2 Time management

Logic, effectiveness and challenges

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Modern society places a variety of temporal demands on people's activities. Organizations require workers to be present and ready to work at particular times, to execute their work in synchrony with others, to keep a certain pace or rhythm, and to complete their work within certain deadlines. Thus, in order to perform well, people at work must 'deal' with time in an effective manner. In personal settings there are time demands as well, and people have to take these into account when scheduling household and family duties, social encounters and leisure activities. Many people live busy lives and struggle between job and family obligations (Koch & Kleinmann 2002; Major, Klein & Ehrhart 2002). The fact that more and more people must balance their careers and home situation (Cooper 2005; Jones, Burke & Westman 2006) may explain why time management is such an important issue in popular discourse, and why it keeps demanding attention from management and scholars.

Time management has been a popular topic since the 1960s, when it was introduced as a method for managers to increase work performance and effectiveness (e.g., Drucker 1967). It is intuitively appealing to many people, and much propagated by trainers and consultants, but has hardly been investigated scientifically. Currently, we have a very limited understanding of what time management is and how people can successfully 'manage their time'. Although researchers have proposed some conceptualizations and tried to disentangle some aspects of the way in which people deal with time in work situations, much is still unclear or simply unknown. In this chapter, we will discuss the notion of time management, review the literature, discuss time-management techniques, and propose a future research agenda.

Time management defined

The term time management means different things to different people. Traditionally, the term is used to refer to the use of particular techniques, such as making 'to-do' lists or deliberately planning activities, or to participation in training with the purpose of learning how to master and use such techniques (e.g., Lakein 1973). In the most generic sense it refers to types of behavior that differentiate people who do things 'on time', stick to deadlines and spend little time on their
activities from those who are often late, pass deadlines, spend much time on their activities and waste time on unimportant matters. Time-management behavior as meant here occurs spontaneously under natural conditions. Some people appear to be effective in dealing with time, while others are not (e.g., Covey 2004). In the recent literature, there is still a third meaning: time management has also been designated as a personality trait that underlies the above-described type of behavior (e.g., Sheng-Tao & Yu-Ling 2006). Unless stated otherwise, we will use the term time management in the more generic way; that is, to indicate time-management behavior related to the effective 'use of time'.

Although the expression 'using time' is a very common one, we should ask ourselves in what sense people are using time and to what degree time can be managed at all. As is pointed out in other chapters of this volume, the notion of time as a 'commodity' that people can use or dispose of is misleading. Time is an abstract attribute of life and hence of everything happening in the lives of people, including their activities. Whatever they do 'extends' in time, i.e. happens while time is passing and the clock is ticking. Confining ourselves to intended activities directed at goals in organizational and private life, we might say that any activity undertaken by a person will 'use' time in the sense that a certain amount of clock and calendar time will pass between the moments the action is initiated and completed. This time that passed or was 'used' can be seen as a source of enjoyment and fulfillment, as described in the work of Csikszentmihalyi (2000), but it is more common to see it as a 'cost'. The activity that has been performed as time was passing by cannot be undone or corrected without more time passing. Hence time passed is time lost. People who use more time to achieve a given objective than those who use less are said to 'have spent' more time and to have been less effective. Thus, the notion of using time is tightly connected to the view that one can treat time as if it were a commodity, and the interest in minimizing the use of time - perhaps at the expense of joy and fulfillment - comes from the view that this quasi-commodity is to be highly valued, expressed in the well-known statement 'time is money'.

What about the idea of 'managing time'? Of course, time cannot be managed in any sense. The only things people seem to be able to manage, or at least influence to some degree, are their own activities. People can set goals, make themselves work and stop working, continue working in the presence of distracters, suppress and postpone other activities, and so on. Or, to put it more generally, they can exercise control over their activities by allowing certain intentions to come to action and inhibiting others, and by accepting or resisting distractions. Put in these terms, time management is a matter of managing one's activities, taking account of the time involved in it. Claessens, Van Eerde, Rutte and Roe (2007: 262) define it as 'behaviors that aim at achieving an effective use of time while performing certain goal-directed activities'.

With this way of describing time management, we come very close to a self-regulation view of human activity. According to Boekarts, Maes and Karoly (2005: 150) self-regulation refers to 'a multi-component, multi-level, iterative,
self-steering process, that targets one’s own cognitions, affects, and actions, as well as features of the environment for modulation in the service of one’s goals. Given the popularity of self-regulation notions in the recent literature (DeShon & Gillespie 2005; Kanfer 2005; Vancouver & Day 2005), we have to ask ourselves how time management can be combined with current views of how people regulate their activities at work. Do we need a separate model to describe time management, in addition to models describing regulation with regard to other goal attributes? Or is it conceivable that time management becomes part of an integrated model of activity regulation that is still to be developed? We will take up this issue when discussing the future research agenda, but for the time being we propose a conception in which activities are regulated with respect to multiple attributes simultaneously. These multiple attributes include — in general terms — quantity, quality, resources and time. The conflict between these attributes may explain why timeliness might sometimes suffer. Some underlying mechanisms may be the same for all regulation efforts; others may be time-specific, such as perception of time.

So far, the literature on time management has been sparse on conceptual issues. Authors have typically taken an operational point of view and focused on planning one’s work activities and prioritizing (see, for instance, Macan 1994). Recent research has helped to broaden the scope, by incorporating time assessment behaviors, planning behaviors and monitoring behaviors (Claessens 2004; Claessens et al. 2007). Claessens et al. (2007: 262–263) describe these behaviors as follows:

*Time assessment behaviors*, which aim at awareness of here and now, or past, present, and future (Kaufman, Lane & Lindquist 1991) and at self-awareness of one’s time use (attitudes, cognitions: e.g. Wratcher & Jones 1988), and help to accept tasks and responsibilities that fit within the limit of one’s capabilities. *Planning behaviors*, such as setting goals, planning tasks, prioritizing, making to-do lists, grouping tasks (e.g. Britton & Tesser 1991; Macan 1994, 1996) which aim at an effective use of time. *Monitoring behaviors*, which aim at observing one’s use of time while performing activities, generating a feedback loop that allows limiting the influence of interruptions by others (e.g. Fox & Dwyer 1996; Zijlstra, Roe, Leonova & Krediet 1999).

These three types of behaviors, also referred to as time-management dimensions, make sense from a self-regulation perspective. Assessing time is an important prerequisite for making realistic plans, planning behavior provides a basis to guide future action, and monitoring is necessary for exercising control. We suggest that *executive behaviors*, which aim to influence ongoing activity, either directly (e.g. by speeding up, slowing down) or indirectly (e.g. by removing environmental distractors), should be added as a fourth dimension of time management. Without these behaviors, a self-regulation model of time management would be incomplete.
Review of the time-management literature

Given the long history of the concept, one would expect research to have demonstrated the incidence and specific forms of time management and have revealed the factors and mechanisms involved in it. Surprisingly, empirical research has begun only recently, approximately twenty-five years after the concept of time management was first introduced (Claessens et al. 2007). The number of empirical studies is still very small.

A recent literature review (Claessens et al. 2007) gives an overview of time-management research since its inception, and summarizes what is currently known about it. In general, a positive relationship was found between people’s self-report of time-management behaviors and perceived control of time, academic performance (Britton & Tesser 1991; Burt & Kemp 1994) and well-being (operationalized as low strain or health) (Bond & Feather 1988; Jex & Elacqua 1999; Macan 1994). Regression analyses suggest that those engaging in time-management behaviors, operationalized as setting goals and priorities, mechanics of time management, and preference for organization, perceive control over their time as being something that, in turn, increases their subjective well-being, as manifested in job satisfaction and job-induced tension. Planning behavior is especially associated with positive outcomes such as job satisfaction (Claessens et al. 2007). Claessens, Van Eerde, Rutte and Roe (2004) demonstrated that one dimension of time management, i.e. planning behavior, is related to higher job performance. How much time management actually contributes to a higher job performance has not been established yet. Future research could focus on quantifying the effects of time management.

Some studies have focused on the effectiveness of time-management training. They have shown mixed results, although in most (of the few) studies a positive outcome was found (Claessens et al. 2007). Green & Skinner (2005: 136), for instance, found that participants in a time-management training program increased their knowledge of time management and, on an individual level, showed ‘significant observable improvement in key areas as planning, prioritizing, assertiveness, and consequent reductions in their stress levels and median improvements in personal effectiveness of some 20 percent’.

The largest part of the research conducted thus far has focused on the effectiveness of time-management behaviors and the use of particular techniques either in do-it-yourself settings or in training situations. Studies have focused on time-management behaviors in relation to perceived control of time (e.g., Francis-Smythe & Robertson 1999), academic performance (Bond & Feather 1988; Britton & Tesser 1999; Burt & Kemp 1994), work–family interference (Adams & Jex 1999), estimation of time duration (Burt & Kemp 1994), job satisfaction (e.g., Macan 1994), or variables related to well-being (e.g., Bond & Feather 1988). Very little attention has been given to factors that might influence the actual use of particular behaviors and techniques, or that moderate their relationship between their use and measures of effectiveness.

A noticeable exception is the study of personality as a factor in effective time
management. In China, a number of studies have recently been devoted to 'time management disposition' (e.g., Sheng-Tao & Yu-Ling 2006; Zhijie 2005), a concept referring to a set of traits associated with the effectiveness of time-management behavior. This 'multi-dimensional personality trait' is captured by the Time ManagementDisposition Inventory for Chinese adolescents (Xiting & Zhijie 2001). Research has addressed the presence of such a trait, its influence on (for example) self-confidence, satisfaction with regard to learning and coping style, and the influence of hereditary vs work experience factors. Up to now these Chinese studies have not provided any conclusive answers. There is some evidence for a hereditary influence, but also for the effects of learning and exposure to other external factors.

Other research on personality has focused on the 'Big Five' and more particularly on the conscientiousness trait, which comprises qualities such as being results oriented, organized, careful in one's work, ambitious, trustworthy and having a conscience. Several studies have shown that such qualities can have a positive influence on work, study and training achievements (see, among others, Barrick & Mount 1991). Pulford and Sohal (2006) demonstrated that students with a certain personality profile (high scores on conscientiousness, extraversion and organization) performed better on a time-management scale. They also found that the overall GPA score of these students at the end of the first year was predicted by the prevalence of time-management behavior operationalized as planning and the ability to deal with deadlines. Williams, Verble, Price and Layne (1995) explored the relation between time-management behaviors and the Myers-Briggs Type Indicator (MBTI). They found that the J-P (Judgment-Perception) index of the MBTI was positively linked to the time-management factors of short-term planning, long-term planning, and attitude with regard to time. A higher score on the J-P scale indicates '...having a preference for a planned, orderly, and controlled way of living' (Williams et al. 1995: 37).

There is evidence from older studies showing that personality may play a role in displaying time-management behavior. Shahani, Weiner and Streit (1993) found that the incidence of time-management behavior was quite stable under varying levels of reported stress. Frese, Stewart and Hannover (1987) pointed to large differences between individuals in goal orientation and planning behavior. However, they suggested that these differences are in fact 'action styles' or 'propensities to act' (op. cit., p. 1183), and do not indicate a personality trait. One action style is planfulness, referring to a kind of coping style a person applies in complicated or stressful situations, in this case by preplanning that situation.

There are several limitations in the studies performed. They vary widely in the definition of time-management behavior and its operationalization, as well as using different research methods, measurements or types of respondent (e.g. students, engineers). These differences may account for the lack of consistency in results. Whereas some studies, for instance, found no significant relation between (dimensions of) time-management behavior (e.g., Macan 1994), other studies demonstrate a significant relationship (e.g., Claessens et al. 2004). The
most common research method has been self-report questionnaires (e.g., the time-management behavior scale, Macan 1994), composed of items on setting goals, planning and prioritizing, attitudes towards time, and the like, used in a cross-sectional design. In addition to this, a few diary studies (e.g., Orpen 1994), experiments (e.g., Woolfolk & Woolfolk 1986) and intervention studies (e.g., Macan 1996) have been conducted. One cannot rule out that self-report studies are biased, as they rely on single-source data. Moreover, as most studies had cross-sectional designs, their findings allowed for reversed causation and might be less generalizable than studies using other research methods and designs, such as a longitudinal study.

Studies also differ in the kind of respondents participating, which may account for part of the variation in outcomes. Respondents in most studies were students enrolled in psychology classes (e.g., Bond & Feather 1988). Other studies used a sample of employed adults (Adams & Jex 1999), novice teachers (Woolfolk & Woolfolk 1986), or trainees in a time-management workshop (Van Eerde 2003). It is questionable to what degree the students’ situation is comparable to that of paid workers, as they generally have fewer obligations and more freedom than employees. As a consequence, they might use fewer or different time-management techniques.

As for effectiveness, it seems that time-management techniques are helpful in the medical profession. A recent study showed that physicians displayed many time-management behaviors and made decisions with time implications (Kleshinski 2006). As in other professions, time allocation to different duties should be determined, after which time-management strategies can be adopted. Planning can be especially helpful in the medical profession, accompanied by a reflection on time spent and adapting to changing circumstances (Sarp, Yarpuzlu & Mostame 2005). Furthermore,

- facility characteristics (academic affiliation, type of organization of services, serving as a “hub” for treatment of severely mentally ill, facility size) as well as individual provider characteristics (discipline, length of time in job, having an academic appointment) would influence time allocation.

(Sulivan, Jinnet, Mukherjee & Henderson 2003: 89).

A few studies have examined intercultural differences in time-management behaviors. Nonis, Teng and Ford (2005), for instance, studied differences between a Sri Lankan and a US sample and found no significant mean differences in four time-management dimensions, yet partial correlations showed that certain dimensions were related to job performance in one culture and not in the other. In the US sample, for instance, the dimension of prioritizing was significantly positively related to job performance ($r = 0.37$), whereas in the Sri Lankan sample it was not related ($r = 0.06$). They conclude that, as opposed to the generally accepted idea that there are differences between cultures as expressed in the pace of life (cf. Levine & Norenzayan 1999), it is not certain that this also holds for time-management behavior – at least not based on their study; thus they urge
further research be dedicated to intercultural factors in time-management behaviors and their effects.

In most business situations, people work in projects that not only involve a specification of the moment the projects should be completed – i.e. a deadline – but also a specification of the expected outcome and amount of work. Next, as Teigen and Karevold (2005: 231) put it: ‘Progress can be monitored both with respect to a task dimension: how much work is done, and a temporal dimension: how much time has been spent?’ In their study on time-framing in projects, they asked four teams to describe, by means of four statements, the status of their work that had to be completed within a certain time. In experiment I, for instance, Team A had to answer the statement ‘We have spent half the time...’ with either ‘... so now we have to hurry up a little’ or ‘... so now we can take it more easy’. In the same manner, Team B had to answer the statement ‘We have half the time left...’. Results showed that the teams that had statements referring to ‘time spent’ felt that they had to hurry up, possibly as a result of a feeling that the deadline was near, whereas the other teams that had half the time left answered that they could take it easy. These statements might also be used in group time-management to reflect on team members’ allocation of time, similar to one of the aspects of individual time-monitoring. Prichard, Stratford and Bizo (2006), for instance, found in their study that several student team-skills, such as team ‘problem solving, planning, decision making, setting objectives, time management, agreeing roles, creating a group environment and cooperation’ (ibid., 258–259), facilitated effective teamwork. More research on group time-management is needed.

We can conclude that there is evidence showing that time-management behaviors are related to effectiveness in performing tasks in accordance with temporal demands. Our knowledge about the mechanisms involved in bringing about these effects is still very limited. However, there is some scientific support for the influence of personality on the display of time-management behavior, a so-called dispositional component.

Using time-management techniques

Time management was and still is very popular, and books, self-help tools and training courses on how to improve one’s time-management behavior are sold all over the world. Although techniques for improving time management were originally aimed at managers, the demands of modern organizational life are such that many people, not only managers, have become interested in changing their way of working with respect to time. Here we will discuss the main time-management techniques and the way in which they are used.

Techniques and dimensions

Notwithstanding the weak knowledge-base, much has been written about techniques for time management. Many of the techniques described in the popular
literature (e.g., Covey, Merill & Merill 1994; Lakein 1973) are associated with the planning dimension of time management, i.e. with deliberately setting work goals and personal goals, identifying core tasks and activities, and scheduling and prioritizing these tasks and activities. Calendars and planners are often used as tools to support all this. They differ in the time segments they stipulate: some people plan in one-hour blocks per day, while others divide the day into fifteen-minute blocks (Burt & Forsyth 1999). Other tools are to-do lists or other bits of paper, pocket diaries, e-mail and mobile phones. Some of these can also be used to strengthen the monitoring dimension of time management. They are supposed to support ‘prospective remembering: that is appointments and to-do’s’ (Blandford & Green 2001: 219).

Other techniques address the executive dimension of time management. They imply a range of behaviors that aim at avoiding work interruptions (Jet & George 2003), increasing effectiveness of meetings at work (Rogelberg, Reach, Warr & Burnfield 2006), overcoming delay behavior (also known as procrastination, cf. Van Eerde 1998), and motivating and regulating oneself in goal-directed behavior (cf. Boekaerts, Maes & Karoly 2005; Gollwitzer 1999; Kuhl & Fehrman 1998). The techniques addressing executive dimensions seem to fall into two categories. The first aims to avoid ‘time wasters’ – such as unexpected telephone calls, visitors, and meetings – that interrupt the execution of work as planned. They essentially consist of protective measures that prevent these disturbances, bringing them under control by planning, or stopping them from causing interference by isolating the person from them. The second aims at the motivation to carry out the plan. According to time-management gurus such as Mackenzie (1972), people are normally energized and motivated to execute their work when they have set goals for themselves and engaged in planning and prioritizing work tasks. Yet they may lose the motivation to perform the goals once they are in the maelstrom of everyday work-life. A specific motivational technique, introduced by Gollwitzer (1999), is to generate ‘implementation intentions’ by using ‘if–then’ self-instructions to direct one’s behavior. According to Henderson, Gollwitzer and Oettingen (2007: 82), people benefit from these self-instructions to start working on their goals and to persist in the pursuit of these goals:

Whereas goals have the structure of ‘I intend to achieve or reach Z’ with Z referring to a desired outcome or behavior to which one feels committed, implementation intentions have the structure of ‘If situation X is encountered, then I will perform behavior Y.

By formulating these if-then plans, mental links are created between current and desired conditions or end-states. They also entail that people are able to select the actions (e.g. thoughts, feelings and behavior) needed to attain this desired state. The idea of ‘implementation intentions’ can be applied to time management; for example, the following self-instruction might be used: ‘If time T has come (and situation X is encountered), then I will engage in behavior Y’.
It appears that little attention has been given to the assessment dimension of time management. One technique, used to balance work and private time demands, is to make a list of all personal commitments and a list of all work commitments, and then compare them with respect to their time duration, importance, urgency or priority. It might also be useful to decide whether certain work commitments on one's list could be performed by others as well. More techniques might be developed to give people insight into their actual use of time and the effects of newly presented time demands.

The general idea behind the use of these techniques is that it allows a person to focus on a limited number of attainable tasks without losing sight of the big picture. Instead of being overwhelmed by the complexity or large number of goals or projects which may discourage one from even starting work, one should be able to formulate many small tasks that one is able to perform. In addition, this focus has the effect that energy is directed at the completion of tasks and enables obstacles to be overcome as they occur.

The popular management literature gives many suggestions for so-called 'quick wins': switch-off the e-mail notifier, read e-mail only three times a day (at the start of work, after lunch and one hour before going home), use your prime time (the time that you are most concentrated – usually between 11 am and 1 pm) for important tasks, cluster work activities, have a clean and ordered desk, arrange a workstation (no phone, no interruptions by others) where you can work on high-concentration tasks, reward yourself when finishing activities, break-down tedious tasks into small tasks that are easier to complete, and monitor your activities with respect to time while executing them (for more, see Covey, Merill & Merill 1994; Covey 2004). These make sense, but their effectiveness remains to be established.

Particularly interesting is time management at the intersection of work and private activities. In one's personal life, time-management techniques may also be applicable (e.g. Roesch 1998). Some techniques may help one to become more effective in using private time and to attain a balance between private and work activities. The technique of listing and comparing all private and work commitments may be helpful in finding and maintaining the balance between work and home. The list can make it evident that there are often far too many work commitments compared to personal ones, after which one may consider eliminating certain work commitments in order to make more time for a personal life. In addition, people may make a personal time-management chart (cf. time budget) showing how they spend time on family, recreation, eating, sleeping and getting up. This may help them to separate perception from reality, and make room for actual improvements in allocating time to these activities (see www.lifeorganizers.com/time). Of course, finding an ideal balance between personal and work time is different for each individual (Francis-Smythe & Robertson 1999), and people will have to use these techniques to accommodate their own preferences and opportunities.

Although these techniques have emerged from practice, it is not difficult to see how they are rooted in a self-regulation view of time management. They aim
Applicability of time management in different settings

Time management was first introduced for professional managers (e.g., McCay 1959) before being made available to anyone in work situations (e.g., Lakein 1973; Mackenzie 1972). Time-management books tend to be very workplace-oriented. Almost every page deals with meetings, paperwork, calendars, delegation, business communication, time logs and so on. Most of the examples are set in the workplace – even the charts, figures and worksheets are applicable only to work or business situations. The traditional techniques and tips are not always applicable for those working outside a traditional office situation. Furthermore, to apply time-management techniques, a certain level of job autonomy is required. One can imagine that in work situations where there is no room at all for personal planning and decision-making, time management might not be implemented to the full extent. However, in these cases techniques such as motivating oneself to perform tasks might be helpful. Generally, managers, directors or job professionals have higher job autonomy than those working in administrative or staff jobs, and as a consequence the low autonomy group can only engage in restricted time-management behaviors. Also, other job characteristics, such as perceived workload (Claessens et al. 2004), goal clarity (Kleinbeck & Fuhrmann 2000) or task complexity (Kernan, Bruning & Miller-Guhde 1994), play a role.

We have seen that past empirical studies find some support for a dispositional foundation of time-management behavior (e.g., Zhijie 2005), suggesting that there are consistent individual differences in time-management behavior which make some people more and others less effective. These differences may originate from personality, motivational or cognitive factors. Personal preferences, such as working on several tasks simultaneously, are also involved. Kaufman-Scarborough and Lindquist (1999), for instance, showed a relation between monochronic individuals and time management. They indicated that individuals with monochronic preferences were more likely to do detailed planning than those with polychronic preferences, yet they experienced difficulties in sticking to their plan, possibly because they preferred to concentrate on one thing at a time. Polychronic individuals indicated that they more often achieved their planned goals than monochronic individuals, and were also better able to cope with interruptions. Moreover, a study by Zhang, Goonetilleke, Plocher and Liang (2005) demonstrated differences in time-sharing – that is, being able to

Conclusion: challenges

Time management is a complex, multi-tasking situation that commonly agreed on that self-regulation between time assessment dimensions of it. The research attention, the role executive behaviors might play, and those that modify their effects on the workplace. Hence, influence the acti...
switch attention quickly back and forth between different tasks. Where mono-
chronic individuals switched to a next task only when the previous task was 
completed, polychronic individuals preferred continuously to switch between 
different tasks even when the situation was already distracting due to noisiness. 
Their findings support the idea that there are different patterns of behavior 
among people with monochronic and polychronic preferences, especially in 
multi-tasking situations.

Conclusion: challenges for research

Time management is a largely unexplored area for research, containing many 
unresolved issues. Further research will profit greatly from an unequivocal and 
commonly agreed conceptualization of time management. We have suggested 
that a self-regulation approach be adopted and that a distinction be made 
between time assessment, planning, monitoring and executive behaviors as 
dimensions of it. The former three dimensions have received some previous 
research attention, while the fourth deserves further elaboration. For instance, 
executive behaviors might be divided into those that directly change an activity, 
and those that modify the conditions in which the activity is taking place and 
hence influence the activity indirectly. Direct executive behaviors would change 
activities with regard to addressing one or more temporal facets: a (new) activity 
may be started, an (ongoing) activity might be accelerated or decelerated, or 
might be interrupted or postponed until a later moment. Indirect executive 
behaviors can be many, as the behaviors can be directed at the place where the 
person finds him- or herself, the location of the person in space, the presence of 
other people, the distribution of roles, the collaboration with other people, and 
so on. By acknowledging these four dimensions, it becomes apparent that effective 
time management comprises a broad range of behaviors and techniques. It 
includes planning and prioritizing tasks, excluding oneself, disconnecting the 
telephone or e-mail, asking other people to help in dealing with disturbing 
events by giving reminders and by assisting in performing tasks, etc.

In addition to a common view of time-management behaviors, a common 
set of standardized instruments to measure all four dimensions is needed. A 
number of instruments are already available, but we feel that they might have 
to be improved and expanded. Of course, they would also have to be 
developed further by investigating construct validity, reliability, and criterion-
related validity.

A facet of time management that has received minimal research attention in 
the past and is important for further advance is the definition of effectiveness: is 
time management effective when people produce results within deadlines, when 
they use minimal time, when they do not ‘waste’ time on trivial activities? There 
is as yet no clear understanding about what is effective, and defining that may 
turn out to be problematic because time is only one of the aspects of perform-
ance that people should meet. In almost any work (or private) situation, people 
are expected to meet standards of quality, quantity, utilization of resources and
timeliness. Therefore, time will have to be balanced against these other aspects, implying that effective time management cannot just involve looking at the use of time. Somehow, other aspects of performance will have to be taken into account: trade-offs will have to be considered, in terms of both the demands that people are supposed to meet and those standards that the individual strives to meet.

A priority would be to investigate the four dimensions of time management and the various behaviors in which they are manifested. Past research has already charted a limited range of time-management behaviors that can be classified along these dimensions, but more research exploring a broader range of options would also be welcome. Further research could not only investigate behaviors belonging to the four dimensions but also study patterns of time-management behavior. It would be worthwhile to examine the combinations in which time-management behaviors occur, and how effective they are in meeting performance standards, to show whether there is one best way of doing time management (as is often implicitly assumed in the ways in which techniques are presented) or whether there are different ways that are equally effective or ineffective.

From a differential perspective, it would be interesting to examine which types of people prefer particular approaches of time management and why. As was discussed above, research on personality has already shed light on facets of this issue, as there are, for example, clues that conscientiousness is related negatively to procrastination and positively to effective time management (e.g., Van Eerde 2003). It would be interesting to broaden the scope of this type of research by including other than the classical personality traits and styles. In addition to the notion of ‘time management personality’ traits mentioned above, one might think of polychronicity and monochronicity (Palmer & Schoorman 1999), time-management disposition (e.g., Sheng-Tao & Yu-Ling 2006), temporal perspective (orientation on past, present, future) (Murrell & Mingrone 1994) and temporal depth (time horizons, Bluedorn & Stadler 2006).

Equally important is research into characteristics that are normally classified as ‘demographical’. Schunk (2006), for instance, fails to reveal differences between males and females, but this may be a result of the fact that time management was conceived in terms of scores on distinct variables and not in terms of patterns. Further research seems worthwhile, certainly if patterns are linked to external criteria of effectiveness. Age is another category that deserves to be investigated. It is quite possible that older and younger people differ in terms of time-management behaviors, not only because of the learning experiences involved in getting older, but also because of generational differences, which may imply different conceptions of time and different norms regarding the use of time and timeliness.

From a dynamic perspective on time management, it would be worth studying the development of different behavior patterns over time. Such research might find proof of stability, as is suggested by the research on time-management personality (e.g., Xiting & Zhijie 2001), but one cannot rule out changes.
Efforts could be made to clarify to what degree stable personal preferences and/or the exposure to particular learning situations would determine such patterns. Learning situations could be natural situations presenting themselves in everyday life (e.g., examples of successful people) or contrived situations produced by using self-learning tools or by following training. Long-term changes may also occur. For instance, time-management preference and competencies may develop during a career, as people are exposed to a variety of situations that impose time demands and receive feedback and coaching regarding effective and ineffective techniques.

As time-management research derives much of its significance from the world of work, another relevant area for study would be differences between people in different occupations and organizational roles. It seems quite likely that the norms inherent in various occupations and in roles belonging to functional areas or organizational levels are different, and that diverse types of time management are, in fact, required. As far as we know there is no current evidence on this matter, but if differences do exist then they are likely to be important for the people involved. In certain branches of industry, particularly in communication, transport, catering and computer-based services, the requirements for timeliness are very high, and success and failure in meeting such standards are likely to be critical for employees and managers.

The need for time-management research is probably high at the interface between organizational and private life. Actually, much of the interest in the topic of time management among ordinary people seems to stem from difficulties they have in reconciling the demands of the domains of work, household, leisure, family and community life. Therefore, by restricting itself in focus only to the field of work, research might miss important issues and forego opportunities to explain problems at work, exactly because of conflicts with the private domain. It would be good to develop a specific line of research into how, in terms of patterns, people balance the requirements from various sides. Given the lack of insight on this matter, any research that helps to show more and less effective approaches to perceiving and assessing demands, planning and monitoring activities, and effectuating changes will be welcome.

Research should not only try to frame time management and chart the various forms in which it is applied by different groups of actors, with varying degrees of success, but also look into the nature of the processes involved. Here we return to a theoretical issue that was raised earlier: whether a separate model of self-regulation in time management is needed or whether we should aim for integration with models that describe regulation in terms of qualitative and quantitative outcomes – that is, what must be achieved rather than when. We are inclined to pursue the option of integration, if only for the reason that qualitative, quantitative and temporal demands can conflict, and can be detrimental for the temporal side of performance. In practical terms, people may be late because they want to deliver a good piece of work rather than just a piece of work. The interdependencies and trade-offs have to be brought into a common conceptual framework in order to be able to study them adequately.
The self-regulation approach may also be helpful in guiding research into the underlying mechanisms of time management. More fundamental research is needed to reveal ways in which people perceive and assess temporal demands, cognitive and motivational aspects of planning, and the various processes involved in monitoring and effectuating change. Here, we should emphasize the need to differentiate between demands regarding facets such as deadlines, total duration and lead time, which may be differentially important depending on the particular type of work task and the relational interdependencies with other people (colleagues, clients). In fact, the way in which people deal with these multiple facets during the four stages of the self-regulation cycle may prove to be very complicated.

In our view, there is much theoretical research to be done before the field of time management will reach the stage of adolescence, not only to gain a better understanding of time-management behaviors and the psychological mechanisms underlying them but also to reveal the conditions under which people engage in various types of time-management behaviors and the factors that control their effectiveness. The interest in the practical side of time management will, however, remain, and it would be unrealistic to assume that applied research will wait for the results of fundamental research. Research on time-management techniques can advance by departing from clear definitions and unequivocal operationalizations, preferably within a commonly accepted framework. Such research would also profit from adopting experimental and/or quasi-experimental designs that offer adequate opportunities for control, and from the use of appropriate methods for statistical analysis. Although this may seem obvious, it is something lacking in many studies performed in the past.

It is definitely worthwhile further exploring the effectiveness of time management, as the results so far are not conclusive. Research should differentiate between time-management behaviors occurring in natural situations, the use of selected time-management techniques, and participation in time-management training. Although results of past studies seem to highlight the positive effects of time management on performance and well-being, partially mediated by the perceived control of time, this point needs further exploration. As mentioned, a review of past studies demonstrated the large variation in definition, research methods, materials (surveys) and respondents (mostly students), which restrain a conclusive finding of time-management effectiveness. Moreover, the influence of situational and personal factors should be studied. Some earlier studies have already looked at the interaction of a small number of job and personal characteristics (Claessens 2004; Macan 1994), but there is room for including a wider array of factors.

It would also be interesting to explore the negative impacts of time-management behaviors, especially from a social perspective. Individual time management entails that, at some point, someone seclude themselves from the outside world in order to focus and concentrate. In the eyes of a spouse, co-workers or supervisor(s), this might be conceived as antisocial, selfish, inflexible, and so on. Furthermore, it might also affect their evaluation of a time-manager’s job.
performance in either a positive or a negative manner. Past studies have been primarily aimed at identifying the positive effects of time management.

Differences in cultural background in relation to time-management behaviors are also an interesting research topic. As more and more organizations operate globally instead of nationally, the differences between cultures become more apparent. To our knowledge, only a few studies have been devoted to this topic (e.g., Nonis et al. 2005). Future research should be devoted to distinguishing between general time-management behaviors (applicable in different cultures) and culture-specific time-management behaviors. Traditionally, time-management is presented as being applicable in different cultures with no exceptions. However, it is also conceivable that there are large differences between cultures in the applicability and effectiveness of different time-management behaviors.

Another interesting issue is whether time management can be combined with creative work. A common notion in practice is that the display of time-management behavior would decrease work flexibility and obstruct creative processes. However, it is also conceivable that time-management techniques contribute to creativity. For instance, the prevention of interruptions may help in reaching the high level of concentration necessary to experience flow, a state in which individuals experience timelessness and are highly creative (Csikszentmihalyi 1997; Csikszentmihalyi & Csikszentmihalyi 1988). Beestink, Van Eerde and Rutte (2007) studied the relation between time management and creativity, and their results indeed suggest that creative work benefits from time-management techniques. Their interview study demonstrated that architects worked on several projects at the same time, and alternation between projects allowed them to use an active--inactive--active pacing pattern in order to create incubation time—that, time to let ideas sink in. This confirms the notion that time management is part of a broader set of management practices aiming at improved self-regulation that include motivational processes.

Finally, the research focus might also be shifted to include time management in work groups and project teams, as this should also be investigated. Group time-management becomes a necessity as colleagues or co-workers, supervisors and customers can also be responsible for a disorganized workday and people not feeling in control of time (cf. Perlow 1999), because more and more people have to work closely together, with limited time to perform (Waite & Hoffman 2002; Waller, Conte, Gibson & Carpenter 2001). Gevers (2004; see also Chapter 5) found that groups with an adequate temporal consensus about their projects are more able than others to finish their projects within the allotted time. This temporal consensus arises when people with the same pacing preference are asked to work together and give each other temporal reminders.

To conclude, there is still much work to be done in the area of time management, at least on the following subjects: the different behaviors and their effects; factors related to time-management behaviors, such as personality and work characteristics; and the context in which time-management behaviors manifest themselves.
References


