The Development and Initial Validation of a Scale to Assess Career Goal Discrepancies

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Abstract

Career goal discrepancy, which is at the heart of goal-oriented, career models of motivation and agency, is the perceived gap between an individual's career goal (i.e., future self or situation) and the progress being made towards achieving that goal (i.e., current self or situation). There are no existing scales that assess this construct. To progress research in this area, we devised a brief, 12-item measure suitable for use with young adults. Devising a scale for this population is appropriate, as young adulthood is the age when occupational goals and occupational goal progress are important foci. We generated initial items for four underlying domains of goal discrepancy (achievement, effort, ability, and standard discrepancy), had the items rated by experts, and then administered them to a large, diverse sample of young adults ($N = 615$, mean age 20.9 years). We reduced the number of items and tested the factor structure of the scale using exploratory factor analysis, confirmed the structure on a hold-out sample using confirmatory factor analysis, and assessed construct validity by testing hypothesised relationships with existing measures (career goal commitment and career distress). Being able to assess discrepancy in the career domain will stimulate research into the career development of young adults and will allow practitioners to explore issues around career goal setting and adaptive responses to career setbacks.

Keywords: career goal discrepancy; goal-oriented theories; goal setting; goal progress; career goal commitment; career distress; scale development

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Goals, including career goals, are internal representations of future, desired states (Austin & Vancouver, 1996). Future, desired states are embodied in behaviours, outcomes, and processes, which can be narrow in focus (e.g., memorising a mathematical formula in preparation for an exam) or very complex (e.g., aspirations related to leading a productive life; Dijksterhuis & Aarts, 2009). Most psychological theories, including those in the career development area, incorporate some representation of goals, goal striving, and/or goal regulation as the foundation for personal agency (Austin & Vancouver, 1996; Shulman & Nurmi, 2010). From a goal-oriented perspective, once individuals set a goal, they continuously appraise it and the associated striving behaviours by monitoring, consciously and unconsciously, the progress they are making. They compare their progress to some internal and/or external standard and manage the discrepancies they identify between where they are and where they want to be by increasing effort or adjusting the goal (Bandura, 2001; Carver & Scheier, 1990; Locke & Latham, 1990). As there is currently no measure that directly assesses appraised discrepancies between current career self/situation and future career self/situation, we devised and provide initial validation for a scale that can measure career goal discrepancy. Being able to assess discrepancies between career goals and current progress will allow career researchers to assess the correlates and outcomes of appraised career goal progress and give practitioners a tool to explore difficulties in this area.

Goal-oriented theories, such as social cognitive theory (Bandura, 2001), control theory (Carver & Scheier, 1990), and goal-setting theory (Locke & Latham, 1990) have been applied widely in the careers area (Abele & Spurk, 2009; Haase, Heckhausen, & Köller, 2008). For example, in identity control theory, a derivative of control theory (Anderson & Mounts, 2012; Kerpelman, Pittman, & Lamke, 1997), interpersonal and social feedback stimulates self-

monitoring of goals and goal progress, and appraisal of goal progress leads to adjustment or defence-oriented processes when a discrepancy is identified, or leads to ongoing monitoring when no discrepancy is perceived. In social cognitive career theory (Lent, Brown, & Hackett, 1994), which is based on social cognitive theory (cf. Bandura, 2001), choice goals (e.g., the desired occupational direction) and performance goals (e.g., the desired level of achievement) are affected by the individual's self-efficacy for achieving the goal, and affected by their perceived outcome expectations if they invest energy in achieving it. If self-efficacy is compromised and/or barriers to achieving outcomes are identified, the individual can, for example, focus on developing the requisite skills (i.e., improve competence and self-efficacy), explore ways to overcome or reduce the barriers to achieving the goal, or adjust the goal itself (e.g., become a nurse rather than a medical practitioner). In this way, career goals are set and refined, and have personal resources allocated to them, in the context of feedback from others and the environment, and appraisals of the individual's efficacy and future expectations.

Thus, from a goal-oriented perspective, a career goal discrepancy is the perceived gap between the individual's set career goal (future self or situation) and their career goal progress (current self or situation), which, for some theorists, is an inevitable occurrence when setting and appraising goals (Bandura, 2001; Carver & Scheier, 1990; Higgins, 1987). Goal setting theories outline the processes involved in setting goals, monitoring progress, identifying discrepancies, and managing such discrepancies. Individuals formulate goals or standards (e.g., a goal of becoming an electrician), which serve as reference values or "self-guides" (Higgins, 1987). In turn, ongoing behaviours and achievements (e.g., working hard and obtaining an apprenticeship, respectively) are compared to these goals or standards, and individuals make judgements about how well they are progressing towards them; that is, are they ahead, on-track, or behind in what is required to achieve the goal. Discrepancies arise

from such comparisons, and individuals adopt strategies aimed at reducing the cognitive dissonance that is generated by being behind with a goal. This might involve engaging in behaviours that will increase the goal-pursuit effort (e.g., put more time into study), reducing the original goal to something more manageable and attainable (e.g., to become a trade assistant), both (i.e., moderate goal and increase effort), or discarding the goal altogether (e.g., settle for a non-trade career). When the individual perceives that they are ahead with a goal (i.e., the goal is perceived as too low or easy), they will raise the bar for themselves by setting a more difficult goal. This process of setting a higher goal reflects discrepancy production, which, in turn, stimulates future appraisal and adjustment (Bandura, 2001; Bandura & Locke, 2003; Williams, Donovan, & Dodge, 2009)

From a theoretical perspective, there are several hypothesised relationships for perceived goal discrepancy. Feedback from others and the environment are considered to be antecedents to appraised goal discrepancies, as discordant social feedback generates performance-goal disturbances (Kerpelman et al., 1997). In support of this relationship, college students who received feedback challenging the attainability of their career goals reacted defensively when they were high on certainty about their career direction and responded by increasing exploration when they were low on certainty (Anderson & Mounts, 2012). Additionally, college women who were given feedback that was inconsistent with their perceptions of their future ideal selves engaged in more self-verification when they were more certain about their future goals (Kerpelman & Lamke, 1997). Outcomes of goal discrepancies include feelings of failure and dissatisfaction (Williams et al., 2009), with large discrepancies being associated with seriously distressing results (Fejfar & Hoyle, 2000). When employed college students were allocated to different conditions of career compromise, those reporting more compromise also reported more negative affect and less job satisfaction (Tsaousides & Jome, 2008), and, for high school students, actual-ideal

academic discrepancies were associated with more depressive symptoms and lower self-esteem (Ferguson, Hafen, & Lauresen 2010). Individuals also respond to goal discrepancies by taking action (Carver & Scheier, 1990). One proposed action is exploration (Kerpelman et al., 1997), which involves organising existing information regarding potential courses of action, identifying strategies, and deciding on tasks and timelines needed to improve goal progress (Zikic & Klehe, 2006). Support for exploration as an outcome of goal discrepancy has come from Anderson and Mounts (2012), who showed that career goal discrepancy stimulated occupational exploration in college students who were uncertain about their career future, and career goal discrepancy stimulated self-exploration as well as occupational exploration in students who rated their career goals as important.

To date, studies that have assessed career goal discrepancies have used experimental procedures (Anderson & Mounts, 2012; Kerpelman & Pittman, 2001) or have inferred a disturbance indirectly by measuring levels of anxiety (Anderson & Mounts, 2012). More generally in the career literature, career goal discrepancies have been measured using indirect measures (e.g., discrepancies between occupational aspirations and expectations; Patton & Creed, 2007) or single items (e.g., discrepancies between ideal and actual occupational attainment; Hesketh & McLachlan, 1991). Scales have been devised to assess related career constructs, such as goal progress (Lent et al., 2005), goal attainment (Brunstein, 1993), and career success (Buddeberg-Fischer, Stamm, Buddeberg, & Klaghofer, 2008), but there is no scale that taps appraised discrepancies between one's career goals and career progress. More generally in the social science literature, other measures of discrepancies include having respondents rate their actual and ideal states and then calculating a discrepancy score (e.g., Ekinci & Riley, 2003), and by having respondents list important goals and then rate how well these have been achieved (e.g., Seiffge-Krenke & Gelhaar, 2008).

In the present study, we use the standard, classical, test theory approach (Nunnally, 1978) to develop and provide initial validation for a scale to measure career goal discrepancies, where higher scores would represent higher levels of perceived goal discrepancy and lower scores would represent lower levels. Such a scale will be of use to researchers in the career domain whose studies are based on general, goal-oriented approaches, or based on specific applications of goal-oriented theory, such as identity control theory or social cognitive career theory. A career goal discrepancy scale will also be useful to practitioners who wish to explore career goal progress with their clients. Using a direct measure of discrepancy will help stimulate the client's thinking about their career goals, help them reflect on their progress, and stimulate exploration regarding what might be done to either modify their situation so that they are better placed to reach their goals or set new ones that are more realistic. We generated items for multiple underlying domains of goal discrepancy, had these items rated by experts, and administered the items to a large diverse sample of young adults. We reduced the number of items and tested the factor structure of the scale by using item analysis and exploratory factor analysis, confirmed the factor structure on a hold-out sample using confirmatory factor analysis, and further assessed construct validity by testing hypothesised relationships with existing measures.

Method

Item Development

Items were written to assess the individual's perceived discrepancy between their ideal occupation and their current situation regarding achieving that goal. From an analysis of the discrepancy construct drawn from the goal-setting literature, we identified four discrepancy domains that were considered important to assess. These were: *achievement discrepancy* (i.e., perceptions of achievements to date in relation to where one should be to achieve the career goal; sample item = "My performance so far will not get me the career I want"), *effort*

discrepancy (discrepancy between effort expended so far and effort required to achieve the career goal; “I doubt the effort I have made so far will be good enough for me to reach my career goal”), *standard discrepancy* (perception that the career goal is set too high; “I have an image of my dream job, but I think it is out of my reach”), and *ability discrepancy* (perception that the individual might not have the capacity to achieve the desired goal; “To get the career I really want takes a big commitment, and I am not sure I have what it takes”).

We generated an initial list of 48 items, which was sufficient for the development of a brief scale suitable for research purposes (Hinkin, 1998). To assess content validity, these items were reviewed by five experts, who had knowledge in the scale development and career area. Three experts were doctoral level psychology academics and two were postgraduate students undertaking doctoral research in the careers area. In this process, these 48 items were reduced to 35, which were then sent to six independent experts, who were asked to rate how well each item tapped the domain indicated (7-point, Likert-like response format, with endpoints of 1 = *Very poor* and 7 = *Very good*), and to comment on the general readability of the items. These experts were psychology and business academic staff and post-graduate doctoral students. Based on these ratings, eight items were discarded as they did not have an average expert rating of above average or better (Lynn, 1985), leaving 27 items to be administered to the initial sample. The final items had a Flesch-Kincaid Reading Ease score of 86 (scores closer to 100 indicate easier reading) and Flesch-Kincaid Grade Level of 5.5 (indicating items would be understood by typical upper primary school level students). The 27 items, together with demographic questions (e.g., age, gender) and scales to assess construct validity were compiled into one questionnaire, pilot tested with a small group of young adults, and then administered to a large sample of young adults.

Participants

Participants were 615 young adults (25% male, mean age = 20.88 years, $SD = 3.96$; range 17-35 years). To gain a proxy for ability, we asked respondents to indicate, “On average, what grades did you achieve in your last year of high school, where 5 is the highest level (equivalent to *Very High Achievement*) and 1 is the lowest (equivalent to *Very Low Achievement*)?”. The mean academic achievement level was 3.98 ($SD = 0.73$). To gain a proxy for perceived, current socio-economic standing (SES), we asked, “Which of the descriptions comes closest to how you feel about your family’s economic situation nowadays (Family may mean your family of origin if you are still dependent or your current self/family if you are independent)?”, using endpoints of 1 = *Living comfortably on present income* and 4 = *Finding it very difficult on present income*. Mean SES proxy was 1.89 ($SD = 0.80$). Participants identified mostly as Australians (77%), with others indicating South-East Asian backgrounds (9%), Europe and the UK (6%), New Zealand and Pacific Islands (4%), North America (2%), and the Middle-East (2%).

This sample of 615 was split randomly into two groups: Sample A and Sample B. Sample A was used for the exploratory factor analysis to test the factor structure of the 27 items and to reduce these to a smaller number for the final scale. Sample B was retained as a hold-out sample to confirm the factor structure of the scale and to test for construct validity. Chi-square and independent sample t -tests indicated that these two groups did not differ on any of the demographic variables, suggesting no bias in the samples as a result of the split. Sample A contained 300 participants (25% male), with a mean age of 20.84 years ($SD = 4.20$), mean academic achievement level of 4.01 ($SD = 0.71$), and mean SES level of 1.86 ($SD = 0.76$). Sample B consisted of 315 participants (25% male), with a mean age of 20.92 years ($SD = 3.74$), mean academic achievement level of 3.95 ($SD = 0.75$), and mean SES level of 1.91 ($SD = 0.84$).

Materials

The 27 items devised specifically for the career goal discrepancy scale were compiled into a questionnaire with the demographic questions and two other scales, which were used to assess construct validity. The two additional scales were career goal commitment and career distress. Goal commitment, or one's determination to reach a goal (Locke & Latham, 1990), declines as goals become appraised as unattainable (Wrosch, Scheier, Miller, Schulz, & Carver, 2003), and goal failure results in disappointment and negative affect (Neese, 2000).

Career goal commitment. We used the 5-item Goal Commitment Scale (Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001), which we modified to refer to the individual's career goal (e.g., "I am strongly committed to pursuing this goal", was changed to, "I am strongly committed to pursuing my career goal", and "Quite frankly, I don't care if I achieve this goal or not", became "Quite frankly, I don't care if I achieve my career goal or not"). Validity of the scale has been supported by expert review, meta-analytic confirmatory factor analysis, and by testing correlations with other constructs (e.g., task complexity). Reliability has been assessed as sound (range = .70 to .78; Klein et al., 2001). The confirmatory factor analysis conducted in our study indicated one factor; alpha was .84.

Career distress. We used the 14 subjective career distress items from the Coping with Career Indecision Scale (Larson, Toulouse, Ngumba, Fitzpatrick, & Heppner, 1994). These items were designed to assess the level of subjective distress in relation to career decision making, avoidance of career thoughts, and career goal setting (e.g., "I often feel down or depressed about selecting a career" and "I feel stress or pressure to select a satisfying career"). Validity has been supported by finding negative associations with career decision certainty and positive associations with anxiety. Previous reliability coefficients have been > .90 (Larson et al., 1994). We found satisfactory fit for a 1-factor solution; alpha was .93.

Procedure

The web-based questionnaire was advertised to students via a university-wide broadcast email. Students were eligible to enter a draw to win a shopping voucher if they participated in the study, which was conducted under the auspices of the authors' university ethics committee.

Results

Exploratory Factor Analysis and Item Reduction (Sample A)

Using Sample A ($N = 300$), we first assessed the 27 career goal discrepancy items for poor distributions (e.g., skew, kurtosis), high inter-item correlations ($r \geq .80$), and low item-total correlations ($r \leq .30$), but did not delete any items as a result of these investigations. Next, we conducted a series of exploratory (principal-axis) factor analyses (EFAs) to assess the underlying structure of the scale. We selected a direct oblimin rotation, as all underlying domains were expected to correlate to represent an overall career goal discrepancy measure (Hair, Black, Babin, & Anderson, 2010), although we anticipated a 1-factor structure reflecting career goal discrepancy. The KMO measure of sampling adequacy (.96) and Bartlett's test of sphericity ($p < .001$) indicated that the 27 items were suitable for an EFA.

The first analysis suggested three factors with eigenvalues > 1 (the eigenvalue for Factor 1 was 14.70, which accounted for 54.46% of the variance; for Factors 2 and 3, the respective numbers were 1.73 and 6.42%, and 1.20 and 4.45%). We found six cross-loading items ($> .30$), and one factor was comprised exclusively of three negatively-worded items. When the cross-loading and negatively-worded items were removed from the analysis, a single factor containing 18 items was produced (63.09% variance accounted). While ensuring that breadth of content coverage was maintained, we removed an additional six low-loading items to reduce the length of the scale to 12 items, which consisted of three items from each of the four domains of achievement, effort, standard, and ability discrepancy. This final factor accounted for 68.89% of the variance, above the recommended desirable level of 60%

(Hinkin, 1998). Factor loadings ranged from .69 to .89, and the internal reliability coefficient (alpha) was .95. See Table 1 for items and factor loadings.

Confirmatory Factor Analysis (Sample B)

Using Sample B, we applied confirmatory factor analysis (AMOS Version 21) to validate the factor structure of the 12-item career goal discrepancy scale. In this model, we allowed each observed variable to load freely on one latent variable. We followed Hair et al.'s (2010) recommendations for a sample ≥ 250 participants with ≥ 12 observed variables, and assessed model fit using chi-square (χ^2 ; significant p value expected), the normed chi-square (χ^2/df ; ratio of 3:1 or less suggests a good fit), the comparative fit index (CFI $> .92$ expected), the goodness of fit index (GFI $> .90$), and the root mean-square error of approximation (RMSEA $< .07$). This model yielded good fit statistics: $\chi^2(48) = 93.40$, $p < .001$, $\chi^2/df = 1.95$, CFI = .98, GFI = .95, and RMSEA = .06. All factor loadings were significant ($p < .001$), and ranged from .65 to .90. Alpha for the scale using Sample B was .96. The EFA and CFA analyses suggest that these 12-items reflect a unidimensional career goal discrepancy measure, with high scores reflecting high career goal discrepancy and low scores reflecting low discrepancy.

Construct Validity (Sample B)

We tested construct validity further by examining two correlates of career goal discrepancy: career goal commitment and career distress. Both theory and previous research (Locke & Latham, 1990; Wrosch et al., 2003) suggest that career goal discrepancy should be associated negatively with career goal commitment and positively with career distress. The correlations with career goal commitment ($r = -.44$, $p < .001$) and career distress ($r = .66$, $p < .001$) were moderate to strong and were in the expected directions (see Table 2); supporting validity for the career goal discrepancy scale. Additionally, there was no evidence to suggest that career goal discrepancy perceptions should be different across gender, age, ability, or

SES levels among young adults. Ideally, construct measures should not contain group-based bias that might distort scale interpretation or result in adverse impact on any group (Holland & Wainer, 1993). The correlations between career goal discrepancy and age ($r = -.04$, $p = .45$), gender ($r = .01$, $p = .89$), grade ($r = -.09$, $p = .10$), and SES proxy ($r = .08$, $p = .17$) were all negligible, suggesting that respondents across the different groups did not respond differently to the measure.

Discussion

We used classical test theory procedures to develop a short, 12-item scale suitable for use by researchers and practitioners who want to assess perceived discrepancies between set career goals and career goal progress. The unidimensional scale is based on coverage of four important discrepancy domains: perceived discrepancies in achievements required at that point in time vs. actual achievements, discrepancies in effort required to achieve the goal vs. actual effort to date, discrepancies in competencies required to achieve the goal vs. available competencies, and global perception that a self-referent, career standard is unrealistic. Content validity of the items was supported by reference to the literature, pilot testing, and use of expert raters. Construct validity of the scale was supported by exploratory and confirmatory factor analyses on two separate samples, maintenance of the four underlying domains in the final version of the scale, the high internal reliability coefficient, and by finding the scale was related to the two independent measures of goal commitment and career distress in the expected directions. Additionally, the findings that the scale was not related to age, gender, academic achievement or SES indicates no inherent bias based on these groupings.

Having a tool to assess career goal discrepancy (i.e., assess the perceived gap between one's career goal progress and one's set career goal) is important for researchers whose studies are informed by goal-oriented and self-regulatory theories, such as social cognitive,

control, and goal-setting theories. It is particularly important for studies that examine career development in young adults, as this is the period in life when career goals are especially salient and when individuals invest much time, effort, and resources preparing for the occupational future. By tapping four underlying domains, the scale assesses multiple aspects of discrepancy, and by being brief, at 12 items, will be practically useful to researchers and practitioners. The scale has excellent reliability, and initial assessment of content and construct validity is very encouraging.

In devising the scale, we drew on university students, and our sample contained disproportionately more young women than young men; thus, future studies need to assess the psychometric properties of the scale on more diverse populations to establish how well the scale will generalise to other groups. As we found no significant relationship between the scale and age, gender, academic achievement, or SES, we expect scale generalizability not to be problematic. We were not able to assess predictive validity, nor did we assess test-retest reliability. Across-time studies will need to be conducted to generate these statistics. What are required here are studies that test the association between scores on the scale at one point in time and real-life outcomes at a second; for example, to demonstrate that high discrepancy scores now are associated with later career-related exploration (cf. Kerpelman & Lamke, 1997).

Setting goals that are not fulfilled is pervasive across the lifespan (Dijksterhuis & Aarts, 2009); setting career-related goals that are not fulfilled is pervasive in young adulthood (Seiffge-Krenke & Gelhaar, 2008). Thus, we expect that being able to assess this discrepancy in the career domain will stimulate future research into the career development of young adults. Topics of particular importance are outcomes of career-related distress and career-related actions, such as exploration and planning behaviours after having to compromise following detection of career goal discrepancy. There are theoretical perspectives predicting

these outcomes (e.g., Kerpelman et al., 1997; Locke & Latham, 1990) and empirical evidence supporting the relationships (e.g., Anderson & Mounts, 2012; Fejfar & Hoyle, 2000); however, little is known about how young people deal with and manage the consequences of these disappointments. Future research, for example, might examine the individual and contextual factors that exacerbate the negative outcomes of discrepancies, and identify the strategies that are particularly useful in ameliorating their effects.

Finally, having a brief, screening measure of discrepancies will allow practitioners to explore issues around career goal setting, decision-making, and dealing with loss, and lead them to identify the adaptive strategies required by their clients to progress optimum occupational and life futures. Practitioners currently have access to tools to assess goal-related constructs, such as career aspirations (e.g., Career Aspirations Scale; O'Brien, 1996), career barriers (e.g., Perceived Career Barriers Scale; McWhirter, 1997), and career satisfaction (e.g., Career Satisfaction Scale; Greenhaus, Parasuraman, & Wormley, 1990), but there is no existing scale that taps the specific construct related to discrepancies between career goals and career progress. Directly measuring discrepancies will help educate clients to processes around goal-setting, goal management, and goal adjustment, and provide insights into the effects of dissonance and how they might be managed.

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Table 1

Items and Factor Loadings for the Career Goal Discrepancy Scale; Sample A (N = 300)

Items	Factor loadings
<i>Achievement Discrepancy Domain</i>	
My plans are not working out to get the career I really want.	.75
What I have achieved to date doesn't give me confidence that I will reach my career goals.	.71
I am making progress on my career goals, but I don't think I have achieved enough to get the career I want.	.69
<i>Effort Discrepancy Domain</i>	
Despite my best efforts, I think I am going to miss out on my ideal career.	.88
Even with my best efforts, I think I will have to settle for something less than my ideal career.	.85
I am working hard, but still doubt I will end up with the career I would really like.	.80
<i>Standard Discrepancy Domain</i>	
I doubt I can meet the standards of entry to my ideal career.	.89
I have set my sights on a particular career, but I don't think that I am going to reach it.	.86
I have an image of my dream job, but I think it is out of my reach.	.81
<i>Ability Discrepancy Domain</i>	
I thought I had the ability to get the career I want, but now I am not so sure.	.88
I know the career I want, but don't think I have what it takes to reach it.	.84
I am not sure I am capable of meeting the requirements for the career I really want.	.80

Table 2

Summary Statistics for Study Variables: Sample A = 300; Sample B = 315.

Variables	<i>M</i>	<i>SD</i>	1	2	3
Sample A:					
Career goal discrepancy (12-item scale)	33.89	12.66			
Sample B:					
Career goal discrepancy (12-item scale)	33.47	12.89	-	-.44***	.66***
Career goal commitment (5-item scale)	25.10	4.09		-	-.50***
Career distress (14-item scale)	44.73	15.48			

*** $p < .001$