



The Journal of Psychology: Interdisciplinary and Applied

Publication details, including instructions for
authors and subscription information:

<http://www.tandfonline.com/loi/vjrl20>

Procrastination at Work and Time Management Training

Wendelien Van Eerde^a

^a Department of Psychology , University of
Amsterdam

Published online: 01 Apr 2010.

To cite this article: Wendelien Van Eerde (2003) Procrastination at Work and Time Management Training, The Journal of Psychology: Interdisciplinary and Applied, 137:5, 421-434, DOI: [10.1080/00223980309600625](https://doi.org/10.1080/00223980309600625)

To link to this article: <http://dx.doi.org/10.1080/00223980309600625>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

Procrastination at Work and Time Management Training

WENDELIE VAN EERDE

*Department of Psychology
University of Amsterdam*

ABSTRACT. The author examined the impact of time management training on self-reported procrastination. In an intervention study, 37 employees attended a 1½-day time management training seminar. A control group of employees ($n = 14$) who were awaiting training also participated in the study to control for expectancy effects. One month after undergoing time management training, trainees reported a significant decrease in avoidance behavior and worry and an increase in their ability to manage time. The results suggest that time management training is helpful in lessening worry and procrastination at work.

Key words: personnel training, procrastination, time management, worry

INCREASED AUTONOMY AND RESPONSIBILITY AT WORK, together with increased pressure to get a product to market, has affected life in the work place considerably in recent years. Pressure at work has led to expressions such as *time famine* (Perlow, 1999) that indicate the feeling of having too much to do and not enough time to do it. Time famine does not only arise from product requirements but also from how effectively people use the time available to them. Procrastination can be considered part of a vicious cycle that increases time pressure. Employees procrastinate at work, even when they are under pressure. Examples may easily be recognized, such as when someone does not prepare an action for a meeting or repeatedly complains about not having started to prepare a presentation instead of starting on it. What is procrastination, and why do people engage in this behavior?

An earlier draft of this paper was presented at the 1998 International Conference of Work Psychology in Sheffield, UK. I would like to thank Coiriet van Berkestijn for her help in the data collection and Michael West for his comments on a previous version of the manuscript.

Address correspondence to Wendelien van Eerde, who is now at Eindhoven University of Technology, Faculty of Technology Management, P.O. Box 513, 5600 MB Eindhoven, The Netherlands; W.v.Eerde@tm.tue.nl (e-mail).

Procrastination Conceptualized as Self-Regulatory Avoidance Reactions

Procrastination can be typified as avoidance behavior and can be seen as the avoidance of the execution of an intended action. The action is (cognitively) important to the individual but is anticipated as something (affectively) unattractive, causing an approach-avoidance conflict. Phrased in other terms, it presents an intrapersonal conflict between what one should do and what one wants to do and losing it instead of solving it (Bazerman, Tenbrunsel, & Wade-Benzoni, 1998).

Avoidance coping reactions can be considered emotion-oriented coping reactions (Lazarus & Folkman, 1984), specifically those that are characterized by escaping the problem. Escaping work is not always possible, but people may use distraction at work to reduce emotional distress, for example, surfing the internet rather than preparing a presentation. This distraction is a less important action, an activity that can be taken up and abandoned within a short time span that takes the mind off the unpleasant intended action (Sabini & Silver, 1982).

The inability to control one's attention and thus overcome the more pleasant distraction is the core of procrastination. In other words, the preference for immediate positive outcomes becomes dominant, and this may serve the purpose of feeling better temporarily but may lead to outcomes that are self-defeating in hindsight. This preference for immediate outcomes has been studied extensively as the failure to delay gratification or the lack of impulse control (Ainslie, 1975; Mischel, Shoda, & Peake, 1988).

Most studies on procrastination have treated it as an individual difference variable and have examined several correlates of procrastination among students. In a meta-analysis (Van Eerde, in press), the results of 121 studies on procrastination were combined. The strongest average correlations were those with conscientiousness ($r_{mean} = -.63$) and self-efficacy ($r_{mean} = -.44$), which leads to the conclusion that personality characteristics such as orderliness, discipline, and achievement orientation as well as a positive self-image are important for the occurrence of procrastination. Anxiety and depression were moderately related ($r_{mean} = .21$ and $.30$, respectively), suggesting that emotional stability can play a role. Performance outcomes, such as grade point average, were negatively related ($r_{mean} = -.28$). Unfortunately, the results of this study do not allow a conclusion on whether procrastination precedes, follows, or overlaps with the variables studied because of the designs used in previous studies.

Although the results of the meta-analysis may lead one to think that procrastination is dysfunctional, it is not necessarily dysfunctional (Van Eerde, 2000; in press). It can be argued that the outcome of procrastination may only lead to time pressure. For certain tasks, in particular easy, boring, or routine tasks, time pressure may simply create a challenge (Freedman & Edwards, 1988) and may lead to finishing a task faster. Procrastination has been shown to function as a temporary relief from stress (Tice & Baumeister, 1997) and as a strategic effort to repair a bad mood temporarily (Tice, Bratslavsky, & Baumeister, 2001). Although these

positive consequences may occur, many would like to break the procrastination habit because it is perceived as undesirable in a society that stresses achievement within strict deadlines. Quite a few popular publications have been written to act on this wish to stop procrastination (e.g., Knaus, 1998).

How can procrastination be overcome? First of all, increased awareness of the behavior is a starting point, as in any behavioral change. Second, to overcome avoidance behavior, anything that can help to make a task less threatening or more pleasant may help. Planning may help to make a distant outcome more tangible through the mental representation of processes that lead to the outcome (Pham & Taylor, 1999). This may help to strengthen volition, that is, consciously choosing to act according to the longer term outcome rather than distracting oneself (Van Eerde, 2000).

One particularly popular type of training, time management training, may be helpful to learn strategies, mostly in the area of planning, that keep attention focused on important future outcomes. In the present study I investigated whether a change in self-reported procrastination can be found after time management training.

Time Management

Time management is based on the assumption that recording, managing, and consolidating time may help a person deal efficiently with his or her time (Drucker, 1966). Time management training consists of two basic steps that resemble the two phases of goal setting and goal striving. First of all, the individual is encouraged to develop an increased awareness of which goals are personally valuable and of how he or she currently uses time to attain these goals, identifying routines and habits. Second, the person should prioritize these goals, plan how to attain them, and self-monitor the use of time. Most time management training programs build on these two steps and may add other topics, such as the effective use of energy, how to deal with interruptions, and how to be assertive in dealing with requests from others.

But how does time management work? Macan (1994) proposed a process model of time management, in which the relation between time management and outcomes such as performance, tension, and job satisfaction is mediated by the control of time. In other words, time management is not a direct antecedent of performance but may help a person to experience structure and to obtain feelings of control, which would affect performance and satisfaction positively and reduce tension and stress reactions.

Previous Studies

Empirical studies on time management and procrastination in a work-related context are scarce. Two studies measured trait procrastination and time

management of students. Lay (1992) found negative relations between trait procrastination and subscales of the Macan (1994) Time Management Behavior Scale. Lay & Schouwenburg (1993) hypothesized that time management was a mediator of the relation between trait procrastination and dilatory behavior. This relation was not found, but a clear outcome was that procrastinators engaged in less time management than non-procrastinators.

Time management training is very popular in many countries, but only a few evaluation studies have been conducted. Woolfolk and Woolfolk (1986) used a quasi-experimental design and incorporated meeting deadlines. Preservice teachers were assigned to one of three conditions: time management, time management in combination with supervised practice, or a control condition in which the participants attended a seminar discussing the broad concerns of beginning teachers. Dependent variables were meeting an intermediate and a long-term deadline; the number of completed reports; promptness in returning a questionnaire; self-reports of time management; and a supervisor evaluation of performance.

Results showed that in the combined condition more reports were finished, the questionnaire was returned more promptly, and the self-reports of time management were higher. However, compared with the control condition, even the basic training condition affected promptness in meeting the intermediate deadline and returning the questionnaire. The long-term deadline and the supervisory ratings were not affected in either training condition. The significant result in the basic condition suggests that time management training may reduce procrastination on intermediate deadlines. Although this study provided support for the effectiveness of the training, it remains unclear how the students felt.

In the current study, I examined the effectiveness of commercial time management training. Does it lead to better time management in the eyes of the participants? And does it affect motivational and affective variables such as procrastination and worry?

The study was conducted among participants in time management training. I sampled a control group of persons on a waiting list who wanted to attend the training but were scheduled to attend 2 months later. This group was included in the study to control for expectancy effects. I expected that trainees would report an increased use of time management, a decrease in worrying about their jobs, and a decrease in procrastination. I developed the following three hypotheses:

1. Trainees will report an increase in time management that is greater than that demonstrated by respondents in the control group.
2. Trainees will report a decrease in worrying that is greater than that demonstrated by respondents in the control group.
3. Trainees will report a decrease in avoidance reactions (procrastination) that is greater than that of respondents in the control group.

Method

Design

I used a quasi-experimental 2 (treatment–control) \times 2 (pretest–posttest) design. Although this design does not allow conclusions about whether the training caused changes in the dependent variables, it makes it more likely that a change can be ascribed to the training. It includes pretest information about the existing groups' baseline levels, and it provides a comparison group (Kidder, 1981). That is, change can be assessed because the scores before and after training are known and can be compared with a similar sample that did not attend the training. To ensure that the treatment and control groups were similar, I measured several background variables.

Participants and Procedure

Participants were Dutch trainees in time management workshops of a commercial training company. The procedure followed in this training includes an intake conversation with the trainer 2 months before training. The intake is to establish whether this training is suited for the individual or whether a more intensive stress management program would be better. The first group meeting involves a workshop lasting 1½ days. A follow-up session is given to the group 1 month later.

For the present study, the treatment group consisted of 37 trainees who filled out a questionnaire at the intake conversation and after the follow-up meeting. The control group consisted of 14 participants who were approached at the intake but were scheduled to take the training later. They filled out the questionnaire twice before the training started, either at the intake conversation and at the beginning of the first workshop or 2 months before the intake conversation and at the intake conversation.

Both groups received a checklist with the first questionnaire to be given to a peer who in the eyes of the participant could judge his or her work behavior; 32 peers sent back the checklist (a response rate of 63%). Participation was voluntary, and each participant was offered the possibility of receiving personal scores after training, with the group scores added for comparison.

The training groups varied in size from 8 to 11 participants. The training sessions were open to participants from different organizations and consisted of the topics typical of time management training. About half a day is spent in sharing problems in the group, analyzing the log completed before training in light of personal goals and of responsibilities at work (effectiveness analysis), and deciding which activities are important core activities and which are less important. About one afternoon and one morning are spent on hints and techniques to increase the efficiency of these responsibilities. This includes learning how to

make a plan, first for a year, to 1 month, to 1 week, and finally to a list of tasks for 1 day.

The participants learn how to prioritize, using a decision-making schedule that helps to distinguish between importance and urgency of tasks. This schedule has four cells with advice for planning: If a task is not urgent or important, don't do the task; when the task is urgent but not important, try to delegate the task to someone else; when a task is urgent and important, do it yourself and make time for it; if a task is important but not urgent, plan to do it later. Also, attention is devoted to personal preferences in relation to one's biorhythm (When are you most concentrated? Are you a morning or evening person?), how to schedule and reserve time for uninterrupted working, and how to deal with interruptions or to say no to others in an assertive yet friendly manner.

A majority of the participants were men (75%), and 75% of the participants had a degree comparable to a college degree. Their average age was 37 years, and most had worked within the same job an average of 5.9 years; 10% held jobs in which they worked less than 36 hours per week. Their scores on training motivation were high ($M = 4.20$). The treatment and control groups were compared on these variables. Overall, nonsignificant t tests indicated that the participants did not differ except for the working hours per week (control group $M = 39.3$; treatment group $M = 36.7$), $t(45.34) = 2.54$, $p < .05$. When the hypotheses were tested, this variable was controlled for as a covariate. However, this manipulation did not change the results; therefore the results are presented without this covariate. I also tested whether the participants differed in emotional stability. No difference was found, $t(48) = -.76$, *ns*.

Measures

Questionnaire 1 contained questions about participants' backgrounds. Otherwise the two questionnaires contained the same measures. All individual items and the scale descriptors are given in the appendix.

I requested information on age, gender, tenure, hours worked per week, level of education, and whether the initiative for the training was taken by the trainee or suggested by someone else. I used two measures to assess training motivation: "I will do my best in this training" and "I expect that this training helps to achieve what I consider valuable" ($r = .52$). I also included an 8-item peer checklist on orderliness ($\alpha = .76$) to establish whether the peers agreed with the participants' self-reports.

I measured emotional stability with a 7-item scale ($\alpha = .77$) from the Berkeley Personality Profile (Harary & Donahue, 1994), a checklist of the Big Five Model of Personality. For time management I used an 8-item scale based on three subscales of the Time Management Behavior Scale, goal setting, using mechanics, and control of time (Macan, 1994). The internal consistency of the scale was adequate ($\alpha = .71$ at Time 1 and $\alpha = .78$ at Time 2).

I measured worrying with a 4-item subscale of the VBBA, a Dutch questionnaire used to assess the effects of workloads (Van Veldhoven & Meijman, 1994). The coefficient alpha was .80 at Time 1 and .76 at Time 2.

To test avoidance reactions, I had created an 8-item scale (Van Eerde, 1998). The participants reported behavioral and cognitive acts when confronted with a deadline. Avoidance reactions are the reactions indicative of procrastination, leading to delay. The construction of the scale was based on Latack and Havlovic's (1992) framework for the evaluation of coping measures.

The following procedure was used to refine the scale for this study: First, because of this small sample, I compared it with a larger student sample ($n = 259$). I used confirmatory factor analysis to establish whether the same model fitted both samples and chi-square significance tests to determine whether restrictions to the model deteriorated the fit for both samples. These tests revealed that the factor structure for both samples was homogeneous. Therefore, the fit of the student sample was used as an indication for this sample ($\chi^2 = 60.50$, $df = 62$, $CFI = 1.000$). In this sample, $\alpha = .78$ at Time 1 and .85 at Time 2.

Results

Data Analysis

I compared the two groups in a 2×2 MANOVA, using group membership as a between-subjects factor, and the time of the measurements (first and second questionnaire) as a within-subject factor. This analysis established whether the trained group changed between the two measurements compared with the degree of change in the untrained group. Thus, my hypotheses were supported when a significant interaction was found between the factors indicating that the treatment group changed more in the expected direction than did the control group. This analysis also allowed for a test of whether the effect was general, identical for the three variables, or different for each variable.

The intercorrelations between the variables of both groups at Time 1 are shown in Table 1. Avoidance reactions were significantly negatively related to time management. Emotional stability was significantly related to worrying and time management. The peer rating of orderliness, which can be seen as a validating measure, was correlated negatively and significantly with the self-report on avoidance reactions.

In Table 2, the average scores and standard deviations of both groups are given. Table 3 shows the F values and effect sizes of the MANOVA. The multivariate interaction effect was significant, $F(3, 46) = 9.04$, $p < .000$, $\eta^2 = .37$, and thus an overall effect of the training over time was established.

My first hypothesis was also supported. There was a significant interaction of the dimensions of time and group membership for the variable of time management, $F(1, 48) = 27.77$, $p < .001$, $\eta^2 = .37$. The treatment group reported an increase

TABLE 1. Means, Standard Deviations, and Zero-Order Correlations at Time 1 (*n* = 50)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Time management	2.76	.48				
2. Worrying	2.48	.73	-.12			
3. Avoidance reactions	2.83	.66	-.52**	.11		
4. Emotional stability	3.50	.71	.29*	-.53***	-.09	
5. Peer rated orderliness (<i>n</i> = 32)	3.31	.49	.17	-.17	-.48**	.04

p* < .05. *p* < .01. ****p* < .001.

in time management (*M* = 2.71 at Time 1, and *M* = 3.46 at Time 2), *t*(36) = 7.95, *p* < .001, but the control group did not (*M* = 2.88 at Time 1 and *M* = 2.75 at Time 2), *t*(13) = 1.45, *ns*.

My second hypothesis also stated that the treatment group would report a greater decrease in worrying than would the control group, and this expectation was supported, *F*(1, 48) = 3.91, *p* < .05, $\eta^2 = .08$. That is, the treatment group reported a decrease (*M* = 2.54 at Time 1 and *M* = 2.20 at Time 2), *t*(36) = -3.18, *p* < .01, whereas the control group did not report any change (Time 1 *M* = 2.33 and Time 2 *M* = 2.41), *t*(13) = .48, *ns*. I found a significant interaction, *F*(1, 48) = 5.06, *p* < .05, $\eta^2 = .10$. The avoidance reactions of the treatment group decreased (from *M* = 2.85 to *M* = 2.40), *t*(35) = -4.73, *p* < .001, whereas avoidance reactions in the control group remained stable (Time 1 *M* = 2.66 and Time 2 *M* = 2.56), *t*(13) = -.58, *ns*.

Discussion

One month after the time management training had finished, trainees reported an increase in their ability to manage their time and a decrease in worrying and procrastination greater than those who had not yet taken the course. These results show that the time management training affected how these employees perceived their procrastination at work. Although one may point out that the overall effect was mainly because of an increase of time management behavior in the trained group, the decrease in worrying and procrastination, in comparison to the untrained group, was also significant. The convergence of self-reports and peer ratings of orderliness lend support to the validity of the measures.

TABLE 2. Average Scores of the Treatment and Control Groups

Variable	Treatment group (<i>n</i> = 37)				Control group (<i>n</i> = 14)			
	Questionnaire 1 (before training)		Questionnaire 2 (after training)		Questionnaire 1 (before training)		Questionnaire 2 (before training)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Time management	2.71	.47	3.46	.40	2.88	.51	2.75	.46
Worrying	2.54	.70	2.20	.59	2.33	.81	2.41	.85
Avoidance reactions	2.85	.66	2.40	.73	2.66	.56	2.56	.65

TABLE 3. Multiple Analysis of Variance for Training and Time

Variable	Time management <i>df</i> = 1, 48		Worrying <i>df</i> = 1, 48		Avoidance reactions <i>df</i> = 1, 48		Overall <i>df</i> = 3, 46	
	<i>F</i>	η^2	<i>F</i>	η^2	<i>F</i>	η^2	<i>F</i>	η^2
	5.43*	.10	.00	.00	.29	.01	2.61	.15
Training	13.75**	.22	1.58	.03	21.44***	.31	7.88***	.34
Time	27.77***	.37	3.91*	.08	5.06*	.10	9.04***	.37

p* < .05. *p* < .01. ****p* < .001.

How may the training have affected the scores? It is likely that the trainees reported a better use of time management because they learned and applied new strategies. However, the possibility remains that the training may only raise awareness of one's own behavior in general, and that time management training does not actually cause the change. Limitations in the design of the current study leave room for this alternative explanation, and the efficacy (cf. Nathan, Stuart, & Dolan, 2000) of this particular training cannot be established.

Efficacy evaluations involve a systematic evaluation of the intervention in a controlled context with emphasis on the internal validity of the study. However, an effectiveness evaluation is another issue. *Effectiveness* has to do with the applicability and feasibility of the intervention in the setting in which the treatment is delivered, with an emphasis on the external validity of the study, and this was the case in the current study. The perceived reduction of avoidance reactions and worrying in this setting is an important outcome with practical relevance.

Future studies related to procrastination and time management may emphasize efficacy rather than effectiveness by using experimental designs and manipulating specific pieces of content in the training to establish the mechanism of how a change of strategy may lead to a decrease in procrastination. Other studies, extending the effectiveness criterion, may use observation methods or diaries to assess the actual use of strategies, time use, and performance. Both types of studies should include measures that assess the degree to which the strategies were actually learned, for example, by asking the participants to explain the strategies to others.

How may the changes found in this study affect performance? The effect of time management on performance is not well established (Barling, Cheung, & Kelloway, 1996). Another suggestion for future studies is therefore a focus on how different time use affects performance. Particularly, procrastination may affect performance negatively in some cases but positively in others. Procrastination causes time pressure, and the effects of time pressure can be interpreted in terms of goal difficulty (see also Peters, O'Connor, Pooyan, & Quick, 1984), which might imply that procrastination may be functional to performance when goals are easy, because the time pressure would lead to moderately difficult goals, which would lead to higher performance.

However, procrastination would be detrimental to performance when goals are difficult because goals would become too difficult as a result of time pressure. In addition, other (emotional) effects may occur because the time pressure caused by procrastination is self-induced. To establish the effects of procrastination, researchers should include other measures, such as experienced work load, the difficulty or aversiveness of task goals, or task variables, as proposed by Harris & Sutton (1983) and Van Eerde (2000).

Other research demonstrates that pursuing goal-directed action more effectively, and as a result overcoming procrastination, may be achieved through the establishment of implementation intentions (Gollwitzer & Brandstätter, 1997). Essentially, making an *implementation intention* is specifying more precisely

how, where, and when the intended action will take place. This helps to make the action something less abstract and links it to a specific context, which may help to trigger the intended behavior.

The results have implications for practice. First of all, it is important that the time management training helped to alleviate procrastination and worrying. Second, the convergence of self-reports of procrastination and time management with peer ratings of orderliness indicate that peers are aware of procrastinating behavior and that they may influence the person's procrastination through social control.

In particular, peer awareness may have implications for training. Some time management training workshops include a whole work team to ensure that rules and preferences about managing time are discussed and decided on among peers. This would imply that the synchronization of activities with peers becomes an integral part of self-management. Norms in the organizational culture about time, including norms about punctuality and the awareness of time in the group (Schriber & Gutek, 1987), or the preference for a polychronic working style (Slocombe & Bluedorn, 1999) may play an important role in this process. In addition, certain group behavior may be helpful in overcoming procrastination, such as increased attention given to time at transitions to qualitatively different project phases or when deadlines approach (Chang, Bordia, & Duck, 2003; Gersick, 1988, 1989; Seers & Woodruff, 1997).

In conclusion, this study provides support for the notion that individual training may change the perceptions of trainees, which may help them to deal with time pressure more adequately. The study also has implications for the social aspects of time management training.

REFERENCES

- Ainslie, G. W. (1975). Specious reward: A behavioral theory of impulsiveness and impulse control. *Psychological Bulletin*, 82, 463-496.
- Barling, J., Cheung, D., & Kelloway, E. K. (1996). Time management and achievement striving interact to predict car sale performance. *Journal of Applied Psychology*, 81, 821-826.
- Bazerman, M. H., Tenbrunsel, A. E., & Wade-Benzoni, K. (1998). Negotiating with yourself and losing: Making decisions with competing internal preferences. *The Academy of Management Review*, 23, 225-241.
- Chang, A., Bordia, P., & Duck, J. (2003). Punctuated equilibrium and linear progression: Toward a new understanding of group development. *Academy of Management Journal*, 46, 106-117.
- Drucker, P. F. (1966). *The effective executive*. New York: Harper & Row.
- Freedman, J. L., & Edwards, D. R. (1988). Time pressure, task performance, and enjoyment. In J. E. McGrath (Ed.), *The social psychology of time* (pp. 11-133). Beverly Hills, CA: Sage.
- Gersick, C. J. G. (1988). Time in transition in work teams: Toward a new model of groups development. *Academy of Management Journal*, 31, 9-41.
- Gersick, C. J. G. (1989). Marking time: Predictable transitions in task groups. *Academy of Management Journal*, 32, 274-309.

- Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology*, 73, 186–199.
- Harary, K., & Donahue, E. (1994). Ontdek de vele facetten van uw persoonlijkheid [Discover the many facets of your personality]. *Psychologie*, 13, 10–13.
- Harris, N. N., & Sutton, R. I. (1983). Task procrastination in organizations: A framework for research. *Human Relations*, 36, 987–996.
- Kidder, L. H. (1981). *Research methods in social relations* (4th ed.). New York: Holt, Rinehart and Winston.
- Knaus, W. J. (1998). *Do it now: Break the procrastination habit* (rev. ed.). New York: Wiley.
- Latack, J. C., & Havlovic, S. J. (1992). Coping with job stress: A conceptual evaluation framework for coping measures. *Journal of Organizational Behavior*, 13, 479–508.
- Lay, C. H. (1992). Trait procrastination and the perception of person–task characteristics. *Journal of Social Behavior and Personality*, 7, 483–494.
- Lay, C. H., & Schouwenburg, H. C. (1993). Trait procrastination, time management, and academic behavior. *Journal of Social Behavior and Personality*, 8, 647–662.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer.
- Macan, T. H. (1994). Time management: Test of a process model. *Journal of Applied Psychology*, 79, 381–391.
- Mischel, W., Shoda, Y., & Peake, P. K. (1988). The nature of adolescent competencies predicted by preschool delay of gratification. *Journal of Personality and Social Psychology*, 42, 687–696.
- Nathan, P. E., Stuart, S. P., & Dolan, S. L. (2000). Research on psychotherapy efficacy and effectiveness: Between Scylla and Charybdis? *Psychological Bulletin*, 126, 964–981.
- Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative Science Quarterly*, 44, 57–81.
- Peters, L. H., O'Connor, E. J., Pooyan, A., & Quick, J. C. (1984). The relationship between time pressure and performance: A field test of Parkinson's law. *Journal of Occupational Behaviour*, 5, 293–299.
- Pham, L. B., & Taylor, S. E. (1999). From thought to action: Effects of process versus outcome-based mental stimulations on performance. *Personality and Social Psychology Bulletin*, 25, 250–260.
- Sabini, J., & Silver, M. (1982). *Moralities of everyday life*. Oxford, England: Oxford University Press.
- Schriber, J. B., & Gutek, B. A. (1987). Some time dimensions of work: Measurement of an underlying aspect of organizational culture. *Journal of Applied Psychology*, 72, 642–650.
- Seers, A., & Woodruff, S. (1997). Temporal pacing in task forces: Group development or deadline pressure. *Journal of Management*, 23, 169–187.
- Slocombe, T. E., & Bluedorn, A. C. (1999). Organizational behavior implications of the congruence between preferred polychronicity and experienced work-unit polychronicity. *Journal of Organizational Behavior*, 20, 75–99.
- Tice, D. M., & Baumeister, R. F. (1997). Longitudinal study of procrastination, performance, stress, and health: The costs and benefits of dawdling. *Psychological Science*, 8, 454–458.
- Tice, D. M., Bratslavsky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over impulse control: If you feel bad, do it! *Journal of Personality and Social Psychology*, 80, 53–67.
- Van Eerde, W. (1998). *Work motivation and procrastination: Self-set goals and action avoidance*. University of Amsterdam, Kurt Lewin Dissertation Series, No. 6.
- Van Eerde, W. (2000). Procrastination: Self-regulation in initiating aversive goals. *Applied*

- Psychology: An International Review*, 49, 372-389.
- Van Eerde, W. (in press). A meta-analytically derived nomological network of procrastination. *Personality and Individual Differences*.
- Van Veldhoven, M., & Meijman, T. (1994). *Het meten van psychosociale arbeidsbelasting met een vragenlijst: de vragenlijst beleving en beoordeling van de arbeid (VBBA)* [The measurement of psycho-social workload with a questionnaire: The questionnaire experience and judgment of work (VBBA)]. Lisse, the Netherlands: Swets & Zeitlinger.
- Woolfolk, A. E., & Woolfolk, R. L. (1986). Time management: An experimental investigation. *The Journal of School Psychology*, 24, 267-275.

APPENDIX

Items in the Questionnaire (*signifies reversed scoring)

Time management

1. I feel in control of my own time.
 2. I find it difficult to keep to a schedule because other people keep me from my work.*
 3. I set myself clear goals when carrying out tasks.
 4. I am aware of the things I think are important about my job.
 5. I manage to do the work I set out to do.
 6. I am easily distracted.*
 7. I set clear priorities in my job.
 8. I promise to do things for other people that I don't really have time for.*
- 1 = not at all; 2 = to a small extent; 3 = neither to a small, nor to a high extent;
4 = to a large extent; 5 = completely

Avoidance reactions to a deadline

Try to imagine yourself in the following situation: You have to carry out a task at work. The deadline is approaching and it is important it will be met. Indicate for each of the sentences below how you would react in such a situation.

1. I begin later than I had planned.
 2. I have another sweet /cigarette /cup of coffee instead of beginning the task.
 3. I feel I can only do it under pressure when it's very nearly due.
 4. I say to myself: start now. And I still don't start.
 5. I'll just do something easier.
 6. I make a plan that I really already know is not feasible.
 7. I convince myself that there are other things that have to be done first.
 8. I let the time go by without getting any work done on the task.
- 1 = (almost) never; 2 = hardly ever; 3 = sometimes; 4 = usually; 5 = (nearly) always

Worrying

1. After work, I carry on worrying about work-related problems.
2. I find it easy to switch off from my work.*
3. In my free time I often worry about my work.
4. I often lie awake at night because I can't stop thinking about my job.

(appendix continues)

APPENDIX (Continued)

1 = not at all; 2 = to a small extent; 3 = neither to a small, nor to a high extent;
4 = to a large extent; 5 = completely

Emotional stability: I view myself as someone who: . . .

1. . . . remains calm in tense situations.
2. . . . is relaxed, can deal with stress.*
3. . . . becomes nervous quickly.
4. . . . is emotionally stable, not easily upset.

Emotional stability: I view myself as someone who: . . .

5. . . . is depressed, dejected.
6. . . . worries a lot.
7. . . . can be tense.

1 = highly disagree; 2 = slightly disagree; 3 = agree nor disagree; 4 = slightly agree; 5 = highly agree

Peer rating

1. is goal-oriented.
2. is easily distracted.*
3. is aware of his or her time.
4. appears to be in control of his or her time.
5. starts working on important duties on time.
6. procrastinates on beginning important things.*
7. is an orderly person.
8. is punctual in appointments.

1 = not at all; 2 = to a small extent; 3 = neither to a small, nor to a high extent;
4 = to a large extent; 5 = completely

Original manuscript received November 13, 2002

Final revision accepted December 12, 2002