# Chapter 5
# Time and Work Pressure in Today's Working World

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## 5.1 The Importance of Time and Work Pressure

Time and work pressure has become increasingly predominant in today's world of work. The European Working Conditions Survey (1991–2010) shows that work intensity – for instance, working at high speed or working to tight deadlines – has increased over the last two decades and seems to have stabilised at a high level since 2005. In 2010, two thirds of the workforce in the EU stated that they have to work to tight deadlines at least for a quarter of their working time (Table 5.1).

Breaking down the results according to type of occupation reveals that highly skilled workers more often report that they work to tight deadlines than low-skill workers. The development over time also differs between the groups. In contrast to a general stabilisation, the high-skilled clerical workers show a substantial increase between 2000 and 2010 (Table 5.2).

Data from other sources corroborate these findings. In the representative ESENER Study (European Survey of Enterprises on New and Emerging Risks), conducted in 31 European countries, management representatives and health and safety representatives were asked about psychosocial risk factors in their establishments. More than half of the management representatives named 'time pressure' as a concern, followed by 'having to deal with difficult customers, patients, pupils, etc.' (Table 5.3). Health and safety officers also indicated most frequently time pressure as a relevant concern in their organisation.

These numbers show that in the EU, time and work pressure is a growing and persistent phenomenon that has been identified not only by the workers themselves

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**Table 5.1** Percentage of the workforce working to tight deadlines for at least a quarter of their working time, EC12, EU15 and EU27, 1991–2010

| Year | EC12 | EU15 | EU27 |
|------|------|------|------|
| 2010 | 63.2 | 63.6 | 62.0 |
| 2005 | 61.8 | 62.4 | 61.8 |
| 2000 | 58.6 | 59.2 | 59.0 |
| 1995 | 54.9 | 55.9 | n/a |
| 1991 | 49.6 | n/a | n/a |

Eurofound (2010)

**Table 5.2** Percentage of the workforce working to tight deadlines for at least a quarter of their working time, EU27, type of vocation

| Year | Low-skilled manual | High-skilled manual | Low-skilled clerical | High-skilled clerical |
|------|--------------------|---------------------|----------------------|-----------------------|
| 2000 | 58.8 | 67.1 | 54.0 | 60.8 |
| 2010 | 60.9 | 68.1 | 57.5 | 67.1 |

Source: Eurofound Online Survey mapping tool; http://www.eurofound.europa.eu/surveys/smt/ewcs/ewcs2010_14_03.htm

**Table 5.3** Concern about psychosocial risk factors (percentage of organisations in the EU)

| 'Several factors can contribute to stress, violence and harassment at work; they concern the way work is organised and are often referred to as 'psychosocial risks'. Please tell me whether any of the following psychosocial risks are a concern in your establishment' (multiple responses possible) | Management representatives (N = 28.649) | Health and safety representatives (N = 7.226) |
|---|---|---|
| Time pressure | 52.2 | 58.5 |
| Having to deal with difficult customers, patients, pupils, etc. | 49.7 | 46.7 |
| Poor communication between management and employees | 28.0 | 32.9 |
| Job insecurity | 26.8 | 30.3 |
| Poor cooperation between colleagues | 25.7 | 22.6 |
| Long or irregular working hours | 21.9 | 27.7 |
| Problems in supervisor-employee relationships | 20.4 | 26.2 |
| Lack of employee control in organising their work | 20.7 | 21.4 |
| An unclear human resources policy | 14.8 | 22.8 |
| Discrimination (e.g. due to gender, age or ethnicity) | 6.9 | 7.3 |

Source: ESENER survey 2009; http://osha.europa.eu/sub/esener/en/front-page

but also by management and by health and safety officers. As more than half of the workforce is affected by time and work pressure, it seems worthwhile to have a closer look at how time and work pressure can be treated theoretically, how it comes about, what strategies people have developed to cope with time and work pressure and what possibilities exist for work redesign.

## 5.2   Time and Work Pressure in Current Theory

Time and work pressure is already a component in many theories of stress and well-being at work. The Job-Demands-Control model by Karasek (1979), for example, has been very successful in describing the origins of work-related stress, using a combination of two factors: job demands and decision latitude (control). According to this theory, high job demands can be buffered if the worker enjoys a high level of control. High-demand, high-control jobs thus are called 'active jobs' where people do not suffer from increased stress at work. In contrast, high-demand low-control jobs are 'stressful jobs' as decision latitude cannot buffer the high demands. Time and work pressure, according to the model, is a component of the job demands. Therefore, the amount of control available to the worker influences the negative consequences of time and work pressure experienced by the worker.

Action Regulation theory (e.g. Hacker 2003) describes how actions are regulated by a hierarchy of goals, subgoals and operations that translate into visible actions. According to the theory, stress at work results when action regulation is frustrated. Such frustrations or hindrances create additional workload by creating the need for repeated actions, restarts, diversions or additional demands on concentration. If time constraints exist, this extra workload causes time pressure. Time pressure puts excessive demands on action regulation capabilities, has adverse effects on concentration and attention, increases the probability of risky behaviour and in the long term leads to negative health outcomes (Greiner and Leitner 1989; Zapf 1993).

The Effort-Reward Imbalance model (Siegrist 1996) claims that if great effort is spent on work and if that effort is not recognised with an equal level of job rewards (e.g. money, esteem, career opportunities), then negative emotions and sustained stress responses are likely to ensue. Here, time and work pressure puts off the balance between efforts and rewards as it increases the necessary effort without necessarily increasing the rewards. The model also assumes that a motivational variable is contributing to a sustained imbalance between efforts and rewards, namely, overcommitment at work. Overcommitment at work shows as excessive work-related commitment and may be a contributing factor when time and work pressure results in negative health consequences.

In conclusion, current theories do explain how time and work pressure may influence the way in which stress is experienced at work and what moderating and mediating variables need to be taken into account. Among these variables are job design variables (decision latitude), motivational variables (rewards) and personal variables (overcommitment). Time and work pressure does not per se have positive or negative consequences for the experience of stress; this will instead depend on interaction with other variables. A notable gap in current theoretical models is that although time and work pressure is an important precondition for stress, these theories do not explain how time and work pressure comes about and what strategies are available to deal with it on the individual and organisational level.

## 5.3   Defining Time and Work Pressure

*Work intensity*, *workload* and *work effort* are terms related to the concept of time and work pressure. Just how these concepts are related can be explored using an analytic approach.

Following Trägner (2006), *work intensity* may be defined as the relation between the quantity of work, the quality of work and the available time to accomplish the work. Work intensity thus can be measured by asking: How much do the workers have to do? What is the desired quality of the result? And how fast do they have to work? Thus, not a single measure, but the interplay of these three factors determines work intensity.

An important distinction needs to be made between work intensity that is *anticipated* and work intensity that is *realised*. Anticipated work intensity ('What I have to do') may be set by the company as norms, targets and objectives for the work (e.g. to deliver a given number of products of a defined quality within a specified period of time). The realised work intensity ('What I have done'), however, may differ from the anticipated work intensity when solving unforeseen problems, working on additional tasks or being influenced by exceptionally low or high worker motivation.

Note that the difference between anticipated and realised work intensity is not only one of looking forwards or backwards in time. Anticipated work intensity may only contain the countable, already known and explicit while realised work intensity may also acknowledge all the invisible and often less acknowledged work people have to do, e.g. to coordinate their activities with others, maintain social networks or appease customers. The difference between anticipated and realised work intensity may also be used to distinguish the terms workload and work effort. Then, the term *workload* refers to anticipated work intensity. The term *work effort* mostly refers to realised work intensity (e.g. as used by Burke et al. 2009, 2010; Green 2001, 2004).

*Time and work pressure* then results from a misfit between the three components determining work intensity: quantity, work quality and time (Fig. 5.1). More specifically, time and work pressure can be defined as the subjectively perceived misfit between the amount of work to do, the quality of the work required and the time available to finish the work. The perceived misfit depends on the situation, the individual abilities, the working conditions and the company culture. This subjective definition of time and work pressure recognises that the same objective relationship between the amount of work, quality of work and time can differ on a subjective level when judged by people with differing work experience, motivations and interests and within differing company cultures.

Perceiving time and work pressure may have positive or negative effects, e.g. it may be perceived as activating or stressing. Short- and long-term effects need to be considered and it is possible that positive short-term effects may lead to negative long-term effects.

**Fig. 5.1** The subjective
misfit between the three
components – quantity of
work, quality of results and
time available – defines the
perceived time and work
pressure
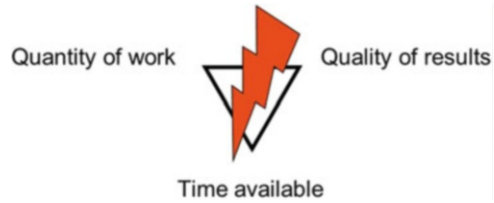


The terms *time pressure* and *work pressure* might be differentiated according to the most salient component of work intensity. If the time is short, e.g. due to an approaching deadline, then this results in time pressure. If quality and quantity of the work is in the foreground, we would speak about work pressure. However, we do prefer to use the compound term *time and work pressure*, because in many areas (e.g. knowledge work), time pressure cannot be readily separated from the quality and quantity of work to do.

Each of the three corners of the triangle in Fig. 5.1 may be predetermined by management or may be determined by the workers. The greater their latitude and control over their work, the more it is possible for them to increase or decrease the amount of work, the time available to finish the job and the quality achieved. Therefore, if workers perceive time and work pressure as a misfit between these corners, they may develop coping strategies that address one or several of the corners. The amount of work can be reduced by delegating tasks or subtasks to others, by trying to multitask or by dropping tasks or task steps. The quality of the work can be lowered by reducing the amount of effort per task. To influence the time component, workers may work faster, extend their working hours or reduce the number and length of breaks between work units.

Expressed in a linear order, anticipated work intensity (or workload) may lead to time and work pressure that determines the realised work intensity (work effort). This rather formal analysis may give some hints at how to define, measure and influence time and work pressure. It is, however, still too coarse to show how time and work pressure is caused under the specific circumstances of today's world of work and which strategies people have developed to influence the amount of time and work pressure they experience and to counteract its negative effects. In the following comments, we therefore open the discussion by looking at recent work in industrial sociology and work psychology. The aim is to identify the driving forces behind increasing time and work pressure, especially in relation to the introduction of information and communication technology (ICT) and issues of acceleration. We will also have a quick look at strategies that workers have adopted to cope with increasing time and work pressure. We find that many findings are of qualitative nature and the research on the topic has only just started. Still, it is possible to draw some conclusions on how to approach work redesign in the future.

## 5.4    Origins of Time and Work Pressure in a Changing World of Work

Interviews with experts and screening the literature have let us identify four larger trends that influence how time and work pressure comes about and how it is viewed in today's working life (Junghanns et al. 2011). First, there is increased competition between companies and – increasingly – between different groups of workers. Second, workers' performance is increasingly being measured by the outcomes of their work instead of merely being based on the time they put in to achieve these results – a phenomenon we discuss under the heading subjectification of work. Third, the increasing availability of and reliance on information and communication technology (computerisation) has influenced work patterns in a way that also increases time and work pressure. Fourth, an overarching trend in society towards acceleration eventually forms an environment that makes it difficult to evade time and work pressure.

The following sections discuss each of these four trends in greater depth. Although they interact and form a contingent web of influences on workers' time and work pressure, we discuss each of the four trends separately. While computerisation and acceleration directly relate to the issues discussed in this book, the other two (competition and subjectification) are needed in order to understand the framework in which these two trends operate and affect workers' time and work pressure. Although many of these trends may also contribute to better working conditions, greater motivation and sometimes less time and work pressure (e.g. Buch and Andersen 2009), we primarily focus on developments with negative consequences. More than these four trends could be thought of, but to us they seemed the most pervasive and characteristic of today's changing world of work.

### 5.4.1    Competition

Competition, i.e. the struggle among companies to capture larger portions of the market, has become more aggressive. Economic globalisation, the opening of markets around the world, means that the number of competitors has been increasing, the pressure to produce more cost-efficiently has become greater and market conditions have become more volatile. The more companies there are in the market, the more likely that a better service or product will emerge, perhaps at some distant location, at a better price for the customer. Companies are forced to produce more efficiently and streamline their structures. Their reaction to this is a constant adjustment of their processes and structures to meet the requirements of the market. Strategies to keep ahead of the competition include offshoring (relocating business processes to other and cheaper countries), site closures or downsizing.

Information and communication technology, in the eyes of the management, plays a major role in remaining competitive. While the promise of introducing ICT often is a streamlining of business processes, reduced costs of data processing and a higher transparency of business processes and financial outcomes, there also is a literature discussing the 'productivity paradox of IT', i.e. the finding that investments in ICT do not show in revenue statistics (Brödner 2002; Brynjolfsson 2003). Enterprise resource planning systems like SAP software, for example, are often implemented with the intention to implement the industry's one best way. Ironically, implementing standard ICT systems is at best a strategy to avoid falling behind rather than realising a competitive advantage, because competitors are highly likely to use the same system (Hurtienne et al. 2009). Still, the company-wide introduction of ICT systems is often a major trigger for reorganising the company's structure and business processes (e.g. as prescribed by the one best way implemented in the software).

Reorganisations often go hand in hand with staffing cuts and these very often mean that the same amount of work has to be done by fewer people. Efficiency enhancements frequently mean that work processes are being speeded up, in the employees view. Quality standards are rising to meet the customers' increasing demands, generating even more work. These changes, occurring either singly or in combination, can create higher time and work pressure for workers by directly affecting the amount of work to be done. But these changes also introduce extra work that is required to adjust to ever-changing company policies, new organisational structures, ICT systems, tasks and work processes. In addition, a feeling of insecurity spreads among the workforce: Will my qualifications, skills and knowledge still be adequate after reorganisation? Whom will I be working with next year? Might I even lose my job? A permanent feeling of job insecurity may lead to employees taking on more work and raise the threshold on how much time and work pressure is tolerated (cf. Valenduc et al. 2009).

Due to these reorganisation activities, competition between companies may become competition between groups of workers with different statuses. The standard employment contract (i.e. full time, permanent employment) is gradually being replaced by fixed-term and part-time work or by employment via temporary employment agencies. The classic career goals for permanent staff are reduced to 'keeping my job' while temporary staff aim to 'get permanent employment' in the same company. Increased competition between groups of workers by inducing fears of precarisation increases the amount of tolerated (or even self-induced) work pressure, thereby enhancing the likeliness of negative health outcomes (Brinkmann 2011; Kieselbach et al. 2009; Kratzer and Nies 2009; Menz et al. 2011; Peters 2011).

Organisational and occupational case studies highlight an increasing importance of market constraints for the organisation of work. The general trend can be summarised as 'closer to markets, closer to customers, and faster' (Valenduc et al. 2009, p. 37). In a number of organisational case studies in 14 European countries, Valenduc et al. (2009) find that market pressure is salient for all business functions across the value chain. However, different occupational groups are

**Table 5.4** Company variables and their effects on time pressure and workload of employees as rated by the members of works councils of 1,674 German companies

| Effects of... | on... | Time pressure | Workload |
|---|---|---|---|
| Increasing customer orientation | | Large | Large |
| Restructuring | | Medium | Large |
| Management by objectives | | Medium | Medium |
| Profit centre | | Low | Medium |
| Project work | | Low | Low |
| Intensified controlling | | Low | Low |
| Good order situation | | None | None |

Adapted from Ahlers (2009)

affected differently. For some (e.g. researchers and designers), market pressure is perceived as new or having become more systemic. For others, especially in manufacturing occupations, the main manifestation of market pressure is a speeding-up of just-in-time processes. Again in others (e.g. in software engineering and front-office public service occupations), customer-centred strategies have been starting to drive the reorganisation of business processes (Valenduc et al. 2009).

The effects of changes in the organisational structure and processes on time and work pressure are illustrated by a study by Ahlers (2009, 2011). Table 5.4 shows that while a full order book does not influence time pressure and workload measures to any great extent, competition-related strategies like the introduction of profit centres, management by objectives, restructuring and an increased focus on customer orientation have a much stronger effect on time pressure and workload for employees in Germany.

## 5.4.2   Subjectification of Work

Subjectification of work (German *Subjektivierung von Arbeit*) is a concept originating in the German-speaking sociology of work. The term, on the one hand, refers to the ever-increasing tendency for workers to bring to bear their personal views, aspirations and subjective standards in their work. On the other hand, it means a shift in how management envisages the relation between working abilities and the person. In contrast to Taylorism, which officially excluded workers' subjectivity, managers now often aim at fully utilising the 'whole person' by demanding, to an ever larger extent, that workers bring to the work process their subjective capacities, i.e. their ingenuity, experience, judgements, tacit skills, etc. (Huws 2008). Subjectification of work is linked to a discussion of concepts of the *intrapreneur* (Pinchot 1985), the *entreployee* (German: *Arbeitskraftunternehmer*, Pongratz and Voß 2003) or the *entrepreneurial self* (Bröckling 2007).

In practical terms, and of interest here, subjectification means that companies have begun loading the uncertainties of the market onto the individual worker. This often is referred to as *indirect control* or *indirect management* (Peters 2011).

Instead of, as in classical management, to assess and control how much effort workers put into solving a task, with indirect control only the output of the work is specified and monitored, not the actual doing. One application of this is *management by objectives*. The employee's performance towards predefined standards is measured continuously and compared against these standards. A consequence of this management style is employees' enhanced responsibility for how they go about their work and how they achieve the results.

Empirical data illustrate the effects of management by objectives on different aspects of time and work pressure (Ahlers 2011, Fig. 5.2). In their sample of 1,700 companies, about half employed management by objectives (53 %). In these companies works council members are more likely to report greater time pressure, a larger workload and longer working hours. They also indicate that employees are more likely to undermine measures for health and well-being that are already in place, that employees do not feel that work time can be planned and that employees are more likely to engage in presenteeism (i.e. employees attending work when actually sick).

Although management by objectives also has positive effects by enhancing employees' decision latitude and control of how and when they do their work, there are several implications of this management style that can lead to higher time and work pressure. The role of ICT in this is ambivalent, however. It may support workers in coping with the demands but it may also hinder them doing their work.

First, targets are mostly set quantitatively as monetary *key performance indicators* (KPI), leaving other (qualitative) factors, e.g. the quality of customer service, disregarded. This may lead to situations where the KPI targets that have been set are in conflict with other job objectives that are not measured (e.g. delivering excellent customer service that meets clients' needs). If all these various targets are still to be achieved, employees need to increase their efforts, thus increasing time and work pressure. ICT acts as medium in which KPIs are set, communicated and measured. Although this may render KPIs and the progress towards fulfilling them transparent to the worker, the danger is that these KPIs become predominant and other objectives of the work become underemphasised. As enterprise resource planning software acts as the main information tool for managerial decisions, non-quantified objectives of the work can hardly influence these decisions.

Second, the targets are often deliberately set to be very *ambitious*, so as to enhance worker motivation and performance (often with a reference to the Goal-Setting theory by Locke and Latham 1990). Very often, however, employees cannot realistically meet these targets, because they lack the necessary resources (e.g. time, equipment, qualifications). If there is no possibility to revise targets, efforts to achieve overambitious targets lead to increased time and work pressure. Targets are often set via ICT. Although the functionality of the system may not allow for the revision of targets, revising via other channels (e.g. by calling face-to-face meetings) may not be legitimate and therefore not done. In addition, by allowing for comparisons between workers, a subtle form of peer pressure can be created via ICT. For example, when on-screen statistics show that the majority of co-workers
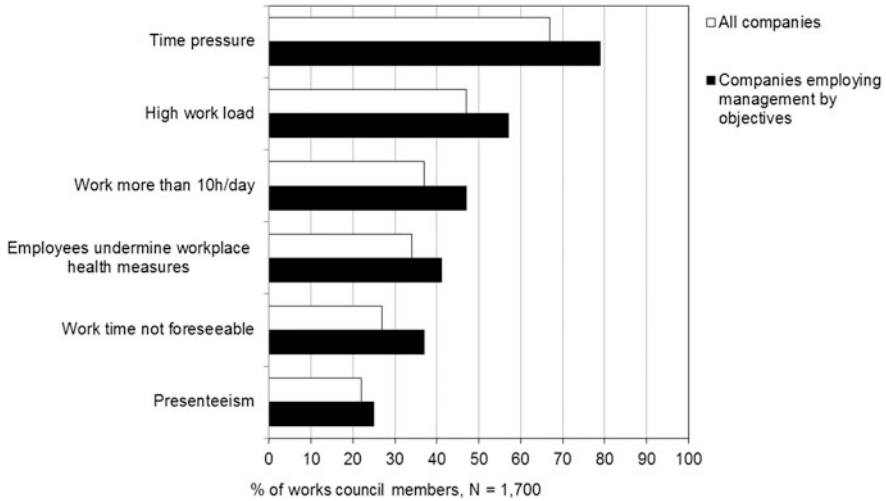
**Fig. 5.2** Aspects related to time and work pressure in companies employing management by objectives compared to all companies in the sample ($N = 1,700$, Data from Ahlers 2011)

have already accepted overambitious targets, it will be difficult to not accept these targets oneself.

Third, the work is not only influenced by the targets set by management. Increasing *demands voiced by others* (customers, colleagues and network partners) can increase the amount of work and quality required. Customers may have additional requirements, colleagues depend on one's work outcomes and personal networks need to be nurtured (Kratzer and Nies 2009) – all adding to the amount of work to do. Demands of others are often mediated by ICT: ticketing systems and e-mail. Usually, ICT lowers the threshold for others to create new tasks for the workers (see below).

Fourth, monitoring workers' performance often means that performance measurement, documentation and reporting are shifted to the employees. This also adds to the amount of work they have to do. These *additional controlling tasks* are likely to be mediated by ICT. Very often this increases the amount of manual data entry. Sometimes, ICT systems measure KPIs like total output per day automatically. If these numbers are fed back to the workers, this may enhance transparency. But also new areas of conflict may arise, e.g. regarding worker surveillance.

Fifth, increased worker autonomy creates additional *tasks associated with self-organisation and coordinating with others*, finding a balance between work and life, etc. These additional tasks require time but are very often invisible, because they are not part of the measurement and reporting system. Depending on the degree of autonomy of the workers, ICT may provide the means to solve these tasks more easily. E-mail and intranets, knowledge management applications as well as mobile communication devices may help with staying connected and self-

organised. More often than not, however, new software introduces new functionalities, new complexity and more demands on learning its usage, thus creating extra workload.

Sixth, performance targets, especially if financial, tend to be increased periodically. This means that if employees meet their targets today, they will *face increased standards tomorrow*. This may lead to a feeling of 'permanent insufficiency' that increases stress and undermines one's sense of accomplishment (Dunkel et al. 2010). ICT can play a role in this if performance targets are increased automatically, say by 10 % for all employees. Automatic increases may be coupled to external market data making the whole process anonymous and seemingly 'objective' so that not even management can be held personally responsible for the extra workload.

Seventh, the direct coupling of employees' performance targets to the company's market performance also increases the *unpredictability* of future performance targets. ICT may help with making the market more transparent and predictable. Such functionality, however, mostly remains accessible to management and not to the ordinary employee.

Eighth, as these new management techniques generate new work requirements and tasks, they create *new demand for skills and qualifications*, beyond the core skills of each vocation (e.g. in areas such as marketing, communication, public relations, teamwork, project management, customer relationships, e-skills). The responsibility for acquiring such extended skills is often shifted to the individual worker – through self-training or on-the-job training – again adding to a workload which is already high (Valenduc et al. 2009). Although e-learning may help and make it easier to distribute knowledge and engage in learning, ICT in itself also creates new demands for learning.

Looking at the implications of the subjectification of work, another theory might be able to explain the origins of time and work pressure on a more general level. It is the *theory of conflicting work requirements* (Moldaschl 2010, Fig. 5.3). According to this model, stressful working conditions are created when there are conflicts between goals (tasks, informal expectations), rules (regulations, business processes) and resources (time, knowledge, tools). Time and work pressure occurs when there are conflicts between resources (time) and objectives (quantity and quality of work) or between resources (time) and regulations (administrative rules for documentation). But we also find typical conflicts between the personal goal to act professionally and the company's objective to fulfil financial targets. An insurance agent, for example, is given the target to sell policies generating profits of ten thousands of euros per month, even though he knows that most of these policies are not needed by his clients. This undermines his feelings of serving the customer well. Another potential conflict is that between the goal of fulfilling company-set performance standards (often coupled to individual earnings) and the goal of maintaining one's own health and welfare (Kratzer and Dunkel 2011). By working long hours at high speed and reducing the time for rejuvenation, employees put their health and well-being at risk – should this working pattern persist over longer periods of time. Another conflict is opening up between an
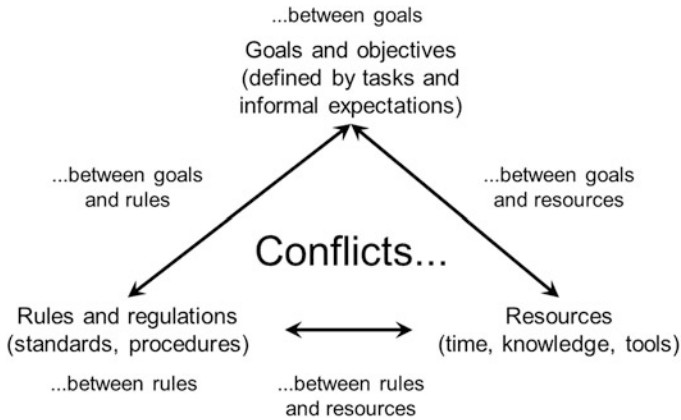
**Fig. 5.3** The model of conflicting work requirements (Adapted from Moldaschl 2010)

increased nominal autonomy for workers and a simultaneous increase in the amount of rules and regulations. Salespeople, for example, might be allowed to sell their customers' products only in standardised bundles instead of custom-tailored packages. Thus their possibility to control the outcomes of their work is reduced and can only be regained by creating time-intense workarounds.

Finally, the discussion so far should have shown that ICT as a tool and thus as a resource for work is not fully utilised. It is often used as a conveyor of objectives and rules and regulations. Its main value is for management supporting indirect control and enhancing the transparency of the company. Its value as a resource for workers, however, is not fully utilised. In the context of time and work pressure, ICT might be used to facilitate (self-)scheduling and organising work as well as cooperation and coordination. The means to achieve this are available with techniques of *user-centred design* and *usability management* (ISO 2010; Hurtienne et al. 2009). The next section on computerisation looks more specifically at how ICT itself may contribute to increasing time and work pressure.

The main challenge for workers, however, is to see the negative consequences of indirect control as a structural problem instead of a personal insufficiency. Today, for most employees, these conflicts need to be resolved intrapersonally. Employees are motivated to want these goals simultaneously – to be a good entreployee, to be a good servant to the customer and to maintain their health and well-being. If they are unable to resolve these conflicts, employees often feel they are deficient and incapable of reaching the targets they are responsible for. As a consequence they put even more effort into showing what they can do. If employees could see these conflicts as a structural problem in which companies deliberately set unrealistically high-performance targets, they might have discovered one mechanism that expand their workload and their time and work pressure and they might take the steps necessary to counteract this (Kratzer and Nies 2009; Menz et al. 2011; Peters 2011).

### 5.4.3  Computerisation

Computerisation here stands for the increasing availability and reliance on information and communication technology (ICT) in everyday work. In Germany, for example, 58 % of the population say they cannot imagine life without the Internet, and about half (51 %) cannot imagine life without their mobile phone. Similarly, in their jobs, 58 % say they cannot forgo using their mobile phones at all (or at most for some hours) without getting into trouble; 36 % say this about their e-mail accounts (Huth 2011).

Information and communication technologies, on the one hand, are used to leverage the efficiency of work by making cooperation easier, providing faster and more accurate access to information and automatising repetitive working procedures. Users can work wherever necessary and share information with colleagues in real time. On the other hand, ICT can have negative effects that contribute to increased time and work pressure. One of the most widely discussed topics is *information overload*. About a third of the respondents in the study by Huth (2011) say they often feel flooded by information (another third say 'sometimes', a third 'never'). Time and work pressure is caused by having to sift through too much available information. New information is being produced at an increasing rate while copying and distributing information has become easier. In addition to its sheer amount, the information available may be contradictory and inaccurate, requiring time for evaluation. Apart from the Internet, where information just sits and waits to be used, e-mail is a major source of information overload, because information is pushed to the user, often requiring immediate attention; people struggle to keep up with the stream of incoming messages. As well as filtering out unsolicited commercial messages (spam), users also have to contend with a growing mass of e-mail attachments in the form of lengthy reports, presentations and media files. The problem becomes one of managing the e-mail inbox by sorting out unwanted e-mail from informative e-mail and from e-mail that needs to be acted upon.

A second consequence of increasing ICT use is that the technology enables employees to become *constantly available* to their bosses, colleagues and clients, thus extending time and work pressure into time periods that are actually meant for recreation and rejuvenation. Companies increasingly expect that their employees be available whenever needed, although they are not formally on standby service. This may also include nights, weekends and holidays. In the above study (Huth 2011), about 29 % say that they are always available outside of regular working hours, 37 % restrict this to evenings, but 8 % each are also available at weekends and in their holidays. Only 12 % say that they are never available outside of working hours. As a consequence the boundaries between work and life are blurring. A side effect of being constantly connected is that people may become compulsive about feeling connected and that they feel forced to respond instantly to work-related communication (Tarafdar et al. 2011; Rosa 2005).

Third, constant availability via phone or e-mail goes along with *frequent inter-ruptions* of ongoing work and leads to multitasking (Tarafdar et al. 2011). This, of course, is detrimental to work that requires long periods of concentration like programming, writing reports, etc. Interruptions may result in tasks that are never finished. After an interruption it is necessary to return one's undivided attention to the original task at hand, and this requires additional time and mental resources.

Fourth, apart from lowering the threshold for the dissemination of information, modern ICT can also *lower the threshold for assigning new work tasks*. One example is the boss who assigns new tasks via the enterprise resource planning system instead of communicating personally. But it may also be the client who informally adds a new requirement to the ticketing system, because he can easily write an e-mail without going through a formal process of approval. The software engineer is likely to respond to the requirement because she later will be evaluated by this customer. Thus, the number of 'grey' assignments for workers is rising. These tasks are rarely official, but if not acted upon, they might harm the evaluation of the work unit or the individual employee who chooses not to respond to them. In combination with constant availability, these processes lower the ability of employees to plan their work and to stick to an assigned schedule. They do require that workers develop skills in scheduling tasks for themselves and that they renegotiate assignments with others, again activities that require additional time.

Fifth, if the *usability* of ICT is low, employees will spend unnecessary time entering and searching for data, formatting reports and trying to learn obscure functionalities; they will spend endless time recovering from errors (cf. Marcus 2005; Brodbeck et al. 1993). Computer crashes, downtime, network instabilities and idiosyncratic software not only waste time and effort but also frustrate users and, if they take the situation personally, can even enrage them (Brinks 2005). Our own research shows that negative ergonomic quality of software enhances worker's irritation and even the level of psychosomatic complaints (Hurtienne and Prümper 2003).

Sixth, one of the main reasons for introducing ICT systems is the *standardisation* of working tasks. Enterprise resource planning software like SAP software is often sold with the promise that implementing the software also implements the 'best practices' of the industry involved. However, companies usually refrain from customising the software to their specific needs and thus work with a one-size-fits-all solution that is often too complex to allow for efficient usage (cf. Hurtienne et al. 2009). This – aggravated by centralised decision-making about performance targets – introduces imperfect standardisation that actually keeps employees from being able to fully exploit the autonomy they purportedly gained through a management-by-objectives approach. The combination of overly ambitious targets and restricted autonomy through standardisation facilitated by ICT use is a very explosive mixture regarding workers' time and work pressure and its stressful consequences (Menz et al. 2011).

Seventh, enterprise resource planning systems are often sold with the promise to have real-time access to all relevant process variables in the company. What is not said, however, is that someone must *provide all the data* that gives management the

ability to achieve a 'transparent company'. This promise often means additional work for employees on the shop floor, who must enter data into the system that are not germane to the job at hand and only add to their workload.

Eighth, ICT use also changes how teams work together (cf. the notion of *virtual teams*). ICT contributes to a shrinking world; communication is possible across great distances and work teams become distributed over large spatial areas, often spanning several continents. This may add problems of cooperation and coordination due to different working styles, languages and work rhythms. So, for example, it was found that virtual teams located in different time zones were more strongly affected than teams spread across similar distances within the same time zone, because the former spent more time maintaining their communications (Cummings 2011). ICT also may impoverish communication by reducing the amount of small talk in a virtual meeting. This 'chatter' is necessary to keep up a team spirit, to gauge the general mood and stress level, to smooth out potential conflicts and to grease the wheels of cooperation.

In summary it must be said that ICT does not directly cause information overload, constant availability, assignment of new tasks, standardisation, etc. Instead it works as facilitator and accelerator of behavioural tendencies that were observed before. Sometimes this facilitation and acceleration effect crosses a threshold and then a new quality is added to the experience of time and work pressure by employees.

### 5.4.4 Acceleration

In his theory of social acceleration, Hartmut Rosa (2003, 2005) differentiates between technological acceleration (e.g. the acceleration of transport, communication and production), acceleration of social change (e.g. of institutions, habits, fashions and lifestyles) and the acceleration of the pace of work and life (i.e. the time needed for activities, the feeling of being hurried and of time and work pressure). ICT in this case would be part of technological acceleration. From this, however, it does not follow that increased use of ICT would result in more time and work pressure. Paradoxically, technology use has been connected with saving time, because technology enables us to do things quicker than before. The same for ICT. A letter that took several days before can now be sent instantly using e-mail. Thus, the speed of communication is said to have increased by a factor of $10^7$, and the speed of data processing by $10^6$ (Rosa 2003). If everything can be done faster, then how can an increase in time pressure be possible at all?

Rosa suggests that time pressure is a phenomenon where growth rates overtake acceleration rates. Although we can do things faster, the number of things to do grows even more, in the result making it difficult to keep pace. And so – even though competition in a global market, subjectification of work and increased use of ICT contribute to a faster working life – they also facilitate the accretion of more and more work.

As an example, the ever-changing nature of the World Wide Web opens up new communication channels that allow for a fast distribution of information. In the past, information about a new product could be posted to the press and it may have secured the attention of the target group. With the advent of the Internet, the same information now needs to be put on a website, might be part of an e-mail newsletter, and gets announced on social media platforms like Twitter and Facebook. Although essentially the same content, it needs to be tailored to the specific media channels, thus introducing more work than before. On a more trivial note, if the introduction of new ICT accelerates business processes, this often goes along with staffing cuts. The result is that the amount of work to do per person increases and the impact of each additional colleague missing (e.g. due to illness) on time and work pressure is higher than before.

The consequences of social acceleration are also indirect. What – under conditions of low-speed change – remained one-off or occasional tasks are now permanently on the agenda and thus increasing time and work pressure. The rapid sequence of technological and organisational changes, for example, requires more effort by the employees to adjust to ever-changing circumstances. Changes might occur through 'permanent restructuring' of organisations to meet market needs. They might occur through technological change but also due to changing requirements of customers and clients. The consequences are that work is less foreseeable; employees are less able to schedule and plan their upcoming tasks. On a larger scale, their employment situation is no longer predictable.

Constant change leads to a decrease in resources. Skills and qualifications rapidly become outdated, previous routines are not applicable, and the time available is too short to establish a new routine. As a consequence, experience and expertise is devalued and there is increasing need for permanent learning and familiarising oneself with new styles of work, new colleagues, etc. All these activities require time and acceleration devalues the time previously invested. Hence acceleration-related time and work pressure is one of the major stressors of modern working life (cf. Kubicek et al. 2013; Ulferts et al. 2013, for first empirical results on Rosa's theory).

### 5.4.5   Interim Conclusion

The above trends, loosely knitted together, show the main trends in today's world of changing work. Although our focus was on how these trends affect time and work pressure today, it also is possible that these enhance possibilities for coping. Management by objectives, for example, can provide greater autonomy that allows for a better and more flexible scheduling of work (Kratzer and Nies 2009). The use of ICT, and especially mobile phones, may change social practices; it may make it possible to cope with and coordinate during times of high work density (instead of just producing these; Wajcman 2008). Of course these four factors are not distinct.

They work together and depend on one another in producing time and work pressure.

Finally, by looking at competition, subjectification, computerisation and acceleration, the 'ordinary' causes of time and work pressure should not be forgotten. Classic problems in the regulation of work activity remain valid: all kinds of interruptions, inadequate equipment, lack of information, social conflicts with supervisors, colleagues and clients, etc. These also contribute to increasing time and work pressure, as do personality variables like skills and knowledge, commitment, tolerance for stress, ambition, etc.

In summary one can say that many causing factors of time and work pressure are known. Empirical research is scarce, however, on the way in which conditions and actors work together to produce concrete instances of time and work pressure, on how employees evaluate the time and work pressure they experience, on how they deal with that pressure and cope with increased demands and on which individual and organisational strategies can prevent the negative consequences of time and work pressure. The remainder of this chapter will briefly look at the issues of coping and work design and hint at further research that is necessary to better understand and address these issues.

## 5.5 Coping Styles and Work Redesign: First Approaches

If time and work pressure is too high or too long lasting to be sustainable any more: what are typical coping strategies under the circumstances discussed so far? Kratzer and Dunkel (2011), under the heading 'work and health in conflict', discuss defensive and active coping techniques. A defensive style would be characterised by renouncing career progression, enhanced status or higher pay in order to escape from higher demands. Often people reduce their working time to minimise their exposure to pressure at work. Others move to a different employer in the hope of finding a better work environment there. Some withdraw into a niche where they hope to be less affected; others diminish their commitment to work. The more committed are more likely to postpone a solution to a later time. Instead they modify their perception of the situation or even deny negative consequences of time and work pressure (especially with regard to their health and well-being).

People who actively cope with pressure will proactively seek rejuvenation during their time away from work. They exercise, work in the garden, foster social relationships and pay more attention to their nutrition. They try to work more efficiently and be better time managers. They put up rules for themselves and others. They hone their skills, read books and attend seminars. Others tend to over-engage and overcommit to work, ending up in what Peters (2011) describes as 'interested self-harming'.

Although these coping styles have been shown to exist, little is known about the circumstances in which they are possible and effective and what their specific benefits, drawbacks and side-effects might be. Most importantly, these coping

strategies remain at the individual level while the problems are more of an organisational and structural nature. A large number of self-help books on time management and self-management are available that address individual coping strategies. Similarly, a number of companies offer training and coaching to their employees to cope with time and work pressure. But their perspective is still on the individual coping styles, e.g. more effective and efficient work habits as well as better nutrition and exercise. Although these strategies may be helpful in coping with the strain resulting from time and work pressure, they do not address the underlying problems that are structural, organisational, cultural and social. For example, it may help to go for a run after a stressful day but the underlying causes of work-related stress are not addressed.

Adhering to traditional occupational psychology (Gniza 1994; Hacker 1998), we believe that changing the circumstances or conditions under which work is carried out is more effective than trying to change workers' behaviour by individual strategies alone. Traditional work design concepts like job enrichment, job enlargement or job rotation are not applicable anymore, because jobs today are already enriched, enlarged and offer multiple challenges to workers. Under today's conditions of greater autonomy and highly individualised work conditions, the main task becomes to enable employees to change their own working conditions and redesign their work themselves.

Although further research remains necessary, any work redesign that addresses the problems of time and work pressure needs to observe some basic rules. Due to the complex and subjectivised nature of the work today, work design needs to be done bottom-up, should get employees involved and should not be a process that is top-down controlled by management or external consultants. Work design should be understood as a continuous process, not as a one-off project. An appropriate tool to work design therefore is the workshop in which problems are discussed in teams and changes to the working conditions can be decided. The continuous process ensures a revision of the strategies and enables to change procedures when general conditions change. One major aspect of such workshops is to agree on new rules and regulations to balance work demands and workers' health.

Examples of work redesign strategies as the result of a number of workshops involving IT knowledge workers are provided by Gerlmaier (2010). The strategies developed to change working conditions, by way of example, suggest:

- Limiting to a maximum of two the number of projects in which an employee is involved at any given time
- Agreeing on blocks of 'quiet time' permitting interruption-free work on tasks that require high levels of concentration
- Segregating the times in which project work is done from periods reserved for answering customer inquiries
- Making stress and psychic well-being a regular topic in weekly group meetings
- Optimising technical reporting and documentation systems to reduce time spent on administrative duties

Although these are recommendations that go far beyond the usual company offerings on the individual level, the implementation of these ideas is not widespread and there is no empirical data available yet on their effectiveness.

While the suggested approaches focus on the levels of workgroups and project teams, it remains less clear how to address changes in employees' working conditions in the higher levels of management. First, due to a high-performance culture among managers, they may not see time and work pressure as something that needs to be addressed at all. Second, and more importantly, however, since they are far removed from the operational level of business, they are not competent enough to understand what resources and tools are needed to help employees cope with their jobs. Third, it is highly unlikely that upper management is undoing the processes of flexibilisation, subjectification, computerisation and acceleration, because they currently seem to be the only solution to the many problems businesses face in today's globalised and competitive markets. Thus, if the problem is recognised at all, it is delegated to Health and Safety or Corporate Health Management departments that again come up with individualised solutions.

Because it is difficult to address work redesign beyond the operational level, sociologists tend to suggest collective actions. Trade unions and works councils should on the political level get involved with changing working conditions. Again, this appears difficult, because the problems with time and work pressure seem highly individualistic and subjectivised and do not (yet) lend themselves to collective action. Similarly, individual circumstances seem to evade policy making and health and safety legislation. It is known that employees feel, for example, even more time pressured when faced with – in their eyes restrictive – working time regulations (Kratzer and Dunkel 2011; Menz et al. 2011).

To conclude, from the above trends, some suggestions for further strategies include:

- To supply employees with the appropriate resources to meet ambitious targets
- To reduce the amount of administrative duties, documentation and reporting
- To acknowledge and support the large amount of invisible work employees are engaged in
- To reduce the density and speed of communication, especially via ICT systems
- To simplify complex process chains
- To support self-education and training
- To sensitise and to provide room for reflection on how to improve unsatisfying working conditions

## 5.6   Conclusion and Outlook

Time and work pressure is an important topic in today's world of work. Many people are affected and the consequences can be grim. Current theoretical models, however, say little about how time and work pressure comes into being, under what

circumstances its consequences are positive or detrimental to health and what to do about it. Although it is easy to derive simple analytical models that can describe the main contributors to time and work pressure (i.e. large amounts of work to do, at high quality, with insufficient time), empirical research undertaken by sociologists shows that the picture has many more facets and is not as easy to understand as the simple triangle model in Fig. 5.1 suggests. This chapter has reviewed four major trends that contribute to the predominance of time and work pressure in today's world of work. We have identified a complex web of influences that can be described with the keywords of competition, subjectification, computerisation and acceleration. We briefly looked at how people cope with the increasing demands resulting from these trends and have looked at first attempts to derive techniques and methods for work redesign.

The central thesis is that acceleration and information technology do influence the quality of working life, but this must be seen against a background of larger trends involving competition and subjectification of work. Therefore, measures derived to enhance the quality of working life need to take the larger picture into account in order to be successful and sustainable. It is not technological or social acceleration per se that needs to be observed and monitored, but instead the interaction of these developments, how people go on with their lives and the changing values, activities and relationships that develop in interaction with these trends. Or as Judy Wajcman (2008, p. 67) puts it, 'We need to ask whether there is evidence that people are collectively finding ways to appropriate, adapt and actively shape the use of digital technologies to take more control of time rather than being victims of uncontrollable instantaneous time'.

Our approach to further research, therefore, is coping oriented. What are the strategies and coping mechanisms developed by organisations, teams and individuals as a reaction to time and work pressure? What strategies for prevention and coping are deemed useful? What are the organisational and cultural conditions that influence whether these strategies and coping mechanisms are realised? Thus, we combine the individual level of analysis with the organisational and team-related levels. Strategies for work design, so is our belief, need to address the interactions between these levels and cannot be focussed on one of these areas alone.

Finally, although strongly involved in the creation of time and work pressure, technology is not the culprit. ICT may facilitate human behaviour that increases time and work pressure, e.g. by enhancing workload, allowing a blurring between work and leisure, posing new learning challenges, etc. But in the end, ICT may also facilitate coping with time and work pressure by supporting the 'micro-coordination of everyday life, allowing for tighter and more efficient 'real time' planning of activities [. . .] They may offer positive forms of temporal control, enabling more people to have not only more time but time of their choice' (Wajcman 2008, p. 71). While we did not focus on these effects in this chapter, this promises a fruitful area of further exploration.

Further research will help to develop sustainable approaches to dealing with time and work pressure. Although individual strategies are en vogue at present, they often cannot be effective because of organisational or cultural restrictions.

We believe that novel approaches to work design need to take account of individual, team-related and organisational options for influencing time and work pressure and to consider the interactions among those options.

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