# Work-related Goal Perceptions and Affective Well-being

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COMPETING INTERESTS: None declared.

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*Journal of Health Psychology*

London, Thousand Oaks and New Delhi,
www.sagepublications.com
Vol 10(1) 101–122
DOI: 10.1177/1359105305048558

## Abstract

The aim was to clarify how perceptions of work-related goals influence affective well-being and goal commitment. Participants ($N = 201$) completed a Goal Perceptions Questionnaire and affect scales. A model was refined using structural equation modelling. Value and success expectation substantially mediated the effects of other goal perceptions on affects and commitment. Both value and success expectation increased commitment, but whereas value increased positive affects, success expectation reduced negative affects. The determinants of value (e.g. personal origin) were different from those of success expectation (e.g. personal control). Through astute goal setting, it is possible to promote well-being without compromising commitment.

## Keywords

*affect, commitment, goals, well-being, work*

THE SUBJECTIVE work environment is an important influence on well-being (Cox & Ferguson, 1994). Recently, there has been growing interest in work-related affect, building on previous research into organizational stress (e.g. Brief & Weiss, 2002; Payne & Cooper, 2001). In the present study, we focus on the impact of work-related goals on affective well-being. Goals are 'internal representations of desired states, where states are broadly construed as outcomes, events, or processes' (Austin & Vancouver, 1996, p. 338). It has been established beyond reasonable doubt that goals can have positive effects on performance (e.g. Locke & Latham, 2002), leading to the extensive use of goal setting as a management tool. However, it is important, from a health psychology perspective, that goal setting is done in a way that is conducive rather than detrimental to well-being. It is clearly better that individuals feel good (e.g. composed, elated or energetic) as a result of their goals than that they feel bad (e.g. anxious, depressed or tired). We observed as practitioners that goal setting was often conducted without regard for well-being, the focus being on performance. This motivated us as researchers to understand better how goal setting could be conducted in a way that was conducive to well-being, without compromising performance. To that end, in this research, we tested and refined a model of how goal perceptions (of the kind that might be manipulated in goal setting) influence both goal commitment (a performance-related outcome) and affective well-being (the health-related outcome). In the course of this research, we found it necessary to develop a measure of goal perceptions that may be of wider use. We first outline the model that was tested, then detail how the model was derived from previous theory and research, then finally express the model as a set of formal hypotheses.

The model that we constructed and tested is depicted in Figure 1. The outcome variables are commitment to the goal (performance-related outcome), and positive and negative affects (health-related outcomes). According to the model, individuals are committed to the goal as a result of valuing it or expecting to succeed at it or both. They experience positive affects as a result of valuing the goal and negative affects as a result of not expecting to achieve it. They value the goal if they perceive it as involving some competition with other people, and little conflict with their other goals, and as being originated by themselves, publicly recognized and specific. They expect to succeed at the goal if they perceive it as being within their ability, not too complex, within their control and not too difficult, and as involving support from others, feedback from others, sufficient time and sufficient other resources (tools). Thus the model is one in which value and success expectation mediate the effects of other goal perceptions on performance- and health-related outcomes.

In constructing this model, we began with the literature on goal commitment. In the relationship between goals and performance, goal commitment plays a crucial role (Klein, Wesson, Hollenbeck, & Alge, 1999). For example, goal commitment can moderate the effect of goal difficulty on performance, and can also have a main effect on performance (Locke & Latham, 2002; Seijts & Latham, 2000). Based on the extant literature, Hollenbeck and Klein (1987) proposed a value-expectancy model of goal commitment, in which the proximal determinants of commitment were the attractiveness and expectancy of goal attainment. Other situational and personal variables influenced commitment only via their effects on either attractiveness or expectancy. Attractiveness was influenced by the situational factors of publicness, volition, explicitness, reward structure and competition, and by the personal factors of need for achievement, endurance, Type A personality, organizational commitment and job involvement. Expectancy was influenced by the situational factors of social influence, task complexity, performance constraints and supervisor supportiveness, and by the personal factors of ability, past success, self-esteem and locus of control. In a subsequent meta-analysis, Klein et al. (1999) concluded that attractiveness and expectancy were indeed related to goal commitment. They also found that 'higher levels of commitment resulted from having high ability, a voice in the determination of the goal, task or job satisfaction, specific goals, task experience, receiving feedback on one's performance, and the form of that feedback' (1999, p. 890). They noted that some other possible distal determinants of commitment

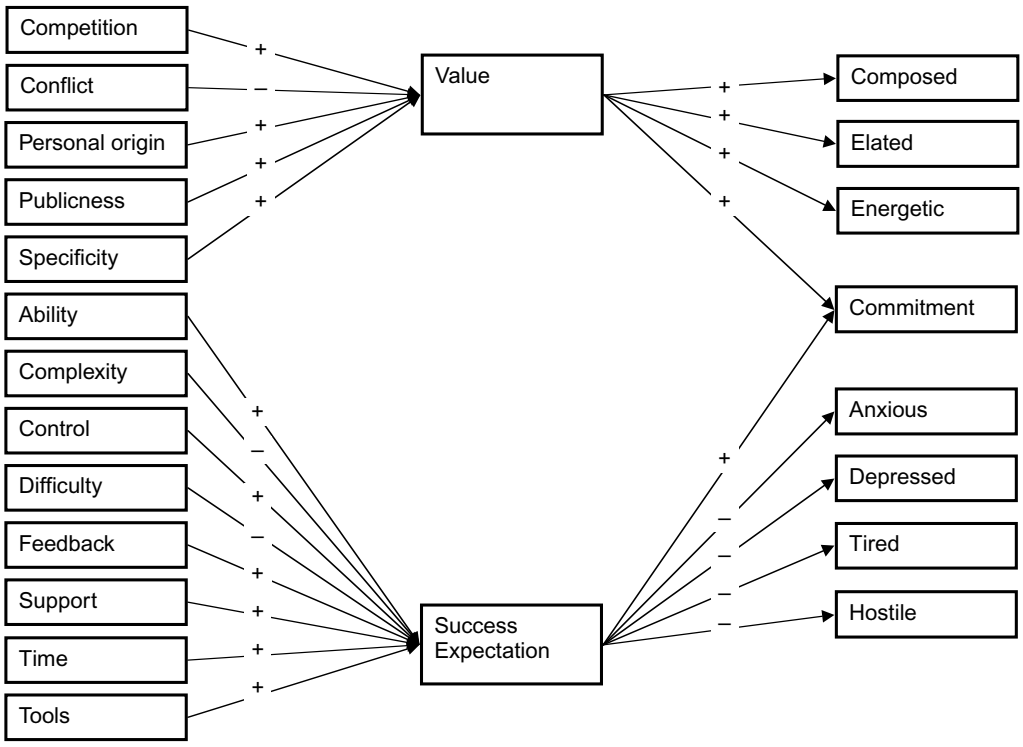


*Figure 1.* Full model to be tested.

'have been infrequently examined (e.g., goal conflict, performance constraints) or not examined at all (e.g., authority, competition)' (p. 893). However, they were unable to test whether attractiveness and expectancy mediated the effects of other goal dimensions on commitment. Moreover, some of the univariate effects of goal dimensions on commitment might have been confounded by interrelationships between goal dimensions. Austin and Vancouver (1996) have argued that the relationships between goal dimensions should be tested by structural modelling.

We took Hollenbeck and Klein's (1987) model as a starting point for our model. We adopted a phenomenological perspective (Austin & Vancouver, 1996), which meant that we were interested in individuals' goal perceptions, and not in more general factors such as personal traits or organizational structures. This led us to omit some of Hollenbeck and Klein's factors, and adapt or rename others. We also incorporated certain factors highlighted by Lee, Bobko, Earley and Locke (1991) as important goal dimensions: difficulty, feedback, resources (separable into time and tools) and conflict. In our resulting model, goal commitment was influenced by *value* (Hollenbeck & Klein's attractiveness) and *success expectation* (Hollenbeck & Klein's expectancy). Value was influenced by *publicness* (Hollenbeck & Klein), *personal origin* (Hollenbeck & Klein's volition), *specificity* (Hollenbeck & Klein's explicitness), *competition* (Hollenbeck & Klein) and *conflict* (Lee et al., 1991). Publicness was the extent to which the individual perceived that other people were aware of the goal; personal origin that they had originated the goal; specificity that the goal was precise; competition that they had to compete with others to achieve the goal; conflict that the goal was in conflict with their other goals. Success expectation was influenced by *complexity* (Hollenbeck & Klein), *support* (*cf.* Hollenbeck & Klein's supervisor supportiveness), *ability* (Hollenbeck & Klein), *control* (*cf.* Hollenbeck & Klein's locus of control), plus

*difficulty*, *feedback*, *time* and *tools* (Lee et al.; *cf.* Hollenbeck & Klein's performance constraints). Complexity was the extent to which the individual felt that the goal was complicated; support that they were supported (from any source) in achieving the goal; ability that they had sufficient expertise to achieve the goal; control that they had control over the goal; difficulty that the goal was difficult; feedback that they received sufficient feedback about progress towards the goal; time that they had sufficient time to achieve the goal; tools that they had sufficient other resources to achieve the goal.

We then extended this value-expectancy model, to include affective well-being. Several researchers have found that individuals' self-articulated goals (in life, not just work) can have positive and negative affective consequences (see Austin & Vancouver, 1996; Cantor, 1990; Emmons, 1997; Little, 1999; Martin & Tesser, 1996; Schmuck & Sheldon, 2001). The findings of Emmons (1986) on 'personal strivings' (what a person is characteristically trying to do) proved especially pertinent to our model building. He asked individuals to rate their personal strivings on various dimensions and examined the correlations between these dimensions, though he did not conduct any causal modelling. The dimensions included value, success expectation and commitment. He found that value and success expectation were both positively correlated with commitment (as we would expect), that value was positively correlated with positive affect and that success expectation was negatively correlated with negative affect. These findings dovetailed with our model, allowing us to extend it. Not only would value and success expectation both positively influence commitment, but value would influence positive affects while success expectation would negatively influence negative affects. Value and expectancy would remain at the core of the model, mediating the effects of all other goal perceptions on commitment and positive and negative affects.

In adding affects to the model, we made several decisions regarding the conceptualization and measurement of affects. The first issue was whether affects should be conceptualized as goal-specific (how individuals felt about their goals) or more free-floating (how individuals felt in general). Warr (1999) has distinguished between context-specific and context-free approaches to well-being in the workplace. We decided that our measure of affects should be goal-specific, because our measure of goal perceptions was to be goal-specific. The second issue was whether affects should be conceptualized as global (one or two major dimensions) or differentiated (numerous different affects). Much of the debate about the relative merits of differing models of affect is conducted at the global level, but most models incorporate a more differentiated level (Gray & Watson, 2001; Russell & Feldman Barrett, 1999). We decided that our measure of affects should be differentiated, because we preferred a more detailed picture. The third issue was whether positive and negative affects should be conceptualized as bipolar (opposite ends of the same continuum) or independent (separate continua). It has been suggested that independence is more likely when affects involve an evaluative component (Cacioppo, Gardner, & Berntson, 1999; Russell & Carroll, 1999; Russell & Feldman Barrett, 1999) and when they involve aggregation across episodes (Russell & Carroll, 1999), as well as when they are less intense (Diener, 1999). We decided that we should allow for independence, because in asking individuals 'how does your goal make you feel?' we would be inviting them to evaluate their experience and allowing them to generalize across time, without restricting them as regards the intensity of affects. Moreover, our model implied independence, with different determinants for positive and negative affects. Having made these decisions, we might be justified in referring to the affects more specifically as *emotions*. *Affect* itself is an umbrella term covering both emotions and moods. In distinctions between emotions and moods, one recurrent criterion is that emotions have an object whereas moods do not (Frijda, 1999; Gray & Watson, 2001; Morris, 1999; Schwartz & Clore, 1996). In our study the affects did have an object, the goal itself. However, to avoid unnecessary contention, we use the term affect throughout this article.

Thus, in the present research, we tested a structural model examining the relationships between goal perceptions and goal-related affects. This model (Figure 1) encapsulated the following hypotheses: (1) goal value and goal success expectation would both positively

influence goal commitment; (2) value would positively influence positive affects; (3) success expectation would negatively influence negative affects; (4) commitment and affects would not directly influence each other; (5) value would be influenced by competition, conflict (negatively), personal origin, publicness and specificity; (6) success expectation would be influenced by ability, complexity (negatively), control, difficulty (negatively), feedback, support, time and tools; and (7) these determinants of value and success expectation would not have direct effects on commitment, positive affects or negative affects. Thereby, we answered Austin and Vancouver's (1996, pp. 361–362) call for structural modelling of the relationships between goal dimensions, and Klein et al.'s (1999, pp. 892–893) call for proper tests of the mediating role of value and success expectation in the determination of commitment, while giving due consideration to affective well-being alongside commitment.

## Method

### Participants

The sampling procedure can be described as nonprobabilistic but purposive. The objectives were to obtain a sample of workers sufficiently large in terms of the proposed analyses (around 200), and sufficiently varied in terms of the range of goal perceptions. Five local companies were approached: three utility companies, one manufacturing company, and one consultancy company. These companies agreed to allow access to their workforces or to certain sections thereof. A researcher visited the workplaces, recruited participants and collected data. This was done in person wherever possible, but by internal mail if necessary. By these means, 201 participants were recruited at baseline. They comprised 149 males, 45 females, and 7 who did not disclose their sex. Ages ranged from 20 to 59 with a mean of 38.31 (SD = 9.99) years. They displayed a wide range of goal perceptions, as evidenced by the descriptive statistics in Table 1. Therefore, the objectives of recruitment were achieved. However, we cannot claim that the sample (being nonprobabilistic) was necessarily representative of any particular workforce.

### Measures

***Goal Perceptions Questionnaire*** Participants completed a Goal Perceptions Questionnaire (GPQ). They first wrote down a 'goal that you currently have which is to do with your work'. They were presented with 'various statements which you might use to describe a goal or target', and asked to rate each statement according to how well it represented 'how you see the goal', using a five-point response format (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree). There were 100 items, four items for each of the 25 scales. The scales were Ability (in relation to the goal), Complexity (of the goal), Competition (with other people in working towards the goal), Commitment (to the goal), Conflict (with other goals), Control (in relation to the goal), Difficulty (of the goal), Divisibility (of the goal), Effort (necessary to achieve the goal), Enjoyment (of working towards the goal), Feedback (about progress towards the goal), Importance to others (of the goal), Measurability (of progress towards the goal), Personal origin (of the goal in terms of the extent to which it was instigated by the individual him or herself), Modifiability (of the goal), Options (in working towards the goal), Progress (towards the goal), Publicness (of the goal), Specificity (of the goal), Support (in working towards the goal), Success expectation (in relation to the goal), Time (to achieve the goal), Tools (to achieve the goal), Teamwork (as a prerequisite for achieving the goal) and Value (of the goal). The items, grouped by scale, are listed in the Appendix. When administered, the items were intermingled.

***Development of the Goal Perceptions Questionnaire*** We developed the Goal Perceptions Questionnaire because existing measures did not fit the purpose of the present study. Locke and Latham (1984) have produced a goal setting questionnaire, but this refers to organizational practices as well as goal perceptions, and when Lee et al. (1991) factor analysed the questionnaire they did not find factors representing key goal dimensions of difficulty, specificity or commitment. Hollenbeck, Williams and Klein (1989) have produced a measure of goal commitment, but this tends to conflate commitment with its supposed causes and

*Table 1.* Confirmatory factor analysis single-factor fit statistics, descriptive statistics and longitudinal analyses

| | *Confirmatory factor analysis single-factor fit statistics* | | | | | | *Descriptive statistics* | | | *Correlation between baseline and follow-up* | *Change from baseline to follow-up* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Scale* | $\chi^2$ | *d.f.* | *p* ($\chi^2$) | *RMSEA* | *SRMR* | *CFI* | *Cronbach's* α | *M (SD)* | *Skewness* | | *M (SD)* |
| Goal perception | | | | | | | | | | | |
| Ability | 1.92 | 2 | .38 | .00 | .02 | 1.00 | .71 | 4.11 (0.68) | –.46 | .56** | .05 (.61) |
| Commitment | 5.27 | 2 | .07 | .09 | .02 | .99 | .89 | 4.41 (0.67) | –1.70 | .63** | –.17 (.54)** |
| Competition | 13.11 | 2 | .00 | .17 | .03 | .98 | .89 | 2.77 (1.11) | .08 | .72** | .04 (.83) |
| Complexity | 2.45 | 2 | .29 | .03 | .03 | 1.00 | .67 | 3.43 (0.84) | –.53 | .65** | –.02 (.69) |
| Conflict | 3.77 | 2 | .15 | .07 | .03 | .99 | .77 | 1.99 (0.71) | .70 | .42** | .15 (.74)* |
| Control | 29.48 | 2 | .00 | .26 | .09 | .86 | .73 | 3.71 (0.80) | –.49 | .71** | –.11 (.60)* |
| Difficulty | 4.33 | 2 | .12 | .08 | .02 | 1.00 | .88 | 3.55 (0.95) | –.62 | .59** | –.06 (.82) |
| Divisibility | 8.42 | 2 | .01 | .12 | .03 | .98 | .84 | 3.43 (0.97) | –.58 | .68** | –.06 (.74) |
| Effort | 4.17 | 2 | .12 | .07 | .02 | .99 | .86 | 3.72 (0.85) | –.83 | .74** | –.15 (.60)** |
| Enjoyment | 10.60 | 2 | .01 | .14 | .03 | .98 | .86 | 3.95 (0.81) | –.68 | .69** | –.23 (.63)** |
| Feedback | 4.95 | 2 | .08 | .08 | .02 | .99 | .84 | 3.10 (0.88) | –.14 | .57** | –.08 (.77) |
| Importance to others | 7.50 | 2 | .02 | .12 | .04 | .96 | .70 | 3.46 (0.85) | –.43 | .70** | –.10 (.62) |
| Measurability | 5.35 | 2 | .07 | .09 | .03 | .99 | .76 | 3.41 (0.81) | –.25 | .65** | .05 (.67) |
| Modifiability | 3.54 | 2 | .17 | .06 | .02 | 1.00 | .87 | 2.99 (1.08) | –.23 | .51** | –.26 (.99)** |
| Options | .58 | 2 | .75 | .00 | .01 | 1.00 | .88 | 3.33 (0.94) | –.49 | .64** | –.13 (.72) |
| Personal origin | 1.44 | 2 | .49 | .00 | .01 | 1.00 | .85 | 3.34 (1.16) | –.35 | .68** | .03 (.87) |
| Progress | 4.28 | 2 | .12 | .08 | .02 | .99 | .82 | 3.50 (0.88) | –.40 | .63** | –.09 (.71) |
| Publicness | 88.32 | 2 | .00 | .46 | .08 | .84 | .89 | 3.48 (1.03) | –.21 | .54** | .22 (.93)* |
| Specificity | 8.68 | 2 | .01 | .13 | .04 | .96 | .73 | 4.01 (0.76) | –.69 | .63** | –.10 (.63) |
| Success expectation | 17.61 | 2 | .00 | .19 | .03 | .96 | .87 | 4.01 (0.82) | –.79 | .46** | –.05 (.77) |
| Support | 4.07 | 2 | .13 | .07 | .03 | .98 | .64 | 3.54 (0.75) | –.64 | .59** | –.17 (.64)** |
| Teamwork | 6.63 | 2 | .04 | .11 | .03 | .99 | .86 | 3.78 (0.99) | –.93 | .70** | –.08 (.73) |
| Time | 11.70 | 2 | .00 | .15 | .04 | .94 | .74 | 3.48 (0.88) | –.60 | .51** | –.11 (.80) |
| Tools | 16.55 | 2 | .00 | .20 | .05 | .93 | .77 | 3.77 (0.77) | –.47 | .55** | –.03 (.70) |
| Value | 21.16 | 2 | .00 | .23 | .04 | .95 | .87 | 4.35 (0.71) | –1.38 | .67** | –.21 (.50)** |

*Table 1. Continued*

| Scale | *Confirmatory factor analysis single-factor fit statistics* | | | | | | *Descriptive statistics* | | | *Correlation between baseline and follow-up* | *Change from baseline to follow-up* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | $\chi^2$ | *d.f.* | *p* ($\chi^2$) | *RMSEA* | *SRMR* | *CFI* | *Cronbach's α* | *M (SD)* | *Skewness* | | *M (SD)* |
| Affect | | | | | | | | | | | |
| Composed | 20.30 | 9 | .02 | .08 | .04 | .97 | .80 | 2.39 (0.80) | –.04 | .61** | –.16 (.74)* |
| Elated | 20.28 | 9 | .02 | .08 | .03 | .98 | .90 | 2.40 (0.98) | .30 | .68** | –.18 (.79)* |
| Energetic | 58.45 | 9 | .00 | .18 | .04 | .94 | .93 | 3.09 (1.03) | –.48 | .68** | –.25 (.77)** |
| Anxious | 53.15 | 9 | .00 | .15 | .07 | .91 | .85 | 1.78 (0.74) | 1.10 | .66** | –.05 (.59) |
| Depressed | 28.47 | 9 | .00 | .11 | .05 | .96 | .85 | 1.51 (0.67) | 1.68 | .58** | .08 (.63) |
| Tired | 22.45 | 9 | .01 | .09 | .04 | .97 | .84 | 1.71 (0.72) | .93 | .45** | .00 (.75) |
| Hostile | 69.42 | 9 | .00 | .19 | .06 | .90 | .87 | 1.60 (0.73) | 1.81 | .71** | .02 (.60) |

*Note*: *N* = 187 to 201 for confirmatory factor analyses and Cronbach's alpha; 196 for *M*, SD, and skewness, by listwise deletion for missing values; 112 to 114 for repeated measures. RMSEA = Root Mean Square Error of Approximation. SRMR = Standardized Root Mean Square Residual. CFI = Comparative Fit Index. The possible range of scores was from 1 to 5 for all scales

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

consequences (DeShon & Landis, 1997; Seijts & Latham, 2000), whereas we needed to maintain clear distinctions between these constructs. Other measures have included relatively few scales and relatively few items per scale (e.g. Brunstein, 1993; Roberson, 1989).

Although we developed the Goal Perceptions Questionnaire to meet the immediate purposes of the present study, we were determined that the instrument should if possible be of wider use in research relating goal perceptions to performance and well-being. The following principles guided the development process. First, the instrument should focus on individuals' perceptions of their goals. It should not be confounded by other factors such as personal traits or environmental features. Second, the instrument should assess a broad range of goal perceptions. If one is merely interested in explaining variance in performance or well-being, then it may be sufficient to just assess a few proximal determinants, but if one is interested ultimately in designing interventions to promote performance and well-being, then it is important to also assess the distal determinants. Third, the instrument should be informed by a broad range of theories. This should include theories that are centrally concerned with goals (e.g. Hollenbeck & Klein, 1987) but also other theories that include goal-like constructs, such as motivational theories (e.g. Deci & Ryan, 1985), social cognition theories (e.g. Ajzen, 1991) and coping theories (e.g. Lazarus & Folkman, 1984). Fourth, the instrument should be potentially useable in domains other than work, for example, education, sport or health. It is likely that psychological processes will be similar across domains (Austin & Vancouver, 1996). Therefore the questionnaire items should not be domain-specific; rather they should relate to whatever goal is specified by or for the individual at the top of the questionnaire. Fifth, the instrument should have good psychometric properties. There should be sufficient items per construct, the items should be unambiguous indicators of their intended constructs and the constructs should be clearly discriminated from each other.

Following these principles, we distinguished twenty-five dimensions. We then generated six items for each dimension. Where possible, this included three positively keyed items (representing the presence of the construct) and three negatively keyed items (representing the opposite or lack of the construct). However, for some perceptions, it proved impossible to generate negatively keyed items without the use of the words 'not' or 'no'. Consequently, some scales contained only positively keyed items. This provisional questionnaire was completed by 113 employees of a nation-wide training company. Confirmatory factor analyses were conducted on the scales. This involved testing the scales one at a time in single-factor models and two at a time in two-factor models, thereby establishing whether or not items reflected their intended constructs and whether or not the constructs were discriminated from each other. Such a sequential approach to model testing has been advocated by Jöreskog (1993), and has been successfully used by us in developing other instruments (e.g. Markland & Ingledew, 1997; Mullan, Markland, & Ingledew, 1997; Rees, Hardy, Ingledew, & Evans, 2000). It provides good psychometric information, while avoiding models that are too large in terms of sample size or too complicated in terms of interpreting the diagnostic information. Based on these analyses, items were identified that were strong and unambiguous indicators of their intended constructs. These items were retained for use in the Goal Perceptions Questionnaire, comprising four items per scale, as used in the present study. Further information on the preliminary questionnaire development, including which items were eliminated and why, is available from the first author on request.

*Affects* Participants also completed an affects questionnaire. They were presented with 'a number of words that describe different feelings and emotions', and asked to rate each word according to how well it represented 'how your goal makes you feel', using a five-point response format (very slightly or not at all, a little, moderately, quite a bit, extremely). The items were drawn from Lorr and McNair's (1988) Profile of Mood States. In the present study, only the items representing the Anxious, Composed, Elated, Depressed, Energetic, Tired and Hostile constructs were included. The items representing the other constructs (Agreeable, Clear-headed, Confused, Confident, Unsure) were not included because they seemed to be

inapplicable when referring to 'how your goal makes you feel' or because they seemed to overlap with other concepts such as success expectation. Each construct was represented by six items. The items were intermingled.

### Procedure

***Questionnaire administration*** At baseline, each participant wrote down a current work-related goal, and completed the GPQ and affects measure with reference to that goal. Approximately three months later, each participant was reminded of their original goal, asked whether they had completed that goal and if not, whether they were still working towards it. If the individual was still working towards their original goal, they were asked to complete the GPQ and affects measures with reference to the goal as they now perceived it.

***Baseline analyses*** The GPQ scales were subjected to confirmatory factor analyses using LISREL version 8 (Jöreskog & Sörbom, 1996). A sequential approach was adopted, testing the scales singly and in pairs. This was to establish whether or not items reflected their intended constructs and whether or not constructs were discriminated from each other, but not to eliminate items. The affect scales were also subjected to these procedures. Descriptive statistics (Cronbach's alpha, means, standard deviations, skewnesses) and intercorrelations of the scales were examined, in preparation for the structural modelling.

The relationships of goal perceptions with commitment and affects were tested using structural equation modelling with observed variables. The model depicted in Figure 1 was tested in stages. First, a submodel comprising Value and Success expectation and their antecedents was tested. Second, a submodel comprising Value and Success expectation and their consequences (commitment and affects) was tested. This allowed us to examine diagnostic information and make modifications to submodels prior to combining them in the full model. It afforded a clearer test of the hypothesis that all effects of goal perceptions on commitment and affects were mediated by value and success expectation.

There is no consensus as to what constitutes adequate fit in confirmatory factor analysis or structural equation modelling. A conservative approach is to look for $\chi^2$ non-significant at the .05 level. However, this can be an unreliable criterion because $\chi^2$ increases with sample size. Other popular fit indices include the Root Mean Square Error of Approximation (RMSEA), the Standardized Root Mean Square Residual (SRMR) and the Comparative Fit Index (CFI). Hu and Bentler (1999) described the derivations and evaluated the performances of such indices. They suggested a cut-off value for RMSEA close to .06, for SRMR close to .08, and for CFI (or similar indices) close to .95. Furthermore, because different fit indices perform well under different conditions, Hu and Bentler advocated assessing fit in terms of a combination of two indices. For smaller sample sizes (less than 250) they advocated assessing fit in terms of SRMR close to .09 in combination with CFI (or similar index) close to .95. Therefore, in the present study, we took our criterion for adequate fit to be SRMR less than or equal to .09 in combination with CFI greater than or equal to .95; though we do still report $\chi^2$ and RMSEA. This criterion is very conservative (*cf.* Kline, 1998).

***Longitudinal analyses*** It was not feasible to conduct repeated measures structural equation modelling. Such models would be large because two time points were involved, while the sample size would be small not only because some individuals would be lost to follow-up but also because many individuals would no longer be working towards the same goal as at baseline. Instead, some simpler longitudinal analyses were conducted. For those individuals who were at follow-up still pursuing the same goal as at baseline, relationships over time in goal perceptions and affects were assessed by correlations, and changes over time in goal perceptions and affects were assessed by paired-sample *t*-tests.

## Results

### Preamble

As noted earlier, the GPQ was developed for wider uses than the present study. Of the 25 GPQ scales, 16 were needed for the structural equation modelling in the present study. However, we have reported the item content and the confirmatory factor analyses, descriptive statistics, correlations and test–retest results

for all 25 scales. The psychometric information may be of use to other researchers wishing to use the GPQ (which is available from the first author on request), and the descriptive statistics and correlations will permit secondary analyses of the present dataset or hint at additional relationships to be tested in future studies.

### Confirmatory factor analyses and descriptive statistics

The single-scale confirmatory factor analyses of the GPQ scales are detailed in Table 1 (fit statistics) and the Appendix (item-factor loadings). The fit was adequate (SRMR ≤ .09 and CFI ≥ .95) for all except for Control, Publicness, Time and Tools. Of the 100 loadings, 91 were .50 or above in absolute size, and only one was below .30 in absolute size, that being the loading of 'Other people undermine my efforts to achieve this goal' on Support. The paired-scales confirmatory analyses of the GPQ scales are not shown for reasons of space, but there was little evidence of item ambiguity (the items reflected their intended factors) and the 95 per cent confidence interval for the correlation between factors always excluded unity (the constructs were discriminated from each other). The descriptive statistics for the GPQ scales are shown in Table 1. Cronbach's alpha was above .70 for all except Complexity and Support. Commitment and Value had relatively high means and relatively but not disconcertingly high negative skewnesses.

We investigated further the inadequate fit of Control, Publicness, Time and Tools as single-factor models, by examining the standardized residuals of the covariances between items and then conducting further post hoc factor analyses. These procedures suggested that Control would meet the fit criteria if represented by two factors, one comprising 'As regards this goal, I feel in command of the situation' and 'I am in control of this goal', the other comprising 'I am powerless in relation to this goal' (negative loading) and 'I am helpless in relation to this goal' (negative loading), these factors being correlated .58 ($\chi^2(1, N = 199) = .03$, $p = .87$; RMSEA = .00; SRMR = .00; CFI = 1.00). Publicness would fit if represented by two factors, one comprising 'The fact that I have this goal is common knowledge' and 'It is widely known that I have this goal', the other comprising 'It is a public fact that I have this goal' and 'Many people know that I have this goal', these factors being correlated .76 ($\chi^2(1, N = 198) = 7.68$, $p = .01$; RMSEA = .18; SRMR = .01; CFI = .99). Time would fit if represented by two factors, one comprising 'I have enough time in which to complete this goal' and 'There is insufficient time in which to achieve this goal' (negative loading), the other comprising 'The deadline for completing this goal is unrealistic' (negative loading) and 'I will be pushed for time to achieve this goal' (negative loading), these factors being correlated .84 ($\chi^2(1, N = 191) = 8.23$, $p = .00$; RMSEA = .19; SRMR = .04; CFI = .96). Tools would fit if represented by two factors, one comprising 'I have the necessary tools to achieve this goal' and 'I have enough resources to achieve this goal', the other comprising 'I am inhibited by lack of materials to complete this goal' (negative loading) and 'I have a shortage of tools in respect of this goal' (negative loading), these factors being correlated .76 ($\chi^2(1, N = 197) = 1.02$, $p = .31$; RMSEA = .01; SRMR = .01; CFI = 1.00).

As regards the affect scales (Table 1), in the single-scale confirmatory factor analyses, the fit was adequate for all except Energetic, Anxious and Hostile. Cronbach's alpha was above .70 for all scales. Anxious, Depressed and Hostile had relatively low means and relatively but not disconcertingly high positive skewnesses. In the paired-scale confirmatory factor analyses, the 95 per cent confidence interval for the correlation between factors always excluded unity, and there was little evidence of item ambiguity.

### Correlations

The correlations within and between goal perceptions and affects are shown in Table 2. There were many significant correlations of goal perceptions with each other and with affects, affording a basis to the subsequent structural equation modelling. The positive affects were highly correlated with each other, as were the negative affects with each other, but there was no significant correlation between any positive affect and any negative affect.

Some of the correlations were fairly high (e.g. Commitment with Success expectation and with Value; Complexity with Difficulty; the positive affects with each other; Depressed with Hostile). However, the internal consistencies

*Table 2.* Correlations within and between goal perceptions and affects

| *Variable* | *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* | *11* | *12* | *13* | *14* | *15* | *16* | *17* | *18* | *19* | *20* | *21* | *22* | *23* | *24* | *25* | *26* | *27* | *28* | *29* | *30* | *31* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ability | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2. Commitment | .47** | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3. Competition | –.06 | .03 | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4. Complexity | –.09 | .10 | .12 | – | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. Conflict | –.45** | –.44** | .12 | .07 | – | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. Control | .31** | .39** | –.15* | .15* | –.31** | – | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. Difficulty | –.12 | .17* | .19** | .66** | .01 | –.02 | – | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. Divisibility | –.05 | –.06 | –.06 | .32** | .03 | .23** | .22** | – | | | | | | | | | | | | | | | | | | | | | | | |
| 9. Effort | .00 | .25** | .43** | .50** | –.06 | .06 | .63** | .25** | – | | | | | | | | | | | | | | | | | | | | | | |
| 10. Enjoyment | .35** | .52** | .03 | .16* | –.34** | .44** | .15* | .17* | .18* | – | | | | | | | | | | | | | | | | | | | | | |
| 11. Feedback | .08 | .15* | –.03 | .20** | –.01 | .30** | .13 | .17* | .05 | .18* | – | | | | | | | | | | | | | | | | | | | | |
| 12. Importance to others | .20** | .13 | –.14 | .14 | –.15* | .32** | .16* | .13 | .10 | .11 | .31** | – | | | | | | | | | | | | | | | | | | | |
| 13. Measurability | .35** | .31** | –.30** | .06 | –.24** | .53** | –.05 | .19** | .00 | .30** | .38** | .25** | – | | | | | | | | | | | | | | | | | | |
| 14. Modifiability | –.09 | –.07 | .19** | –.15* | .06 | .04 | –.14* | .20** | .05 | .08 | .00 | –.09 | –.08 | – | | | | | | | | | | | | | | | | | |
| 15. Options | .04 | .12 | .21** | .12 | –.01 | .19** | .09 | .46** | .16* | .26** | .02 | .04 | –.05 | .26** | – | | | | | | | | | | | | | | | | |
| 16. Personal origin | .13 | .18* | .30** | –.14* | –.23** | .12 | –.08 | –.06 | .10 | .29** | –.21** | –.25** | –.09 | .27** | .11 | – | | | | | | | | | | | | | | | |
| 17. Progress | .32** | .38** | –.08 | –.04 | –.15* | .51** | –.13 | .14 | –.06 | .43** | .42** | .29** | .45** | –.05 | .07 | .03 | – | | | | | | | | | | | | | | |
| 18. Publicness | .19** | .21** | –.02 | .01 | –.05 | .02 | .04 | –.05 | .05 | .17* | .22** | .18* | .17* | –.20** | .03 | –.08 | .16* | – | | | | | | | | | | | | | |
| 19. Specificity | .40** | .49** | –.01 | –.03 | –.46** | .24** | .07 | –.17* | .13 | .30** | .18* | .21** | .35** | –.28** | –.17* | .02 | .16* | .31** | – | | | | | | | | | | | | |
| 20. Success expectation | .41** | .63** | –.11 | –.05 | –.35** | .52** | –.10 | .01 | .02 | .31** | .30** | .25** | .42** | –.06 | .07 | .09 | .52** | .06 | .30** | – | | | | | | | | | | | |
| 21. Support | .17* | .28** | –.11 | .23** | –.19** | .41** | .19** | .27** | .10 | .35** | .57** | .46** | .31** | .02 | .10 | –.08 | .48** | .10 | .16* | .36** | – | | | | | | | | | | |
| 22. Teamwork | .00 | .14 | –.07 | .21** | –.03 | .00 | .26** | .13 | .13 | .21** | .13 | .04 | .03 | .00 | .27** | –.24** | –.02 | .26** | .06 | –.08 | .14 | – | | | | | | | | | |
| 23. Time | .16* | .19** | .02 | –.37** | –.26** | .13 | –.25** | –.28** | –.23** | .05 | .08 | .03 | .05 | –.12 | –.01 | .21** | .25** | .04 | .14 | .37** | .10 | –.10 | – | | | | | | | | |
| 24. Tools | .31** | .32** | –.16* | –.10 | –.31** | .27** | –.06 | –.11 | –.08 | .23** | .13 | .22** | .24** | –.23** | –.05 | .08 | .25** | .07 | .38** | .35** | .23** | –.20** | .37** | – | | | | | | | |
| 25. Value | .34** | .67** | .16* | .13 | –.42** | .33** | .20** | –.02 | .28** | .64** | .08 | .02 | .17* | .07 | .16* | .42** | .24** | .23** | .40** | .29** | .20** | .14 | .19** | .19** | – | | | | | | |
| 26. Composed | .16* | .22** | .06 | –.14* | –.12 | .15* | –.09 | .07 | –.05 | .40** | .05 | –.14* | .01 | .18* | .19** | .26** | .25** | .07 | –.01 | .12 | .10 | .05 | .19** | .01 | .36** | – | | | | | |
| 27. Elated | .13 | .27** | .17* | –.03 | –.12 | .16* | .06 | .07 | .10 | .51** | .03 | –.19** | .06 | .15* | .28** | .39** | .25** | .02 | –.01 | .15* | .12 | –.01 | .14 | –.02 | .48** | .71** | – | | | | |
| 28. Energetic | .26** | .37** | .19** | .13 | –.22** | .33** | .17* | .11 | .23** | .65** | .10 | .03 | .15* | .10 | .23* | .30** | .25** | .06 | .16* | .19** | .24** | .10 | .09 | .08 | .50** | .60** | .69** | – | | | |
| 29. Anxious | –.25** | .00 | .35** | .10 | .06 | –.20** | .21** | –.09 | .29** | –.01 | –.09 | –.14 | –.17* | –.06 | .08 | .06 | –.13 | .05 | .01 | –.19** | –.10 | .07 | .04 | –.14 | .11 | –.07 | .10 | .12 | – | | |
| 30. Depressed | –.19** | –.14* | .22** | –.05 | .20** | –.42** | .05 | –.16* | .10 | –.14* | –.33** | –.32** | –.30** | .02 | –.05 | –.01 | –.37** | .11 | –.08 | –.46** | –.40** | .17* | –.22** | –.26** | –.02 | –.02 | –.03 | –.04 | .46** | – | |
| 31. Tired | –.16* | .06 | .22** | .20** | .07 | –.26** | .23** | –.03 | .32** | –.03 | –.14* | –.22** | –.10 | –.03 | .09 | .04 | –.12 | .14* | –.01 | –.18* | –.11 | .16* | –.18* | –.16* | .12 | –.05 | .11 | .02 | .59** | .53** | – |
| 32. Hostile | –.17* | –.05 | .25** | .08 | .20** | –.35** | .12 | –.11 | .17* | –.09 | –.27** | –.24** | –.23** | –.01 | .00 | –.01 | –.25** | .10 | –.10 | –.41** | –.31** | .19** | –.29** | –.27** | .02 | –.02 | .04 | .06 | .48** | .82** | .57** |

*Note*: $N = 196$ by listwise deletion for missing values

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

(Cronbach's alpha) were also high, so that when the correlations were disattenuated they did not reach unity. Furthermore, as noted earlier, in the confirmatory factor analyses, the 95 per cent confidence intervals for the correlations between factors always excluded unity. Hence, despite some high correlations, the constructs were clearly discriminated from each other.

### *Structural equation modelling*

We first tested the submodel comprising the antecedents (but not the consequences) of Value and Success expectation. The antecedents (as exogenous variables) were free to covary with each other, thereby ensuring that the effects of the antecedents on Value and Success expectation were adjusted for the interrelationships between the antecedents. By our criterion, the fit was adequate: $\chi^2(14, N = 196) = 33.32$, $p = .00$; RMSEA = .09; SRMR = .04; CFI = .98. There was a large modification index for the path from Complexity to Value, the valence of the expected change suggesting that the more individuals perceived their goals to be complex, the more they valued them. By large, we mean greater than or equal to 6.63, the value of $\chi^2$ with 1 degree of freedom at the .01 level. It was credible that more complex goals could be seen as more worthwhile (see, for example, Klein & Wright, 1994; Matsui, Okada, & Mizuguchi, 1981), so the modification was allowed. The fit was then good: $\chi^2(13, N = 196) = 19.81$, $p = .10$; RMSEA = .05; SRMR = .02; CFI = .99.

We next tested the submodel comprising the consequences (but not the antecedents) of Value and Success expectation. The disturbance terms for the three positive affects were allowed to covary, as were the disturbance terms for the four negative affects. This was to accommodate the relationships between affects apparent in the correlations (Table 2). Otherwise, disturbance terms were not allowed to correlate. The fit was adequate: $\chi^2(26, N = 196) = 58.72$, $p = .00$; RMSEA = .08; SRMR = .07; CFI = .97. However, there were two large modification indices. These were independent of each other, in that making either modification had no effect on the other modification index. One of these indices was for the path from Anxious to Composed, the valence of the expected change suggesting that as individuals felt more anxious about their goals they felt less composed about them. This was entirely plausible, even if it was an exception to our general finding that positive and negative affects were independent, so the modification was allowed. The other large modification index was for the path from Hostility to Commitment, the valence of the expected change suggesting that as individuals felt more hostile about their goals they felt more committed to them. It seemed possible that feeling hostile ('angry', 'annoyed', 'bad tempered', 'furious', 'grouchy', 'hostile') about a goal as a result of reduced success expectation might fortify commitment to the goal (in a way that feeling anxious, depressed or tired would not). In Amsel's (1992) frustration theory, primary frustration is the temporary state that results when a response is nonrewarded in the presence of a reward expectancy. Empirically, this state has a short-term motivational (energizing) effect on behaviour, as well as manifesting in aggressive tendencies. Lazarus and Cohen-Charash (2001) have argued that, depending on the circumstances, anger can be seen as a positive rather than a negative emotion: 'By being angry we are apt to feel less helpless or frustrated and more in command of our situation and ourselves because we are doing something to overcome or avenge the social slight we have suffered' (2001, pp. 55–56). Similarly, Pekrun (1992) has argued that, in some circumstances, anger may motivate the investment of intensified effort. On this basis, we allowed the modification. With these two modifications, the fit was good: $\chi^2(24, N = 196) = 35.80$, $p = .06$; RMSEA = .05, SRMR = .07, CFI = .99.

We then tested the full model without any modifications. Once again, the antecedents of Value and Success expectation were free to covary with each other, and the disturbance terms for the three positive affects were allowed to covary, as were the disturbance terms for the four negative affects. The fit was less than adequate: $\chi^2(144, N = 196) = 328.58$, $p = .00$; RMSEA = .08; SRMR = .08; CFI = .90. The parameter estimates are shown in Fig. 2. Modification indices indicated that the modifications made to the two submodels were still warranted. With these modifications, the fit was still less than adequate: $\chi^2(141, N = 196) = 292.15$, $p = .00$; RMSEA = .08; SRMR = .08; CFI

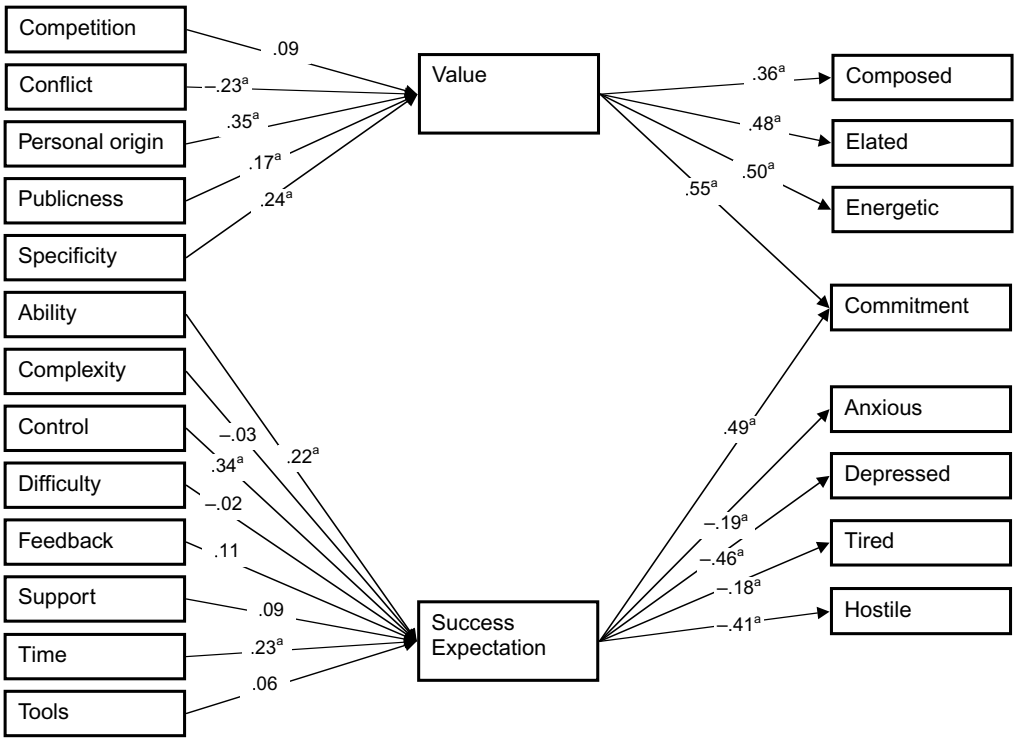


*Figure 2.* Full model without modifications, showing standardized parameter estimates.

= .92. We then attended to possible direct effects (not mediated by Value or Success expectation) of goal perceptions on Commitment and affects. There were some large modification indices for such possible direct effects. Certain modifications were allowed, in the following order. Specificity was allowed directly to influence Commitment, positively. Specificity has been recognized as a core goal attribute leading to better task performance (Locke & Latham, 1990). Competition was allowed to influence Anxiety, positively. Competition with others has been recognized as a workplace stressor (e.g. Spielberger & Reheiser, 1995). Support was allowed to influence Depression, negatively. Social support has been recognized as contributing to (low) depression (e.g. Cohen & Wills, 1985). Control was allowed to influence Energetic, positively. Perceived control has been recognized as an important determinant of workplace well-being (Sauter, Hurrell, & Cooper, 1989). The fit was then adequate: $\chi^2(137, N = 196) = 238.98$, $p = .00$, RMSEA = .06, SRMR = .07, CFI = .95. The parameter estimates for the modified model are shown in Fig. 3. The determinants of Value (i.e. paths where the 95 per cent confidence interval excluded zero) were high Complexity, low Conflict, high Personal origin, high Publicness and high Specificity. The strongest influence was Personal origin (standardized estimate .39). The determinants of Success expectation were high Ability, Control and Time. The strongest influence was Control (standardized estimate .34). Value and Success expectation both influenced Commitment positively. Value influenced all positive affects positively. Success expectation influenced all negative affects negatively. In addition, Specificity positively influenced Commitment, Control positively influenced Energetic, Competition positively influenced Anxiety and Support negatively influenced Depression. Anxiety negatively influenced Composure, and Hostility positively influenced Commitment.

The parameter estimates for the unmodified

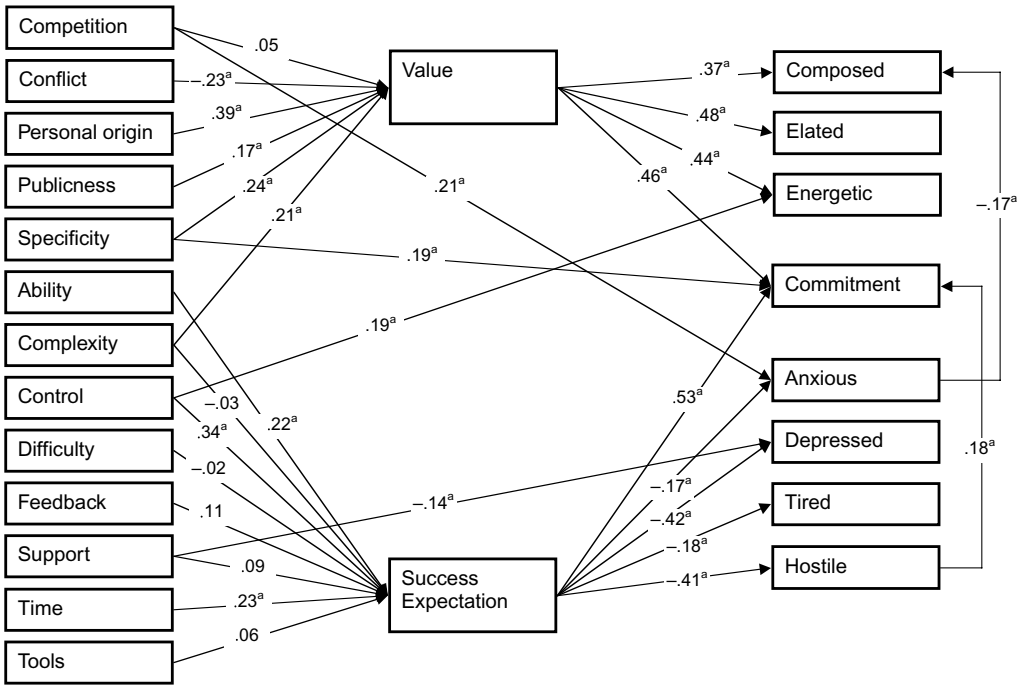


*Figure 3.* Full model with modifications, showing standardised parameter estimates.

full model (Fig. 2) were compared with the corresponding parameter estimates for the modified model (Fig. 3). This was to check whether adding new (not originally hypothesized) paths had substantially altered the parameter estimates for old (originally hypothesized) paths. It was found that the new paths had made little or no difference to the parameter estimates for the old paths: if the 95 per cent confidence interval excluded zero in the unmodified model, it did so in the modified model; and if the 95 per cent confidence interval included zero in the unmodified model, it did so in the modified model.

## *Longitudinal analyses*

Of the original 201 participants, 162 responded to follow-up, 39 did not. Response to follow-up correlated slightly but significantly with baseline Importance to Others ($r = .14$, $N = 201$, $p = .046$) and Support ($r = .15$, $N = 201$, $p = .04$). Of the 162 who responded to follow-up, 47 reported that they had completed their baseline goal, 106 that they had not, and 9 were noncommittal. Goal completion correlated slightly but significantly positively with baseline Ability ($r = .18$, $N = 153$, $p = .02$), Importance to Others ($r = .20$, $N = 153$, $p = .01$), Measurability ($r = .18$, $N = 153$, $p = .04$), Progress ($r = .19$, $N = 153$, $p = .02$) and Publicness ($r = .19$, $N = 153$, $p = .02$), and negatively with Personal Origin ($r = –.28$, $N = 153$, $p < .001$).

A total of 114 individuals reported that they were pursuing the same goal as at baseline. The test–retest correlations and mean differences are shown in Table 1. For the GPQ scales, test–retest correlations were all significant, ranging from .46 for Success expectation to .74 for Effort, and there were significant mean increases in Conflict and Publicness and decreases in Commitment, Control, Effort, Enjoyment, Modifiability, Support and Value. For the affect scales, test–retest correlations were all significant, ranging from .45 for Tired to .71 for Hostile, and there were significant mean decreases in Composed, Elated and Energetic.

## Discussion

The main findings of this study can be summarized in relation to the seven hypotheses. Hypothesis 1 was that goal value and goal success expectation would both positively influence goal commitment. This is what was found. Hypothesis 2 was that value would positively influence positive affects, and Hypothesis 3 that success expectation would negatively influence negative affects. This is what was found. Hypothesis 4 was that commitment and affects would not directly influence each other. This is what was found, except for the effect of hostility on commitment. Hypothesis 5 was that value would be influenced by competition, conflict (negatively), personal origin, publicness and specificity. It was found that value was indeed influenced by conflict, personal origin, publicness and specificity, but not by competition, and that it was also influenced by complexity (positively). Hypothesis 6 was that success expectation would be influenced by ability, complexity (negatively), control, difficulty (negatively), feedback, support, time and tools. It was found that success expectation was indeed influenced by ability, control and time, but not the others. Hypothesis 7 was that value and success expectation would mediate the effects of other goal perceptions on commitment, positive affects and negative affects. This is what was found, except for direct effects of specificity on commitment, control on energetic, competition on anxious and support (negatively) on depressed. Thus, the results of the structural equation modelling were substantially consistent with the model. The theoretical justifications and supporting citations for the modifications to the model were given in the Results section and are not repeated here.

We also considered in a limited way the variation of goal perceptions across time. For those individuals who were referring to the same goal at baseline and follow-up, test–retest correlations were moderate in magnitude. The nature of goal perceptions is such that it is to be expected that they will vary over time, so moderate test–retest correlations were to be expected and are not indicative of low measurement reliability. The mean changes over time included decrements in Value (but not Success expectation), in Commitment, and in the positive (but not the negative) affects, a pattern that is consistent with the model.

Having considered the main and subsidiary findings, it is necessary to address two methodological concerns. The first arises from the single-factor confirmatory factor analyses of the GPQ scales. Generally, the scales performed well in these analyses. However, four scales (Control, Publicness, Time and Tools) fell short of the fit criterion. These scales had adequate coefficient alphas, but it is known that relatively high alpha can be obtained even when there is more than one underlying factor (e.g. Schmitt, 1996). Post hoc analyses suggested that each of these scales might be better represented by two correlated factors. We were particularly concerned about the Control scale, given its prominent role in the final structural equation model. In the two-factor model of Control, one factor comprised the positively keyed items while the other comprised the negatively keyed items. It is known that there is a general tendency for positively and negatively keyed items to form separate factors (e.g. Marsh, 1996; Schmitt & Stults, 1985), which in some instances may reflect mere response bias. However, in this instance, the positively keyed items referred to 'control' and 'command', whereas the negatively keyed items referred to 'helpless' and 'powerless'. It may be that control and helplessness are different constructs and not opposite ends of the same construct. In this regard, Skinner (1996) has suggested that helplessness should be viewed as a potential consequence of lack of control. In future, we may need to refine the Control scale to ensure that as far as possible all items reflect 'prototypical personal control' (Skinner). Meanwhile (in addition to the analyses reported in the Results section), we reran the structural equation models using a Control scale made up of only the 'control' and 'command' items. Reassuringly, the results were essentially unchanged: the 95 per cent confidence intervals excluded or included zero as before. We were less concerned about the Publicness, Time and Tools scales. Though each of these scales might have been better represented by two factors, these two factors were highly correlated and not in any obvious way conceptually distinct. Overall, such shortcomings as there were in the Control,

Publicness, Time and Tools scales were unlikely to have compromised the internal validity of the study.

The second methodological issue arises from the strikingly low correlations of the positive with the negative affects. Green, Salovey, and Truax (1999) have warned of numerous measurement problems that can lead to apparent independence when there is actual bipolarity. These problems include artefacts arising from differing distributions. In our data, the variances were somewhat higher for positive affects than for negative affects, a common finding (Green et al., 1999). This could distort the observed correlations of positive and negative affects not only with each other but also with other variables, which might threaten the validity of some of our key findings. However, our key findings were based on structural equation modelling, in which the parameter estimates are regression slopes not correlations, thereby circumventing the specific artefact arising from differing variances. There might be artefacts arising from other distributional differences (e.g. skewness). However, visual scrutiny of the distributions of variables did not reveal any worrying pattern. Moreover, certain key findings are simply not consistent with a pervasive artefact. For example, value was related to positive affects whereas success expectation was related to negative affects, but both value and success expectation were related to commitment.

Having dispelled such methodological concerns, we now consider the implications of the findings. It appears that individuals' perceptions of their goals influence not only their commitment to the goals but also their affective well-being. Crucially, the proximal and distal determinants of positive and negative affects are different. Either value or success expectation enhances commitment, but value influences positive affects and success expectation influences negative affects, and the determinants of value and success expectation are different. The implication is that, in goal setting, there need be no trade-off between commitment and affective well-being. On the contrary, it should be possible to enhance both commitment and well-being. This will require attention to the determinants identified in this research. When a goal is being set, individuals need to be convinced that they have some ownership of the goal (personal origin), that the goal is consistent with their other goals (low conflict) and does not involve too much competition with others (low competition), that it is well defined (specificity), that it is challenging (complex) yet within their competence (ability), that it is recognized (publicness) and supported (support) and that they have the requisite control (control) and time (time). Equally, if an individual presents as uncommitted or unhappy about an extant goal, it should be possible to trace this back to the proximal and distal determinants identified in this research, so that corrective action can be taken. In so doing, it should be recognized that, when an individual is thwarted (low success expectation), anger (hostility) may be constructive.

Ideally, these perceptions will be grounded in reality: individuals will have choice in the selection and refinement of goals, will have (or be provided with) the training and resources necessary to goal attainment and will be supported throughout. However, we accept that it is not always possible for individuals to be entirely free agents in the formulation of work-related goals. This is an important issue that finds resonance in self-determination theory (Deci & Ryan, 2000). According to self-determination theory, optimal motivation and well-being will be achieved when individuals feel autonomous (they choose to initiate the behaviour), competent (they have ability) and related (they have support). The theory goes on to describe processes by which externally imposed constraints on behaviour (such as an assigned goal) can become internalized and experienced as more self-determined. By way of illustration, Deci, Eghrari, Patrick and Leone (1994) have shown that internalization of an inherently uninteresting but important activity can be facilitated by providing a meaningful rationale for the activity, by acknowledging the person's feelings with respect to the activity and by presenting this rationale and acknowledgement in a non-controlling fashion that minimizes pressure and conveys choice.

We see three major ways forward from the current research. First, there is a need for further research, to verify that commitment and well-being can be enhanced by manipulating the postulated distal determinants (such as personal

origin and control), and to verify that such effects are mediated by the postulated proximal determinants (value and success expectation). Second, there is a need for further theory development, directed towards clarifying the relationships between the antecedent variables. In the present research, we concentrated on the effects of the antecedent variables on Value and Success expectation and thereby Commitment and affects, for which we had strong hypotheses derived from previous theory and research. We allowed the antecedent variables to covary freely. Some did so to a fairly high level, suggesting that they were causally related to each other or that they had common causes (latent or missing variables). We did not model such relationships (that is to say introduce additional levels into the model), because we could not derive strong hypotheses from previous theory and research, and the data alone could not distinguish between the numerous possible configurations. Hence the need for theory development, as a prerequisite to further modelling.

Third, the model should be adapted and tested in other contexts. Within health psychology, the application of the model to health behaviour goals could be especially interesting. Whereas, by convention, occupational psychologists tend to refer to commitment, health psychologists tend to refer to intention. However, commitment (when not conflated with its supposed causes and consequences) is conceptually equivalent to strength of intention (Tubbs, 1993). Therefore, the model of occupational goal commitment and related affects could be adapted as a model of health behaviour goal intention and related affects. Karoly (1991) has argued that health behaviour change can be conceptualized as a matter of goal attainment. Health behaviours feature prominently among individuals' self-articulated goals (Little, 1983; Norcross, Ratzin, & Payne, 1989; Polivy & Herman, 2002). Some research has suggested that health behaviour goals are more likely to be attained if they are specific (Orbell & Sheeran, 2002) and if they do not conflict with other goals (Gebhardt & Maes, 2001). These lines of evidence support the potential of adapting the present model to the study of health behaviour goals. By design, the Goal Perceptions Questionnaire could be readily adapted for use with health behaviour goals.

The present study adds to the burgeoning evidence that the subjective work environment is an important influence on well-being (Cox & Ferguson, 1994; Payne & Cooper, 2001). It offers a model of the psychological processes by which work-related goals can have positive and negative influences on well-being as well as commitment. By applying this model, it should be possible to promote well-being without compromising performance, and vice versa. In our opinion, the goal of goal setting should be to optimize productivity *and* well-being. Our study suggests that this is a realistic goal.

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*Appendix*. Goal perception questionnaire scales and items, with factor loadings in single-factor models

| *Scale/item* | *Factor loading* |
|---|---|
| Ability | |
| This goal might exceed my current abilities | –.44 |
| I have the necessary abilities to achieve this goal | .59 |
| I have the skills needed to attain this goal | .92 |
| I have the necessary expertise to achieve this goal | .79 |
| Commitment | |
| I mean to achieve this goal | .80 |
| I am really committed to achieving this goal | .67 |
| I fully intend to achieve this goal | .95 |
| I am determined to reach this goal | .86 |
| Competition | |
| To achieve this goal, I have to compete with others | .62 |
| To achieve this goal my performance has to be superior to others | .89 |
| To reach this goal I must do better than others | .91 |
| I have to outperform others to achieve this goal | .90 |
| Complexity | |
| This goal requires detailed planning | .35 |
| This is an uncomplicated goal | –.62 |
| This goal is simple | –.90 |
| This is a complex goal | .48 |
| Conflict | |
| This goal fits in well with my other goals | –.42 |
| This goal seems to contradict the purpose of my other goals | .62 |
| This goal conflicts with some of my other goals | .88 |
| This goal clashes with my other goals | .84 |
| Control | |
| As regards this goal, I feel in command of the situation | .78 |
| I am powerless in relation to this goal | –.51 |
| I am helpless in relation to this goal | –.43 |
| I am in control of this goal | .79 |
| Difficulty | |
| This goal is easy | –.68 |
| This goal is difficult | .77 |
| This is a tough goal | .91 |
| This is a hard goal | .88 |
| Divisibility | |
| This goal can be divided into smaller parts | .84 |
| This goal can be simplified by splitting it up | .78 |
| I can break this goal down into sub-goals | .81 |
| I find it hard to see how this goal could be broken down | –.60 |
| Effort | |
| I will need to strive hard to achieve this goal | .60 |
| I will need to stretch myself to achieve this goal | .87 |
| I will have to exert myself to achieve this goal | .83 |
| I will have to push myself to achieve this goal | .81 |
| Enjoyment | |
| I enjoy working towards this goal | .84 |
| I get a lot of satisfaction out of pursuing this goal | .80 |
| I dislike having to work towards this goal | –.65 |
| Pursuing this goal gives me a lot of pleasure | .81 |

*Appendix. Continued*

| *Scale/item* | *Factor loading* |
|---|---|
| Feedback | |
| I get feedback on the progress I am making towards this goal | .73 |
| People fail to tell me how I am progressing in relation to this goal | –.51 |
| I am kept informed about my progress towards this goal | .93 |
| I am kept in the picture about my progress towards this goal | .87 |
| Importance to others | |
| Other people think this goal is trivial | –.67 |
| Other people think this goal is of little consequence | –.70 |
| Others people are unconcerned whether I achieve this goal | –.59 |
| It matters to other people that I achieve this goal | .47 |
| Measurability | |
| It is hard to know what stage I am at with this goal | –.56 |
| It is difficult to know how far I have progressed towards this goal | –.82 |
| It is difficult to know how well I am doing in relation to this goal | –.84 |
| I can measure, step by step, my progress towards this goal | .44 |
| Modifiability | |
| This goal can be altered | .57 |
| This goal can be adjusted | .83 |
| This goal can be changed | .88 |
| This goal can be amended | .94 |
| Options | |
| There are a number of different paths to achieving this goal | .69 |
| I can see more than one method of achieving this goal | .87 |
| There are various possible approaches to achieving this goal | .85 |
| This goal can be achieved in a number of ways | .85 |
| Personal origin | |
| I chose to have this goal | .80 |
| This goal was set for me | –.54 |
| I set this goal for myself | .83 |
| I selected this goal | .93 |
| Progress | |
| So far, progress on this goal has been slow | –.58 |
| So far, I seem to be getting nowhere with this goal | –.78 |
| So far, I have made a lot of progress towards achieving this goal | .83 |
| So far, I am on course to achieving this goal | .77 |
| Publicness | |
| The fact that I have this goal is common knowledge | .86 |
| It is widely known that I have this goal | .89 |
| It is a public fact that I have this goal | .73 |
| Many people know that I have this goal | .78 |
| Specificity | |
| This goal is ambiguous | –.46 |
| This goal is specific | .70 |
| This goal is clearly defined | .72 |
| This goal is vague | –.69 |
| Success expectation | |
| I doubt that I will achieve this goal | –.79 |
| There is a good chance that I will achieve this goal | .80 |
| I am sure that I will achieve this goal | .80 |
| It is unlikely that I will achieve this goal | –.82 |

*Continued*

*Appendix. Continued*

| *Scale/item* | *Factor loading* |
|---|---|
| Support | |
| I get a lot of support in pursuit of this goal | .65 |
| Other people undermine my efforts to achieve this goal | –.22 |
| I have people to turn to for advice about this goal | .56 |
| I have people to encourage me with this goal | .86 |
| Teamwork | |
| I need others to do their bit so that I can attain this goal | .84 |
| My achieving this goal relies on others fulfilling their role | .92 |
| I rely on others to do their part so that I can achieve this goal | .79 |
| This goal requires teamwork | .60 |
| Time | |
| The deadline for completing this goal is unrealistic | –.66 |
| I have enough time in which to complete this goal | .74 |
| There is insufficient time in which to achieve this goal | –.62 |
| I will be pushed for time to achieve this goal | –.56 |
| Tools | |
| I am inhibited by lack of materials to complete this goal | –.62 |
| I have the necessary tools to achieve this goal | .73 |
| I have enough resources to achieve this goal | .67 |
| I have a shortage of tools in respect to this goal | –.74 |
| Value | |
| This goal is important to me | .89 |
| This goal means little to me | –.73 |
| This is a worthwhile goal for me | .75 |
| I value this goal | .81 |