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Bridging the gap between intentions and behavior:
Implementation intentions, action control, and procrastination

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******IN PRESS AT *JOURNAL OF VOCATIONAL BEHAVIOR*******

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Abstract

In the context of Ajzen's (1991) theory of planned behavior, the antecedents of intentions are better understood than the antecedents of behavior. The current study aimed to improve the understanding of the transition from intentions to behavior. Based on the work of Gollwitzer (1993), Kuhl and Beckmann (1994), and Lay (1986) we proposed a model of mediators (i.e., implementation intentions) and moderators (i.e., action – state orientation and trait procrastination) in the intention – behavior relation. The model was applied to job seeking, and tested using longitudinal survey data of a sample of unemployed individuals in The Netherlands ($N = 175$). Support was found for the proposed mediating role of implementation intentions in the relation between job search intention and job search behavior. The proposed moderating roles of action – state orientation and trait procrastination were not supported.

Keywords: Job search behavior; Theory of planned behavior; Implementation intentions; Action – state orientation; Trait procrastination

Bridging the gap between intentions and behavior:

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Unemployment has detrimental effects on the physical and psychological well-being of unemployed individuals and their families (Murphy & Athanasou, 1999). From both an individual and societal point of view, it is crucial that unemployed individuals move back to work. An important antecedent of reemployment is the intensity of the unemployed individual's job search behavior (Kanfer, Wanberg, & Kantrowitz, 2001). Job search behavior has been investigated from a variety of theoretical viewpoints. Fishbein and Ajzen's (1975) theory of reasoned action (TRA) and its successor, Ajzen's (1991) theory of planned behavior (TPB) seem to be valid and useful models to predict job search behavior (Caska, 1998; Van Ryn & Vinokur, 1992; Vinokur & Caplan, 1987). Both theories state that actual (job search) behavior is predicted best by behavioral intentions (to engage in job seeking).

The TRA and TPB have been used extensively in the prediction of a wide range of behaviors (e.g., Armitage & Conner, 2001; Sheppard, Hartwick, & Warshaw, 1988). In general, research shows that whereas these theories capture the variance in behavioral intentions very well, the explained variance in behavior is much lower (Armitage & Conner, 2001; Sutton, 1998). This difference in the prediction of intention versus behavior also applies to the context of job seeking (see Van Ryn & Vinokur, 1992; Vinokur & Caplan, 1987). The main focus of the current study therefore is to improve the prediction of job search behavior, by proposing a model of mediators and moderators in the job search intention – behavior relation.

Theories of reasoned action and planned behavior

According to the TRA, the best predictor of human behavior is the intention to do so (Fishbein & Ajzen, 1975). Intentions, which reflect the effort that people plan to exert in order to perform the behavior, are a function of two determinants (Fishbein, 1980). The first determinant is the person's *attitude* toward the behavior, that is, the positive or negative evaluation of performing the behavior. The second determinant is the *subjective norm*, which reflects the

person's perception of social pressure regarding the performance of the behavior.

The TRA is based on the assumption that humans act rationally. This assumption, however, indicates a major limitation of the theory, because people often act habitually and spontaneously (Conner & Armitage, 1998). Another assumption of the TRA holds that behavior is under complete volitional control of the individual (Ajzen, 1985). In practice however, several non-motivational factors exist. These factors may relate to both internal (availability of information, skills and abilities, and absence of emotions and compulsions) and external aspects (availability of opportunities and resources, and dependence of cooperation of others; Ajzen, 1985). Because most behaviors are not under complete volitional control, Ajzen (1985) introduced the theory of planned behavior, which extended the TRA with the variable perceived behavioral control (PBC). Perceived behavioral control refers to the person's perception of ease or difficulty to perform the behavior (Ajzen, 1991). PBC is related to Bandura's (1982) *self-efficacy* concept, referring to perceptions of control over internal resources, but also comprises an external component, which refers to perceptions of control over environmental constraints on behavior (perceived control; Conner & Armitage, 1998; Terry & O'Leary, 1995). PBC is supposed to influence behavior both indirectly (via intention) and directly. That is, people will more likely be motivated to perform the behavior (i.e., to form intentions) if they think the behavior is under their personal control. In addition, holding intention constant, individuals with high levels of PBC will be more likely than others to perform the behavior (Ajzen, 1991).

As noted previously, several studies in the context of job seeking have used these theories in explaining job search intention and behavior (Caska, 1998; Van Ryn & Vinokur, 1992; Vinokur & Caplan, 1987). These studies found support for most of the TRA- and TPB-relations. More generally, meta-analytic results indicate strong support for the TRA and the TPB in the prediction of behavioral *intentions*. In a review of nine meta-analyses and quantitative reviews of the TRA and the TPB, Sutton (1998) concluded that attitudes, subjective norms, and PBC account for 40% to 50% of the variance in behavioral intentions. Furthermore, Sutton's (1998)

review indicated that the predictive power of the TRA and TPB regarding *behavior* is lower, and more variable across different studies. That is, 19% to 38% of the variance in behavior is accounted for by intentions or by intentions and PBC. This lower predictive power with respect to behavior in the TRA and TPB led to the criticism that the processes explaining the way intentions lead to behavior remain unexplored in the TRA and TPB (Bagozzi, 1992; Eagly & Chaiken, 1993). That is, the TRA and TPB do not explain how intentions translate into behavior, and why people do not always behave in accordance with their intentions. Especially in the case of job seeking, which is a rather complex behavior (e.g., people have to carefully review their strengths and weaknesses, make decisions about the use of search strategies, and deliberately plan their actions), other variables may be important in the transition from intention to behavior. In the current study we discuss three psychological concepts that may be helpful in bridging the gap between job search intention and behavior, that is, implementation intentions (Gollwitzer, 1993), action control (Kuhl & Beckmann, 1985; 1994), and procrastination (Ferrari, Johnson, & McCown, 1995; Lay, 1986). Furthermore, we propose a combined model of job seeking, based on the TPB and these three concepts. Finally, we test the proposed model using longitudinal survey data from a sample of unemployed individuals in The Netherlands.

Implementation intentions

According to Fishbein and Ajzen's (1975) TRA, intentions are the sole determinant of human behavior. The TPB identified people's perceived control over the behavior as a second determinant of human behavior in cases where complete volitional control is lacking (Ajzen, 1985). Despite this addition, the common weakness of the model remains, that is, ignoring the psychological processes that turn intentions into actions. In filling this void, Gollwitzer (1993) introduced the concept of implementation intentions. Gollwitzer (1990) distinguished between two phases preceding the occurrence of behavior. During the *predecisional* or *deliberative phase*, individuals deliberate which goal to pursue. This phase ends with forming a goal intention, which parallels Ajzen's (1985) view of intention formation (Orbell, Hodgkins, &

Sheeran, 1997). The subsequent *postdecisional* or *implemental phase* concerns planning when, where, and how to act in accordance with the goal intention. These plans, labeled implementation intentions, are supposed to mediate the goal intention – behavior relation, because they describe the processes how goal intentions translate into behavior (Gollwitzer, 1993). Whereas goal intentions commit people to achieving a certain goal, implementation intentions pass over control to the situation. That is, people plan to execute the behavior once a specified situation is encountered, for example when it is Monday 11:00 p.m. (Gollwitzer, 1993). Furnishing goal-directed behaviors with implementation intentions is proposed to increase the likelihood of performing the behavior. This proposition has been supported for a variety of behaviors, such as the completion of an assignment (Gollwitzer & Brandstätter, 1997), performing a breast self-examination (Orbell et al., 1997), taking vitamin C tablets (Sheeran & Orbell, 1999), initiating functional activities after orthopedic surgery (Orbell & Sheeran, 2000), and continuing education (Brandstätter, Heimbeck, Malzacher, & Frese, 2003).

Several studies investigated implementation intentions in the context of the TPB (Orbell et al., 1997; Orbell & Sheeran, 2000; Sheeran & Orbell, 1999; Verplanken & Faes, 1999). Orbell et al.'s (1997) experimental study for example, shows that among people with similar scores on the TPB-variables, individuals who formed implementation intentions were almost twice as likely to perform the intended behavior than others. Whereas Orbell et al. (1997), like the vast majority of implementation intention studies, experimentally manipulated implementation intentions, Orbell and Sheeran (2000) assessed the natural formation of implementation intentions. In their quasi-experimental field study, they found that persons who naturally formed implementation intentions performed the intended activities sooner than others. Differences in attitudes, normative beliefs, PBC, and goal intentions could not explain these effects.

The formation of implementation intentions also seems to be a useful concept in improving our understanding of the job search intention – behavior relation. Indeed, some theoretical models in the job search literature have distinguished between phases of deliberation

and implementation as well. Soelberg's (1967) job search and choice model for example, identified a deliberation phase of evaluation and occupational choice, followed by an implemental phase during which people allocate time, money, and effort to the job search (Power & Aldag, 1985). Likewise, in their application of image theory to job seeking, Stevens and Beach (1996) distinguished between a phase of goal formulation (cf. goal intentions) and a phase of planning the job search (cf. implementation intentions). However, as far as we know, the concept of implementation intentions has not been applied to job seeking before.

Action control theory

In trying to explain the gap between behavioral choice and action, Kuhl and Beckmann (1985) introduced a theory of action control. This theory assumes that besides motivational factors (e.g., goal intentions), there is a second category of non-motivational factors that may cause a failure to enact an intended action. Action control refers to self-regulatory mechanisms guiding the initiation and maintenance of an intention. People with low levels of action control can be characterized as state oriented, whereas people with high levels of action control are referred to as action oriented. Kuhl (1994a; 1994b) distinguished between three types of action – state orientation, which occur in different stages of goal-directed behavior. The degree to which an individual has difficulty initiating intended goal-directed behavior, is indicated by the *initiative versus hesitation* dimension. Individuals with an action orientation have no difficulties in initiating actions, whereas state oriented individuals do. The second dimension, *persistence versus volatility*, relates to continuing goal-directed behavior. Regarding this dimension, action orientation corresponds with persistence in continuing the behavior until the task is completed. Volatility reflects a state orientation causing distraction when working on a task. The *disengagement versus preoccupation* dimension relates to the finishing stage in goal-directed action. Action oriented individuals are able to disengage a goal that is no longer attainable, whereas state oriented individuals persevere in their thoughts about some unpleasant experience.

Bagozzi, Baumgartner, and Yi (1992) investigated action versus state orientation in the

context of the TRA. Their results indicated that action – state orientation moderated the relations of attitude and subjective norm with intention, but not the relation of intention with behavior. Bagozzi et al. (1992) suggested that the lack of support for the expected moderating effect of action – state orientation in the intention – behavior relation might be explained by the routine nature of the behavior under study (i.e., consumers' usage of coupons for grocery shopping), and recommended future research to investigate the moderating effect of action – state orientation in less routine behaviors. Job search behavior can be regarded as a highly complex, and non-routine behavior. As far as we know, however, no research has investigated the role of action versus state orientation in the context of job seeking.

Procrastination

A third variable that may play a role of importance in the gap between intention and behavior is procrastination. Lay (1986) defined procrastination as the tendency to postpone that which is necessary to reach some goal. As Van Eerde (2003) noted, procrastination must be distinguished from *planned* delay. Only unintended delay is considered procrastination. Thus, procrastination pertains to intentions that do not result in actions. Generally, procrastination is interpreted as a lower-order personality trait in the literature, associated with a lack of Conscientiousness (Van Eerde, 2003). We can distinguish between decisional and avoidant procrastination (Ferrari & Emmons, 1994). *Decisional procrastination* concerns dilatory behavior in making important decisions. Indecision is seen as a coping mechanism when people are faced with conflicts and choices (Ferrari et al., 1995). *Avoidant or behavioral procrastination* is the tendency to delay task performance in order to avoid aversive tasks or performance failures (Ferrari & Emmons, 1994).

Lay and Burns (1991) examined the effects of trait procrastination on study behavior within the framework of the TPB. They found that, controlling for study intentions, procrastinators started studying later than non-procrastinators. Lay and Brokenshire (1997) investigated procrastination in the context of job seeking, and found a strong negative correlation

between trait procrastination and Conscientiousness. However, while Conscientiousness seemed to influence job search attitudes and perceived job search competence, trait procrastination appeared to enter the prediction model at a later stage. That is, procrastination is of importance between the formation of intentions and the actual job search behavior. This indicates that procrastinators do intend to search for jobs, but fail to act on these intentions.

A model for the relation between intention and behavior

In the preceding sections we discussed various theories that contribute to the prediction of job search behavior. In this section, we integrate these theoretical viewpoints, resulting in a combined model describing the relation between intentions and behavior (see Figure 1).

According to the models of Fishbein and Ajzen (1975; Ajzen, 1985) the immediate determinant of behavior is the intention to perform the behavior. As was described above, however, Gollwitzer (1993) suggested that this relation is mediated by the formation of implementation intentions about when, where, and how the behavior is going to take place. Whereas goal intentions commit a person to achieving a more general goal or end state, implementation intentions commit a person to executing the specific intended behavior. Thus, implementation intentions are closer to behavioral enactment, and therefore proposed to be the immediate determinant of behavior. In line with this theoretical argument (see Gollwitzer, 1993), and consistent with previous studies (e.g., Brandstätter et al., 2003; Rise, Thompson, & Verplanken, 2003), we expected that implementation intentions completely mediate the intention – behavior relation. Whereas the transition from goal intentions to implementation intentions is more cognitive, the implementation intentions – behavior transition is more behavioral in nature.

We described trait procrastination as the tendency to unintentionally postpone that which is necessary to reach some goal (cf. Lay, 1986). As indicated by Lay and Brokenshire (1997) procrastinators do not differ from non-procrastinators in their goal intentions to perform certain behaviors, however, they fail to act on their intentions in comparable ways. Thus, procrastinators do form goal intentions to perform the behavior. They even plan when to perform the behavior in

question (i.e., forming implementation intentions). If the delay in action were intended, we would not regard it to be procrastination. Therefore, trait procrastination can be viewed as a moderator in the relation between implementation intentions and behavior. Because this relation concerns the transition between cognition and behavior, the avoidant or behavioral variant of trait procrastination is most applicable. Since no decisions have to be made, decisional procrastination is not of any importance in this relation. That is, the phases of deciding which behavior to perform (i.e., forming goal intentions) and when, where, and how to perform it (i.e., forming implementation intentions) have already been passed through.

In the context of the goal intention – implementation intention – behavior relation, the initiative – hesitation dimension of action control seems to be particularly relevant. This dimension concerns the initiation of intended goal-directed behavior (Kuhl, 1994a), and therefore comes into play after the formation of goal intentions. In earlier publications, this scale was described as prospective or decision-related state orientation (Kuhl & Beckmann, 1985). That is, people with a prospective state orientation have difficulty in making decisions prior to the initiation of an action, whereas individuals with an action orientation of this type more easily terminate the decision-making process and proceed to the performance of the behavior. State oriented individuals are therefore likely to have problems in deciding when, where, and how to perform the behavior. The transition from goal intentions to implementation intentions is less likely for state than for action oriented people. Thus, we suggest that the initiative – hesitation dimension of action control moderates the goal intention – implementation intention relation.

The constructs of procrastination and state orientation are closely related. Both constructs are associated with intentions that do not lead to behavior (Beswick & Mann, 1994). Indeed, Kuhl (1994b) identified procrastinatory behavior as a distal consequence of a prospective state orientation. In their empirical study of the relation between hesitation and decisional procrastination, Beswick and Mann (1994) found correlations of .44, .46, and .70 in three different samples. The association of decisional procrastination with the behavioral items of

hesitation appeared to be much stronger than with the cognitive items.

To summarize, we propose that prospective action – state orientation moderates the cognitive part of the intention – behavior relation, that is, the transition from goal intentions into implementation intentions. Furthermore, we propose that behavioral trait procrastination moderates the behavioral part of the intention – behavior relation, that is, the transition from implementation intentions into behavioral action. More specifically:

Proposition 1: A positive relation exists between goal intention and behavior.

Proposition 2: Implementation intention mediates the goal intention – behavior relation.

Proposition 3: Prospective action versus state orientation (initiative versus hesitation) moderates the goal intention – implementation intention relation, such that it is stronger for action oriented individuals than for state oriented individuals.

Proposition 4: Trait procrastination moderates the implementation intention – behavior relation, such that it is stronger for people low on procrastination than for others.

The role of perceived behavioral control

Although the model presented in Figure 1 especially concerns the relation between intention and behavior, the role of perceived behavior control should not be disregarded in this context. As discussed before, two different components of PBC can be distinguished (Conner & Armitage, 1998; Terry & O'Leary, 1995), that is, self-efficacy and perceived control. Terry and O'Leary (1995) found support for this distinction, although the two components were correlated. Moreover, their study showed that self-efficacy influenced intentions but not actual (in this case exercise) behavior, whereas the opposite was found for perceived control. Conner and Armitage (1998) argued that self-efficacy is more relevant in predicting behaviors that are largely dependent on internal resources (e.g., academic performance), whereas perceived control is more relevant in the prediction of behaviors demanding external resources (e.g., exercise behavior). Job seeking demands both internal (i.e., skills to write application letters, social skills, and presentation skills in job interviews) and external resources (i.e., social contacts, facilities such

as newspapers and internet to search for vacancies, and resources to buy representative clothes and to travel to job interviews). We therefore expect both self-efficacy and perceived control to play a role of importance in the prediction of job search intention and job search behavior.

According to the TPB, perceived behavioral control contributes to the prediction of both intention and behavior. That is, people are more likely to engage in behaviors they think they have control over, and the formation of goal intentions is more likely when individuals believe it is easier to perform the behavior. Similarly, it can be argued that people are more likely to form implementation intentions when the personal control over the behavioral enactment is perceived to be higher. That is, when external resources such as time, money, and opportunities are available (high perceived control), the planning of when, where, and how to perform the behavior is made possible. Furthermore, when people have greater faith in their abilities to perform the behavior (high self-efficacy), they are more likely to actually plan the performance of the behavior. Therefore, we suggest that PBC will contribute not only to the prediction of job search intention and behavior but to the prediction of implementation intention as well.

The present study

As job search behavior is an important predictor of reemployment among unemployed individuals (Kanfer et al., 2001), it is critical to improve our understanding of the antecedents of job search behavior. Therefore, the present study was designed to illustrate the model as depicted in Figure 1 with empirical data from a sample of unemployed individuals. The variables specified in the model were measured in a longitudinal survey design. Contrary to much previous work on implementation intentions, we did not experimentally manipulate the formation of implementation intentions. Rather, we assessed the natural formation of implementation intentions, because it is likely that for complex and multifaceted behaviors such as job seeking, people may form plans about when and how to conduct the behavior by themselves.

Method

Sample and procedure

The data were collected in a two-wave longitudinal design in The Netherlands. Job search intention, self-efficacy, perceived control, implementation intentions, prospective action – state orientation, and trait procrastination were assessed at Time 1 of the study. Job search behavior was assessed four months later at Time 2. Data were collected in a sample of unemployed individuals in The Netherlands as a part of a larger study (Van Hooft, Born, Taris, Van der Flier, & Blonk, 2004). All individuals registered as unemployed at the local welfare centers of two mid-sized cities in The Netherlands at Time 1 of the study (November 2000) received a questionnaire by mail ($N = 3,508$). The cover letter emphasized that participation was voluntary, and that individual data were not provided to the local welfare centers. Individuals were asked to return the survey in a preaddressed and stamped envelope. A total of 677 usable questionnaires were returned, for a response rate of 19.3%. Of these, 38 respondents turned out to be reemployed, and were therefore deleted from the sample. Of the remaining 639 respondents, 378 participated in the Time 2 questionnaire four months later (59.2%).

People's intentions to search for employment are the starting point of the proposed model. That is, if an individual does not have a goal intention to look for a job, implementation intentions are no longer relevant. Moreover, previous research has suggested that implementation intentions have beneficial effects on the performance of the behavior among those individuals who strongly intend to perform the behavior (Orbell et al., 1997). In addition, Gollwitzer (1999) noted that from a functional point of view "implementation intentions should not be effective when the goal intention on which they are based is weak or had been completed or abandoned" (p. 499). Although our sample consisted of unemployed individuals, over half of the respondents (53.7%) indicated that they were not searching for employment, and did not intend to start a job search in the next four months. These respondents were excluded from the analyses. Of the remaining participants ($N = 175$), 34.3% were male, the average age was 39.2 ($SD = 10.0$), 7.4% held a college or university degree, and 49.7% had been unemployed for more than five years.

Unfortunately, we were not able to compare this final sample of 175 individuals with the

3,508 individuals that received the survey. Instead, to check for response bias, we compared the final sample with general statistics reported by Statistics Netherlands (2002) about all individuals who were registered as receiving welfare in the same two cities in 2000 ($N = 4,190$). Regarding sex and unemployment duration we did not find significant differences, $t(4363) = -0.93, p > .10$, and $t(4363) = 0.69, p > .10$. Individuals in our final sample, however, were slightly older as compared to the general statistics, $\chi^2(4) = 24.53, p < .01$. Furthermore, multivariate analysis of variance showed no significant mean differences on sex, age, education, and unemployment duration between our final sample and the 502 individuals who returned a usable Time 1 survey but were excluded from the analyses, $F(4, 635) = 1.51, p = .20$. Our final sample, however, differed significantly from the 203 individuals who participated at Time 2 but were excluded from the analyses, $F(4, 357) = 2.60, p < .05$. Subsequent t -tests revealed that our final sample had slightly more males, $t(374) = 2.83, p < .01$.

Measures

When possible, the measures used were based on measures that have been shown to be reliable and valid in previous research. To test our measures, we conducted a pilot-study in a sample of 45 graduating students who attended a labor market orientation training. Validity information of our measures using this sample is presented below. Unless stated otherwise items were completed by 5-point Likert scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Table 1 presents the coefficient alphas of the measures.

Job search intention. Ajzen (1991) described intentions as “indications of how hard people are willing to try, of how much effort they are planning to exert, in order to perform the behavior” (p. 181). In accordance with this definition, and based on previous research (Barber, Daly, Giannantonio, & Phillips, 1994), the intensity of one’s intended job search was measured with one item assessing the number of hours per week the participant intended to invest in job seeking in the next four months (0 = *zero hours* to 5 = *twenty hours or more*), and one item assessing the effort the participant intended to put into search in the next four months (1 = *no*

effort to 5 = a great deal of effort). Both items were converted to z-scores and then averaged into a job search intention score. In the pilot-study this measure correlated strongly with a 9-item job search intention index measure based on Blau's (1994) behavioral scale ($r = .70, p < .01$).

Prospective action – state orientation. The initiative versus hesitation dimension of action – state orientation was measured with the Action Control Scale (ACS-90; Kuhl, 1994a) as translated into Dutch by Otten, Boekaerts, and Seegers (1994). Based on Diefendorff, Hall, Lord, and Streaun's (2000) validation study, four of the original twelve items were dropped. The items provide descriptions of everyday situations and require participants to choose between two specific response alternatives, corresponding with action versus state orientations. A sample item is: "When I have a lot of important things to do and they must all be done soon: (1) I often don't know where to begin (2) I find it easy to make a plan and stick with it."

Implementation intention. Research on implementation intentions has almost exclusively been (quasi-)experimental. For the purpose of the current survey study we therefore developed a measure of implementation intentions, assessing the extent to which the participants had naturally formed implementation intentions on when and how to search for employment. The specific items read: "I know exactly how I am going to handle my job search", "I agreed with myself about when to apply for employment", "I have already decided how to organize my job search", "I am lacking specific plans about when to start looking for employment", and "I only have vague ideas about how to search for jobs." Confirmatory factor analysis showed support for a one-factor structure of the measure, $\chi^2 (5, N = 171) = 52.93, p < .001$, goodness-of-fit index (GFI) = .89. In the pilot-study this measure of implementation intentions correlated moderately to strongly with measures of job search behavior ($r = .45, p < .01$ with the job search measure described below, and $r = .31, p < .05$ with a 9-item job search measure based on Blau, 1994).

Trait procrastination. Trait procrastination was measured with nine items based on Lay's (1986) General Procrastination Scale. Sample items include: "I generally delay before starting on work I have to do", and "I usually accomplish all the things I plan to do in a day."

Perceived behavioral control. Based on previous research (Armitage & Conner, 1999; Terry & O'Leary, 1995) we distinguished between two components of PBC. The first component refers to perceived personal control over internal resources, and was measured as self-efficacy for job search behaviors. Eight items were selected based on Ellis and Taylor (1983) and Van Ryn and Vinokur (1992). A sample item is: "I have confidence in my abilities to complete a good job application." The second component refers to perceived personal control over external resources, such as time, opportunities, and resources. Eight items were developed, based on previous research (Armitage & Conner, 1999; Terry & O'Leary, 1995). Sample items are: "I have sufficient resources to perform an adequate job search" and "Searching for employment is beyond my personal control" (reverse scored). Confirmatory factor-analysis showed better support for the two-factor structure, $\chi^2(103, N = 163) = 235.29, p < .001, GFI = .84$, than for a one-factor solution, $\chi^2(104, N = 163) = 275.86, p < .001, GFI = .81, \chi^2_{diff.} = 40.57, p < .001$.

Job search behavior. Job search behavior was assessed at Time 2 with two items. Because Fishbein and Ajzen (1975) stressed the importance of correspondence in specificity, target, situation, and time between the measures of intention and behavior, we used the same items for job search behavior as for job search intention. That is, respondents were asked to indicate the number of hours per week they had spent on job seeking in the last four months, and the effort they had put into search in the last four months. Response options were identical to those of the intention measure. Both items were converted to z-scores and then averaged into a job search behavior score. In the pilot-study this measure strongly correlated with a 9-item job search behavior index measure based on Blau's (1994) behavioral scale ($r = .74, p < .01$).

Results

Table 1 presents the means, standard deviations, and correlations between the study variables. The table shows that the goal intention to engage in job seeking was significantly correlated with reported job seeking behavior four months later (Proposition 1 supported). As expected, action – state orientation and trait procrastination were negatively correlated.

The proposed model as depicted in Figure 1 (Model A) was tested using structural equation modeling with LISREL 8.30 (Jöreskog & Sörbom, 1993). All variables in the analysis were converted to *z*-scores first in order to avoid multicollinearity. Covariances were analyzed and maximum likelihood was used as method of estimation. The results indicated a good fit for Model A, $\chi^2 (5, N = 155) = 16.16, p < .01, GFI = .97$. Figure 2 presents the resulting path coefficients and squared multiple correlations. Goal intentions significantly predicted implementation intentions, and implementation intentions significantly predicted job search behavior. Furthermore, prospective action – state orientation significantly predicted the formation of implementation intentions. However, the effects of the Job search intention \times Action – state orientation interaction and the Implementation intention \times Trait procrastination interaction were not significant (Proposition 3 and 4 not supported). Proposition 2 stated that implementation intention would mediate the relation between goal intention and behavior. The results as presented in Figure 2 supported this proposition. However, we also tested a second model (Model B) in which a direct path from goal intention to job search behavior was specified. Model B fitted the data significantly better than Model A, $\chi^2 (4, N = 155) = 5.48, p = .24, GFI = .99, \chi^2_{diff.} = 10.68, p < .01$. Thus, it can be concluded that implementation intentions only partially mediated the effect of job search intention on job search behavior.

In the present study we distinguished between two components of perceived behavioral control, that is, job search self-efficacy and perceived control over job search behavior. Although both components were highly correlated as reported in Table 1, we found some differences in the correlation patterns of the internal and external component with the other variables. Specifically, self-efficacy, but not perceived control, was positively related to action – state orientation and negatively to trait procrastination. In the goal intention – implementation intention – behavior sequence, both self-efficacy and perceived control were most important to implementation intentions. That is, whereas the two components were not related to job search intention and job search behavior, strong correlations were found with implementation intentions. Individuals with

higher levels of self-efficacy, and individuals who perceived job seeking to be more under their control, were more likely than others to form implementation intentions regarding job seeking.

Discussion

In the context of Ajzen's (1991) theory of planned behavior, the antecedents of intentions are better understood than the antecedents of behavior. The current study aimed to improve our understanding of the transition from intention to behavior by presenting a model of mediators and moderators in the intention – behavior relation (see Figure 1). The model was applied to the area of unemployment. From both an individual and a societal point of view it is important to move unemployed individuals back to work. Because job search behavior is an important predictor of reemployment among unemployed individuals (Kanfer et al., 2001), it is critical to improve our understanding of the antecedents of job search behavior. The proposed model was tested in a sample of unemployed individuals in The Netherlands.

Consistent with the TPB, job search intention significantly predicted job search behavior. Contrary to the predictions of the TPB, neither the internal (i.e., job search self-efficacy) nor the external component of PBC (i.e., perceived control over job seeking) was related to the intensity of one's job search behavior. In support of the work by Terry and O'Leary (1995), the present study found some support for the discriminant validity of the two PBC components.

Implementation intentions were found to partially mediate the job search intention – behavior relation. Thus, unemployed individuals who intended to seek employment, and who made specific plans about when and how to perform the intended job search activities, were more likely than others to perform these activities. This is an encouraging finding from both a theoretical and a practical point of view. Theoretically, this finding lends further support for the usefulness of the implementation intentions concept in the prediction of a wider variety of behaviors. That is, whereas previous research already demonstrated the usefulness of implementation intentions for relatively simple and one-dimensional behaviors such as meeting deadlines, taking vitamin tablets, and recycling behavior, the current study shows that

implementation intentions may improve the prediction of complex and multifaceted behavior like job seeking as well. Furthermore, the current study presents an alternative theoretical foundation as well as empirical support for the distinction between two phases in job search (i.e., a phase of deliberation or goal formulation and a phase of planning or implementation) as has been suggested in other theoretical models describing the job search process (e.g., Soelberg, 1967; Stevens & Beach, 1996). From a practical point of view, the formation of implementation intentions might prove to be a useful tool in the coaching and employment counseling of unemployed individuals. Promoting the formation of implementation intentions may be especially important for individuals with low levels of job search self-efficacy and for individuals who perceive little personal control over external resources, as these variables were positively related to the natural formation of implementation intentions.

It should be noted that implementation intentions only partially, instead of completely, mediated the intention – behavior relation, and that the effect of implementation intentions on job search behavior was rather small. Although from a theoretical perspective full mediation is to be expected, our finding of partial mediation is consistent with other research (Brandstätter et al., 2003; Rise et al., 2003). This discrepancy between theory and empirical findings as well as the small effect size might be explained by the research design employed (i.e., measuring at only two points in time; see also below), and the possible incomplete measurement of implementation intentions. Future research should therefore adopt broader measures of implementation intentions. Still, the present study adds to our understanding, because it demonstrates that the *natural formation* of implementation intentions can increase the intensity with which unemployed individuals seek for employment. In contrast, previous research on implementation intentions has almost exclusively used (quasi-)experimental designs in which the formation of implementation intentions was manipulated.

Action oriented individuals were more likely to form implementation intentions about when and how to search for jobs than state oriented individuals, regardless the strength of their

initial goal intentions to engage in job seeking. These findings extend previous work by Diefendorff et al. (2000) showing that action – state orientation not only affects individuals' work-related behavior, but is also of importance in the stage that precedes organizational entry. However, no support was found for the proposed moderating effect of action – state orientation in the goal intention – implementation intentions relation. A possible explanation for this null finding might relate to the research design used in the present study, as both goal intentions and implementation intentions were measured at the same point in time.

Contrary to the propositions, no effects of trait procrastination on the implementation intentions – job search behavior relation were found. This lack of support may have been caused by the time span used in the current study. As noted before, trait procrastination concerns the tendency to *delay* task performance. More specifically, previous research suggested that procrastinators more than others fail to act on their intentions *within a certain (intended) time span* (Lay & Brokenshire, 1997; Steel, Brothen, & Wambach, 2001), which does not mean that procrastinators do not perform the behavior in question at all. Steel et al. (2001) for example, found that among students following a psychology course, procrastinators did less work than intended at course commencement, but were likely to do more work than intended towards course completion. We used a fairly long time span of four months between the assessment of job search intention and behavior. This long time span may have limited our power to find effects of trait procrastination on the intention – behavior relation, because even the procrastinators may have started to act on their intentions after four months. Future research should assess job search behavior at more points in time, employing shorter time intervals between the separate measurements. In this way, it is possible to investigate the proposed effects of trait procrastination on the relation between (implementation) intention and (the speed of) behavioral enactment more extensively.

Limitations and future research

Limitations of the current study include the measurement of implementation intentions,

the use of self-report measures, the low response rate, and the research design. Firstly, implementation intentions were measured with a 5-item scale, assessing when and how the participants intended to search for jobs. As such, this global measure of job search implementation intentions aligned with the global job search intention and behavior measures that we used. However, whereas the job search intention and behavior measures corresponded exactly, the measure of implementation intentions used different items. This might explain the limited added value for implementation intentions. Therefore, future research should investigate the goal intention – implementation intentions – behavior sequence employing measures that correspond exactly in specificity, target, situation, and time (cf. Fishbein & Ajzen, 1975).

A second limitation pertains to the reliance on self-report measures. Common method variance might therefore be a concern. However, the use of a two-wave longitudinal design might have attenuated this concern. Further, social desirability might have influenced the participants' responses. For example, the fear of being cut back on their unemployment benefits might have biased the participants' responses on the job search intention and job search behavior scales. To minimize this concern, it was emphasized in the cover letter that individual data would not be provided to the local welfare centers.

Thirdly, the low response rate might limit the generalizability of the findings. It should be noted that the sample included a large proportion of lower educated individuals, and low response rates are not uncommon in such samples (e.g., Schmit, Amel, & Ryan, 1993). Comparison of our sample with official statistics did not reveal any significant differences regarding sex and unemployment duration. Our respondents, however, were slightly older than the average individual receiving welfare in the surveyed cities. Furthermore, because the purpose of the current study was to test a model in which implementation intentions mediated, and action control and procrastination moderated the job search intention – behavior relation, respondents without job search intentions were excluded from the analyses as implementation intentions are no longer relevant then (see *Method* section). As a consequence, the generalizability of our

findings is restricted to unemployed individuals who intend to engage in job seeking activities. For research findings on the predictors of job search intention and behavior among the total sample of unemployed individuals we refer to Van Hooft et al. (2004).

The research design used can be considered a fourth limitation. Because previous research has emphasized the dynamic, changing nature of the job search process (cf. Barber et al., 1994; Saks & Ashforth, 2000), we used a longitudinal design. However, measuring at only two points in time is still suboptimal, in that it may fail to capture the full process of job seeking. Furthermore, the time-span between the two waves might not have corresponded with the underlying causal interval (cf. Taris, 2000). Therefore, future research should monitor the job search process in a more detailed fashion, for example by means of a diary study.

Conclusion

In order to improve employment counseling, it is of major importance to understand people's job search behavior. Although previous research has resulted in adequate models to predict job search intentions, the prediction of job search *behavior* remains relatively unexplored. This study tried to fill this void by proposing an extended model for the prediction of job search behavior. The model suggests that people are more likely to actually search for jobs when they furnish their intentions with detailed plans concerning when, where, and how to start their job search activities (implementation intentions). Presumably, state oriented individuals will have difficulty in converting their job search intentions into implementation intentions, whereas procrastinators will have difficulty in actually carrying out their implementation intentions. In a sample of unemployed individuals, support was found for the mediating role of implementation intentions. Stimulating the formation of implementation intentions may be especially useful for individuals who perceive having little resources to engage in job seeking and who have low confidence in their job search abilities. Future research is needed to find out whether implementation intentions can provide a useful tool for employment counseling.

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Table 1

Means, standard deviations, and correlations among the study variables

	α	M	SD	1	2	3	4	5	6
1 Job search intention	.75	0.68	0.68						
2 Action – state orientation	.78	5.59	2.21	.15					
3 Implementation intentions	.75	3.23	0.78	.27**	.23**				
4 Trait procrastination	.78	2.43	0.62	-.11	-.58**	-.21**			
5 Self-efficacy	.81	3.39	0.73	.11	.37**	.56**	-.22**		
6 Perceived control	.65	3.11	0.63	.16	.09	.41**	-.01	.47**	
7 Job search behavior	.93	0.46	1.12	.31**	.14	.23**	-.11	.12	.04

Note. Due to incidental missing values N varies between 155 and 175.

* $p < .05$. ** $p < .01$.

Figure 1. A combined model of the intention – behavior relation applied to job seeking.

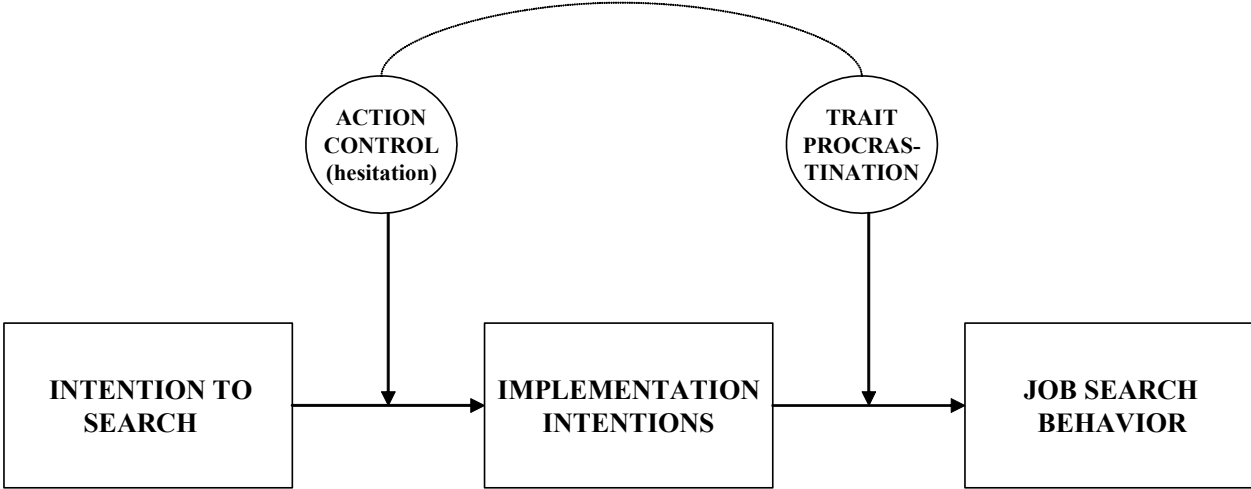
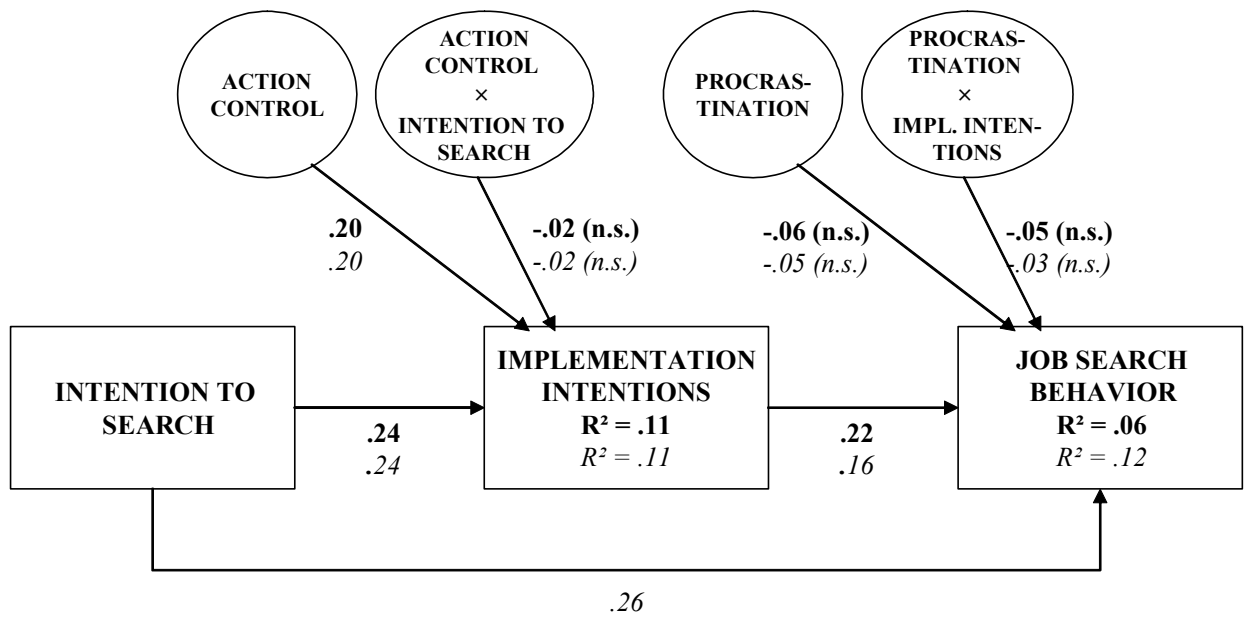


Figure 2. Path coefficients and squared multiple correlations for the proposed model (Model A) and the model with a direct path between goal intention and job search behavior (Model B).



Path coefficients and squared multiple correlations of Model A in bold
Path coefficients and squared multiple correlations of Model B in Italics