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The relationship between the Type A behavior pattern and well-being in information work

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Keywords: well-being, Type A, workload, computer work

Abstract

The aim of this study was to clarify the relationship between the Type A behavior pattern and well-being found in some studies. A questionnaire measuring Type A/B, well-being, work overload, and additional variables was administered to a sample of 726 employees holding office jobs in a big insurance company. Three possible explanations were investigated: 1. Type A/B and well-being are overlapping concepts, 2. Type As are more vulnerable to the damaging effects of stress than Type Bs (moderator model), and 3. Type As perceive more workload, which in turn leads to poor well-being (mediator model). Inspection of the item contents made clear that some conceptual overlap does exist. The moderating effect of Type A/B turned out to be insignificant. The mediating effect of work overload between Type A/B and well-being was confirmed. Suggestions for future research, and implications of the results for the personnel management of Type As are discussed.
'You’ve been working at this pace all that time?'
'I’m the supervisor.'
'But you’ve got no one to supervise. They’ll never hire anyone else if you work like this. Slow down and they’ll have to get someone else.' J. Mole

The relationship between Type A behavior and well-being in information work

This study investigates the relationship between Type A behavior and well-being in offices. This was done in a domain of work called 'mental information work'. Mental information work is defined by a predominance of mental operations carried out on information objects (Roe & Meijer, 1990) and is characterized by the frequent use of information technology (Roe, Van den Berg, Zijlstra, Schalk, Taillieu, & Van der Wielen, 1993). The number of people doing mental information work has grown dramatically in the last decades. This group of people has been relatively neglected in work and organizational psychology. The typical environment of mental information work is the modern office. Especially in offices, computers are common tools. This has important implications for the structure of work. One of the dimensions that has been changed is time. An important reason for automatization is to save time. Organizations want to do more with less employees. The working process has been hurried up and the communications over long distances are nearly immediate.

The Type A behavior pattern seems to be especially relevant in mental information work. Because mental information work is less bound to working hours and place of work than the traditional production work (Roe, 1989), Type As can easily overload themselves. For example, the possession of a personal computer makes it more likely that people will take their work at home, and do overtime work in the evening resulting in the phenomenon of 'computer widows'. We cannot simply change the objective time dimension of work, but perhaps we can help some people with problems in their subjective perception of time.

It is well known that people with Type A behavior are prone to coronary disease. In their meta-analysis Booth-Kewley and Friedman (1987) showed that especially the competitive element of the Type A behavior pattern is predictive of heart and vascular diseases.
Although this relationship cannot be interpreted as a causal link, the Type A behavior pattern can be conceived as an antecedent of heart attacks. The reverse is not plausible. Thus, the relationship between the Type A behavior pattern and physical health seems clear.

A number of researchers have also reported a relationship between Type A behavior and well-being. This is not surprising, since physical health and well-being are related. For example, Sutherland and Cooper (1991) found that employees in the offshore industry with a Type A behavior pattern had poor well-being and a high level of stress. Cooper, Watts, Gaglioni, and Kelly (1988) reported the same kind of results in a sample of dentists. Furnham and Linfoot (1987) also found a relationship between Type A behavior and well-being in a more random sample of employees, though the correlation was not high. He explained this low correlation by the fact that Type As are less conscious of a general threat to health than Type Bs. Empirical support for this explanation can be found in a laboratory study of Carver, Coleman, and Glass (1976), in which Type As reported significantly less fatigue than Type Bs despite their objectively working harder on a treadmill test.

If we assume that Type A behavior and well-being are related, this relationship is more difficult to explain than in the case of physical health. Three explanations can be given:

1. The conceptual-overlap explanation. The relationship is explained by the overlap in the concepts of Type A behavior and well-being. This can be checked by comparing the item contents. If too much overlap exists, the relationship is explained. The concepts should be more sharply defined, and the operationalizations should be improved.

2. The vulnerability-to-work-overload explanation. Following this explanation Type As have less well-being than Type Bs, because they are more vulnerable to the damaging effects of stress. In a non-stressful work environment they function well, but when the work pressure is high, they try to meet the exaggerated requirements, worry about the deadlines they missed and become burned out. In contrast, Type Bs react more relaxed. This explanation is in accordance with the stress model of the Michigan group (e.g. French & Caplan, 1972). In this model many stressors are related to strain reactions, like low job satisfaction, absenteeism and psychological
complaints, finally resulting in physical diseases. Type A/B is hypothesized to be one of the moderators. This hypothesis has been confirmed in only a small number of studies. Henly and Williams (1986) found that Type As gave more negative emotional reactions in frustrating situations than Type Bs. Kushnir and Melamed (1991) reported many stress symptoms, such as irritation, somatic complaints and anxiety in Type As confronted with a high work load. On the contrary, Newton and Keenan (1990) found that in Type As the relationship between quantitative workload and anxiety strain was less strong than in Type Bs. A possible explanation of these results is that in the specific sample investigated, i.e., professional engineers at an early stage of their careers, the Type A behavior pattern is quite adaptive. The differences between group in this aspect might be the reason that in many studies the moderating effect of Type A/B on the relation between stress factors and psychological and physical health has not been significant (Marcelissen, 1987; Pavett, 1986; Reiche, 1982).

If the vulnerability-to-work-overload explanation will be confirmed, the practical implication is that the workload of Type As doing information work should be lessened.

3. The self-overloading explanation. Following the self-overloading explanation the Type A behavior pattern frequently results in poor well-being, because it is characterized by a self-overloading working style. Work overload would be a mediator between Type A and well-being. For this explanation some empirical evidence can be found. The Type A behavior pattern has been shown to be associated with the propensity to seek stressful situations (Frankenhaeuser, Lundberg, & Forsman, 1980; Suls, Becker, & Mullen, 1981). More specifically, the results of a longitudinal study conducted by Reiche (1982) made clear that Type A behavior frequently results in work overload. This relationship can be partially the result of attribution. For example, Kirmeyer (1988) found in a sample of police dispatchers that Type As tended to report heavier workloads than Type Bs, but did not actually have heavier workloads. The relationship between work overload and well-being has been demonstrated by Reiche (1982) and House (1974). Spector and O'Connell (1994) showed that the relations among Type A, job stressors and job strains are more
complex. They discerned two dimensions of The Type A construct: impatience-irritability and achievement striving. In their study Type A achievement striving correlated significantly with workload, but not with some job strains, in spite of the strong relationships between workload and job strains. Type A impatience-irritability did not significantly correlate with workload, but correlated with somatic symptoms. Well-being was not included in the study.

The self-overloading explanation implies that Type As should be trained to perceive their workload in a more realistic way and to restrain themselves from seeking stressful situations.

In most of the studies referred to, only one of the explanations for the relationship between Type A behavior and well-being has been investigated. An exception is Furnham and Linfoot's (1982) study, in which a direct link between these variables as well as the moderating effect of Type A/B were analyzed. None of the studies included all the explanations given. The aim of the present study was to compare the three explanations.

Method

Sample
The subjects of this study are a subsample of a larger sample used in a more extensive research (Schalk & Van den Berg, 1993), conducted in a big insurance company in the Netherlands. All 993 employees of the head office and the branches were involved. For this study a sample of 728 office workers was selected consisting of 94 percent clerks, 4 percent technicians, and 2 percent managers. All of them frequently used a computer. Subjects varied in age from 18 to 66 years, with an average age of 34 and a standard deviation of 10 years. Four-hundred-sixty-one were men and 267 were women.

Instruments
In the larger study a Dutch questionnaire consisting of many scales was administered to the employees. In addition, data were collected about the whole organization, the branches, and the employees (personnel and medical data). In this study only three scales of the questionnaire were used:
A. The Type A/B Scale. To assess the Type A behavior pattern an abbreviated form of the Jenkins Activity Survey (JAS; Jenkins, Rosenman, & Friedman, 1967) was used. Appels (1985) translated the JAS into Dutch. The resulting scale consisted of 24 items and had a Cronbach's alpha of .84 (N = 2922). Fifteen items of this scale were used in the present study. Ten items had three answer categories, four items had four categories, and one item had five categories. The original items of the abbreviated JAS are presented below. To make the content of some items clear, one of the answer categories is given.

1. Have you got a dynamic job that 'drives you'?
2. How often do you do more than one thing at a time, for instance, work while having meal?
3. When you are listening to someone who is talking a long time in coming to the point, do you feel like hurrying him up (like saying, 'man, get to the point')?
4. Are you in a hurry when you have to go somewhere, even if you actually have plenty of time?
5. Assuming that you are meeting someone at a corner of the street, in the vestibule of a restaurant, and so on, and this other person is already ten minutes late. Will you:
   - usually have a book or newspaper to be busy with while waiting?
6. When you were younger, did people think:
   - that you were often forcing yourself and eagerly wanted to be first and the best in everything?
7. What would your wife's opinion (or your best friend's opinion) be of you?
   - I am often forcing myself and eagerly wanting to be the first and best in everything?
8. Would people who know you well agree that you have less energy than most people?
9. Would people who know you well agree that you tend to do most things in a hurry?
10. What is your temper these days?
    - Hot-tempered and hardly controlled?
11. Do those jobs which must be completed by a fixed time:
   - cause no pressure because they are common jobs?
12. Do you set time limits on amounts of work of yourself at the job or at home?
13. How often do you take home with you in the evenings, work or material for study to your job?
14. When you are one of a group, do the others expect you to take charge?
15. Compared with others who do the same work as I do, I feel the necessity to hurry?

The Cronbach’s alpha of the scale was .77. The item scores were standardized and added up to a total score.

B. The Work Overload Scale. To assess the work overload of the employees a 4-item scale constructed in the present study. The items are presented below.

In my work I am troubled by:
1. under-staffing
2. overload because of sick leave
3. too much work to be done in the time available
4. too many tasks to be done at the same time

Each item was scored on a 5-point Likert-type scale ranging from (5) very much trouble to (1) no trouble. In the total the Cronbach’s alpha sample was .76 (N = 993).

C. The Well-being Scale. The well-being was assessed by the following scale developed in a pilot study:

Did you experience changes in your feelings and mood in comparison with how you normally feel?
1. I had less pleasure in my life
2. I felt more stressed
3. I became angry and hot-tempered more quickly
4. I got depressed more easily
5. I felt more restless
6. I felt more irritable
7. I didn’t like anything any more
8. I was worried more often
9. I was more easily annoyed

The answer categories were: right, slightly right, not right, don’t know.

In present study the Cronbach’s alpha of the scale was .94 (N = 993).

Results

Table 1. Corrected correlations between Mental Health, Work Overload, and Type A/B.

<table>
<thead>
<tr>
<th></th>
<th>Mental Health</th>
<th>Work Overload</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Overload</td>
<td>-.44</td>
<td></td>
</tr>
<tr>
<td>Type A/B</td>
<td>-.19</td>
<td>.27</td>
</tr>
</tbody>
</table>

Note: All correlations are significant at $\alpha = .001$.

The correlations between the Type A/B Scale, the Well-being Scale, and the Work Overload Scale are presented in Table 1. These correlations were corrected for the unreliability of the measures used. Reiche (1982) reported the correlations between Type A/B and other variables found in some unpublished studies. Compared with their results, the correlations we found were rather low. The correlations between Type A/B and work overload were somewhat stronger than the relationships between Type A/B and well-being.
I. The first explanation was explored by comparing the content of the items on the Type A/B scale and the well-being scale. Taking the items on the well-being scale as a point of departure it is clear that item 2 ('I felt more stressed') resembles some items on the Type A/B scale, namely items 4, 9, 11, 12 and 15. Item 3 of the well-being scale ('I became angry and hot-tempered more quickly') looks like Type A/B item 10 ('What is your temper these days?'). The contents of the well-being items 6 ('I felt more irritable') and 9 ('I was more easily annoyed') show some overlap with the contents on the items 3 and 5 of the Type A/B scale. This means that in 10 of the 135 possible comparisons between the items on the different scales (7.4%) a content overlap appears.

II. The second explanation implies that only in an environment with a high workload is the Type A behavior pattern related to mental unhealthiness. To test if this relationship is moderated by workload, a regression analysis with an interaction term has been performed. In the first step Type A/B and Workload were entered in the regression to predict Well-being. In the second step the cross product of the standardized scores on the Type A/B scale and the Workload scale was entered. The contribution of this interaction term to the prediction was quite low and insignificant ($\beta = -.02$; $T = -.54$; $p = .59$). Therefore, the second explanation was not confirmed.

To investigate the third explanation was investigated, the correlation between Type A/B and Well-being was compared with the partial correlation between these variables with the effect of Work Overload partialled out. The correlation declined significantly from -.19 to -.08 ($z = 2.13$; $p < .05$). This reduction in the correlation is not so strong in absolute terms, but relative to the zero-order correlation it is considerable.

**Discussion**

The results indicate that the Type A behavior pattern is weakly related to the well-being in an information processing work environment. This relationship can be partially explained in two ways. First, some items on the Type A/B Scale resemble some items on the Well-being Scale. Therefore, the correlation found between these scales is partially explained by the overlap between the concepts.
As far as the correlation between the Type AIB Scale and the Well-being Scale is not a result of item overlap, it can be explained by the mediating effect of work overload. This result suggests that people with a Type A behavior pattern overload themselves with work resulting in poorer well-being. As Kirmeyer (1988) indicated, the higher scores of Type As on workload do not necessarily mean that they actually have heavier workloads. A better interpretation of the result is that the poorer well-being of Type As is partially the consequence of their exaggerated idea of the workload.

The hypothesis that the Type A behavior pattern leads to a higher vulnerability to work overload is not confirmed. This finding is in agreement with the literature review of O'Brien (1986) showing that interactions between personality traits and environmental variables are seldom significant and nearly always small.

The fact that the mediating model got some empirical support in contrast with the moderating model has practical consequences for the management of employees with a Type A behavior pattern. This result suggests that reducing the work load of these employees is not so successful. Because the Type A behavior pattern easily leads to the perception of work overload, it would be better to learn them to manage their own work activities, for example by a training in time-management.

For future research more conceptual clearness is needed. If the concept of the Type A behavior pattern is supposed to contain aspects of well-being, the Type A/B Scale can be used as dependent variable too. As indicated in the comparison of the scales, many items of the Type A/B Scale showing overlap with the well-being scale have to do with 'being in a hurry'. Of course, this behavior can result from work overload. Because this factor of the Type A behavior pattern is dependent on the situation, it cannot be called a personality trait. For this reason, terms like 'Type As' and 'Type Bs' should not be used. However, the Type A behavior pattern as a whole has some consistency over situations. Caplan, Cobb, and French (1975) cited an unpublished study showing that the scores on the Type A/B scale were stable over a period of five months, while the work load fluctuated. Probably, the scale measures partly a personality trait and partly a situation-specific behavior pattern.
Another related problem is that the Type A construct is not unidimensional (Edwards, Baglioni, & Cooper, 1990). In present study three factors were derived from a factor analysis. The factors were called: agitation, job involvement, and time pressure. This result is in agreement with a study of Zyzanski and Jenkins (1970) who also found three dimensions. Consequently, the Type A behavior pattern is not a unifying construct, but consists of independent factors.

A limitation of this study is that all subjects are employed by the same organization. Another limitation is that this study is cross-sectional. Therefore, no conclusions be made about causal relationships, and the results presented can only be suggestive. In future studies longitudinal designs should used to investigate relationships between well-distinguished concepts.
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