations such as values and ideas of progress, rationalization, individualism, universalism, and activism,⁸¹ were themselves exempted from change and therefore helped create reliable expectations, stable planning, and predictability. This in turn must be viewed as the foundation of economic, technical, and scientific acceleration and perhaps also of an accelerated individual conduct of life.⁸² Only against the background of such stable horizons of expectation does it become rational to make the long-term plans and investments that were indispensable for numerous modernization processes. The erosion of those institutions and orientations as a result of further, as it were, “unbounded” acceleration, propagated by the followers of postmodern or neoliberal philosophies and diagnosed in postmodernity by various social scientists, might undermine their own presuppositions and the stability of late modern society as a whole and thereby place the (accelerative) project of modernity in greater danger than the antimodern deceleration movement.

Joseph Schumpeter had already indicated the possibility that the attempt to clear away all barriers to speed in the service of a maximal acceleration, that is, the unleashing of the “total market,” could achieve the opposite of what was intended: the collapse of the developmental dynamic and hence economic slowdown through recession and depression. Even from an economic point of view, then, “shackles and brakes”⁸³ might prove to be functional for further acceleration.⁸⁴

Lübbe presents this argument from a culture-theoretical perspective when he places the stability and preservation (*Bestandsgarantie*) of some cultural fixed points among the presuppositions of successful cultural reproduction, in particular under the conditions of flexible and accelerated social change: “Highly dynamic cultural development presupposes a high constancy in the validity of some cultural elements. Dynamic cultures put themselves at risk

from the rapid obsolescence of tradition that complements their dynamism, and in order to cope with this, declining traditional resources, whose validity demonstrates constancy, become all the more important. In other words, there seem to be limits, from both an individual and an institutional perspective, to the capacity to process innovation.”⁸⁵

In this sense, to say it once more, selective social deceleration for the purpose of hindering an erosion of institutions necessary for the continued existence of society may be, from both a cultural and structural perspective, a functional requirement of the contemporary acceleration society. The investigation of such tendencies of erosion under the pressure to accelerate of late modern societies will therefore be a central object of part 4.

E) STRUCTURAL AND CULTURAL RIGIDITY

Perhaps the most interesting form of an (at least superficially) opposing deceleration in the context of a theory of social acceleration are the phenomena of cultural and structural rigidification or crystallization, already encountered multiple times, that constitute the fifth and last category of slowdown or inertia. As has been shown, they are paradoxically closely connected to social manifestations of acceleration and have led to theories, such as those of the “end of history,” the “exhaustion of utopian energies,” “cultural crystallization” and the “utopia of the zero-option,”⁸⁶ that postulate a paralyzing standstill in the inner development of modern societies complementary to the diagnosis of an acceleration of social change. Underlying them is the suspicion that the apparently limitless contingency and openness of modern societies and their rapid, continuous change are merely appearances at the “user interface,”⁸⁷ while the solidification and hardening of their deep structures goes unnoticed. In chapter 1.3, I formulated the fundamental hypothesis of this work, namely, that these complementary processes of social hyperacceleration and societal rigidity, which find their most eloquent expression in the metaphor of “frenetic standstill,” are systematically and not contingently connected to each other. The forms of slowdown included in this category are thus not opposed to the modern dynamic of acceleration but instead represent an *internal* element and an *inherent* complementary principle of the acceleration process itself. Since an entire chapter in the last part of this book is dedicated to their analysis, and since what are here loose ends of the developing theory of acceleration will systematically converge there, further discussion of this category right now is unnecessary.

4. ON THE RELATION BETWEEN MOVEMENT AND INERTIA IN MODERNITY

The categories of *inertia* introduced in the last chapter have made clear the untenability of the notion that “everything” became faster with the advent of modernity. Much remains as fast (or slow) as it ever was, and some things are even slower. Reflected in that quite stubbornly repeated formula, though, is the almost constitutively modern conviction of a ceaselessly advancing shift in the balance between the elements of inertia and movement in favor of the latter.⁸⁸ Now that we have defined the forms of social acceleration and deceleration, we are in a position to make their relations to each other more precise and thus test the cogency of that view.

In principle, two possibilities are conceivable here. The first consists in a basic equilibrium of the forces of inertia and movement, i.e., we find processes of both acceleration and deceleration in the temporal structures of society without being able to identify a dominant long-term trend. The second, in contrast, rests in the possibility that the balance actually shifts in the direction of movement and acceleration, i.e., in favor of progressive dynamization. Such a diagnosis would be justified if (and only if) discernible (and nonfunctional) elements of slowdown and inertia were proved to be either *residual* or *reactive* with respect to the forces of acceleration.

My thesis is that the latter condition is in fact fulfilled in modern society. It rests on the two assumptions that, first, the listed categories of inertia exhaust all the relevant phenomena and, second, none of them embody a structural and/or cultural countertrend that could equal the acceleration dynamic of modernity. The justification for this claim runs as follows: The phenomena listed under categories (a) and (b) describe the (retreating) *limits* of social acceleration; they do not at all represent a contrary force. The slowdowns of the third category are *side* effects of acceleration, and as such they derive from it and hence are secondary in status. The processes classified under category (d₂), on the other hand, are of more fundamental importance for the acceleration process itself in that they either appear as elements of it or at least must be counted among its conditions of possibility and/or preservation. In either case, they also fail to represent any countertendency. Furthermore, the efforts of intentional resistance to social acceleration and the deceleration ideology listed under (d₁) are without a doubt *reactions* to the pressure to accelerate and its side effects. They appear anew with each wave of acceleration in modernity, and even though there is no guarantee that it will also be this way in future, so

far they have always been rather short-lived and in the end very unsuccessful. There may even be a change looming in the way the acceleration dynamic is dealt with, one whose cause could be precisely the repeated experience of the futility of resistance. It is expressed in the way the Techno Generation distinguishes itself from its predecessors, especially among the youth movements. Previous movements like the '68ers, hippies, greens, new age groups, etc., were shaped by, among other things, resistance to the compulsions to accelerate (of society and machines). At least in this respect they have on the whole failed. Today's Techno Generation has perhaps drawn from this the lesson that resistance should be given up: similar to the (disappearingly small group of) futurists in their own day, its representatives set themselves up at the forefront of the acceleration process, using all time-saving devices and the fastest media and technologies to regain their temporal and technical sovereignty and impose their will on the machines instead of pulverizing themselves in a senseless revolt against them. However, as I will argue in chapters 10 and 11, the price for this seems to be the abandonment of the project of modernity. In both cases, nevertheless, it remains true that these deceleratory forces are neither structurally nor culturally on a par with the acceleration dynamic. Instead they seem to behave in an almost parasitical fashion toward it.⁸⁹

Only the processes of cultural and structural rigidification included in the fifth category cannot be explained in this way as secondary, reactive, or residual phenomena. They seem to be rather an inherent and constitutive element of the acceleration process itself and to belong to modernity just as indissolubly as it does. With them one is dealing with the (acceleration-specific) reverse side of the modernization process that is characteristic of all its basic tendencies—differentiation, rationalization, domestication, individualization, and acceleration—and it stands to reason that they wax or wane with the forces of acceleration themselves.

Even if there can be no doubt that no equivalent force stands against the tendency of acceleration, it is nevertheless of great significance to understand the contribution that the institutional immobilization (*Stillstellung*) of central social background conditions has made to the accelerative success of modernity. For its part, this fixation of background conditions, which consisted in particular in the laying down of stable *developmental tracks*—of legislation, of political steering, of economic growth, of educational and professional paths, etc.—followed a prior phase in which these social realms were liquefied and dynamized in early modernity and the industrial revolution. From the very beginning of modernity, the placing in question of traditions and traditional

principles of validity, the establishment of new practices in the sphere of production, and the processes of urbanization allowed the contingency of social institutions to become visible, and this very fact dynamized or “liquefied” society as a whole. The institutional reconsolidation (or, in Peter Wagner’s terms, organization) of the social framework through the unfolding of the modern rule of law and the welfare state (*Rechts- und Sozialstaates*) did not supersede that inherent contingency and mutability (since modern law and democratic politics are essentially dynamic), but rather guaranteed that alterations ran along stable paths or transpired in accordance with predictable rules.⁹⁰

For individuals, there emerged reliable lifelong career paths that guided them from birth through education and on to retirement, and, for economic development, stable, long-term foundations were created for calculation and secure expectations. As I have tried to show, it was precisely this “slowness of the rules of the game” that made possible the immense acceleration of material reproduction and scientific-technological progress as well as the liquefaction of many, if not all, social relationships.⁹¹ Modernity thereby created in its leading institutions its own moment of *inertia*, as it were, one that was in peculiar tension with its dominant core tendency of setting “all that is solid” in motion and transforming it. This contradiction between the idea of *institutions*, whose etymological roots in Latin already indicate something standing, *inert*, and subject to at most incremental change, and the “spirit of modernity” was already seen by Nietzsche in the following formulation of his critique of modernity: “The West as a whole has lost the instincts that give rise to institutions, that give rise to a *future*: it might well be that nothing rubs its ‘modern spirit’ the wrong way more than this. People live for today, people live very fast,—people live very irresponsibly: and this is precisely what one calls ‘freedom.’ The things that make an institution into an institution are despised, hated, rejected.”⁹²

According to the thesis I will justify in what follows, the institutions of that spirit can no longer provide resistance because the forces of acceleration have developed so far that even the institutional structures that brought about and supported their unfolding can no longer keep up with them. Thus they become hindrances to acceleration and braking forces at the threshold of *another* modernity. Social acceleration has outgrown them and is now beginning to erode them and thereby introduce the end of the phase of institutionally immobilized social background conditions in which the space of experience and the horizon of expectation were congruent with respect to the rules of the game. As I will show in chapter 8, this holds true, for instance, for the

nation-state and its bureaucracies (celebrated by Weber as accelerators, they have become too slow and inflexible in the age of hyperacceleration), but possibly also for the institutions of representative democracy, for the work (time) regime of “classical modernity” and its institutional separation of production and reproduction or work and free time, for the life course regime, for the “institution” of stable personal identities, and even for law.⁹³ The consequences of this development are still hardly foreseeable. They could paradoxically immobilize the acceleration dynamic in two different ways: on the one hand (in a limited sense), through the appearance of a “frenetic standstill,” a situation brought about by the abandonment of a perspective and “path” of progress and characterized by the absence of any direction of development and, on the other, through the unsettling of the very foundations of the previously “ultrastable” cultural and structural societal framework of modernity by “post-modern” processes of erosion.⁹⁴

Thus it becomes apparent that the relationship between inertia and movement in the history of modernity is not to be understood as a linear advance from the former to the latter and hence as a linear acceleration of social change. Rather, in a peculiar way, it follows more closely the dialectical developmental logic of forces of production and relations of production worked out by Marx and Engels. It seems that the dynamic forces of acceleration themselves produce the institutions and forms of practice they need in accordance with the respective requirements of their further unfolding and then annihilate them again upon reaching the speed limits those forms have made possible. From this perspective, surprisingly, it appears that it is the *increase of speed* rather than the unfolding of forces of production (though these are naturally closely connected to the acceleration dynamic) that is the real driving force of (modern) history. However, such a way of looking at the modern process of acceleration naturally harbors the danger of unreflectively making acceleration into a macrosubject of history. In order to meet this threat head on, I will investigate the historical causes and social mechanisms of the modern circle of acceleration in part 3.

106. Van der Loo and van Reijen also point out this inherently paradoxical nature of the fundamental processes of modernization (1997:36ff.). However, they identify no countertendencies to the four main developments, but rather see these as *in themselves* contradictory: differentiation thus displays at once elements of both enlargement of standards and shrinking of standards (130ff.), rationalization is characterized by the contradictory principles of pluralization and generalization (176ff.), individualization processes lead as much to greater individual independence as they do to stronger dependency (216f.), and domestication finally means at the same time (physical) deconditioning and (social and psychological) reconditioning (260ff.).
107. Simmel 1992b [1908]:791ff. For a similar diagnosis of more recent data, cf. for instance Riesman, Denney, and Glazer 2001 [1950].
108. Cf. on this Lübke 2009. Interestingly, Weber already characterizes the ethical foundation of modern capitalism, the Protestant ethos, as a highly irrational attitude toward the world, insofar as it aims (on the basis of the world-denying, active character of Protestant Christendom) at the maximal accumulation of wealth under a simultaneous renunciation of the enjoyment of its fruits. The “most fateful power” of our modern life thus rests, as it were, on irrational ethical foundations.
109. Cf. for example, Luhmann 1996:256ff.
110. Cf. on this in greater detail, Rosa 1998:305ff., 417ff.
111. I owe this insight not least to the critical objections Andrew Arato and Hanns-Georg Brose directed against my first attempt at a conceptualization of this constellation.
112. Differentiation, rationalization, individualization, and domestication can all be interpreted equally well as strategies of acceleration. In my opinion, among the other processes, only rationalization can claim a similar transcategorical pervasiveness.

2. What Is Social Acceleration?

1. The desolate condition of research into this context is also reflected in Lothar Baier’s confession, presented with an honesty as striking as it is disarming, in his philosophical and belle-lettristic “18 Essays on Acceleration” (2000:12): “How one can discern the acceleration values of a society has not become clear to me. Even if it is correct that our societies are in ceaseless inner movement, something hardly ever intelligibly described, let alone defined, in anything more than catchphrases, that is still a long way from saying that they are moving forward, however fast or accelerated they may be.”

2. The existence of the latter trends is definitely controversial; I will come back to the question of the cogency of the corresponding empirical findings.
3. Nowotny 1993:97 (my emphasis).
4. Ibid., 98 (my emphasis).
5. When, for instance, Matthias Eberling (1996:41), in his investigation of the effects of acceleration on politics, defines acceleration as “increase in developmental speed, that is, of socially relevant changes in politics, economics, culture, science and technologically per unit of time,” he has this dimension of acceleration exclusively in mind. The basic problem with this definition naturally lies in the concept of relevance, i.e., in the notorious problem of distinguishing fundamental innovations and secondary alterations, which we can safely ignore here since we are only concerned with making the acceleration concept more precise.
6. “The rise of world population from around a half a billion persons in the seventeenth century to around six billion around the year 2000 can be interpreted as acceleration: it is an exponential time curve in which humanity doubles itself at ever shorter intervals,” finds Reinhart Koselleck, who at the same time conjectures that the gradual differentiation and biological “development of the human being” since the solidification of the earth’s crust, and after that the history of culture, and within that, moreover, the development of great civilizations, can be similarly interpreted as histories of acceleration and thus as growth curves (2000:199).
7. Cf. for an entire series of such growth curves, see Eriksen 2001:78ff.
 The “kairotic” society imagined at the beginning of this work [i.e., in “In Place of a Preface” —TRANS.] can now be defined as a “uchronia” in which freed-up time resources are directly transformed into “free time,” that is, in which corresponding processes of growth remain absent.
8. Anyone to whom these reflections are too abstract can easily help themselves make it more concrete with a contemporary example: without a doubt, the establishment of e-mail essentially accelerated communication. Writing and sending an e-mail message may take only half as much time as a conventional letter. However, when the quantity of e-mails written daily exceeds the number of letters one wrote daily by a factor of four, the amount of time dedicated to correspondence climbs by 100 percent! That this corresponding growth relates to the speed of communication transmission, moreover, is incontestable. If the answer to the morning message has already been received by nightfall while previously one required at least fourteen days, then it seems that an inherent impulse toward the accelerated continuation of chains of communication and action results. Nevertheless, this impulse can be neither logically nor causally

reduced to technical acceleration: *the heightening of the quantity of communication is made possible by technology, but not compelled by it.* The perceptible compulsion to heighten therefore results not from technics itself, but rather from the contraction of the present enabled by it, i.e., from the *accelerated transformation of the context of communication and action.* Thus this example illustrates in a paradigmatic way the mechanism (*Wirkungsweise*) of the circle of acceleration that is presented in chapter 6.

9. I assume along with Luhmann 1994 [1968]; Bergmann 1983:484; and Linder 1970; and against Moore 1963; and Balla 1978, that despite the limits of a natural lifetime, time scarcity is *not* an invariant phenomenon of human life, but rather is influenced, at least in the degree of its severity, by structural factors (which the first three cited authors emphasize), and cultural forces (which I will work out in chapter 7.2 in connection with Blumenberg and Gronemeyer).
10. Robinson and Godbey 1999:258.
11. *Ibid.*, 259.
12. Robinson and Godbey assume that the “Parkinson law” (originally formulated for the allocation of time in organizations) is at work here, according to which a (work) task takes as much time as there is available regardless of how large the quantity of work is. “Put in Parkinson’s terms, there is some norm or ‘mental image’ of the amount of time that should be devoted to certain activities. Whatever can be accomplished within that time is what determines the time spent on the activity” (*ibid.*, 260).
13. Robinson and Godbey use the concept of the tempo of life very inconsistently, however; their presentation shows just how important it is to distinguish between technical acceleration and the acceleration of the pace of life and exactly define their relation. On the one hand, the authors are inclined (on the grounds given), to hold the acceleration of the tempo of life for a paradoxical problem of perception (“The problem of lack of time is, in most senses, a perceptual problem” [1999:25, cf. 229ff.]), yet, on the other, they see in it a constitutive element of modernization, but only by identifying it with technical acceleration: “from the Middle Ages through the Industrial Revolution, the pace of life began an unprecedented process of speeding up” (*ibid.*, 29).
14. Cf. in more detail and with greater precision, chapters 2.2.c and 6.1.
15. This will be described in terms of industrial sociology and in connection with Marx as the intensification of work through the closing of the pores of the work day; cf. chapter 7.1.
16. Cf. on this in greater detail, chapter 7.3.
17. Cf. Geißler 1999:89. Heylighen (2001) starts from the assumption of a heightening of “several quantitative orders” in two-hundred years of the history of

- technology. Cf. further Beniger 1986: inter alia, 208–14, as well as, on the history of technical acceleration as a whole, Virilio 1980, 1993, 1998.
18. Heylighen (2001:2) and Beniger (1986) leave no doubt that the sum of these values increases, although they forego corresponding estimations, let alone calculations.
 19. Harvey 1990:240ff.; cf. also chapter 3.
 20. For Beniger (1986), the acceleration of communications and information technology represents the attempt to win back control over the accelerating processes of transport and production. On the acceleration of communication in general, see Virilio 1993; Kirchmann 1998; Großklaus 1997; Myerson 2001; and Eriksen 2001.
 21. Geißler 1999:89; Heylighen 2001:2f.
 22. While some services can be accelerated through specialization and the use of technology, there are many realms (for instance, the education of children and care for the elderly or even shoe cleaning) in which no significant increases in tempo can be achieved, for which reason they become relatively more expensive and therefore, as Staffan Linder remarks (1970:38ff.), promote the tendency toward a “disposable society” in which, for example, cleaning, repair, and maintenance services are minimized by continually replacing used products with new ones.
 23. Beniger 1986:vii, cf. 169ff., 427.
 24. Recounted by, for instance, David S. Landes in “The Unbound Prometheus” (1969).
 25. Freyermuth 2000:75.
 26. Cf. Geißler 1999:89.
 27. *Ibid.*, 155; for a criticism of Geißler, cf. Rosa 2001a:341ff.
 28. In this wider sense, the various types of “human-technical” rationalization of the work process can also naturally be counted as technical acceleration, for instance, Frederick W. Taylor’s methods of “Scientific Management” or also current forms of flexible “just in time” production, of “lean management,” etc. Furthermore, time-saving improvements in, say, running and swimming techniques in sports or reading techniques in studying also fall into this category.
 29. Eriksen 2001:97; cf. further Beniger 1986:324ff., 362ff.
 30. Heylighen 2001:3.
 31. As just one example among many, cf. Robinson and Godbey 1999:46.
 32. Cf. Sztompka 1993; Müller and Schmidt 1995; and Eder 1995.
 33. Jahoda 1988:169.
 34. Laslett 1988:31ff. Interestingly, Laslett postulates that political change, in contrast to most of the other types of change, cannot be accelerated, which suggests the possibility of desynchronization phenomena as discussed in part 3 of

this work. Nevertheless Laslett defends what is in my view a highly implausible equation of the personal tempo of life with the speed of political change, whereas in what follows I would like to show that the increase of the pace of life must itself be considered one of the three basic forms of social acceleration.

35. Cf. on the following, the keywords *Vergangenheit*, *Gegenwart*, and *Future* in the lexicon *Gedächtnis und Erinnerung* (Rosa 2001b).
36. Luhmann (1997: 1073) also suggests the same definition.
37. Cf. Koselleck 1989:323ff.
38. Cf. Lübbe: “[‘Contraction of the present’] means that in a dynamic civilization, in proportion to increases in the number of innovations per unit of time, the number of years decreases over which we can look back without seeing a world alien to our trusted present-day lifeworld as well as outdated in significant experiential respects. . . . Moreover, the innovation-dependent contraction of the present implies that in accordance with the shortening of the chronological distance to a past that has become alien, the number of future years for which we can infer the likely conditions of life decreases. Beyond these years, the future can no longer be compared in its essential respects to our present living conditions. In short, the contraction of the present entails a process whereby the space of time for which we can calculate our living conditions with a degree of constancy is shortened” (2009:159f.). In contrast to Lübbe, it seems to me inappropriate here to tie the concept of a contraction of the present to that of innovation: the form of contraction described by Lübbe can be the consequence of any kind of accelerated sociocultural transformation (thus, for instance, also of a partial return to old relations); it does not require any genuine innovations (unless one wants to, for example, describe the dismantling of the welfare state or the return to a militaristic, nationalist politics as innovations).
39. Cf. Koselleck 1989:328ff., 367 or 2000:150ff. David Harvey, who interprets modernity as an advancing process of “time-space compression,” also sees in the progressive shortening of time horizons and stability horizons a constitutive sign of this process and a core characteristic of modern societies, although in his terminology he deviates diametrically from Lübbe: “As space appears to shrink to a ‘global village’ . . . and as time horizons shorten to the point where the present is all there is . . . so we have to learn how to cope with an overwhelming sense of compression of our spatial and temporal worlds” (1990:240; my emphasis).
40. Nassehi 1993:342.
41. “First in modernity and only through a shortening of the temporal extension of the present is the problem of inertia or conservatio a living one. . . . By restructuring time in the last two hundred years, the present has specialized itself in

- the function of temporal integration; it does not, however, have enough time available to manage this" (Luhmann 1990a:135f. (my emphasis); cf. Nassehi 1993:342 and 375f.).
42. Cf. Guy 2002:2 and Nassehi 1993:342, 375f.
 43. Cf. Guy 2002:7.
 44. This viewpoint is also suggested by Nassehi (1993:370ff.) when he interprets the loss of binding expectations that follows the shortening of time horizons as an acceleration of social change in the shape of a "modalization of social structure."
 45. Another entirely conceivable reaction to the shortening of time horizons and the resulting instability of expectations is a passive, fatalistic, and action-reducing stance, while conversely stable horizons of expectation and experience can also go along with an increase in the speed of action and (the feeling of) a dearth of time resources, as Ernst Benz (1977) and Reinhart Koselleck (2000:177ff.) have shown, using the example of Christian eschatological conceptions of time. On the historical-empirical interaction of the three forms of modern social acceleration in a self-reinforcing circle of acceleration, cf. chapter 6.
 46. Garhammer 1999:470ff.; Robinson and Godbey speak of "time-deepening" (1999:24ff.).
 47. Whoever eats, irons, calls people on the phone, and watches television at the same time will presumably be relatively time-inefficient regarding each particular task, but nevertheless complete them all faster than in the case of a sequential performance of the four actions.
 48. I will return to factual empirical evidence for such a development in chapter 5.1; it is in fact postulated everywhere, but only seldom verified.
 49. Geißler 1999:92; Garhammer 1999:448ff.; Levine 2006:146f.; and above all Robinson and Godbey 1999:229ff.; for a critical discussion of the evidence, cf. chapter 5.2.
 50. On the concept of deceleration, popularized by Fritz Reheis (1998), see the corresponding entry in the dictionary *Umweltbildung* (Reheis 1999): "Deceleration means negative acceleration, that is, decreasing speed, slowing down, hesitation or even stretching out time" (53). In distinction from my use of the concept, however, Reheis wants it to be understood as a *prescriptive* concept for the characterization of an "alternative plan" in contrast to the "high-speed and non-stop society." "In transportation, deceleration means the reduction of speed. . . . In the economy, deceleration means a decrease in the technical rate of innovation, a rise in the shelf life of products and an orientation of production and consumption towards the goal of sustainability. . . . In politics, the deceleration concept is opposed to attempts to curtail the working of political

processes under pressure from the economy. . . . In the context of the human psyche, deceleration opposes the attempt of many people to heighten the enjoyment of life by heaping up and compressing external events" (ibid.).

51. See here, for instance, Pöppel 1997.
52. This is one of the central arguments of Fritz Reheis (1998).
53. Schivelbusch 2000 [1977]:16, 35ff.
54. Ibid., 51ff; cf. also Treptow 1992:4f. and Eriksen 2001:54f.
55. "The railroad produced (*inszeniert*) a new landscape. The speed that volatilizes objects in the perception of a Ruskin [a paradigmatic representative of the "old" mode of perception] and strips them of their contemplative existence, becomes an elixir of life for the new perception. It is through speed that the objects of the visible world obtain an allure" (Schivelbusch 2000 [1977]:58, cf. 143).
56. Eriksen 2001:54f.
57. Cf. the CD publications of the *Jazz Heritage Society*. For this reference I thank Bethany Ryker, who investigated the connection between social and musical experiences of time in an excellent term paper at the New School for Social Research (Ryker 2002). Cf. also Ogren 1989.
58. Schivelbusch 2000:142ff.
59. Cf. Armitage 2000:49ff.
60. In the meantime such acceleration-resistant forms of practice have been idealized in advertisements, for instance, in the well-known Jack Daniel's ad from Tennessee (which has since been caricatured in a cigarette ad coming down on the side of acceleration) or in the advertising images for Werther's Original that suggest that precisely through this acceleration-immune practice a transgenerational solidarity is established that, outside this protected world, is becoming increasingly fragile because of the acceleration of social change to an *intragenerational* pace of change (see chapter 4).
61. Nowotny 1993:127, 133; Lübke 2009.
62. See chapter 10.3.
63. Cf. Sennett 1998:159ff. On the transformation of the structure and perception of time as an effect of unemployment, see Jahoda 1988:169ff. and, also still instructive, Jahoda, Lazarsfeld, and Zeisal 1933.
64. Cf. for instance Hall 1988.
65. This can be directly observed, for instance, when the harried manager is held up in his attempt to ask directions by the kiosk salesperson who has an endless amount of time or the hurrying professor's schedule is ruined by the (slow) library circulation desk or even where a highly accelerated industrial production process is knocked off its stride by the obsolete, slow repair service.

66. Cf. for instance Lauer 1981:30. On the three second window, see Pöppel 1997:64ff., 84ff.
67. Cf. also Levine 2006:72ff.
68. This can also be seen, for example, in popular best sellers like the books of Reheis (1998) and Gronemeyer (1996).
69. Glotz 1998:75; cf. Eriksen 2001:29f.
70. Cf. on this, for instance, the numerous publications of the Tutzinger Project "Ecology of Time" (for an overview, see Adam 2002).
71. So says the subtitle of Reheis 1998.
72. Cf. Glotz 1998:76.
73. Cf. Lafargue's *Right to Be Idle* (*Recht auf Faulheit*) of 1883 (Lafargue 1998 [1883]) and Russell's *In Praise of Idleness* (Russell 1985).
74. From a historical perspective, violent protests against accelerative technologies, e.g., the destruction of factories or railroad lines, naturally lead to temporary delays, but never to a reversal of the direction of development.
75. The first movement mentioned sets itself the goal of enjoying organically grown nutrition in a stylish and unhurried way, while the second movement, which emerged in the more well-off strata of the U.S. several years ago, purposefully tries to break through the "vicious circle of acceleration" of more work, higher income, and increased consumption by abstaining from consumption. The latter, at least, seems to have passed its zenith without achieving any noteworthy effects.
76. Cf. the instructive essay of Dieter Ronte (1998) on experiences of time in art and in museums.
77. Radkau 1998:220ff.
78. This is not to deny that monasteries and yoga techniques cannot be utilized in other ways, namely, in the sense of a genuinely alternative and decelerated form of life. In this case they fall under category (d.1).
79. On such strategies, see Seiwert 2000. The title itself, "if you're in a hurry, slow down," denotes one.
80. For Chesneaux (2000:411) such moratoria belong essentially to democracy, and hence to modernity, because, against all the acceleration-induced tendencies toward closure, they hold open the horizon of the future and thus enable future development. Cf. further Eberling (1996), who suggests that decelerating moratoria be made into a central instrument of politics in the struggle for control of processes in science, technology, and the economy that are taking on a life of their own (*sich verselbständigenden*); similarly also Reheis (1998:217ff.).
81. On the latter as stable fundamental values of Western, modern societies in the sense of an almost Parsonian "pattern maintenance," cf. Voß 1990.

82. I will go into this argument in greater detail in chapter 2.4; cf. also Bonus 1998.
83. As in the title of an essay by Claus Offe (1992).
84. In fact, Schumpeter defended the preservation of several braking, static, inefficient constraints on the rapid and free economic unfolding of markets in the form of state interventions, price fixing, and cartels with the functionalist argument that in the end they are accelerating factors of a “long-run process of expansion which they protect rather than impede.” This observation is “no more paradoxical than saying that motorcars are travelling faster than they otherwise would *because* they are provided with brakes” (Schumpeter 1994:88–89). As Offe remarks, for Schumpeter the massive growth dynamics of capitalism thus “do not rest on free price competition and on the unfettered development of market conditions, but on their [temporary — H. R.] shackling by monopolistic practices” (1992:73).
85. Lübke 2009:175f.; cf. Brose 2002:126f. Also informative on the question of cultural reproduction is Bonus 1998.
86. Fukuyama 1992; Habermas 1989; Gehlen 1978 and 1994; Offe 1987, respectively.
87. Cf. Baier 2000.
88. Cf. Rosa 1999b.
89. Cf. Hörning, Ahrens, and Gerhard 1997:176ff.; Baier 2000:12ff.
90. Wagner (1994) identifies in the history of modernity a similar three-stage process of liquefaction, reorganization, and late modern destabilization of institutions and orienting patterns.
91. So runs the title of an essay by Holger Bonus (1998).
92. Nietzsche 2005:214–15 (*Twilight of the Idols*, “Skirmishes of an Untimely Man,” § 39).
93. On this see Rosa 1999b:393f.; as well as figure 8.1.
94. Schulze 1997b:79.

3. Technical Acceleration and Revolutionizing Space-Time

1. Cf. Rosa 1998 and 2004b for a justification of the claim that the altering forms of self-interpretation and world interpretation are, in the final analysis, constitutive for both subjects and social reality. I follow there, on essential points, the philosophical approach of Charles Taylor.
2. Of course, Koselleck here commits the fallacy identified in chapter 2.1 of interpreting quantitative growth as an inherent consequence of acceleration. To be correct, it would have to read: “the cargo loads, that . . . could be hauled.” The acceleration of transport *makes possible* a corresponding increase in quantity.